

Linguistic Creativity and Formal Thought Disorder in Schizophrenia

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Dedication

For Daisy, Zelda Dolly, Janet, Sass, and Matt

'I don't worry how the world is going cos I don't wanna take God job away.'

- Participant <26AR16>

Abstract

Both linguistic creativity and formal thought disorder (FTD) are heterogeneously expressed and difficult to define. The present thesis develops operational definitions of these concepts by examining historic and contemporary accounts of FTD and the application of tests of creative linguistic ability with schizophrenia populations. The first of these definitions is operationalised as a novel theoretical framework (the 4TD Framework) that situates historic and contemporary descriptions of FTD in terms of linguistic levels of operation (phonology, morphology, syntax, semantics, and pragmatics), where FTD is conceptualised in terms of grammar, word selection, thought completion, and discourse tracking. The second positions linguistic creativity in schizophrenia as selectively constrained by schizophrenia symptoms and intellectual ability. These definitions are examined quantitatively using experimental psycholinguistic and corpus linguistic methods. The experimental psycholinguistic component involved the design of an original metaphor creation task. The task is described as original as it adapted design elements from three extant tasks for use with a schizophrenia cohort. The corpus linguistic component involved the design of a small, specialised corpus of spoken language. This corpus is the first of its kind at the time of writing and, unlike most other clinical corpora, is publicly available. The results from the systematic literature review support the view that figurative language comprehension is compromised in schizophrenia, and the results from the quantitative studies reveal that grammatical disturbances in everyday speech are more prominent in schizophrenia speakers. These disturbances appear to reside on a continuum with normal speech, and so a dimensional approach to FTD assessment is recommended. This is particularly important as most FTD assessment tools employ a categorical approach. In addition,

schizophrenia speakers over-involve topics of emotional and personal concern when discussing abstract concepts. These findings are largely consistent with the extant literature on language in schizophrenia and FTD, however greater emphasis should be placed on grammatical features in the future. As FTD is considered a transdiagnostic phenomenon *and* a diagnostic criterion for schizophrenia, further work is needed to establish what is truly transdiagnostic. Further work on linguistic creativity in the affective psychosis spectrum, in combination with the work described here, can be assistive in this regard.

Table of contents

CHAPTER ONE: INTRODUCTION	15
1.1. Creativity and mental illness	15
1.2. Schizophrenia	18
1.2.1. Description and classification	18
1.2.2. Changes in DSM-IV/V and ICD-10/11	21
1.2.3. Summary	23
1.3. Definitions	23
1.4. Research aims and objectives	24
1.5. Thesis overview	26
CHAPTER TWO: DEFINING FTD IN SCHIZOPHRENIA	31
2.1. Introduction	31
2.2. Historic accounts of FTD	34
2.3. A linguistic view of FTD descriptions	38
2.4. Important changes in the TLC Scale	45
2.5. The 4TD Framework	52
2.6. Theoretical perspectives of FTD	56
2.7. Summary	61
CHAPTER THREE: DEFINING LINGUISTIC CREATIVITY IN SCHIZOPHRENIA	65
3.1. Introduction	65
3.2. Introduction to systematic literature review	65
3.3. Methods	66
3.4. Results	68
3.4.1. Date	69
3.4.2. Demographics	70
3.4.3. Assessments	70
3.4.4. Cohorts	71
3.4.5. Designs	73
3.4.6. Linguistic focus	73
3.4.7. Metaphor decoding	74
3.4.8. Figurative production	75
3.4.9. Correlations	76
3.5. Discussion	77
3.5.1. Metaphor comprehension	78
3.5.2. Figurative production	79
3.6. Summary	82
CHAPTER FOUR: SYNAESTHETIC METAPHORS IN SCHIZOPHRENIA	84

4.1. Background	84
Research question: How is creative language processing manifested in schizophrenia?	84
4.2. Why synaesthetic metaphors?	84
4.3. Theories of metaphor	86
4.3.1. Analogy.....	87
4.3.2. Categorisation	88
4.3.3. Conceptual mapping	91
4.3.4. Summary	92
4.4. Theories of synaesthetic metaphor	94
4.4.1. Cognitive constraint theory (CCT)	94
4.5. Synaesthetic metaphors in schizophrenia	96
4.5.1. Motivations	96
4.5.2. Hypotheses.....	97
4.6. Replicating the CCT battery	97
4.6.1. Stimuli	97
4.6.2. Stimuli lists	99
4.6.3. Power analysis (a priori to determine required sample size).....	99
4.6.4. Validity	100
4.7. Designing the DoLI task.....	103
4.7.1. General design requirements.....	104
4.7.2. Stimuli selection and norming	107
4.7.3. Building item lists	120
4.7.4. Miscellaneous controls	128
4.7.5. Example presentations and participant instructions	132
4.7.6. Power analyses.....	135
4.7.7. Summary	136
4.8. Case study: participant <18UG15>	137
4.9. Logistics statement	137
4.10. Experimental data	138
4.10.1. Demographics	138
4.10.2. Response times	139
4.10.3. Noun selection	145
4.10.4. Language cognition	151
4.10.5. Experimental summary	153
4.11. Interview data	160
4.11.1. Interviews.....	160
4.11.2. Participant <18UG15>	161

4.12. Interview summary	171
CHAPTER FIVE: BUILDING A SPOKEN SCHIZOPHRENIA CORPUS	174
5.1. Background	174
5.1.1. Why build a corpus	174
5.1.2. Building spoken language corpora	175
5.1.3. Building small, specialised corpora	179
5.1.4. Requirements for the DAIS-C	181
5.2. Building the DAIS-C	183
5.2.1. Design statement	183
5.2.2. Patient public involvement/engagement (PPI/E)	184
5.3. Ethics.....	185
5.4. Recruitment	187
5.4.1. Identification and approach	187
5.4.2. Inclusion and exclusion criteria	188
5.4.3. Remuneration and reimbursement	191
5.4.4. COVID-19.....	192
5.5. Sampling	192
5.5.1. Clinical group.....	192
5.5.2. Comparison group.....	195
5.6. Data collection	196
5.6.1. Logistics statement	196
5.6.2. Interviewing	201
5.6.3. Recording	207
5.7. Demographics	211
5.7.1. Age, sex, gender, and education	211
5.7.2. Setting and geography	214
5.7.3. Clinical features.....	216
5.7.4. Language cognition	217
5.7.5. Handedness.....	223
5.8. Transcription.....	224
5.8.1. Conventions	224
5.8.2. Software.....	230
5.9. Storage.....	230
5.10. DAIS-C characteristics	232
5.10.1. Corpus characteristics	232
5.10.2. Speaker characteristics	233
5.10.3. Group characteristics	242

5.10.4. Summary	251
CHAPTER SIX: FTD AND LINGUISTIC CREATIVITY IN SCHIZOPHRENIA.....	253
6.1. Introduction	253
6.1.1. Method of annotation.....	254
6.2. Study One: Testing the 4TD Framework	256
6.2.1. Feature counts and concordances	256
6.2.2. Significance testing.....	290
6.2.3. Summary	292
6.3. Study Two: Conceptualising Linguistic Creativity.....	297
6.3.1. Word and semantic keyness analyses.....	297
6.3.2. Summary	303
CHAPTER SEVEN: CONCLUSION	305
7.1. Summary of chapters.....	305
7.2. Strengths and limitations.....	313
7.3. Future studies	319
REFERENCES.....	323
APPENDIX I – Shen and Aisenmann (2008) Experimental Materials	348
APPENDIX II – Delgaram-Nejad et al., 2022.....	396
APPENDIX III – DoLI Task Experimental Data	409
APPENDIX IV – Discussing Abstract Ideas in Schizophrenia Corpus (DAIS-C) Transcripts.....	415
Appendix V – Delgaram-Nejad et al., 2020.....	559
Appendix VI – Delgaram-Nejad et al., 2023.....	581
APPENDIX VII – Tables exceeding two pages.....	599

List of Tables

Table 1 - positive and negative symptoms of schizophrenia in DSM IV/V and ICD-10/11	21
Table 2 - historic symptoms fitting one linguistic category	39
Table 3 - historic symptoms with unclear linguistic boundaries	41
Table 4 - TLC symptoms fitting one linguistic category	42
Table 5 - TLC symptoms with unclear linguistic boundaries.....	43
Table 6 - linguistic changes from historic to TLC Scale descriptions of FTD symptoms	46
Table 7 - the 4TD Framework (pre-TLC).....	52
Table 8 - the 4TD Framework (TLC)	54
Table 9 - SLR inclusion and exclusion criteria	66
Table 10 - paper quality weightings.....	68
Table 11 - study characteristics	69
Table 12 - tabular summary of sections 3.4–3.6	77
Table 13 - stimuli used in Shen and Aisenmann (2008).....	98
Table 14 - USAS and LIWC screening	111

Table 15 - Table 14 repeated.....	115
Table 16 - variations in adjective type and scale structures.....	117
Table 17 - main item list characteristics	122
Table 18 - practice item list characteristics	123
Table 19 - distractor item list characteristics	124
Table 20 - modality and chemicality combinations	126
Table 21 - demographic information.....	138
Table 22 - CLQT(+) scores by group	152
Table 23 - DAIS-C-CL: informed consent, GP consent, and archival consent	185
Table 24 - DAIS-C-CO: informed consent, GP consent, and archival consent	186
Table 25 - DAIS-C-CL recruitment.....	187
Table 26 - DAIS-C-CO recruitment	188
Table 27 - DAIS-C-CL: interview only	198
Table 28 - DAIS-C-CO: interview only	199
Table 29 - DAIS-C-CL: experiment pathway and mode, CLQT(+), and CLQT order	199
Table 30 - DAIS-C-CO: experiment pathway and mode, CLQT(+), and CLQT order	200
Table 31 - DAIS-C-CL: interview question and question type	204
Table 32 - DAIS-C-CO: interview question and question type	205
Table 33 - DAIS-C-CL: audio quality, duration, recording date, and recording time	207
Table 34 - DAIS-C-CO: audio quality, duration, recording date, and recording time	208
Table 35 - DAIS-C-CL: interviewer device, participant device, and recording setup	209
Table 36 - DAIS-C-CO: interviewer device, participant device, recording setup	210
Table 37 - DAIS-C-CL: age range, sex, gender, and education	212
Table 38 - DAIS-C-CO: age, sex, gender, and education	213
Table 39 - DAIS-C-CL: interview mode, interview location, and participant locale	214
Table 40 - DAIS-C-CO: interview mode, interview location, and participant locale	215
Table 41 - DAIS-C-CL: diagnosis, EPSEs, and clozapine status	216
Table 42 - DAIS-C-CL: confrontation naming scores.....	219
Table 43 - DAIS-C-CO: confrontation naming scores.....	219
Table 44 - DAIS-C-CL: story retelling subscores, total, and summary scores	220
Table 45 - DAIS-C-CO: story retelling subscores, total, and summary scores.....	221
Table 46 - DAIS-C-CL: generative naming subscores, perseveration ratio, total, and summary scores.....	221
Table 47 - DAIS-C-CO: generative naming subscores, perseveration ratio, total, and summary scores.....	222
Table 48 - DAIS-C-CL: handedness and multilingual status	223
Table 49 - DAIS-C-CO: handedness.....	224
Table 50 - DAIS-C transcription conventions, modified from the BNC 2014	225
Table 51 - token count, audio duration, and audio minutes.....	233
Table 52 - token count, mean, and standard deviation	233
Table 53 - audio minutes, mean, and standard deviation.....	233
Table 54 - sex.....	233
Table 55 - interview only	234
Table 56 - topic breadth	234
Table 57 - DAIS-C-CL: tokens, % of corpus, and % of sub-corpus.....	236
Table 58 - DAIS-C-CO: tokens, % of corpus, and % of sub-corpus	236
Table 59 - 4TD tagging criteria.....	255
Table 60 - concordance lines and grammatical error types by subcorpus	258
Table 61 - concordance lines and word selection error types by subcorpus	269
Table 62 - concordance lines and thought completion error types by subcorpus	275
Table 63 - concordance lines and discourse tracking error types by subcorpus	280

Table 64 - keyness results for 4TD tags at $p < .01$	292
Table 65 - keyness results for 4TD tags at $p < .05$	292
Table 66 - overused words across clinical (O1) and comparison (O2) sub corpora	298
Table 67 - underused words across clinical (O1) and comparison (O2) sub corpora	299
Table 68 - overused semantic categories across clinical (O1) and comparison (O2) sub corpora	300
Table 69 - underused semantic categories across clinical (O1) and comparison (O2) sub corpora	302

List of Figures

<i>Figure 1 - PRIMSA flowchart</i>	69
Figure 2 - pathway A practice item	132
Figure 3 - pathway B practice item	133
Figure 4 - pathway A distractor item	133
Figure 5 - pathway B distractor item	133
Figure 6 - pathway A main item	134
Figure 7 - pathway B main item	134
Figure 8 - mean response times by experimental pathway	140
Figure 9 - mean response times by sex	141
Figure 10 - mean response time by group	142
Figure 11- mean response time by CLQT(+) order	143
Figure 12 - mean response time by speaker ID	144
Figure 13 - mean choice by experiment pathway	146
Figure 14 - mean choice by sex	147
Figure 15 - mean choice by group	148
Figure 16 - mean choice by CLQT order	149
Figure 17 - mean overall choice by speaker ID	150
Figure 18 - mean (non)directional choice by speaker ID	151
Figure 19 - Token count by group by speaker ID	237
Figure 20 - duration (audio minutes) by group by speaker ID	238
Figure 21 - % of subcorpus by group by speaker ID	239
Figure 22 - % of corpus by group by speaker ID	240
Figure 23 - interview token count by group by speaker ID	241
Figure 24 - speaker to interviewer token ratio by group by speaker ID	242
Figure 25 - token count by group by sex	243
Figure 26 - duration (audio minutes) by group by sex	244
Figure 27 - mean % of sub-corpus by group by sex	245
Figure 28 - mean % of corpus by group by sex	246
Figure 29 - token count by group by topic breadth	248
<i>Figure 30 - duration (audio minutes) by group by topic breadth</i>	248
Figure 31 - mean % of sub-corpus by group by topic breadth	249
Figure 32 - mean % of corpus by group by topic breadth	250
Figure 33 - grammar mean counts by group	257
Figure 1 - PRIMSA flowchart	69
Figure 2 - pathway A practice item	132
Figure 3 - pathway B practice item	133
Figure 4 - pathway A distractor item	133
Figure 5 - pathway B distractor item	133
Figure 6 - pathway A main item	134
Figure 7 - pathway B main item	134
Figure 8 - mean response times by experimental pathway	140

Figure 9 - mean response times by sex	141
Figure 10 - mean response time by group.....	142
Figure 11- mean response time by CLQT(+) order	143
Figure 12 - mean response time by speaker ID	144
Figure 13 - mean choice by experiment pathway	146
Figure 14 - mean choice by sex	147
Figure 15 - mean choice by group	148
Figure 16 - mean choice by CLQT order	149
Figure 17 - mean overall choice by speaker ID.....	150
Figure 18 - mean (non)directional choice by speaker ID.....	151
Figure 19 - Token count by group by speaker ID	237
Figure 20 - duration (audio minutes) by group by speaker ID.....	238
Figure 21 - % of subcorpus by group by speaker ID	239
Figure 22 - % of corpus by group by speaker ID	240
Figure 23 - interview token count by group by speaker ID	241
Figure 24 - speaker to interviewer token ratio by group by speaker ID.....	242
Figure 25 - token count by group by sex	243
Figure 26 - duration (audio minutes) by group by sex	244
Figure 27 - mean % of sub-corpus by group by sex.....	245
Figure 28 - mean % of corpus by group by sex.....	246
Figure 29 - token count by group by topic breadth.....	248
Figure 30 - duration (audio minutes) by group by topic breadth	248
Figure 31 - mean % of sub-corpus by group by topic breadth	249
Figure 32 - mean % of corpus by group by topic breadth	250
Figure 33 - grammar mean counts by group	257

List of Acronyms

ADHD	Attention Deficit Hyperactivity Disorder
AMED	Allied and Complimentary Medicine Database
ANOVA	Analysis of Variance
APA	American Psychiatric Association
ASD	Autism Spectrum Disorder
BNC	British National Corpus
CANCODE	The Cambridge and Nottingham Corpus of Discourse in English
CCT	Cognitive Constraint Theory
CINAHL	Cumulated Index to Nursing and Allied Health Literature
CLANG	Clinical Language Disorder Rating Scale
CLAWS	Constituent Likelihood Automatic Word-Tagging System
CLQT	Cognitive Linguistic Quick Test
COCA	Corpus of Contemporary American English
CRN	Clinical Research Network
DAIS	Discussing Abstract Ideas in Schizophrenia
DSM	Diagnostic and Statistical Manual of Mental Disorders
DT	Discourse Tracking
EAL	English as an Additional Language
EEG	Electroencephalogram
EPSE	Extrapyramidal Side Effects
ERP	Event-Related Potential
ESRC	Economic and Social Research Council
FTD	Formal Thought Disorder

GCSE	General Certificate of Secondary Education
GDPR	General Data Protection Regulation
GMC	General Medical Council
GP	General Practitioner
HRA	Health Research Authority
ICD	International Classification of Diseases
ICF	Informed Consent Form
IQ	Intelligence Quotient
IRAS	Integrated Research Application System
IS	Information Sheet
ISI	Interstimulus Interval
IV	Independent Variable
LIWC	Linguistic Inquiry and Word Count
LSCFT	Lancashire and South Cumbria NHS Foundation Trust
MMU	Manchester Metropolitan University
NELFT	North East London NHS Foundation Trust
NHS	National Health Service
NIHR	National Institute for Health Research
PANS	Positive and Negative Symptom Scale
PICOS	Participants, Interventions, Comparitors, and Outcomes
PPE	Personal Protective Equipment
PPI	Patient Public Involvement
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PROSPERO	International Prospective Register of Systematic Reviews
QATSDD	Quality Appraisal Tool for Studies of Diverse Designs
REC	Research Ethics Committee
SAGE	Scientific Advisory Group for Emergencies
SANS	Scale for the Assessment of Negative Symptoms
SCA	Structured Capacity Assessment
SD	Standard Deviation
TALD	Thought and Language Disorder Scale
USAS	UCREL Semantic Analysis System
WHO,	World Health Organisation
XML	Extensible Markup Language

CHAPTER ONE: INTRODUCTION

1.1. Creativity and mental illness

Hypothesised relationships between creativity and mental illness have a long history. Studies examining such potential associations have tended toward case series or case control designs (Lauronen et al., 2004), leading some to call for stronger forms of evidence in the area (Wadell, 1998). The evidence in favour of a direct or causal link between creativity and mental illness is lacking, and this is unsurprising given a lack of clearly defined constructs. Yet oblique connections, such as the tendency for prominent creative figures to have had first-degree relatives with mental illnesses (Hare, 1987) and for individuals with some conditions to have more engagement with creative professions (Mainkar, 2014) continue to generate research interest.

The creativity-psychopathology literature is expansive and mixed, owing largely to a lack of clear definitions for both creativity and mental illness. It is suggested that instead of the broad question of whether creativity (generally) and mental illness (generally) are associated, more specific questions are warranted, such as whether a given aspect of psychopathology is associated with specific cognitive processes thought to be involved in creative thinking (Fisher, 2015). More precise findings emerge under this approach, such as anxiety and depression having little effect on creative cognition when the latter is defined in terms of divergent thinking, creative self-concepts, everyday creative behaviours, and creative accomplishments (Silvia and Kimbrel, 2010).

A large portion of this work has looked at associations between affective psychosis, bipolar disorder, and creativity, with creativity often operationalised in terms of creative

occupation (as a marker of creative expression). This parallels increased recognition that affective psychosis and bipolar disorder are more closely associated with creative professions and pursuits than some other mental illnesses (Andreasen and Canter, 1974; Rihmer et al., 2006; Andreasen, 2022).

Potential associations between schizophrenia and creativity were also considered prior to the (current) emphasis on affective psychosis (see Croy and Sikand, 1973; Sass and Schulberg, 2001), and there has been some renewed interest following that shift.

Unlike the bipolar and affective psychosis literature, though, these studies suggest that there is limited evidence for an association between creativity and schizophrenia per se (Del Missier et al., 2022). A recent meta-analysis proposes a U-shaped relationship between schizophrenia and creativity, with mild expressions, particularly schizotypy, providing some support for creative activity but full symptom expression undermining it (Acar et al. 2018). Mental processes involved in both schizophrenia and creative activity are also thought to overlap (Keefe and Magaro, 1980, Kaufman and Paul, 2014, Hasenfus and Magaro, 2018). The question of whether schizophrenia and creativity are associated, then, requires a setting of parameters. Which facets of schizophrenia are related to what dimensions of creativity? The literature on these broad topics, each characterised by heterogeneous expression and an incomplete understanding of their constituent parts, makes investigating any relationship between the concepts challenging. An investigation focused on exploring the presence of such connections needs clearly defined constructs. The present thesis therefore places substantial emphasis on establishing robust definitions. More specifically, this thesis looks at an

area within the creativity and psychopathology space that has received comparatively little attention.

The relationship between formal thought disorder (FTD), a poorly understood set of language disturbances that affects individuals with and without a diagnosis of schizophrenia (McKenna, 2003), and *linguistic* creativity has received very little attention in recent decades. Most of this work occurred in the 1970s and 80s. A study examining FTD in the context of creative cognition proposed the idea of a cognitive continuum, with highly creative individuals positioned somewhere between normative and disordered expressions of these faculties (Hasenpus and Magaro, 1976; Barrantes-Vidal, 2004). Work that compared individuals with schizophrenia, mania, and creative writers found support for an association between the output of creative writers and individuals with mania but not individuals with schizophrenia (Andreasen and Powers, 1975). Further, the same study also associated creativity with aspects of FTD more prominent in mania presentations, suggesting that some but not all aspects of FTD may be tied to linguistic creativity. A familial association between creative writers and individuals with mania and other affective psychoses has also been noted (Andreasen and Canter, 1974). Further, clinicians who were asked to rate FTD in mania, creative writing, and schizophrenia samples applied higher FTD scores to creative work and mania samples than they did the schizophrenia samples (Andreasen et al., 1974), suggesting a clinical concept of FTD that more closely overlapped with the findings described by Andreasen and Powers (1975). Although these authors have included schizophrenia cohorts within their studies, there is little work that looks specifically at FTD *in schizophrenia* and its

relationship to *linguistic* creativity where both concepts are systematically defined. This is the focus of the present thesis.

1.2. Schizophrenia

Schizophrenia is a serious neuropsychiatric disorder characterised by delusions, hallucinations, motor disturbances, language difficulties, and cognitive impairment (Keefe and Harvey, 2012). Other considerations include genetic vulnerabilities and a neurodevelopmental hypothesis (Rapoport and Gogtet, 2011). Structural (e.g. white matter and ventricular) changes in the brain suggest an accompanying neurodegenerative course (Kochunov and Hong, 2014).

1.2.1. Description and classification

It is unclear whether schizophrenia describes a syndrome that points to a single disorder or a family of disorders resembling a syndrome (Sebat et al. 2009). Its symptoms span multiple domains and vary in type and severity across cases. This clinical heterogeneity has steered description toward classification efforts.

Kraepelin (1913) and Bleuler (1911) provided comprehensive early accounts of schizophrenia symptoms. Kraepelin first grouped four overlapping conditions under *dementia praecox*: *Kahlbaum's catatonia*, *Hecker's hebephrenia*, *Kraepelin's dementia paranoides*, and *Diem's simple dementia*. The main features of these components became the classical *catatonic*, *hebephrenic*, *paranoid*, and *simple* subtypes (McKenna, 2013). In the *catatonic* type, motor, volitional, and behavioural symptoms were most prominent. This form involved variable onset times and severity. Affective and cognitive

symptoms often preceded florid delusions, hallucinations, and FTD. Recovery was characterised by sudden and often lasting remission periods that preceded a relapse course marked by progressive deterioration. In *hebephrenic*, FTD and incongruous or flattened affect were the main symptoms. This form involved a slow onset, bizarre-disinhibited behaviour, and deterioration more severe than the paranoid subtype. In *paranoid*, the main symptoms were delusions, hallucinations, persecutory experiences, social withdrawal, and FTD in the later stages. This form involved a good response to treatment for florid symptoms but a pattern of deterioration involving volitional and affective symptoms with each re-admission. Bleuler introduced the term *schizophrenia* (Greek *schizein*, 'split' and *phrēn*, 'mind') because degeneration was not seen in all patients diagnosed with *dementia praecox* but a general splitting of psychic functions was (McKenna, 2013). Bleuler retained Kraepelin's *catatonic*, *hebephrenic*, and *paranoid* subtypes and also argued for *simple*, in which the florid symptoms were generally absent but subtle behavioural and volitional changes manifested across time. Bleuler was also less prescriptive about stupor and excitement in the *catatonic* subtype and expanded *hebephrenic* to include cases difficult to place elsewhere. Both Kraepelin and Bleuler assumed an underlying physical disease process and recognised the fluidity of their descriptive categories. The lack of validity work on the classical subtypes is surprising given their prominence in both DSM-III and DSM-IV. Carpenter et al's (1976) cluster analysis provided support for four symptom groups, two of which (*typical* and *flagrant*), resembled *paranoid* and *hebephrenic*. The other two differed significantly from *catatonic* and *simple*.

Other approaches, such as Leonhard's (1979), sought to define subtypes lacking any overlap. Ban et al. (1984) produced a simplified form of Leonhard's taxonomy alongside tentative support for its validity: the top level distinguishes systematic (process) or non-systematic (episodic) schizophrenia types. Either of these may be subtyped according to cognitive, affective, or motor symptom dominance. The systematic (process) subtypes could be further divided by symptom type and severity. A recent neuropsychological study of patients grouped in this way observed a common pattern of cognitive impairment that increased in severity through affective psychosis, unsystematic schizophrenia, and systematic schizophrenia groups (Cuesta et al. 2021).

Although the terms positive and negative were used in relation to neurological symptoms as early as 1857 (McKenna, 2013), Wing and Brown (1970) were the first to present the terms as they are currently conceptualised: as clusters of related schizophrenia symptoms. Strauss et al. (1974) provided the contemporary definition of how these groups differ, where positive denotes the excess of something and negative the lessening of something. Andreasen's Scale for the Assessment of Negative Symptoms (SANS; Andreasen, 1989) provided formalised definitions. Among these were two FTD items that are particularly relevant to this work and will be discussed later. Crow (1980) suggested acute and chronic schizophrenia subtypes characterised by positive and negative symptoms respectively. More empirical work has examined symptom interrelationships along these lines. Positive symptoms do not correlate with negative symptoms, suggesting distinct pathological processes (McKenna, 2013). Liddle's (1987a; 1987b) factor-analytic approach revealed a third, disorganisation syndrome that accounts for *FTD* and *bizarre behaviour*.

These moves from patient groupings and classical subtypes to symptom groupings and parity among the positive, negative, and disorganisation symptoms are also evident in the latest DSM and ICD revisions (see Table 1).

Table 1 - positive and negative symptoms of schizophrenia in DSM IV/V and ICD-10/11

DSM IV (APA, 2000)	positive	delusions, hallucinations, disorganized speech, disorganised or catatonic behavior
	negative	affective flattening, alogia, or avolition
DSM V (APA, 2013)	positive	same as DSM-IV
	negative	diminished emotional expression or avolition
ICD-10 (WHO, 1992)	positive	thought echo/withdrawal/broadcasting, delusions, hallucinations, incoherent or irrelevant speech, catatonic behaviour
	negative	diminished emotional expression, alogia, or avolition
ICD-11 (WHO, 2022)	positive	delusions, hallucinations, disorganised thinking, disorganised behaviour, experiences of influence, passivity, or control
	negative	alogia, anhedonia, asociality, blunted or flat affect, psychomotor disturbances

1.2.2. Changes in DSM-IV/V and ICD-10/11

The Diagnostic and Statistical Manual of Mental Disorders (DSM, thereafter) and *International Statistical Classification of Diseases and Related Health Problems* (ICD, thereafter) are diagnostic manuals. The DSM is produced by the American Psychiatric Association and focuses specifically on mental and behavioural disorders. It gained popularity in its third revision, DSM-III (see Spitzer et al., 1980) and is favoured for its research classifications (Tyrer, 2014). The ICD is produced by the World Health Organisation, covers all areas of medicine, and is favoured for its flexibility in diagnostic decision-making (Tyrer, 2014). These differences are less relevant to DSM-V and ICD-11, which use a shared structure (APA, 2013). A person diagnosed using DSM-V is therefore likely to receive the same diagnosis under ICD-11.

In DSM-IV (APA, 2000), bizarre delusions and Schneiderian first-rank auditory hallucinations were Criterion A symptoms and only one of these was required for diagnosis. A DSM-V (APA, 2013) diagnosis requires two Criterion A symptoms. One must be delusions, hallucinations, or disorganised speech. These changes relate to poor reliability on bizarre definitions and the non-specificity of Schneiderian first-rank symptoms. DSM-IV's *paranoid, disorganised, catatonic, undifferentiated, and residual* subtypes were discontinued in DSM-V due to lacking diagnostic stability, reliability, and validity (APA, 2013). DSM-V also includes dimensional assessments that support a case-specific approach to symptom heterogeneity. Four large changes were seen in ICD-11 (WHO, 2022). As in DSM, classical subtypes were removed. In ICD-10 (WHO, 1992), diagnosis required at least one symptom labelled (a) to (d) or at least two labelled (e) to (i). In ICD-11, diagnosis requires at least two symptoms. One must be from those labelled (a) to (d). *Thought block, incoherence, and neologism* (f) in ICD-10 became *FTD* (c) in ICD-11. Catatonia is now treated as a distinct entry (over schizophrenia subtype), and dimensional specifiers are present for both symptom severity and course. Symptom dimensions cover severity in six areas: positive, negative, depressive, manic, psychomotor, and cognitive (Gaebel et al. 2020).

Recent advances position the diagnostic significance of FTD on par with delusions and hallucinations, and subtyping has been replaced with dimensional approaches to symptom heterogeneity.

1.2.3. Summary

The earliest descriptions of schizophrenia saw four distinct pictures (*Kahlbaum's catatonia*, *Hecker's hebephrenia*, *Kraepelin's dementia paranoides*, and *Diem's simple dementia*) compressed into one: *dementia praecox*. This was then unpacked into *catatonic*, *hebephrenic*, *paranoid*, and *simple* subtypes. Later, the DSM-IV's *paranoid*, *disorganised*, *catatonic*, *undifferentiated*, and *residual* subtypes were discontinued in DSM-V. Most recently, symptoms are divided across six dimensions: *positive*, *negative*, *depressive*, *manic*, *psychomotor*, and *cognitive* (Gaebel et al. 2020). Parallel approaches, such as Leonard's (1979a; 1979b) view of *process* and *episodic* types, have attracted contemporary support in studies of cognitive impairment (progressing in increasing severity) across affective psychosis, unsystematic schizophrenia, and systematic schizophrenia subtypes (Cuesta et al. 2021).

1.3. Definitions

Creativity, linguistic creativity, and FTD lack clear definitions. Some have argued that defining creativity is so difficult that it should not be attempted, and that focus should be placed instead on whether creative behaviour has occurred (Epstein, 1980), although this raises the question of how we can determine whether creative behaviour has occurred in the absence of a definition. Others argue that no definition of creativity can exist without a corresponding definition of un-creativity (Simonton, 2018). Dow (2022) argues against the notion that creativity lacks a clear definition, suggesting that multiple historic definitions converge on a combination of novelty and utility. This is even referred to by others as the standard definition of creativity (Runco and Jaeger, 2012).

Interestingly, Runco and Jaeger (2012) use word salad (another term for disorganised speech or FTD) in psychosis as an example of non-creativity, in that it meets the condition of originality but not utility. While the standard definition of creativity may be useful in creativity research, its extension into a definition of linguistic creativity is less clear cut. Bergs (2019) explores a definition of linguistic creativity that relies on Sampson's (2016) distinction between F-creativity (fixed) and E-creativity (enlarging). F-creativity is likened to linguistic productivity (e.g. forming *mansplainer* by using an established formation rule, namely the -er suffix). E-creativity is described as a breaking the rules of language so as to produce something unexpected. Distinguishing these types in everyday language samples is challenging in practice (Bergs, 2019), and while definitions of broader creativity would position word salad in psychosis as non-creative, it can be positioned as linguistic creativity in the form of E-creativity.

1.4. Research aims and objectives

A significant portion of the work described here therefore focuses on developing working or operational definitions of the concepts under study. In addition, given that prior work has operationalised creativity in terms of cognitive functions, a study of creative language cognition in schizophrenia and comparison cohorts may be beneficial. Due to the focus on linguistic creativity, however, a purely experimental approach does not allow for a detailed examination of linguistic production in schizophrenia and comparison cohorts because better methods (such as psycholinguistic and corpus linguistic approaches) exist for the study of linguistic output; experimental approaches are more suited to the study of comprehension. Corpus linguistics, on the other hand,

provides suitable tools for the study of naturalistic language. A corpus linguistic study is used in the present thesis to explore quantitative patterns in naturalistic speech across groups, initially as a complimentary study to support interpretation of the experimental results. Where recruitment challenges affect the experiment, the corpus linguistic study will become the primary study, with greater emphasis placed on production in the discussion of findings, with portions dedicated to the experiment emphasising the methodological implications of interdisciplinary language testing. The thesis aims, objectives, and research questions can therefore be summarised as follows:

Aims and objectives:

To provide an operational definition of FTD in schizophrenia. An operational definition is needed because FTD occurs in clinical pictures other than schizophrenia. A schizophrenia-specific definition is therefore required.

To provide an operational definition of linguistic creativity in schizophrenia. As the investigation is interested in whether FTD and linguistic creativity are comparable, an operational definition specific to schizophrenia is required.

To carry out a quantitative investigation of creative language processing in schizophrenia. A focus on creative language processing enables a discussion of cognitive factors relevant to both schizophrenia and linguistic creativity.

To carry out a quantitative investigation of creative language output in schizophrenia. A focus on creative language production allows for a discussion of interactional factors relevant to both schizophrenia and linguistic creativity.

The project's research questions are thus as follows:

- What is FTD in schizophrenia?
- What is linguistic creativity in schizophrenia?
- How is creative language processing manifested in schizophrenia?
- How is creative language output manifested in schizophrenia?

The next section aims to establish a working definition of schizophrenia, as this is an important starting point. The two chapters that follow each attempt to form definitions of FTD in schizophrenia and linguistic creativity in schizophrenia. It is important to draw attention to some circularity in the argument here¹. From there, a methodological case report, methodological account of corpus construction, and description of two empirical studies follow.

The present chapter has outlined the research topic, aims and objectives, thesis overview, and has also provided a working definition of schizophrenia for the purposes of the current investigation. The next chapters outline working definitions of FTD and linguistic creativity specific to schizophrenia, ahead of the main research.

1.5. Thesis overview

Chapter Two reviews early historic and more contemporary descriptive accounts of FTD in schizophrenia and presents a simplified descriptive framework that consolidates the positions reviewed. The framework was developed using a top-down, theory-driven

¹ In order to create working definitions of FTD in schizophrenia and linguistic creativity, some parameters need to be introduced that themselves impose provisional definitions. It is therefore necessary to start with a definition in order to refine a definition, and this is somewhat circular. It was difficult to avoid this, for reasons further explained in Chapters 2 and 3, due to a lack of prior work on linguistic creativity (however defined) and FTD in schizophrenia specifically.

approach and uses linguistic categorisation as its basis. Linguistic categories were chosen because they allow historic descriptions to be rendered in directly testable linguistic terms. Descriptions of FTD symptoms were grouped according to their focus on either phonology, morphology, syntax, semantics, and/or linguistic pragmatics. The resulting framework is presented both as an operational definition of FTD in schizophrenia and also as a scaffold for future research.

Chapter Three systematically reviews studies that have measured figurative language production and comprehension in schizophrenia cohorts. A mixed-methods approach is used due to the interdisciplinary nature of the research question. This chapter also developed an operational definition, this time covering linguistic creativity in schizophrenia specifically. Based on previous indications in the literature that suggest that FTD and figurative language may be connected, the systematic review presented in this chapter focused on studies that directly tested figurative language production and/or comprehension in schizophrenia cohorts. The results of these studies were then narratively synthesised to develop an operational definition of linguistic creativity in schizophrenia cohorts. This work has subsequently been published and is presented largely as it appears in the *Journal of Interactional Research in Communication Disorders*.

Chapter Four builds on the work of Chapter Three, which identified a knowledge gap on the topic of synaesthetic metaphor in schizophrenia. Some studies did indicate a need for further work on synaesthetic metaphor in schizophrenia (Chakrabarty, 2014), but little such work is currently available. Chapter Four describes the design of a psycholinguistic metaphor production task, tailored to schizophrenia cohorts that

focuses on synaesthetic metaphor specifically. The work in this chapter was intended to be a discrete study, complete with experimental findings. Recruitment challenges (exacerbated by COVID) meant that insufficient data was captured, and inferential testing is not appropriate in the absence of sufficient statistical power (Cohen, 2013). In lieu of this, the chapter presents a methodological case study, focused on the design of metaphor experiments for clinical cohorts and the important role of participant feedback within the design of psycholinguistic tests. Experimental designs that account for schizophrenia symptomatology are critical for ensuring that any identified effects are due to the variables of interest, and participant feedback in the design of psycholinguistic tests is important for establishing whether theoretical assumptions about how a test operates are consistent with participant experience. The experiment presented in this chapter was developed using linguistic insights, an approach that is underutilised but displayed clear advantages. The chapter argues that experimental data should be supplemented by natural language data where available, particularly when linguistic corpora are used as sources of experimental stimuli.

Chapter Five builds on the conclusions of Chapter Four and describes the design and characteristics of a small, specialised corpus of speech in schizophrenia. Theory-driven methodological considerations are outlined prior to defining a set of construction requirements for the present corpus. A discussion of how these design objectives were met follows, as does a discussion of the corpus' main characteristics. The chapter argues that the corpus is sufficiently useful in its early form for basic types of corpus linguistic analysis, such as those described in Chapter Six.

Chapter Six follows the conclusions of Chapter Five to report two empirical studies. Study One tests the descriptive framework presented in Chapter Two on the corpus data described in Chapter Five. A discussion of the linguistic features that significantly distinguished groups follows. The findings indicate that speakers in clinical and comparison nonpsychiatric groups make similar types of linguistic errors. However, clinical speakers tend to make more of these errors. These findings are somewhat consistent with those of studies of referential disturbance: in schizophrenia inpatients, outpatients, and non-schizophrenic relatives (Docherty et al., 2003). The findings also suggest that errors typically associated with the description of FTD occur in both comparison and clinical speakers without any association to FTD, consistent with observations of schizophrenia-wide and FTD specific language disturbances (as in Çokal et al. 2019). This chapter suggests that revisions to the clinical concept of FTD are considered. Study Two explores how participants responded to the initiating interview questions, with particular reference to how they adhered to the topics of linguistic creativity and participation in the psycholinguistic task. Word and semantic level keyness analyses were used to distinguish keywords that were over and underused in the clinical sub corpus. Keyness analysis is used to compare the normalised frequencies of keywords across two datasets. It can be used to infer the statistical probability of finding a keyword more/less in one dataset than the other, as well as the size of the effect. The results suggest that clinical speakers deviated more from the discussion topic toward subjects of personal concern and importance, whereas comparison speakers more closely adhered to the interview subject matter. This is consistent with the view that FTD produces semantic and pragmatic impairments (Salavera et al., 2013) These results are discussed in the context of FTD, particularly derailment, tangentiality, and self-reference

(Andreasen, 1986). The results of Study Two are more in keeping with traditional descriptive approaches to FTD, with groups distinguished on topic relevance. This suggests that current clinical conceptions of FTD are appropriate at some but not all linguistic levels, and modifications are needed to account for different types of linguistic analysis.

Chapter Seven concludes and suggests future directions in light of the work presented in earlier chapters.

CHAPTER TWO: DEFINING FTD IN SCHIZOPHRENIA

2.1. Introduction

Research question: What is FTD in schizophrenia?

A linguistic examination of FTD in schizophrenia requires an operational definition of FTD specific to schizophrenia, as discussed in Chapter One. The present chapter attempts this by reviewing historic descriptive accounts of FTD and their ties to schizophrenia and its symptomatology.

FTD describes a language syndrome indicating atypical form, or shape, of thought.

Although FTD is not required to diagnose schizophrenia, it is strongly associated with the disorder (McKenna, 2013). Similar to schizophrenia, it is considered to have its own set of cardinal elements divisible according to the positive and negative types (McKenna and Oh, 2005). At the same time, it can present in other disorders and even nonpsychiatric populations (see section 6).

Contemporary approaches to FTD draw from Andreasen's Thought, Language, and Communication Scale (TLC Scale; Andreasen, 1986), which itself draws from the historic phenomenological approaches of Kraepelin (1913), Bleuler (1911), and those that followed (see section 2.2). Although newer FTD rating scales exist, such as The Kiddie Formal Thought Disorder Rating Scale (K-FTDS; Kaplan et al. 1989) and Thought and Language Disorder Scale (TALD; Kircher et al. 2014), these incorporate core TLC Scale elements and may be thought of as branches of the TLC itself. There is a linguistic exception, the Clinical Language Disorder Rating Scale (CLANG; Chen et al. 1996), but even this (17-item) scale overlaps considerably with the (18 or 20 item) TLC. In fact, most CLANG items appear to differ from TLC items only in name (compare Chen et al. 1996,

Appendix I with Andreasen, 1986). There are also the Thought and Language Index (Liddle et al., 2018) and the Thought Disorder Index (Johnston et al., 1986). The TDI assesses speech generated during two standardised procedures (ink blots and WAIS intelligence tests), is time consuming, and requires substantial training (Liddle et al., 2018). The TLI also assesses speech generated from standardised procedures (either ink blots or the Thematic Apperception Test), but is briefer than the TDI. Eight types of abnormality are assessed. These are again similar to those of the TLC: poverty of speech and weakening of goal (impoverishment), looseness, peculiar word use, peculiar sentence construction, and peculiar logic (disorganisation), and perseveration and distractibility. A psychometric basis for the TLI has been established via factor analysis that suggests three discrete processes: impoverished thought and language, disorganised thought and language, and non-specific dysregulation (Liddle et al., 2018). These are somewhat consistent with the positive, negative, and disorganisation syndromes (McKenna and Oh, 2005).

While Andreasen's TLC Scale also has a psychometric basis (Andreasen, 1979a; Andreasen, 1979b), this was achieved by reworking (through additions and deletions) many concepts common to the pre-TLC positions, effectively leaving much of that prior work untested. The same can be said for the TALD, which incorporated pre-TLC descriptions but screened items on the basis of clinical experience prior to psychometric testing (Kircher et al. 2014). The fact that pre-TLC accounts lacked supporting psychometric data is a major limitation within contemporary psychiatry (Bech, 2012), and it makes sense for Andreasen and Kircher to have excluded those descriptions that

did not sit with clinical experience. Such approaches do, however, exclude potentially valuable observations that could benefit from further investigation and testing.

The TLC Scale is also predicated on the argument that FTD is not specific to schizophrenia (Andreasen, 1979b). This is in line with current thinking, with FTD being accepted as transdiagnostic despite different disorders having distinct FTD profiles (Morgan et al. 2017). The qualitative differences between these profiles are of potential interest to linguists, as are the terms used to define FTD.

Pre-TLC descriptions of FTD have been extensive and varied, and many of the same terms have been given different definitions. This has not escaped the attention of some psychiatrists, such as Rule (2005), who argue that many of the differing terms and concepts describe fundamentally similar linguistic and clinical features. Rule (2005) also suggests that broad descriptive categories are likely to be clinically useful.

While linguists have contributed to FTD research (cf. Chaika, 1974; Langdon et al., 2002; Covington et al., 2005; Kuperberg, 2010; Condray, 2005; Rossell and Tan, 2019), a linguistic discussion of symptom description itself (rather than the linguistic impact of FTD) is still lacking. In other words, there has not been a linguistic examination of the terms used to describe FTD symptoms that *also* examines the direction of changes made by those drawing on the pre-TLC descriptions to develop their newer taxonomies, such as the TLC (Andreasen, 1986), TALD (Kircher et al. 2014), and CLANG (Chen et al. 1996).

Contemporary FTD rating scales like the TLC have drawn from historic descriptions lacking psychometric support, selectively filtered these descriptions on the basis of subjective assessment, usually clinical experience, and then tested the revised

descriptions for their psychometric validity. While this is certainly clinically useful, the opportunities to linguistically explore neglected historic concepts have been missed.

The present chapter therefore (1) attempts an interdisciplinary review of the pre- and post-TLC descriptions of FTD (section 2.2), (2) defines them linguistically using methods similar to those employed by Covington et al. (2005), (3) compares the similarities and differences at the language level (section 2.3), and (4) synthesises all positions (section 2.5), thus avoiding the revisions seen in Andreasen (1986) and Kircher (2014). The work in section 2.5 is then considered against the current theoretical positions on FTD (section 2.6). Recommendations on future research and classification specific to FTD *in schizophrenia* follow, with an emphasis on the broad categories called for by Rule (2005).

2.2. Historic accounts of FTD

Early descriptions of FTD begin alongside those of the broader *dementia praecox* and schizophrenia pictures. Kraepelin called unconnected ideas, impaired sentence construction, and novel word-selection and/or invention *derailment*. Bleuler (1911) named a tendency toward oblique points *loosening of associations* and lack of goal-directedness without losing the superordinate idea *loss of the central determining idea*. Kleist (1914) termed substitutes for phonetically or semantically related targets *paraphasias* and fluent speech with lexical or phrasal density, expressional abandonment, and grammatical misuse *paragrammatism*. Cameron (1938) described an orbit of related ideas rather than a linear, tight sequence as *asyndetic thinking*; imprecise substitutions for common words *metonymic distortion/word approximation*;

and the tendency to involve, within dialogue, concerns of more individual importance *interpenetration of themes*. Goldstein labelled difficulty with abstract thinking, also seen in organic presentations like dementia (Fish, 1962; Hamilton, 1984) *concrete thinking*. Wing et al. (1974) described countably normal but vague utterances that convey limited information as *poverty of content of speech* and normal words phrased incomprehensibly as *idiosyncratic use of words*.

Andreasen (1979a; 1979b) improved the reliability of FTD descriptions by grouping similar concepts. She termed gradual moves into areas somewhat or totally unrelated or idiosyncratic weaving through frames of reference *derailment*. *Lack of central determining idea, loosening of associations, and asyndetic thinking* became *loss of goal*, to signal a failure to conclude trains of thought. It becomes hard to locate examples of pure *derailment* when *loss of goal* is also present (Andreasen, 1979a; 1979b). *Drivelling, word salad, paragrammatism, and 'schizophasia'* were combined into *incoherence*, severely disordered and often incomprehensible speech. *Incoherence* may refer to semantic consequences (e.g. altered or lost lexical or phrasal meaning) due to word-substitution, word choices that have some tenuous or no apparent connection to the context, or ignoring grammatical and syntactic rules. In some cases, larger incoherent sentences may include coherent sentence portions. *Neologism, idiosyncratic use of words, and word approximations* became *neologisms and related abnormalities*, describing the use of words or phrases lacking etymology. *Technical neologisms* (Fish, 1962; Hamilton, 1984) serve to convey indescribable experiences. *Wooliness of thought, alogia, and empty speech* became *poverty of content of speech*, where replies are countably normal but convey little information. Other elements were also included by

the author, namely *circumstantiality*, to denote a tendency to explore distant details and avenues before returning to the main point; *vorbeireden* ('talking past the point'), to denote incorrect answers that nonetheless reveal understanding of the question; *stilted speech*, to denote excessively formal, overly-polite, rigid, high-register speech; and *perseveration*, to denote the inappropriate repetition of words.

Andreasen later defined 18 FTD elements in the Thought, Language, and Communication (TLC) Scale (Andreasen, 1986). *Poverty of speech* (also laconic speech or poverty of thought) describes speech limited in amount, sometimes characterised by monosyllabic responses. *Poverty of content of speech* (also poverty of thought, alogia, verbigeration, and negative FTD) covers quantitatively normal but otherwise vague, over-abstract or -concrete, repetitive, or stereotyped speech that carries limited communicative information. *Poverty of content of speech* differs from *circumstantiality* in that the latter involves large amounts of detail. *Pressure of speech* describes sometimes uninterruptible speech that is excessive in amount for the context. It usually involves increased volume and emphasis. It can occur outside of interactional contexts when severe. *Distractible speech* describes the tendency to self-interrupt an utterance in progress with commentary on nearby stimuli, usually at the point of attentional shift. *Tangentiality* refers to partially or totally irrelevant responses to questions. Andreasen's redefinition restricts tangentiality to question responses, rather than general conversational shifts as in previous uses. *Derailment* (also *loose associations*, *flight of ideas*) describes speech in which ideas are faintly or totally unconnected. It is often signalled by a lack of cohesive ties and unclear pronoun referents. *Incoherence* (also *word salad*, *jargon aphasia*, '*schizophasia*', and '*paragrammatism*') refers to a rare

pattern of speech disintegration that resembles Wernicke's and jargon aphasias. It is characterised by elided function words, syntactic errors, inappropriate or oblique word choice, and word substitution. *Incoherence* is localised to words and sentences and therefore differs from *derailment*, which affects concepts. *Illogicality* describes a speech pattern characterised by non sequiturs, statements or replies that do not follow from what preceded them, conclusions derived from faulty inductive inferences (i.e. erroneous generalisations derived from particulars, which may relate to *concrete thinking*), and conclusions based on faulty premises in the absence of delusional thought. *Clanging* describes speech, particularly word selection, driven by lexical relationships involving sound (*clang associations*). These may include rhyming and/or punning. *Neologisms* refer to new word formations that lack etymology or a place in the consensus lexicon. *Word approximations* (also *paraphasia* and *metonyms*) are novel expressions created with common words and appropriate use of established word-formation rules. The intended meaning can usually be inferred. *Word approximations* are sometimes seen to arise out of reliance on *stock words* (Kleist, 1914; Andreasen, 1986), words that speakers use in ways suggestive of broadened semantic fields. *Circumstantiality* describes speech that luxuriates its way to its goal, often involving additional details and parenthetical remarks. *Loss of goal* describes difficulty in completing the full course of a thought, characterised by a failure to return to an initial point. This is associated with derailment. *Perseveration* describes the repetition and/or stable resurfacing of words, phrases, or ideas. *Echolalia* describes a pattern of reply where words are echoed with intonational emphasis, with the interactional purpose being unclear. *Blocking* describes the self-reported (with or without prompt) loss of a train of thought, often following a pause lasting seconds or minutes. *Stilted speech* is

speech delivered in a register higher than the context demands. This is characterised by favouring polysyllabic words, fronting subordinating clauses, overly-polite forms, and archaic vocabulary. *Self-reference* describes the tendency to angle discussion topics back toward personal concerns or circumstances. Andreasen also distinguishes two additional types not considered within the global TLC rating. *Phonemic paraphasia* describes mispronunciations that occur due to a lack of syllabic or prosodic coordination. They are common in aphasia, and speakers usually attempt self-correction after having noticed the error. Similar slips may occur due to symptoms affecting motor function and speech articulation. *Semantic paraphasia* describes semantically inappropriate word-substitution. It is common and tends to be more severe in both Broca's aphasia and Wernicke's aphasia. Because this type of word-substitution is also part of *incoherence*, the term semantic paraphasia is reserved for aphasia.

Historic descriptive accounts of FTD largely mirror those of subtypes and syndromes. These descriptions can be organised according to linguistic categories to produce a rough, technical taxonomy of FTD (as shown in the next section).

2.3. A linguistic view of FTD descriptions

It is possible to group the historic descriptive accounts of FTD in terms of sound, word, phrase or sentence formation (phonology, morphology, and syntax), and literal or contextual meaning (semantics and linguistic pragmatics²) based on the language authors use to describe these symptoms and/or the clinical examples given. The

² It is important to distinguish linguistic pragmatics (context-dependent meaning) and pragmatics (as a cognitive process) because both terms relate to FTD but in different ways.

accompanying speculative commentary intends to illustrate some of the challenges that past approaches to FTD description and classification present. Proposed solutions and next steps follow. All descriptions predating the TLC Scale appear separately for reading ease.

Some symptom descriptions fit within single categories (see Table 2), suggesting a close fit with linguistic levels.

Table 2 - historic symptoms fitting one linguistic category

syntactic	derailment	impaired sentence construction (Kraepelin, 1913)
	paragrammatism	lexical or phrasal density (Kleist, 1914) expressional abandonment (Kleist, 1914) grammatical misuse (Kleist, 1914)
	idiosyncratic use of words	phrases of ordinary words combined incomprehensibly (Wing, 1974)
	loss of goal	failure to conclude trains of thought (Andreasen, 1979a)
	incoherence	ignoring grammatical and syntactic rules (Andreasen, 1979a)
semantic linguistic pragmatic	incoherence	word-substitution (Andreasen, 1979a)
	derailment	unconnected ideas (Kraepelin, 1913) gradual moves into areas somewhat or totally unrelated (Andreasen, 1979a) idiosyncratic weaving through frames of reference (Andreasen, 1979a)
	loosening of associations	the tendency toward oblique points (Bleuler, 1911)
	loss of the central determining idea	lack of goal-directedness without loss of the larger idea (Bleuler, 1911)
	interpenetration of themes	the tendency to involve, within dialogue, concerns of more individual importance (Cameron, 1938)
	poverty of content of speech	countably normal but vague utterances that convey limited information (Wing et al. 1974) countably normal but vague utterances that convey limited information (Andreasen, 1979a)

Other symptom descriptions span categories (see Table 3). Novel word selection and/or invention (*derailment*; Kraepelin, 1913) may refer to novel word-finding strategies (semantics) or idiosyncratic word generation (morphology). Difficulty with abstract thinking (*concrete thinking*; Goldstein, 1944), rooted in cognition, may manifest linguistically as trouble with literal meaning about abstract concepts (semantics) or abstract reasoning about contextual cues (pragmatics). Excessively formal, over-polite, rigid, high-register speech (*stilted speech*; Andreasen, 1979a) may relate to sentence construction (syntax) or judgements about the interactional context (linguistic pragmatics). Imprecise substitutions for common words (*metonymic distortion/word approximation*; Cameron, 1938) may relate to word-formation (morphology) or perceptual changes about literal meaning (semantics). Incorrect answers that reveal understanding of the question (*vorbeireden*; Andreasen, 1979a) may reveal altered concepts (semantics) or difficulty detecting the desire for a correct response (linguistic pragmatics). An orbit of related ideas rather than a linear, tight sequence (*asyndetic thinking*; Cameron, 1938) can manifest in sentence structure (syntax) and difficulty accounting for listener needs (linguistic pragmatics). Substitutes for a phonetically or semantically related target (*paraphasias*; Kleist, 1914) are described such that two types (phonological and semantic) are implied. The inappropriate repetition of words (*perseveration*; Andreasen, 1979a) may describe production issues specific to the repeated word (morphology) or its phrasal location (syntax). The tendency to explore distant details and avenues before returning to the main point (*circumstantiality*; Andreasen, 1979a) may refer to losing track of the phrasal structure (syntax) or difficulty maintaining narrative cohesion (linguistic pragmatics). The use of words or phrases lacking etymology (*neologisms and related abnormalities*; Andreasen, 1979a) may refer

to difficulties with word formation itself (morphology), grammatically-motivated morphemic errors (syntax), or generating words to convey idiosyncratic meaning (semantics). Word choices that have some tenuous or no apparent connection to the context (*incoherence*; Andreasen, 1979a) may relate to issues with literal meaning (semantics) or overestimated shared knowledge (linguistic pragmatics).

Table 3 - historic symptoms with unclear linguistic boundaries

morpho-semantic	derailment	novel word selection and/or invention (Kraepelin, 1913)
	metonymic distortion/word approximation	imprecise substitutions for common words (Cameron, 1938)
morpho-syntactic	perseveration	the inappropriate repetition of words (Andreasen, 1979a)
morpho-syntactic-semantic	neologisms and related abnormalities	the use of words or phrases lacking etymology (Andreasen, 1979a)
semantic-linguistic pragmatic	concrete thinking	difficulty with abstract thinking (Goldstein, 1944)
	vorbeireden	incorrect answers that reveal understanding of the question (Andreasen, 1979a)
	incoherence	word choices that have some tenuous or no apparent connection to the context (Andreasen, 1979a)
syntactic-linguistic pragmatic	stilted speech	excessively formal, over-polite, rigid, high-register speech (Andreasen, 1979a)
	asyndetic thinking	an orbit of related ideas rather than a linear, tight sequence (Cameron, 1938)
	circumstantiality	the tendency to explore distant details and avenues before returning to the main point (Andreasen, 1979a)
phono-semantic	paraphasias	substitutes for a phonetically or semantically related target (Kleist, 1914)

Early account symptoms are presented as either exclusively syntactic, semantic, or linguistic pragmatic in nature or spanning morpho-semantic, semantic-linguistic pragmatic, syntactic-linguistic pragmatic, morpho-syntactic, morpho-syntactic-semantic, and phono-semantic boundaries.

Andreasen’s (1986) TLC Scale operates similarly (see Table 4).

Table 4 - TLC symptoms fitting one linguistic category

morphological	neologism	new word formations that lack etymology or a place in the consensus lexicon
syntactic	incoherence	elided function words syntactic errors
	blocking	the self-reported (with or without prompt) loss of a train of thought, often following a pause lasting seconds or minutes
semantic	incoherence	inappropriate word-substitution common in both Broca’s aphasia and Wernicke’s aphasia (semantic paraphasia in aphasia, semantic incoherence in FTD)
linguistic pragmatic	poverty of content	countably normal but otherwise vague, over-abstract or -concrete, repetitive, or stereotyped speech that carries limited communicative information
	illogicality	<i>non sequiturs</i> , statements or replies that do not follow from what preceded them conclusions derived from faulty inductive inferences, such as erroneous generalisations derived from particulars conclusions based on faulty premises in the absence of delusional thought
	self-reference	the tendency to angle discussion topics back toward personal concerns or circumstances

As with the historic accounts, other TLC symptom descriptions span categories (see Table 5). Word selection driven by word-sound relationships (*clang associations*) rhyming, and punning (*clanging*) may relate to speech-sound fixations (phonology) or altered meaning networks (semantics). Descriptions of mispronunciations that occur due to a lack of syllabic or prosodic coordination (*phonemic paraphasia*) indicate separate

types (phonology and morphology). Novel expressions created with common words and appropriate use of established word-formation rules (*word approximations*) involve word-formation (morphology) and grammaticality (syntax). They may represent (linguistic pragmatic), in turn, attempts to convey perceived changes in literal meaning (semantics). Their tendency to occur with *stock words* (Kleist, 1914) reiterates the idea of a semantic aspect. Speech limited in amount, sometimes characterised by monosyllabic responses (*poverty of speech*), may refer to difficulties with word (morphology) or phrase (syntactic) formation or difficulty gauging the amount of speech required in context (linguistic pragmatic). A pattern of reply where words are echoed with intonational emphasis (*echolalia*) contains a prosodic element (phonology) and confounds conversation (linguistic pragmatics). Speech delivered in a register that is higher than the context demands (*stilted speech*) involves using polysyllabic words (morphology), fronted subordinating clauses (syntax), over-polite forms (linguistic pragmatics), and archaic vocabulary (semantics). It is unclear, from the authors' descriptions, for *pressure of speech*, *distractible speech*, *tangentiality*, *derailment*, *circumstantiality*, *loss of goal*, and *perseveration* whether changes in structure (syntax) are due to contextual (linguistic pragmatic) inference failures or vice versa.

Table 5 - TLC symptoms with unclear linguistic boundaries

phono-semantic	clanging	word selection driven by word-sound relationships (clang associations) rhyming, and punning (clanging)
phono-morphological	phonemic paraphasia	mispronunciations that occur due to a lack of syllabic or prosodic coordination
morpho-syntactic-linguistic pragmatic	poverty of speech	speech limited in amount, sometimes characterised by monosyllabic responses
phono-linguistic pragmatic	echolalia	a pattern of reply where words are echoed with intonational emphasis

morpho-syntactic-semantic-linguistic pragmatic	word approximations	novel expressions created with common words and appropriate use of established word-formation rules
	stilted speech	speech delivered in a register higher than the context demands
	incoherence	word choices that have some tenuous or no apparent connection to the context
syntactic and/or linguistic pragmatic	pressure of speech	sometimes uninterruptible speech of excessive amount for the context
	distractible speech	the tendency to self-interrupt an utterance in progress with commentary on nearby stimuli, usually at the point of attentional shift
	tangentiality	partially or totally irrelevant responses to questions
	derailment	speech in which ideas are faintly or totally unconnected. It is often signalled by a lack of cohesive ties and unclear pronoun referents
	circumstantiality	speech that luxuriates its way to its goal, often involving additional details and parenthetical remarks
	loss of goal	difficulty in completing the full course of a thought, characterised by a failure to return to an initial point
	perseveration	the repetition and/or stable resurfacing of words, phrases, or ideas

TLC Scale symptoms are presented as either exclusively morphological, syntactic, semantic, or linguistic pragmatic or spanning phono-semantic, phono-morphological, morpho-syntactic-linguistic pragmatic, phono-linguistic pragmatic, morpho-syntactic-semantic-linguistic pragmatic, and syntactic-linguistic pragmatic boundaries. While both the early and TLC Scale accounts include descriptions that span multiple linguistic boundaries, it appears that revisions to these descriptions alter the points of intersection.

2.4. Important changes in the TLC Scale

The next section reviews changes introduced by Andreasen's TLC Scale, particularly where historic descriptions were altered and retained.

Andreasen collapsed the description of *neologisms and related abnormalities* (Andreasen, 1979a) from one spanning morphology, syntax, and semantics to one restricted to morphology. *Derailment* was collapsed from a combination of syntactic (Kraepelin, 1913), linguistic pragmatic (Kraepelin, 1913; Andreasen, 1979a) and morpho-semantic (Kraepelin, 1913) to syntactic and/or linguistic pragmatic.

The description for *loss of goal* (Andreasen, 1979a) was expanded from a purely syntactic one to one that includes syntax and/or linguistic pragmatics (Andreasen, 1986). *Metonymic distortion/word approximation* was retained as *word approximation*, but the description changed such that the implied linguistic boundaries expanded from morpho-semantic (Cameron, 1938) to morpho-syntactic-semantic-linguistic pragmatic (Andreasen, 1986). Semantic-linguistic pragmatic *incoherence* (Andreasen, 1979a) was expanded to suggest both single category syntactic and semantic types and a morpho-syntactic-semantic-linguistic pragmatic type (Andreasen, 1986)

A description that suggests single categories for linguistic pragmatic *poverty of content* (Wing et al. 1974; Andreasen, 1979a) was retained. Andreasen also retained a description that suggests multiple categories for morpho-syntactic *perseveration* (Andreasen, 1979a) but altered the description to suggest a syntactic-linguistic pragmatic crossover (Andreasen, 1986). Syntactic-linguistic pragmatic *circumstantiality* (Andreasen, 1979a) was also retained. *Stilted speech* was retained, but its description was modified such that a syntactic-linguistic pragmatic crossover (Andreasen, 1979a)

was replaced by a morpho-syntactic-semantic-linguistic pragmatic crossover (Andreasen, 1986). *Paraphasias* were retained as *phonemic paraphasia* and *semantic paraphasia*, and the description for the phonemic type was modified from one indicating phono-semantic overlap (Kleist, 1914) to one suggestive of a phono-morphological crossover (Andreasen, 1986). The TLC Scale specifies that semantic *incoherence* is to be used for FTD whereas semantic *paraphasia* is to be used for similar word-substitutions that occur due to aphasia (Andreasen, 1986).

Descriptions that suggest single categories for linguistic pragmatic *interpenetration of themes* (Cameron, 1938), *loosening of associations* (Bleuler, 1911), and *loss of the central determining idea* (Bleuler, 1911) were removed. Syntactic *paragrammatism* (Kleist, 1914) and *idiosyncratic use of words* (Wing, 1974) were also removed.

Descriptions that suggest multiple categories were removed for semantic-linguistic pragmatic *concrete thinking* (Goldstein, 1944) and *vorbeireden* (Andreasen, 1979a) and syntactic-linguistic pragmatic *asyndetic thinking* (Cameron, 1938).

New descriptions that suggest single categories were introduced for syntactic *blocking* and linguistic pragmatic *illogicality* and *self-reference* (Andreasen, 1986). New descriptions that suggest multiple categories were introduced for phono-semantic *clanging*, morpho-syntactic-linguistic pragmatic *poverty of speech*, phono-linguistic pragmatic *echolalia*, and syntactic and/or linguistic pragmatic *pressure of speech*, *distractible speech*, and *tangentiality* (Andreasen, 1986; see Table 6).

Table 6 - linguistic changes from historic to TLC Scale	neologisms and related abnormalities derailment	Neologisms n/a	morphological, syntactic, and semantic syntactic (Kraepelin,	morphological (Andreasen, 1986) syntactic and/or
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descriptions of FTD symptoms (Appendix VII)collapsed			1913), linguistic pragmatic (Kraepelin, 1913; Andreasen, 1979a) and morpho-semantic (Kraepelin, 1913)	linguistic pragmatic (Andreasen, 1986)
expanded	loss of goal	n/a	syntactic (Andreasen, 1979a)	syntactic and/or linguistic pragmatic (Andreasen, 1986)
	metonymic distortion/word approximation	word approximation	morpho-syntactic (Cameron, 1938)	morpho-syntactic-semantic-linguistic pragmatic (Andreasen, 1986)
retained	incoherence	n/a	syntactic (Andreasen, 1979a)	syntactic (Andreasen, 1979a)
	incoherence	n/a	semantic (Andreasen, 1979a)	semantic (Andreasen, 1979a)
	poverty of content	n/a	linguistic pragmatic (Wing et al. 1974; Andreasen, 1979a)	linguistic pragmatic (Wing et al. 1974; Andreasen, 1979a)
	perseveration	n/a	morpho-syntactic (Andreasen, 1979a)	syntactic and/or linguistic pragmatic (Andreasen, 1986)
	circumstantiality	n/a	syntactic-linguistic pragmatic (Andreasen, 1979a)	syntactic-linguistic pragmatic (Andreasen, 1979a)

	stilted speech	n/a	syntactic- linguistic pragmatic (Andreasen, 1979a)	morpho- syntactic- semantic- linguistic pragmatic (Andreasen, 1986)
	paraphasias	phonemic paraphasia; semantic paraphasia (aphasia) / incoherence (FTD)	phono- semantic (Kleist, 1914)	phono- morphological (Andreasen, 1986); semantic (Andreasen, 1986)
removed	interpenetration of themes	n/a	linguistic pragmatic (Cameron, 1938)	n/a
	loosening of associations	n/a	linguistic pragmatic (Bleuler, 1911)	n/a
	loss of the central determining idea	n/a	linguistic pragmatic (Bleuler, 1911)	n/a
	paragrammatism	n/a	syntactic (Kleist, 1914)	
	idiosyncratic use of words	n/a	syntactic (Wing, 1974)	
	concrete thinking	n/a	semantic- linguistic pragmatic (Goldstein, 1944),	n/a
	vorbeireden	n/a	semantic- linguistic pragmatic (Andreasen, 1979a)	n/a
	asyndetic thinking	n/a	syntactic- linguistic pragmatic (Cameron, 1938)	n/a
introduced	blocking	n/a	syntactic (Andreasen, 1986)	n/a

illogicality	n/a	linguistic pragmatic (Andreasen, 1986)	n/a
self-reference	n/a	linguistic pragmatic (Andreasen, 1986)	n/a
pressure of speech	n/a	syntactic- linguistic pragmatic (Andreasen, 1986)	n/a
distractible speech	n/a	syntactic- linguistic pragmatic (Andreasen, 1986)	n/a
tangentiality	n/a	syntactic- linguistic pragmatic (Andreasen, 1986)	n/a
clanging	n/a	phono- semantic (Andreasen, 1986)	n/a
poverty of speech	n/a	morpho- syntactic- linguistic pragmatic (Andreasen, 1986)	n/a
echolalia	n/a	phono-linguistic pragmatic (Andreasen, 1986)	n/a

As can be deduced from the above, Andreasen's TLC Scale modified prior descriptions through the collapse, expansion, retention, and removal of extant observations, alongside the introduction of new terms and concepts. It is interesting that these descriptions use similar terms yet focus on different levels of linguistic operation (e.g.

compare Andreasen's linguistic pragmatic *derailment* to Kraepelin's syntactic, linguistic pragmatic, and morpho-semantic *derailments*). This occurs, in part, due to how the authors locate their identified features within their interactional and communicative contexts. Kleist's (1914) *paraphasia* describes word-selection errors. This is also the case for Andreasen's (1979a) semantic *incoherence*. Yet Kleist's description focuses on word substitution in relation to a phonetically or semantically related target, whereas Andreasen's description emphasises the relationship between the opted word(s) and their appropriateness in context. The implication is that two similar error types are occurring for different linguistic reasons or at least operating on different linguistic levels.

There has been considerable variation in descriptions of FTD across the 20th century, and this has implications for a contemporary linguistic analysis. It is clear in the case of some symptoms what the level of linguistic operation is, such as Kraepelin's (1913) *derailment* as impaired sentence construction. This is presented chiefly as a syntactic issue, and so, at least for Kraepelin, and at least for sentence construction, we might call this form of *derailment* syntax-specific. For other symptoms, however, the description does not provide clear indications of what linguistic level(s) might be affected. In these cases, it makes sense to incorporate several potentially relevant levels (as shown in this section), based on the information given.

Some descriptive variation is to be expected over time given that linguistic conventions and practices change over time. Past and later observations are nonetheless consistent on symptoms affecting grammar, (Kraepelin's *derailment*, Kleist's *paragrammatism*, Wing's *idiosyncratic use of words*, Andreasen's syntactic *incoherence*), thought

completion (Kleist's *paragrammatism*, Andreasen's *loss of goal*, Andreasen's *blocking*, Andreasen's *distractible speech*) word selection (Kraepelin's *derailment*, Cameron's *metonymic distortion/word approximation*, Andreasen's *perseveration*, *neologism*, *incoherence*, *clanging*, *phonemic paraphasia*, and *word approximation*, Kleist's *paraphasias*), and discourse tracking (Kraepelin's *derailment*, Bleuler's *loosening of associations* and *loss of the central determining idea*, Cameron's *interpenetration of themes* and *asyndetic thinking*, Wing's *poverty of content of speech*, Andreasen's *poverty of content of speech*, *vorbeireden*, *illogicality*, *self-reference*, *poverty of speech*, *echolalia*, *stilted speech*, *pressure of speech*, *tangentiality*, *derailment*, and *circumstantiality*, and Goldstein's *concrete thinking*). Of these, the TLC Scale includes *incoherence*, *loss of goal*, *blocking*, *distractible speech*, *perseveration*, *neologism*, *clanging*, *phonemic paraphasia*, *word approximation*, *derailment*, *poverty of content of speech*, *illogicality*, *self-reference*, *poverty of speech*, *echolalia*, *stilted speech*, *pressure of speech*, *tangentiality*, and *circumstantiality*.

Descriptors on which there is less historic, *descriptive* overlap include *concrete thinking* (Goldstein, 1944), *vorbeireden* (Andreasen, 1979a), *stilted speech* (Bleuler, 1911 cited in McKenna and Oh, 2005; Andreasen, 1979a), *pressure of speech* (Andreasen, 1986), *tangentiality* (Andreasen, 1986), *perseveration* (Andreasen, 1986), *illogicality* (Andreasen, 1986), *poverty of speech* (Andreasen, 1986), *clanging* (Andreasen, 1986), and *echolalia* (Andreasen, 1986). Of these, the TLC Scale includes *stilted speech*, *pressure of speech*, *tangentiality*, *perseveration*, *illogicality*, *poverty of speech*, *clanging*, and *echolalia*.

Although Andreasen’s changes improved reliability through the grouping of linguistically distinct concepts, this did not resolve the issue of clinical descriptions implying the linguistic properties of symptoms. Clinicians will share in seeing this as a problem. Errors in grammar, word selection, thought completion, and discourse tracking are present in pre-TLC and TLC descriptions. As the remainder of this chapter will reveal, these can be organised into a simplified framework that consolidates past work and avoids assumptions about the linguistic properties of symptoms.

2.5. The 4TD Framework

A review of the early and contemporary accounts, whether those arrived through traditional descriptive psychopathology or more exploratory methods like Harrow and Quinlan’s, suggests that FTD descriptions converge on common themes that appear stable across time. While there may be some agreement about the themes, considerable variation is evident in the description of individual symptoms. Further, attempts to view these descriptions linguistically reveal how variations in description shift the linguistic focus. A framework based on features common to pre- and post-TLC viewpoints (grammar, word selection, thought completion, and discourse tracking) is appealing because it makes minimal assumptions about the linguistic properties of symptoms and consolidates previous work. Table 7, below, presents historic FTD descriptions within a simplified, linguistically-driven descriptive framework.

Table 7 - the 4TD Framework (pre-TLC)

grammar	derailment	impaired sentence construction (Kraepelin, 1913)
	paragrammatism	lexical or phrasal density (Kleist, 1914) grammatical misuse (Kleist, 1914)

	incoherence	ignoring grammatical and syntactic rules (Andreasen, 1979a)
	idiosyncratic use of words	phrases of ordinary words combined incomprehensibly (Wing, 1974)
word selection	incoherence	word-substitution (Andreasen, 1979a)
	derailment	novel word selection and/or invention (Kraepelin, 1913)
	metonymic distortion/word approximation	imprecise substitutions for common words (Cameron, 1938)
	perseveration	the inappropriate repetition of words (Andreasen, 1979a)
	neologisms and related abnormalities	the use of words or phrases lacking etymology (Andreasen, 1979a)
	incoherence	word choices that have some tenuous or no apparent connection to the context (Andreasen, 1979a)
	paraphasias	substitutes for a phonetically or semantically related target (Kleist, 1914)
thought completion	paragrammatism	expressional abandonment (Kleist, 1914)
	loss of goal	failure to conclude trains of thought (Andreasen, 1979a)
discourse tracking	derailment	unconnected ideas (Kraepelin, 1913) gradual moves into areas somewhat or totally unrelated (Andreasen, 1979a) idiosyncratic weaving through frames of reference (Andreasen, 1979a)
	loosening of associations	the tendency toward oblique points (Bleuler, 1911)
	loss of the central determining idea	lack of goal-directedness without loss of the larger idea (Bleuler, 1911)
	interpenetration of themes	the tendency to involve, within dialogue, concerns of more individual importance (Cameron, 1938)
	poverty of content of speech	countably normal but vague utterances that convey limited information (Wing et al. 1974) countably normal but vague utterances that convey limited information (Andreasen, 1979a)
	concrete thinking	difficulty with abstract thinking (Goldstein, 1944)
	vorbeireden	incorrect answers that reveal understanding of the question (Andreasen, 1979a)

stilted speech	excessively formal, over-polite, rigid, high-register speech (Andreasen, 1979a)
asyndetic thinking	an orbit of related ideas rather than a linear, tight sequence (Cameron, 1938)
circumstantiality	the tendency to explore distant details and avenues before returning to the main point (Andreasen, 1979a)

Table 8, below, presents TLC Scale descriptions within a simplified, linguistically-driven descriptive framework.

Table 8 - the 4TD Framework (TLC)

grammar	incoherence	elided function words syntactic errors
word selection	neologism	new word formations that lack etymology or a place in the consensus lexicon
	incoherence	inappropriate word-substitution common in both Broca's aphasia and Wernicke's aphasia (semantic paraphasia in aphasia, semantic incoherence in FTD)
	clanging	word selection driven by word-sound relationships (clang associations) rhyming, and punning (clanging)
	phonemic paraphasia	mispronunciations that occur due to a lack of syllabic or prosodic coordination
	word approximations	novel expressions created with common words and appropriate use of established word-formation rules
	perseveration	the repetition and/or stable resurfacing of words, phrases, or ideas
	incoherence	word choices that have some tenuous or no apparent connection to the context
thought completion	blocking	the self-reported (with or without prompt) loss of a train of thought, often following a pause lasting seconds or minutes
	loss of goal	difficulty in completing the full course of a thought, characterised by a failure to return to an initial point
	distractible speech	the tendency to self-interrupt an utterance in progress with commentary on nearby stimuli, usually at the point of attentional shift
discourse tracking	poverty of content	countably normal but otherwise vague, over-abstract or -concrete, repetitive, or stereotyped

	speech that carries limited communicative information
illogicality	<i>non sequiturs</i> , statements or replies that do not follow from what preceded them conclusions derived from faulty inductive inferences, such as erroneous generalisations derived from particulars conclusions based on faulty premises in the absence of delusional thought
self-reference	the tendency to angle discussion topics back toward personal concerns or circumstances
poverty of speech	speech limited in amount, sometimes characterised by monosyllabic responses
echolalia	a pattern of reply where words are echoed with intonational emphasis
stilted speech	speech delivered in a register higher than the context demands
pressure of speech	sometimes uninterruptible speech of excessive amount for the context
tangentiality	partially or totally irrelevant responses to questions
derailment	speech in which ideas are faintly or totally unconnected. It is often signalled by a lack of cohesive ties and unclear pronoun referents
circumstantiality	speech that luxuriates its way to its goal, often involving additional details and parenthetical remarks

The 4TD (Formal Thought Disorder in Four Parts) Framework is an approach developed by the authors intended to simplify the clinical research and description of FTD. The general grouping approach shown in Tables 6 and 7 resembles that employed by Harrow and Quinlan (1985). Their concept of bizarre-idiosyncratic thinking, based on responses to a structured interview designed to elicit FTD, covers errors in linguistic form and structure (peculiar word forms, usages, and shared knowledge failures), content or ideas expressed (coherent but odd ideas, deviation from social convention, illogical or oddly reasoned, confused or contradictory), intermixing tendencies (over-elaborated responses, intermingled responses), question-response relations (attendance to

restricted portions of stimulus, lack of relations between statements/responses and preceding questions), and behaviour (extreme, incongruous, or inappropriate responses). Again, overlap is seen in grammar, word selection, thought completion, and discourse tracking. This (4TD) approach also differs from Andreasen's thought, language, and communication groupings in that no early account symptoms have been altered.

2.6. Theoretical perspectives of FTD

Several theoretical perspectives of FTD have been proposed. They range from Kraepelin's (1913) early confused speech subtype, Wing and Brown (1970) and Andreasen's (1979b) positive and negative syndrome approaches, and Liddle's disorganisation syndrome, to theories of communicative competence, dysphasic disturbance, a dysexecutive syndrome, and a dyssemantic hypothesis (McKenna, 2013).

It is also unclear what disturbances associated with FTD should be included under the FTD header. Output like poverty of speech may not constitute a component of FTD and instead align more closely with the wider negative symptoms of schizophrenia (Harvey et al. 1992; Miller et al. 1993; Liddle, 1987a). Some authors suggest that *poverty of content of speech* and *poverty of speech* are linked by the quality of intellectual emptiness but cannot be rated together due to a contradiction in terms (Andreasen, 1995): producing hardly any speech while simultaneously producing large amounts of speech lacking information seems paradoxical. *Poverty of content* is also quite ambiguous, showing associations with both positive and negative symptom clusters (Harvey et al. 1992). There is also some disagreement on whether *poverty of content* is a form of positive/disorganised speech or a negative symptom tied to *alogia* and *poverty*

of speech (McKenna and Oh, 2005). What is clear is that the language disturbances seen in FTD do at least correlate with schizophrenia symptoms (McKenna and Oh, 2005). This said, FTD is also seen in clinical pictures other than schizophrenia, and its expression varies accordingly. Groups of FTD symptoms appear more common in some pictures than others (McKenna and Oh, 2005). In depression, there is some evidence for *poverty of speech, poverty of content, circumstantiality, tangentiality, and self-reference* (Ianzito et al. 1974). *Illogicality, poverty of speech, tangentiality, circumstantiality, poverty of content, distractibility, pressure of speech, and incoherence* are observed in delirium (Cutting, 1980; Cutting, 1987). In autism, *neologism and idiosyncratic words* (Tantam, 1991), *poverty of speech, poverty of content, perseveration, echolalia, incoherence, and tangentiality* have been noted (Rumsey et al. 1986). In pragmatic disorder (Bishop, 2014), *circumstantiality* and *stilted speech* are seen. Comparisons between schizophrenia and mania suggest that *poverty of content, derailment, loss of goal, and poverty of speech* are more common in schizophrenia, whereas *pressure of speech, distractible speech, and circumstantiality* appear to have a closer tie to mania (McKenna, 2013). FTD is, therefore, not necessarily indicative of or specific to language in schizophrenia. Simply put, FTD items correlate with schizophrenia symptoms, but FTD is not necessarily specific to schizophrenia. This might suggest that FTD correlates with the core features of schizophrenia symptoms that are shared by the symptoms of other clinical pictures. It may also suggest that terms like *circumstantiality* (and their definitions under the TLC) overreach, grouping language disturbances that are fundamentally distinct. If, for example, the *illogicality* rated in delirium is linguistically distinguishable from that seen in schizophrenia, it would unlikely be identified as such by the TLC Scale alone. Some work has also looked at FTD in nonpsychiatric populations,

such as self-reported eccentricity. *Pressure of speech, circumstantiality, and tangentiality* have been observed in this group (Weeks and Ward, 1988; Weeks and James, 1995), and *self-reference* in these contexts was notably higher than that seen in schizophrenia and mania (McKenna and Oh, 2005).

The idea that FTD represents a form of dysphasia, beginning with Kleist (1914, 1930, 1960), has not been a popular one (McKenna and Oh, 2005). It has, nonetheless, resurfaced in light of more recent linguistic studies into FTD. Chaika (1974) acknowledged a difference between FTD, poetry, and aphasia (all forms of linguistic deviance) but later suggested that FTD could represent a form of intermittent aphasia (McKenna and Oh, 2005). Faber et al. (1983) compared FTD and dysphasic patients. Speakers differed on the preserved auditory comprehension of questions, use of multisyllabic words (FTD), comprehension deficits, word finding problems, impaired naming, and reduced noun use (dysphasia). Comprehension and naming disorders are not present in FTD (McKenna and Oh, 2005). Additionally, FTD does not appear to affect aphasia test performance as much as IQ (Oh et al. 2002; Shallice et al. 1991). Zeman et al. (2006) present a case of fluent dysphasia progressing to resemble thought disorder (disconnected ideas) that persisted even after the remission of dysphasic symptoms. This patient had focal pathology in the left superior temporal gyrus, a region implicated in both dysphasia and FTD. The authors suggest that FTD can arise from structural and functional pathology in the dominant temporal lobe. Patients with FTD also show structural and functional abnormalities and hyperactivity at rest in the left temporal language area and hyperactivity at rest in the left frontal language regions (Strik et al. 2008).

Despite the primarily linguistic qualities of FTD, surprisingly few direct linguistic investigations have been carried out. Morice and Ingram (1982) compared sentences (between schizophrenia and comparison groups) and concluded that reduced speech complexity, fewer well-formed sentences, and more semantic and syntactic errors indicated FTD. Similar findings were found in a repetition study (Fraser et al. 1986). Chaika and Alexander (1986; Chaika, 1990) examined expressive speech in FTD but did not include a comparison schizophrenia group. A later study (Oh et al. 2002) did and concluded that semantic errors indicate FTD, particularly in expressive speech (Halliday and Hassan, 1976), whereas syntactic errors have more to do with general schizophrenic illness, unrelated to intellectual impairment.

Other approaches have examined communicative competence, specifically discourse, pragmatic, and sociolinguistic knowledge. Patients with FTD perform poorly on tests of conversational discourse (Cutting and Murphy, 1988), and comprehension studies interested in contextual processing identified differences in reaction time for syntactic, semantic, and pragmatic violations with delays decreasing in that order (Kuperberg et al. 1998).

Theory of mind impairment is another prominent concept in FTD research. On the question of whether general intellectual impairment *gives the impression* of theory of mind deficits, some studies indicate theory of mind disturbances independent of IQ (Mazza et al. 2001; Langdon et al. 2002), while others suggest that adequate IQ matching renders the differences nonsignificant (Brüne, 2003). In addition, theory of mind difficulties are associated with schizophrenia symptoms more than general intellectual impairment. This theory of mind difficulty is different from that seen in the

pragmatic impairments of Autism Spectrum Disorders (ASD) however, (McKenna and Oh, 2005).

The role of executive function in FTD is also under study. Positive symptoms do not correlate with neuropsychological functioning but disorganisation and negative symptoms do for some items (Liddle, 1987b): long-term memory, naming, and conceptual thinking for negative symptoms and orientation, sustained attention, short-term memory, and word recognition long-term memory for disorganisation. When repeated (Liddle and Morris, 1991), negative symptoms correlated with verbal fluency. Disorganisation correlated with verbal fluency, Stroop, Trail Making, and Wisconsin Card Sorting Test performance. The authors concluded that negative symptoms affected executive functioning, whereas disorganisation symptoms related to difficulty with inappropriate response inhibition. This view is supported by Fuentes-Claramonte et al. (2021), who associate frontal/dysexecutive disturbances with alogia (which they define as *poverty of speech*, *poverty of content of speech*, and *perseveration*). They did not find support for an association with the fluent disorganisation components of FTD, however.

The dyssemantic hypothesis or hyper priming theory of thought disorder draws on evidence of increased semantic priming in schizophrenia. Evidence for this is mixed, with increased, normal, and decreased priming (Minzenberg et al. 2002). When stimulus onset asynchrony (SOA; the time difference between showing a prime and then a target) is examined, shorter SOAs reveal increased semantic priming only in patients with thought disorder, suggesting a spreading activation effect and not some other long-term process. It is not clear whether this is due to a general slowing of reaction time in schizophrenia, though (McKenna and Oh, 2005). Proponents of the dyssemantic

hypothesis suggest that the associative network is preserved but becomes disorganised, rather than degrades as is seen in semantic dementia. This view shares some similarities with the concept of overinclusive thinking (difficulty preserving conceptual boundaries; Chen et al. 1994).

There is also the much newer dyssyntactic hypothesis (Badie and Augusto, 2022), which proposes that faulty syntactic processes across an individual semantic network produce semantic disturbances. The authors take a computational, logic-driven approach and claim that the model can diagnose FTD, but it is not clear where this has been tested. Because this is a very recent hypothesis that does not engage heavily with the dysexecutive and dyssemantic hypotheses, it is difficult to position in relation to the wider literature. It is nonetheless another perspective under study.

The evidence supports more than one theoretical perspective of FTD, suggesting a multifaceted construct. FTD in schizophrenia is unique, and yet elements appear in various constellations in other (non)clinical contexts. It is distinct from dysphasia but involves similar frontal/executive and temporal/semantic impairments. And while pragmatic impairments are present, they are discrete from those seen in ASD. Positive symptoms do not correlate with neuropsychological functioning, but disorganisation and negative symptoms do—except for the fluent disorganisation components of FTD, which may be better explained by increased semantic priming/overinclusivity in FTD.

2.7. Summary

Our understanding of FTD has followed a similar descriptive course to that of schizophrenia. Early descriptions were collapsed or compressed only to be expanded or

revised later. The TLC Scale formalised significant changes. And parallel approaches like Harrow and Quinlan's (1985) bizarre-idiosyncratic thinking complement the more canonical contributions. The role of positive, negative, and disorganisation syndromes is also relevant both to schizophrenia and to FTD, suggesting a structural parallel. This is also supported by FTD correlating with schizophrenia symptoms. Even though FTD (as it is described within the TLC Scale) occurs in other clinical pictures, the resulting speech in these cases differs from that seen in FTD in schizophrenia.

In the case of linguistic levels, author descriptions of FTD appear more influential over linguistic categorisation than the inherent linguistic qualities of specific symptoms/deviations. Part of this is conscious, with authors choosing to locate multiple prior descriptions or terms under new, revised terms and descriptions (e.g. Andreasen's *derailment* and *incoherence* in the TLC Scale). At other times, it appears to be a casualty of categorical description intended to generalise. Both early account and TLC Scale descriptions imply unclear linguistic boundaries for some of their items. Despite this, a clear thread of impairment in the domains of grammar, word selection, thought completion, and discourse tracking is evident. It is also worth noting that the bulk of modern FTD research has used the TLC Scale to identify or assess FTD symptoms. Few studies have taken a linguistic approach in which the precise linguistic qualities of language disturbances in FTD in schizophrenia are not assumed *a priori*. This is arguably how the early account and TLC Scale items were constructed. However, the fundamental limitation of these approaches is the tendency to employ descriptions that are linguistically imprecise or vague. As noted in the introduction, a linguistic approach that makes no assumptions about the exact levels of linguistic operation but seeks to define

them through an examination of the broad themes (grammar, word selection thought completion, and discourse tracking) may reveal information that informs or challenges the TLC Scale (see Chapter Six).

Theoretical approaches to FTD are diverse, and the picture is far from clear. The evidence favours a view of FTD as a collection of disturbances involving frontal/dysexecutive and temporal/dysemantic aspects as well as interaction with other schizophrenia symptoms and indeed those of other clinical pictures. It is not clear to what extent the similarities seen across clinical pictures are due to legitimate similarity or the construction of descriptive frameworks like the TLC Scale.

Research interested in FTD may benefit from focusing less on specific symptom descriptors (such as those used in the past, due to the sheer variation and extent of revision), instead focusing on grammar, thought completion, word selection, and discourse tracking. These general error types are stable across the clinical descriptions of FTD reviewed in this chapter. Harrow and Quinlan (1985) demonstrated that a general approach can be productive, and one that assumes a linguistic outlook might resolve some questions of linguistic categorisation. Indeed, an interest in specifics may be inappropriate given the heterogeneous nature of the disorder and how entangled schizophrenia and FTD symptoms seem to be.

I recommend approaching FTD *in schizophrenia* on the basis of grammatical, word selection, thought completion, and discourse tracking errors (the 4TD Framework) to avoid descriptive and theoretical confusion. This approach is consistent with pre- and post-TLC positions, focuses specifically on FTD in schizophrenia, and makes minimal assumptions about the linguistic properties of symptoms. The TLC Scale continues to suit

applications and investigations interested in thought, language, and communication disturbances across clinical pictures, whereas the 4TD Framework best serves those interested specifically in FTD in schizophrenia (see Chapter Six).

This chapter presented an operational definition of FTD in schizophrenia, compared to FTD across clinical pictures. A similarly narrow definition is required for linguistic creativity, which is a broad concept spanning multiple disciplines and domains (Jones, 2015). The next chapter describes the formation of an operational definition of linguistic creativity in schizophrenia. A definition of linguistic creativity as it relates to schizophrenia is necessary given that the wider thesis is interested in whether FTD and linguistic creativity share linguistic properties.

CHAPTER THREE: DEFINING LINGUISTIC CREATIVITY IN SCHIZOPHRENIA

3.1. Introduction

Research question: What is linguistic creativity in schizophrenia?

The previous chapter drew on historic theoretical contributions that have followed a relatively linear course within the psychiatric tradition of descriptive phenomenology.

The topic of linguistic creativity in schizophrenia has not received the same historic attention, and so a different method from that of the previous chapter is required to produce an operational definition. A systematic literature review methodology is used to identify studies in which performance on creative linguistic tasks was measured in the context of schizophrenia symptomatology. The intention is to develop a definition that accounted for the cognitive and communication impairments associated with the condition. The review is presented here as it was published in the *Journal of Interactional Research in Communication Disorders* (Delgaram-Nejad et al., 2020). The rationale for providing it as published is that the publication format mirrors that originally intended for the present chapter.

3.2. Introduction to systematic literature review

In 1974, Andreasen, Tsuang, and Canter asked clinicians to diagnose formal thought disorder (FTD) using proverb interpretations and writing samples from schizophrenia, mania, and creative writing cohorts. Mania and creative writing texts received more FTD diagnoses and mentions of traits thought to indicate FTD, and clinicians did not distinguish the nonpsychotic cohort. The authors reconsidered FTD in terms of thought,

language, and communication disorders (Andreasen, 1979a) inclusive of a positive-negative subtype approach (Andreasen, 1979b). Over time, linguistic creativity received less interest. We queried whether figuration, often seen when language is used creatively and associated with speech in schizophrenia (McKenna and Oh, 2005), could contextualise Andreasen’s findings and therefore reviewed empirical studies of figurative language and creativity in schizophrenia and psychosis cohorts. Given that languages are influenced by interaction, our review is motivated by the view that FTD and clinical interaction studies are mutually informative.

3.3. Methods

This was a systematic review only (i.e. an assessment of heterogeneous trials with no summary estimate). A PRISMA-P protocol was developed and registered with PROSPERO (ID:116255), and the search strategy followed the PICOS framework (Moher et al. 2015). We excluded mixed samples (e.g. where individuals with schizophrenia and/or schizoaffective diagnoses were treated as one cohort) to more clearly distinguish psychosis from schizophrenia (Arciniegas, 2015) and figurative language in relation to the latter (see Table 9).

Table 9 - SLR inclusion and exclusion criteria

PICOS	inclusion criteria
population	a formal diagnosis of schizophrenia
intervention	a direct investigation of the production and/or comprehension of figuration
comparison	any other group(s) or individual(s)
outcome	any outcome, behaviour, quality, and/or improvement measure

study design	peer-reviewed reports of empirical studies that have employed a quantitative, qualitative, or mixed methodology to generate primary data; seen publication in the English language (i.e. either by origin or translation); hold a publication status of either (1) approved for publication or (2) published
PICOS	exclusion criteria
population	formal diagnosis and/or comorbidity of any psychiatric condition other than schizophrenia
intervention	reference to the production and/or comprehension of figuration consequent to an unrelated main research aim
comparison	multiple psychiatric cohorts allocated to a single sample
outcome	n/a
study design	any methodology that examined secondary data only; non-research articles, dissertations, theses, and/or 'grey' literature

Throughout March 2018–March 2021, we searched AMED, Child Development and Adolescent Studies, CINAHL, MEDLINE, PsycARTICLES, and PsycINFO. Keyword combinations were searched against paper titles via 'AND' and 'TI' operators³. We assessed individual paper quality using the Quality Appraisal Tool for Studies of Diverse Designs (QATSDD; Sirriyeh et al. 2012). We chose this tool because our objective was a narrative synthesis of papers covering a range of data, collection methods, and analytical approaches. The tool measures study quality across 16 indices: two apply to qualitative and two to quantitative designs. Any given study was therefore scored against 14 criteria. Per index scores range from zero to three, and the maximum score obtainable is

³ 'TI schizophrenia AND TI creativity'; 'TI psychosis AND TI creativity'; 'TI schizophrenia AND TI creative'; 'TI psychosis AND creative'; 'TI schizophrenia AND TI figurative'; 'TI psychosis AND TI figurative'; 'TI schizophrenia AND TI metaphor'; 'TI psychosis AND TI metaphor'; 'TI schizophrenia AND TI speech'; 'TI psychosis AND TI speech'; 'TI schizophrenia AND TI language'; 'TI psychosis AND TI language'; 'TI schizophrenia AND TI linguistic'; 'TI psychosis AND TI linguistic'; 'TI schizophrenia AND TI language AND TI thought'; 'TI psychosis AND TI language AND TI thought'; 'TI schizophrenia AND TI speech AND TI language'; 'TI psychosis AND TI speech AND TI language'; 'TI schizophrenia AND TI language AND TI figurative'; 'TI psychosis AND TI language AND TI figurative'; 'TI schizophrenia AND TI language AND TI metaphor'; 'TI psychosis AND TI language AND TI metaphor'.

42. We rated studies whose scores fell within the ranges 0—14, 15—28, and 29 or above as low, moderate, and high quality respectively. The appraisal process was conducted by the corresponding author and an independent reviewer blind to the screening and selection processes. We resolved interrater disagreements via discussion when categories, rather than total scores, were discrepant. Apart from four studies (two 'low' and two 'moderate'), we rated the majority as high quality. The final category weightings, as they refer to each study, are outlined in Table 10.

Table 10 - paper quality weightings (Appendix VII)

It is important to note that a low QATSDD score does not necessarily mean a low quality study. Factors such as publication conventions and methodological advancements make it harder to apply certain criteria to some papers. Bilgrami et al. (2020) is a good modern example. The study meets all criteria for inclusion in this review, but only a conference presentation summary is available for appraisal.

We synthesised the extracted data narratively, as per Popay et al. (2006).

The protocol for this review is accessible at

https://www.crd.york.ac.uk/PROSPEROFILES/116255_PROTOCOL_20181109.pdf

There was no funding source for this study, and we declare no competing interests.

3.4. Results

The search returned 912 studies. 912 abstracts (735 excluded) and 177 full texts (144 excluded) were screened against inclusion and exclusion criteria. 33 met inclusion

criteria in full. The PRISMA flowchart is under Figure 1, and Table 3 reports study characteristics.

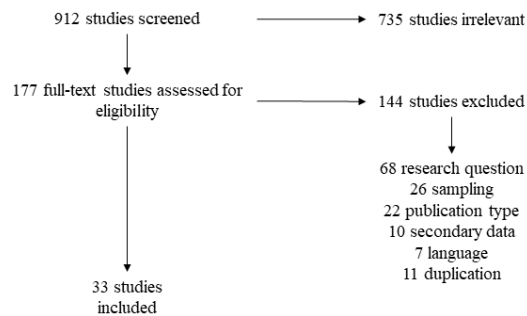


Figure 1 - PRISMA flowchart

Table 11 - study characteristics (Appendix VII)

3.4.1. Date

Articles were published between 1969 and 2020. The majority were published post 2001 (n=27). The study pool has good international representation, with most based in Germany (Bergemann et al. 2007; Binz et al. 2010; Brüne and Bodenstern, 2005; Ketteler et al. 2012; Kircher et al.2005; Schneider et al. 2015). Other countries included the United States of America (Andreasen and Powers, 1975; Bilgrami et al. 2020; Billow et al. 1997; Keefe and Magaro, 1980), Italy (Piovan et al. 2016; Mazza et al. 2008; Marini et al. 2008), Canada (Al Issa, 1976; Cropley and Sikand, 1973), Japan (Fukuhara et al. 2017; Son et al. 2015), Poland (Jaracz et al. 2012; Pawełczyk et al. 2018), the United Kingdom (Deamer et al. 2019; Forrest et al. 1969; Rodriguez-Ferrera et al. 2001), China (Mo et al.

2008), France (de Bonis and Epelbaum, 1997), Belgium (Elvevåg, 2011), Hungary (Varga et al. 2014), Spain (Sampedro et al. 2019), and Israel (Zeev-Wolf et al. 2015). The remaining studies involved transnational collaboration (Abraham et al. 2007: Germany and the United Kingdom; Chakrabarty et al. 2014: India and the United States of America; Mashal et al. 2013: Canada, Israel, and the United States of America; Mashal et al. 2014: Israel and the United States of America; Wang et al. 2017: China and the United States of America).

3.4.2. Demographics

The most common psychosocial matching criteria were age (n=22) and participant education (n=18). In a few cases, full or subscale IQ measures were used (Abraham et al. 2007; Deamer et al. 2019; Forrest et al. 1969; Kircher et al.2005; Rodriguez-Ferrera et al. 2001; Schneider et al. 2015; Varga et al. 2014). Other variables included participant and parent education (Mashal et al. 2013; Mashal et al. 2014), socioeconomic status (Chakrabarty et al. 2014; Keefe and Magaro, 1980; Pawełczyk et al. 2018), and marital status (Keefe and Magaro, 1980).

3.4.3. Assessments

All studies established a diagnosis of schizophrenia (either current or historic), and symptomatology was assessed alongside [diagnosis] in many cases. Nine studies did not assess symptomatology (Al Issa, 1976; Andreasen and Powers, 1975; Bilgrami et al. 2020; Billow et al. 1997; Cropley and Sikand, 1973; Deamer et al. 2019; Forrest et al. 1969; Fukuhara et al. 2017; Zeev-Wolf et al. 2015). IQ measures were taken in 18 cases.

Seven studies reported appropriate IQ matching procedures (Abraham et al. 2007; Deamer et al. 2019; Forrest et al. 1969; Kircher et al. 2005; Rodriguez-Ferrera et al. 2001; Schneider et al. 2015; Varga et al. 2014). Abraham et al. (2007) included participants with preserved premorbid intellectual functioning. Deamer et al. (2019) obtained a premorbid IQ and generated a full-scale IQ. In four cases, executive functioning was used as a matching criterion (Brüne and Bodenstein, 2005; Marini et al. 2008; Mazza et al. 2008; Schneider et al. 2015). In the seven studies to establish right handedness, three employed measurement (Schneider et al. 2015; Son et al. 2015; Zeev-Wolf et al. 2015) and four utilised self-report (Mashal et al. 2013; Mashal et al. 2014; Pawełczyk et al. 2018; Kircher et al. 2005). All studies focused on adults. Nine did not report female ratios (Al Issa, 1976; Bilgrami et al. 2020; de Bonis, 1997; Elvevåg et al. 2011; Forrest et al. 1969; Keefe and Magaro, 1980; Marini et al. 2008; Kircher et al. 2005; Wang et al. 2017). Across studies, participants totalled 1,972.

3.4.4. Cohorts

Authors categorised their cohorts as follows: [subtype independent] schizophrenia (n=847), non-paranoid [subtype dependent] schizophrenia (n=10), paranoid [subtype dependent] schizophrenia (n=91), borderline personality (n=36), mania (n=16), major depression (n=13), low schizotypy (n=39), high schizotypy (n=35), first degree relative (n=34), professional creatives (n=20), non-psychotic psychiatric comparison (n=10), non-psychiatric comparison (n=758), and clinical high-risk (n=63).

Mostly, authors did not distinguish between schizophrenia subtypes (n=29). The remainder focused on paranoid schizophrenia specifically (Bergemann et al. 2007; Jaracz

et al. 2012; Keefe and Magaro, 1980; Varga et al. 2014). Of these, two studies (Bilgrami et al. 2020; Keefe and Magaro, 1980) involved more than one comparison group: clinical high risk and healthy controls (Bilgrami et al. 2020) and non-paranoid schizophrenia, non-psychotic psychiatric comparison, and non-psychiatric comparison (Keefe and Magaro, 1980). Two studies (Jaracz et al. 2012; Varga et al. 2014) utilised one non-psychiatric comparison group. The remainder was a randomised controlled trial (Bergemann et al. 2007). In studies of subtype independent schizophrenia (n=28), the majority involved one non-psychiatric comparison sample (n=23), whereas a smaller number involved either two (Andreasen and Powers, 1975; Bilgrami et al. 2020; Billow et al. 1997; de Bonis and Epelbaum, 1997) Mazza et al. 2008; Wang et al. 2017) or three (Cropley and Sikand, 1973) comparison samples. Andreasen and Powers (1975) compared schizophrenia, mania, and non-psychiatric/healthy volunteer groups. Bilgrami et al. (2020) compared schizophrenia, clinical high-risk, and non-psychiatric comparison groups. Billow et al. (1997) compared schizophrenia, borderline personality, and non-psychiatric groups. Cropley and Sikand (1973) compared individuals with schizophrenia, professional creatives, and two non-psychiatric comparison groups (one for the schizophrenia group and another for the professional creative group). De Bonis and Epelbaum (1997) compared schizophrenia, major depression, and non-psychiatric groups. Mazza et al. (2008) compared schizophrenia, first degree relative, and non-psychiatric groups. Wang et al. (2017) compared schizophrenia, low schizotypy (non-psychiatric) and high schizotypy (non-psychiatric).

3.4.5. Designs

In two cases, all participant groups were blind to the aims of the study (Brüne and Bodenstein, 2005; Varga et al. 2014). Bar one randomised controlled trial (Bergemann et al. 2007), all studies were behavioural (n=32). The majority of these were controlled experiments (n=29), one used open-ended interviewing (Balgrami et al. 2020), and the remainder were single cohort (Al Issa, 1976; Rodriguez Ferrera et al. 2001).

3.4.6. Linguistic focus

Studies focused variously on language production (Abraham et al. 2007; Andreasen and Powers, 1975; Bilgrami et al. 2020; Billow et al. 1997; Jaracz et al. 2012; Son et al. 2015; Wang et al. 2017), comprehension (Bergemann et al. 2007; Brüne and Bodenstein, 2005; Cropley and Sikand, 1973; de Bonis and Epelbaum, 1997; Fukuhara et al. 2017; Ketteler et al. 2012; Mashal et al. 2013; Mashal et al. 2014; Mazza et al. 2008; Mo et al. 2008; Kircher et al. 2005; Schneider et al. 2015; Varga et al. 2014), or a combination of the two (Al Issa 1976; Binz and Brüne, 2010; Chakrabarty et al. 2014; Deamer et al. 2019; Elvevåg et al. 2011; Forrest et al. 1969; Keefe and Magaro, 1980; Marini et al. 2008; Pawełczyk et al. 2018; Piovan et al. 2016; Sampedro et al. 2019; Rodriguez Ferrera et al. 2001, Zeev-Wolf et al. 2015). The majority of studies examined one linguistic device only (n=15); ten examined figuration (Bergemann et al. 2007; Billow et al. 1997; Chakrabarty et al. 2014; Elvevåg et al. 2011; Keefe and Magaro, 1980; Mashal et al. 2013; Mashal et al. 2014; Kircher et al. 2005; Schneider et al. 2015; Zeev-Wolf et al. 2015), three focused on irony (Abraham et al. 2007; Marini et al. 2008; Mazza et al. 2008), and one explored proverb (Brüne and Bodenstein, 2005). A moderate number examined multiple devices (n=13) and/or used natural language elicitation procedures that may have prompted a range of

figurative responses (Al Issa, 1976; Andreasen and Powers, 1975; Bilgrami et al. 2020; Cropley and Sikand, 1973; Deamer et al. 2019; Forrest et al. 1969; Jaracz et al. 2012; Ketteler et al. 2012; Piovan et al. 2016; Rodriguez Ferrera et al. 2011; Sampedro et al. 2019; Son et al. 2015; Wang et al. 2017). Six studies focused on two devices. Of these, most tended toward figuration and irony (Fukuhara et al. 2017; Mo et al. 2008; Pawełczyk et al. 2018; Varga et al. 2014), over irony and proverb (Binz and Brüne, 2010), or figuration and proverb (de Bonis and Epelbaum, 1997).

3.4.7. Metaphor decoding

Eleven studies found evidence for metaphor decoding difficulties in subtype independent schizophrenia cohorts (Binz and Brüne, 2010; Chakrabarty et al. 2014; Deamer et al. 2019; Elvevåg et al. 2011; Mashal et al. 2013; Mashal et al. 2014; Mo et al. 2008; Piovan et al. 2016; Kircher et al. 2005; Schneider et al. 2015; Zeev-Wolf et al. 2015). Five examined conventional and novel metaphors (Chakrabarty et al. 2014; Deamer et al. 2019; Mashal et al. 2013; Mashal et al. 2014; Zeev-Wolf et al. 2015), and two examined conventional and novel metaphors in addition to unrelated word pairs (Chakrabarty et al. 2014; Zeev-Wolf et al. 2015). Two studies found evidence for atypical left hemispheric activity during metaphor comprehension tasks (Mashal et al. 2013; Kircher et al. 2005). Two studies found evidence for reduced decoding accuracy, independent of verbal IQ (Mo et al. 2008; Schneider et al. 2015). Two studies reported metaphor and irony comprehension difficulties (Mo et al. 2008; Piovan et al. 2016). Two studies found conflicting evidence for increased accuracies in the cases of novel metaphors (Schneider et al. 2015; Zeev-Wolf et al. 2015). Deamer et al. (2019) noted a tendency to select pictures that depicted metaphoric story elements represented

literally. Elvevåg et al. (2011) observed an increased tendency to interpret metaphoric speech literally but also reported a general trend, across groups, for non-emotional metaphors to elicit a higher number of literal concrete responses. Kircher et al. (2005) noted increased left hemispheric activation during metaphor processing tasks that followed a literal decoding task directly and significant activation of the left and right precuneus during literal item tasks that followed a metaphor item task directly. Mashal et al. (2013) reported greater left inferior frontal gyrus, fusiform, thalamus, and visual cortical activity in the specific cases of novel metaphors. In a subsequent study, correlations between novel metaphor decoding accuracy and increased activity in the right precuneus were noted (Mashal et al. 2014). Mo et al. (2008) noted reduced comprehension accuracy for both metaphor and irony, independent of both global and verbal IQ measures. Significant performance differences between paranoid and non-paranoid schizophrenia subgroups were observed on measures of irony comprehension specifically. In addition, metaphor and irony decoding performances were found to correlate with one another. Pawełczyk et al. (2018) noted difficulties with the comprehension of humour, which is often figuration dependent. In Schneider et al. (2015), accuracy was higher for literal and meaningless phrases over metaphoric items, independent of age, education, and verbal IQ. Contrary to the findings of other studies, Zeev Wolf et al. (2015) noted increased accuracy for novel metaphors specifically independent of age and gender.

3.4.8. Figurative production

Five studies examined figurative production in subtype independent schizophrenia cohorts (Bilgrami et al. 2020; Billow et al. 1997; Elvevåg et al. 2011; Pawełczyk et al.

2018; Sampedro et al. 2019; Schneider et al. 2015), one of which reported significant strengths on commentary tasks (Pawelczyk et al. 2018). Bilgrami et al. reported participants in the schizophrenia and clinical high-risk groups used metaphors significantly more than healthy controls. Billow et al. (1997) noted increases in the use of autistic bizarre (as in the Autistic/Bizarre subscale of the CBCL/Child Behavior Checklist) and tangential forms and a reduction in the use of idiomatic and evocative forms. Elvevåg et al. (2011) identified a general reduction in the use of figurative language. Pawelczyk et al. (2018) observed difficulties with the explanation of written and picture metaphor prompts. Schneider et al. (2015) reported increased uses of meaningful partly concrete and meaningful entirely concrete forms in circumstances that called for meaningful abstract forms. Sampedro et al. (2019) noted significant differences between schizophrenia and non-psychiatric comparison groups for only some figural creativity subscales: figural abstractness of titles, figural strengths, and total figural creativity score. Significant group differences were present for all verbal creativity submeasures (i.e. verbal fluency, flexibility, and creativity). Importantly, there were no significant group differences on the remaining figural submeasures (i.e. figural originality, fluency, elaboration, flexibility, and resistance to closure).

3.4.9. Correlations

3.4.9.1. *Decoding*

Only four studies reported correlations between higher symptom severity and lower figuration task performance scores (Mashal et al. 2013; Piovan et al. 2016; Kircher et al. 2005; Schneider et al. 2015). Bergemann et al. (2007) observed improvements in metaphoric priming abilities following the administration of 17 β Estradiol (E2, a form of

Estrogen). Kircher et al. (2005) noted an inverse correlation between concretism and metaphor comprehension scores. Higher scores on measures of concretism correlated with decreased activity in the inferior frontal gyrus and cerebellum. Mashal et al. (2013) reported a link between higher 'difficulty with abstract thinking' symptom scores and greater difficulties with the decoding of conventional metaphors. Piovan et al. (2016) observed that the severity of negative symptoms correlated with metaphor decoding errors, independent of the 'difficulty with abstract thinking' symptom measure. Schneider et al. (2015) reported a correlation between the severity of FTD and decreased P200 (non-literal language processing) activity in the period directly following exposure to metaphoric items. Three studies identified correlations between comprehension task performance and IQ results (Piovan et al. 2016; Rodriguez Ferrera et al. 2001; Varge et al. 2014).

3.4.9.2. Production

Rodriguez Ferrera et al. (2001) identified a relationship between FTD and difficulties on one expressive (picture description) task. Expressive difficulties were also found to correlate with higher global symptom scores. Forrest et al. (1969) identified a relationship between abstract response accuracies and IQ.

A tabular summary of the above is shown in Table 12.

Table 12 - tabular summary of sections 3.4–3.6 (Appendix VII)

3.5. Discussion

The results reveal the important roles of schizophrenia subtype, symptomatology, and IQ when discussing figurative language. Production performance is better in the positive

syndrome; the corollary sees negative symptoms restrict creative cognition. Higher irony comprehension accuracy in paranoid schizophrenia (relative to nonparanoid), irrespective of correlations between metaphor and irony comprehension, reveals a need to study irony comprehension in nonparanoid subtypes. It is also worth noting that authors who studied irony did not distinguish between the types of irony examined. Potential further avenues include comparing linguistic, situational, and dramatic irony comprehension in paranoid and non-paranoid cohorts.

3.5.1. Metaphor comprehension

3.5.1.1. *Symptomatology and metaphor type*

Individuals with negative symptoms encounter metaphor comprehension difficulties.

This may have to do with concretism specifically, given the inverse relationship between high concretism and low metaphor comprehension in Kircher et al. (2005). Whilst conventional metaphor decoding difficulties were found to correlate with higher scores on the 'difficulty with abstract thinking' measure (Mashal et al. 2013), general metaphor decoding difficulties were observed independent of this index (Piovan et al. 2016).

Future studies could explore whether or how novel metaphors are affected by negative symptoms and whether the 'difficulty with abstract thinking' measure affects conventional metaphors only.

3.5.1.2. *IQ and metaphor type*

Preferences for literal interpretations are thought to result from an inability to inhibit first-order literal interpretations. Mashal et al. (2013)'s inverted pattern of inferior frontal gyrus activation suggests that more is happening than this alone, however. Mo et

al. (2008) noted metaphor and irony comprehension difficulties independent of both global and verbal IQ but reported significant between group IQ differences. The correlation between metaphor comprehension and verbal IQ reported by Schneider et al. (2015) is more stable under appropriate matching. Robust IQ and neuropsychological matching protocols are important in studies of language in schizophrenia (Heinrichs and Zakzanis, 1998 given evidence for nuanced alterations in brain function, rather than broad structural abnormalities (Ortiz-Gil, Pomarol-Clotet, Salvador, Canales-Rodríguez, Sarro, Gomar, and McKenna, 2011). Even in the cases of those few studies whose IQ matching procedures were of good quality, mixed results were reported. Of these, greater difficulties with both unconventional and, to a subtler degree, conventional metaphors correlated with lower overall IQ in some cases (Rodríguez Ferrera et al. 2001; Varga et al. 2014) but not with verbal IQ in others (Schneider et al. 2015). Potential relationships between elements of non-verbal IQ and non-literal language processing could be explored further. There is also a need to review how studies of language in schizophrenia are designed and conducted. For example, Deamer et al.'s (2019) picture description task, whilst a valid test of metaphor comprehension, uses "incorrect" choices that may appeal to overinclusive thinking.

3.5.2. Figurative production

3.5.2.2. *Expressivity and formal thought disorder*

Correlations between expressional disfluencies in picture description tasks, global symptom severity, and the extent of FTD (Rodríguez Ferrera, 2001) suggest more complex production interactions. Similar outputs were reported in Pawełczyk et al.

(2018), although no symptom correlations were noted. An interesting line of further research involves exploring how FTD and global symptom severity relate to observed difficulties with figural abstractness of titles, figural strengths, total figural creativity score, verbal fluency, verbal flexibility, and verbal creativity and preservation of figural originality, fluency, elaboration, flexibility, and resistance to closure (Sampedro, 2019). Such an investigation may lead to a more specific definition of FTD and symptom severity and their relationship with expressional disfluency.

Whilst the production studies included here elicited natural language responses, they did so within controlled (i.e. task-dependent) contexts. Future production studies might compare post-task interview responses with interviews more akin to general conversation to see whether task contexts influence responses.

3.5.2.3. *Expressivity and affect*

Negative symptom and figurative task performance relations also raise questions about relationships between affect and creativity. This relationship may depend on task type, affect intensity, and the time window between creative affective and affective-referent states (Davis, 2009): given that a portion of the negative symptoms (e.g. anhedonia sociality) dull affective intensity. When we consider Elvevåg et al.'s (2011) observation of a group-independent link between non-emotional metaphors and literal-concrete responses and Andreasen and Powers' (1975) reports of higher creativity scores in individuals with mania, we could conceive of a study in which non-emotional and emotional metaphors are assessed from production and comprehension standpoints, with clinical and non-clinical groups and symptomatology factored into account.

3.5.2.4. *IQ and assessment*

Higher IQ correlated with the accuracy of abstract response productions in one study of good matching quality (Forrest et al. 1969); this finding is, however, restricted to the context of the instrument used, rather than that of natural interaction(s) in the broader sense. Language assessment practitioners should therefore consider their own positionality (including during the development of their measures) when assessing the linguistics of schizophrenia. As many creativity measures involve or leverage tests of executive function, working memory, and/or cognitive flexibility, known to be impaired in schizophrenia, it is worth defining creativity for the purposes of that given investigation and selecting appropriate measures on that basis.

3.5.2.5. *Schizophrenia, mania, creative writing, and FTD*

Clinicians in Andreasen's (1974) experiment viewed writing samples from mania and creative writing cohorts as more indicative of FTD in schizophrenia than FTD in schizophrenia. Within the context of our review, one potential reason for this could be that the clinicians perceived FTD as characterised by linguistic markers of verbal and figural creativity that are impacted by the negative syndrome, global symptom severity, and the presence of FTD itself. These markers are more likely to be preserved in the positive syndrome, mania cohorts, and non-psychiatric cohorts doing creative things with language. Our review suggests that FTD is more likely characterised by expressional disfluencies in specific contexts. Linguistic creativity in schizophrenia remains present but is selectively impaired by the balance of positive and negative symptoms, the

presence or absence of FTD, global symptom severity, verbal IQ, and other factors requiring further study (such as affect).

3.6. Summary

The bulk of this chapter replicates a systematic literature review (SLR) published in Delgaram-Nejad (2020). It has indicated that the present definition of linguistic creativity in schizophrenia is one characterised by widespread challenges when linguistic creativity is defined in task performance terms. Many studies included in the review define figuration using creativity tests and creativity using figuration tests, suggesting that figurative and creative abilities overlap considerably in the testing literature.

Comprehension difficulties for abstract and metaphoric items and production difficulties on expressive tasks suggest that it is specifically linguistic creativity, when defined in terms of fluency, flexibility, and originality, compared with other forms of creativity, that schizophrenia affects. That said, nonlinguistic creativity appears to be largely spared, as signalled by a lack of group differences on tasks that tap *figural* originality, fluency, elaboration, flexibility, and resistance to closure.

The role of schizophrenia symptomatology, IQ, the presence of FTD, and other areas not covered by the present review such as affect implies that a precise definition of linguistic creativity in schizophrenia may be somewhat out of reach in this context. The present operational definition is nonetheless useful for identifying a starting position for further study.

This chapter produced a schizophrenia-specific definition of linguistic creativity. The review that generated this definition highlights a lack of work on linguistic synaesthesia

in schizophrenia. The next chapter introduces prominent theories of metaphor and linguistic synaesthesia as they may relate to schizophrenia populations. It then describes the development and preliminary testing of a psycholinguistic experiment tailored to this topic and cohort.

CHAPTER FOUR: SYNAESTHETIC METAPHORS IN SCHIZOPHRENIA

4.1. Background

Research question: How is creative language processing manifested in schizophrenia?

4.2. Why synaesthetic metaphors?

It is first necessary to define metaphor and linguistic synaesthesia, as these concepts are integral to understanding the experiment described later in the chapter. Metaphor involves talking about (and thinking about) one thing (the target) as though it is another (the source; Kovecses, 2010). Linguistic synaesthesia differs from neurological synaesthesia. The former is about lexico-semantic (word-meaning) relations, whereas the latter describes a tangible intermixing of perceptual experiences. Linguistic synaesthesia is considered metaphorical and distinct from neurological synaesthesia by some (Zhao et al., 2022) and, by others, neither metaphorical nor synaesthetic (in the neurological sense) but primarily linguistic and evaluative (Winter, 2019).

Much work has explored figurative language processing in schizophrenia (cf. Chapter Three), yet very little has explored synaesthetic metaphors. Studies comparing conventional and novel metaphor processing in schizophrenia have proposed abnormal lateralisation and right hemisphere dysfunction as potential explanations (Chakrabarty, 2014). These same studies have called for the examination of synaesthetic metaphors specifically to further inform investigations in this area (Chakrabarty, 2014).

Sensory processing was once thought to be preserved in schizophrenia (Bleuler, 1950). This view was mainstream until the 1960s. Now, however, the relations between sensory processing difficulties and broader cognitive dysfunction in schizophrenia are well-established (Javitt, 2009; Javitt and Freedman, 2015). There is an arguable conceptual distinction between sensory processing and the processing of sensory

language, nonetheless, which is not to be confused with the well-supported (embodiment) view that some sensory language elicits sensory activation (Winter, 2016). Little work has explored how schizophrenia might add to an understanding of this distinction. Some work has examined this in the context of verbal and/or auditory hallucinations, which have been linked to modulation impairments in the neural activation of sensory language areas (Brown and Thompson, 2010). Outside of schizophrenia, work examining depression, apathy, and sensory language proposes that increased use of sensory adjectives with reduced olfactory word use is potentially predictive of Alzheimer's (Kernot et al., 2016).

The operational definition of linguistic creativity in schizophrenia presented in Chapter Three can support the claim that figurative language shares links with creative cognition (see Dunbar and Klahr, 2012). This is because (1) researchers have used creativity tasks to measure figuration and figural tasks to measure creativity, suggesting some conceptual interplay (if only in the minds of researchers), and (2) the reliable patterns of performance on these tasks within schizophrenia cohorts suggest that both task types involve processes affected by schizophrenia. Further work is needed to distinguish the boundaries of these challenges and their relationship to these task types. The question of whether linguistic synaesthesia falls within the domain of figurative language is disputed, and this presents an opportunity. Given that metaphor comprehension is known to be affected in schizophrenia, studies of synaesthetic metaphor in schizophrenia may help to answer this question. The additional question of what relationship sensory processing impairments in schizophrenia have to sensory language is also currently unresolved and stands to benefit from further research too.

The present chapter draws from an exemplary review of prominent theories of metaphor comprehension (Holyoak and Stamenković, 2018) before reviewing a theory of synaesthetic metaphor and its experimental tests. A section focused on adapting these tests for use with schizophrenia cohorts follows (section 4.7.). The chapter then presents a case study that synthesises experimental and interview data from one individual with a diagnosis of schizophrenia and that of several comparison samples (section 4.9.). The chapter ends with recommendations about the design of (psycho)linguistic experiments in the realm of sensory language and schizophrenia populations, as well as suggestions for future applications of the experiment on a larger scale.

4.3. Theories of metaphor

Three theoretical avenues dominate the extensive literature on metaphor comprehension: the analogy, categorisation, and conceptual mapping positions (Holyoak and Stamenković, 2018).

Metaphors come in many types. Among them are nominal (which focus on nouns), predicate (focus on verbs), and attributive (which focus on adjectives; Holyoak and Stamenković, 2018). Relevant to all three (and all three prominent approaches) are the concepts of aptness and conventionalisation (Holyoak and Stamenković, 2018). ‘Aptness’ relates to how well the source can be paired with the target, with much of the burden of fit placed on the source. This is shown in experimental and item-rating conditions, where aptness correlates positively with between-domain similarity (when source and target have similar positions within dissimilar domains) than within-domain similarity

(when two concepts have similar positions within a shared domain; Tourangeau and Sternberg, 1981). 'Conventionalisation' describes what happens when people are exposed to metaphors repeatedly, such as novel metaphors acquiring new literal senses over time (Kittay, 1987; Utsumi, 2007).

It was commonly thought that metaphor processing involved a three-stage process in which literal meanings were extracted, tested against the context, and reprocessed as non-literal if efforts toward contextual fit failed (Holyoak and Stamenković, 2018).

Experimental work has not supported this idea and instead indicates that literal meaning is not required for metaphor comprehension (Holyoak and Stamenković, 2018). This challenges some of the work covered in Chapter Three, as metaphor processing disturbance in schizophrenia is still thought to involve failures of literal response inhibition (see Chapter Three: IQ and metaphor type). This is one of many examples of what occurs in the absence of interdisciplinary working.

4.3.1. Analogy

The analogy position argues that metaphor processing is analogical and assumes that metaphors involve mappings between multiple elements of the source and target domains. Interaction theory (Black, 1962), the theory of structure mapping (Gentner, 1983; Gentner and Clement, 1988), and the career-of-metaphor hypothesis (Bowdle and Gentner, 1999; 2005) are the more prominent analogical positions (Holyoak and Stamenković, 2018).

Black (1962), in interaction theory, suggests that metaphors rely on analogical processes and that some metaphors can generate similarities additional to those pre-existing in

the ground of the metaphor (Holyoak and Stamenković, 2018). In line with structure mapping, complex situational knowledge requires processing of object attributes and relations and 'higher-order' processing of meta relations (Holyoak and Stamenković, 2018). When people are asked to describe metaphor components and then shown metaphors containing those components in both standard and reverse orders, they rate aptness as higher for relational descriptors than attributional ones (Tourangeau and Sternberg, 1981). Aptness is also considered higher in standard versus reversed order metaphors (Holyoak and Stamenković, 2018). The career-of-metaphor hypothesis suggests that analogical reasoning drives novel metaphor processing until repeated exposure leads to conventionalisation, at which point they become category statements (Holyoak and Stamenković, 2018). This leads into the categorisation view.

4.3.2. Categorisation

The categorisation position views metaphors as category statements (Glucksberg and Keysar, 1990) and assumes operation at the levels of individual source and target concepts. Metaphor processing is considered less computationally taxing as a result under this view (Holyoak and Stamenković, 2018).

The categorisation view distinguishes literal and metaphoric statements by the latter's ability to take the form of similes. The argument is that literal comparison tends to apply one level of abstraction across compared items (e.g. *coffee is like tea*) and such comparisons lose their sense when instances are compared to categories (e.g. *coffee is like liquid*; Holyoak and Stamenković, 2018). This can be done with metaphorical comparison, though, because *coffee is fuel* can also become *coffee is like fuel* without

losing its sense (Glucksberg and Keysar, 1990). This is used, within the categorisation view, to argue that sources have two potential meanings: literal concrete and abstract categorical. The simile is thought to elicit comparison, involving the source's literal concrete potential, whereas the metaphor elicits a category statement involving the source's abstract category potential (Holyoak and Stamenković, 2018). Category statements are irreversible, too, because the level of abstraction varies by component. Empirical work has tested and found support for the idea that metaphors, like category statements, are non-reversible (Glucksberg et al., 1997). The prediction was based on the view that sources take the category label position. A related prediction was that source and target ambiguity would confound categorisation: unambiguous sources perform best as primes, and the best targets constrain their plausible attributes (Glucksberg et al. (1997). The interactive property attribution model (Estes and Glucksberg, 2000) and predication theory (Kintsch, 2000) are among the better known categorisation approaches.

People tend to adopt one of two strategies when they are given noun-noun combinations (Holyoak and Stamenković, 2018). The first is to treat the modifying noun as an adjective (property transfer), and the second is to work on an interpretation that allows both nouns to play a role (relation formation; Holyoak and Stamenković, 2018). People doing property transfer prefer it when the information used is apparent in the given modifier. They also prefer it when the overall meaning is plausible and conveys a new concept (Holyoak and Stamenković, 2018; Costello and Keane, 2000; 2001). Under the interactive property attribution model (Estes and Glucksberg, 2000), the modifier concept provides the candidate features for attribution to the head noun, which

provides the relevant dimensions. This is argued as more important than concept similarity overall (Estes and Glucksberg, 2000). Modifier compatibility with the relation preference of the head noun leads to easier interpretation (Maguire et al., 2010).

Categorisation can only apply to novel metaphors through a single-stage process applied to a single example. The best candidate for this is conceptual combination, and adjective-noun modification (e.g. *red fox*) is one of the simplest forms of this process (Holyoak and Stamenković, 2018). Coherence occurs in conceptual combination when source and target are separated, compared, and integrated. The meaning of a word in use is treated as the sum of its stable meaning and those of the words with which it often co-occurs (Holyoak and Stamenković, 2018).

Kintsch's (2000) predication theory, compatible with conceptual combination, treats metaphor as an extended form of literal comprehension that involves three basic steps: (1) stable meanings for source and target are identified, (2) spreading activation identifies words closely associated with the source only, resulting in a set of words that can be matched to both source and target, and (3) the results of steps (1) and (2) are matched to generate the meaning of the metaphor as a whole (Holyoak and Stamenković, 2018). This model supports a view of directional differences in meaning because it assumes an asymmetrical operation. The associates of the source have a greater effect than the associates of the target (Holyoak and Stamenković, 2018). In compound phrases, compatibility between the modifier and the relation preference for the head noun aids interpretation (Maguire and Cater, 2010).

Priming affects literal and non-literal language processing bidirectionally. Literal sentences presented ahead of metaphors confound metaphor comprehension.

Inversely, metaphors presented ahead of literal sentences lengthen the time it takes to judge literal statement truth (Holyoak and Stamenković, 2018). Older adults with poor task performance on cognitive measures of inhibitory control maintain the ability to filter irrelevant information after metaphor comprehension (Newsome and Glucksberg, 2002). This is interesting because inhibitory control is, along with working memory, a core component of Kintsch's (2000) predication theory, and measures of fluid intelligence and executive functioning correlate highly with analogical abilities (Holyoak and Stamenković, 2018).

Similarity among constituents is not as important for metaphor processing as the previous literature may suggest. It is possible for multiple weak and indirect associations to produce an emergent meaning (Holyoak and Stamenković, 2018). Kintsch's (2000) model can be applied to nominal and predicate metaphors, but Kintsch is cautious about its application to complex literary metaphors (Holyoak and Stamenković, 2018). This leads to conceptual mapping.

4.3.3. Conceptual mapping

The conceptual mapping approach draws a distinction between metaphorical linguistic expressions and conceptual mappings, with the former thought to be linguistic manifestations of metaphorical thought processes (Kövecses, 2010). Conceptual mappings specify both source and target and take the form of category statements which are interpreted as mappings, thereby bringing elements of the analogical and categorisation positions together (Holyoak and Stamenković, 2018). The conceptual mapping approach proposes three kinds of metaphor: orientational, structural, and

ontological. Orientational metaphors are about space, particularly the intersection between physical space and physicality (e.g. MORE IS UP). Structural metaphors are about borrowing the source domain structure to improve understanding of the target domain (e.g. ARGUMENT IS WAR). Ontological metaphors are about representing abstract concepts in tangible terms (e.g. *the illness caught up with him*; Lakoff and Johnson, 1980).

The comprehension of conceptual metaphors (or 'root analogies') and conventional metaphors is treated as analogical reasoning based on the retrieval of stored mappings (Barnden, 2008; Fischer et al., 2017). This differs from the other approaches in that the emphasis is on retrieval rather than decoding. The view thus locates metaphors within a more general framework of embodied cognition (Gibbs, 2005). Embodied primary metaphors arise from modality specific, sensorimotor simulations (Holyoak and Stamenković, 2018). Less work has tried to link the conceptual mapping approach to novel metaphors (such as that described in Section 4.8.).

4.3.4. Summary

The analogy position treats metaphor processing as the driver of metaphorical meaning, as involving interactions between object attributes, relations, and meta relations, and as loading heavier on relations than attributes.

The categorisation approach treats metaphors as category statements and assumes that processing separates out the source and target properties ahead of the creation of a harmonised meaning. It highlights how literal and metaphoric statements differ as similes and suggests that sources contain both literal concrete and abstract categorical

potential. Ambiguity in sources and a range of plausible attributes in targets complicate the category statement formation process, and additions to the theory are needed to accommodate novel metaphors. Property transfer involves preferences for what is already conveyed by the modifier and producing an overall meaning that is plausible and leads to a new concept. Modifier concepts lend the target attributes, and the target specifies the relevant dimensions. This is more important than concept similarity overall. Conceptual combination can account for novel metaphors. However, work on predication theory is presently limited to nominal and predicate metaphors. Directionality is well supported by the categorisation view, as are effects specific to compound phrases. Metaphoric priming for literal statements may not be so important for inhibitory control.

The conceptual mapping approach distinguishes general metaphorical language from conceptual metaphors, which are said to operate at a deeper and more embodied level. It proposes mechanisms that draw from analogical and categorisation positions and proposes the metaphorical concepts of orientational, structural, and ontological. The conceptual mapping approach suggests that deeply engrained concepts are retrieved in the comprehension of conceptual metaphors, compared with the reasoning proposed by the analogical and categorisation positions. In this sense, conceptual metaphors resemble schemata (Gibbs, 2013).

The analogy and categorisation approaches are closer to one another than to the conceptual mapping approach. Both describe forms of comparison between source and target without the express use of a shared definition (Gentner and Bowdle, 2008; Glucksberg and Haught, 2006). Both also support directionality: analogical reasoning

progresses from source to target, and sources define categories (Holyoak and Stamenković, 2018). They differ on the extent of associations, though. The analogy view suggests that multiple relational elements across source and target are involved in the creation of a resolved meaning, whereas the categorisation view is much more about applying a single source concept to the target (Holyoak and Stamenković, 2018).

Each position has acquired supporting evidence and demonstrates at least partial compatibility with the others. This suggests the need for an experimental design that speaks to analogical, categorisational, and conceptual mapping approaches simultaneously. This is the subject of section 4.9. It is important to first introduce cognitive constraint theory (CCT), though, as it inspired the work that follows.

4.4. Theories of synaesthetic metaphor

4.4.1. Cognitive constraint theory (CCT)

Cognitive constraint theory (CCT) aims to explain the tendency for poetic figures to take some structural forms more often than others in literary contexts. It follows the observations that some examples of figurative language take the same form regardless of geographic, cultural, temporal, and even language contexts. The primary argument is that poetic language needs to be both novel and communicable and that cognitive constraints impose a necessary compromise (Shen, 2002). The theory makes two formal claims, based on corpus and experimental work (Shen and Aisenmann, 2008):

- some figures of speech exhibit structural regularities across contexts
- the more prevalent structures are the more cognitively accessible

CCT focused on three structural preferences when initially proposed, organised by literary device. These were zeugma, synaesthesia, and oxymora.

Zeugma involves modifying two nouns with one verb or adjective, as in 'he packed his shirt and sadness' (Shen, 2002, p.216). CCT reports more frequent use of the zeugmas that place the literal noun in first position, as above. Experimental work within CCT sees the literal-first forms rated as more natural and recalled more easily (Shen and Aisenmann, 2008).

Linguistic synaesthesia occurs when the senses are grammatically combined. CCT assumes a sensory hierarchy based on the work of Ullmann (1945), Tsur (2002), Day (1996), and Cytowich (1989), which encompasses sight, smell, taste, and touch in that order. CCT suggests that synaesthesias built on a mapping (source target) direction of low to high on this scale are favoured. Embodied cognition (Gibbs, 2006; Lakoff and Johnson, 1999) is used to explain this preference, suggesting that it is easier to borrow source qualities from a proximate modality (such as taste) than a more distant, mediated one (such as sight). A counterpoint to this position, whether intended or otherwise, is seen in *The Sound and the Fury*: 'I couldn't feel the gate at all, but I could smell the *bright cold*' (Faulkner, 1929, p.6). CCT also proposes that directionality is less important for pairings that blend the sight and sound modalities, as in *The Great Gatsby*: 'And now the orchestra is playing *yellow cocktail music*' (Fitzgerald, 1925, p.44). This point is based on observations by Ullmann (1945) and Tsur (2002): that the frequencies are roughly equivalent for both directionalities in the case of these two modalities.

Oxymora bind contradictory elements and can be split into direct and indirect types. The former use direct antonyms such as 'silent sound' (Shen, 2002, p.223), and the latter

involve contradicting associations, such as 'cold fire' (Shen, 2002, p.223). CCT supports a preference for 'weak' or indirect oxymora over direct oxymora as identified by Gibbs and Kearney (1994). Shen (2008) positions CCT close to a conceptual mapping approach but distinguishes structural preferences from conceptual metaphors. CCT is also more specifically a theory of verbal creativity (Shen, 2002). Much of the later CCT experimental work focused on synaesthetic metaphors (Shen and Aisenmann, 2008). This work is the subject of the next section.

4.5. Synaesthetic metaphors in schizophrenia

4.5.1. Motivations

The present investigation takes interest in the relationship between FTD and linguistic creativity. FTD is largely associated with speech (McKenna and Oh, 2005), although its manifestation in writing is also well documented if not yet widely studied (Strous et al., 2009). CCT is particularly well-suited to this topic because it focuses not only on figuration but also verbal creativity and synaesthesia. Synaesthesia, as discussed earlier in the chapter, has received limited empirical attention in the context of schizophrenia. Its status as metaphor is also disputed in the figuration literature (Winter, 2016). An experimental design that combines these elements therefore stands to reveal information about schizophrenia, FTD, verbal creativity, and synaesthesia as (not) metaphor. CCT is also potentially helpful in understanding the degree of symptom heterogeneity observed in FTD (Roche et al. 2015). This is because listeners attempting to rate and/or understand it must engage at various levels of abstraction.

CCT proposes that cognitive constraints govern preferences for the directionality of linguistic synaesthesia. If this is the case, it would be possible to use Shen and

Aisenmann's (2008) materials to test for this constraint in schizophrenia populations. Group differences on this task would indicate a potential breakdown of this constraint in schizophrenia and/or FTD, which could in turn explain or be explained by some of the overinclusivity and semantic deviation observed in these groups. This task may also inform discussions of embodied cognition, because CCT has a theoretical connection to embodiment and individuals with schizophrenia are more liable to alterations in sensory experience due to psychosis (Dudley et al., 2023).

4.5.2. Hypotheses

The above gave rise to the following hypotheses:

- across all measures, task performance will differ between the clinical groups (A and B combined)⁴ and the control group (group C): two-tailed distribution
- for the clinical subgroups, FTD will impair performance across all measures: clinical participants will favour concrete noun selection in the experimental condition

4.6. Replicating the CCT battery

4.6.1. Stimuli

The initial plan was to reproduce the five tasks described in Shen and Aisenmann (2008) as a single experimental battery, comparing task performance across groups. That paper does not provide the stimuli used, and so stimuli were requested from the study

⁴ Early recruitment plans involved separating clinical participants into two groups: (1) individuals with a formal diagnosis of schizophrenia but without any documented history of FTD and (2) individuals with a formal diagnosis of schizophrenia with a documented history of FTD. This approach was altered to streamline recruitment during the COVID-19 pandemic. This is discussed in full in Chapter Five.

authors. These were provided by Professor Yeshayahu Shen on 13 March 2017 as the raw lists shown below.

Table 13 - stimuli used in Shen and Aisenmann (2008)

Sight	smell
an aromatic darkness	a dark aroma
a reeky suntan	a suntanned reek
sight	sound
a murmuring darkness	a dark murmur
a screaming dazzle	a dazzling scream
sound	smell
a scented murmur	a murmurous scent
a still stink	a stinking stillness
sound	taste
a sour scream	a screaming sourness
a pungent whisper	a whispering pungency
smell	taste
a salty stink	a stinking saltiness
a bitterish scenting	a scented bitterness
smell	touch
a sharp reek	a reeky sharpness
a rough aroma	an aromatic roughness
taste	touch
a hot bitterness	a bitterish heat
a salty bluntness	a blunt saltiness
touch	sight
a suntanned sharpness	a sharp suntan
a hot paleness	a pale heat

touch	sound
a whispering roughness	a rough whisper
a still bluntness	a blunt stillness
taste	sight
a pale sourness	a sour paleness
a dazzling pungency	a pungent dazzle

4.6.2. Stimuli lists

Stimuli lists were created for each of the five tasks by comparing the raw stimuli with the methodology described in Shen and Aisenmann (2008), with the intention of replicating the original battery. Only selected examples are shown below due to space limitations. The full stimuli set is available in Appendix I. Although it was ultimately not used in the present investigation (see Section 4.8. for a fuller explanation), it is supplied here to inform reader appraisals and replication efforts attached to the findings described in Shen and Aisenmann (2008).

4.6.3. Power analysis (a priori to determine required sample size)

It was difficult to conduct an a priori power analysis for two reasons: these tasks had not been used with schizophrenia populations previously, and the data were expected to be nonparametric due to the use of purposive sampling and involvement of a clinical cohort. Several similar experimental studies were reviewed, but effect sizes were rarely provided and stimuli were often too dissimilar to those used in the CCT battery.

4.6.4. Validity

Once the stimuli lists had been constructed, it became apparent that the items had not been subjected to the controls typically used in the design of psycholinguistic experiments. This seems to be common to many metaphor experiments. Holyoak and Stamenković (2018) note that most studies covered in their review did not norm their stimuli, for example (this is discussed further in Section 4.8.).

The CCT tasks involved:

- (1) judging the 'naturalness' of synaesthetic adjectives within sentence contexts
- (2) measuring the response times associated with (1) as a separate task
- (3) judging the 'naturalness' of synaesthetic adjective pairs outside of sentence contexts
- (4) reading and later recalling synaesthetic adjective pairs outside of sentence contexts as a separate task
- (5) generating contexts for synaesthetic adjective pairs outside of sentence contexts as a separate task

The sentence contexts were difficult to reconstruct because they are not described by Shen and Aisenmann (2008) in detail. These contexts are used in tasks one (naturalness judgements) and two (comprehension response times). They also vary on other factors, such as whether the sentence begins with a pronoun or a noun phrase, as in the examples below:

She wanted for a ____ and a ____ grace.

The student perceived a ____ and a ____ intolerance.

They also end with abstract nouns. These were not specified in full, and so to compensate for missing information an even distribution of positive, negative, and neutrally valenced were included in the stimuli set given in Appendix I. This was part of an attempt to remain as close to Shen and Aisenmann's (2008) design and items as possible while also introducing some psycholinguistic controls. It quickly became apparent that such compromises would not produce valid stimuli:

The student sensed a ____ and a ____ compassion.

The teacher detected a ____ and a ____ hostility.

Another serious issue affecting these items is the absence of joint-modification, which is needed to create a synaesthetic condition in such a sentence context (Delgaram-Nejad et al., 2022). Instead, conjunction reduction is used (note the repetition of determiners). This makes it difficult to study the phenomenon of interest, because these sentences effectively combine two main clauses that each use only one modifying sensory adjective.

The items that appear outside of sentence contexts also appear with determiners that have to vary based on their grammatical agreement with the stimuli arrangements. This is particularly serious because some items swap determiners *as they swap directionality*. Attempts to measure the effects of directionality are therefore also likely to acquire the effects of the shifts in determiner, as in the examples below:

an aromatic darkness

a dark aroma

a reeky suntan

a suntanned reek

This also raises the question of whether *darkness* and *dark* are interchangeable concepts, one being a noun and another an adjective. While these changes were part of Shen and Aisenmann's (2008) design, it becomes difficult to assess preferences for mapping directionality when changes in directionality also require changes in the part-of-speech classifications of the source and target.

There is also the problem of interstimulus priming, which sees exposure to stimuli of one directional property bias perception of the reverse form (Bonini et al., 1999; Frazier et al. 2008). This is a problem for task three. Participants are shown both directional forms simultaneously and asked to identify the one that is more natural. The authors do counterbalance the reading order evenly across the participant pool, and this controls for order effects, but this does not address interstimulus priming. Addressing interstimulus priming is important because failure to do so would obscure the main effect of interest.

In addition to stimuli issues, wider methodological problems are also evident. Shen and Aisenmann (2008) did not analyse the contexts generated by their study participants in the context generation task, an unusual choice for authors with knowledge of corpus linguistic tools and methodologies. The rationale given was that this information was

elicited only to trigger deep reflection on the task. Participants' contexts yield useful information (see section 4.12.2.), and their exclusion makes very little sense.

It was decided that use of these stimuli and procedures would problematise both the data collection and the interpretation of results. The items used low-frequency, high register vocabulary and lacked sufficient controls for dimensions highly relevant to metaphor processing, such as affect (Sakamoto and Utsumi, 2014). A new design and stimuli lists, tailored to schizophrenia cohorts, were needed. This is covered in the next section.

4.7. Designing the DoLI task

The deciding on literary imagery (DoLI) task is a synthesis of the Pyramid and Palm Trees Test (Howard and Patterson, 1992), minimal context metaphor production tasks (Glucksberg et al., 1997), and Shen's CCT battery (Shen and Aisenmann, 2008). This section describes its development and characteristics ahead of the case study presented in section 4.9.

The first design decision was about the overall presentation of stimuli and response options. The task mirrors the presentation and response structure of the three word Pyramid and Palm Trees Test (Howard and Patterson, 1992), namely because it has been used successfully with schizophrenia populations in the past (McKenna and Oh, 2005). It has also, incidentally, been used to measure overinclusive thinking (McKenna and Oh, 2005). From there, design decisions focused on stimuli selection and norming. A traditional survey norming study was not feasible due to time, cost, and operational limitations. Clinical cohorts, especially those with language and communication

difficulties, are not well served by the survey norming methodology (Ceasar and Kohler, 2009). In addition, the relative rarity of eligible participants means that any survey norming study stands to exclude participants who might otherwise be recruited for and engage with the experiment. An alternative norming approach was thus required, and corpus linguistic methods were introduced for this. Corpus norming addresses a gap in the psycholinguistic methods literature. Sections 4.8.1-4.8.7, following, draw from work reported in Delgaram-Nejad et al. (2022) (the paper has been reproduced in Appendix II). The sections have been selectively abridged and elaborated here for necessary context. The paper focuses more on the methodological novelty of a corpus-driven norming approach, whereas the present chapter focuses more on the design rationale for the experiment.

4.7.1. General design requirements

The general aim of the DoLI task is a test of synaesthetic metaphor directionality (and thus CCT) across clinical and comparison groups that mirrored the presentational format of metaphor production tasks used to investigate analogical and categorisation positions (Glucksberg et al., 1997) *and* the Pyramid and Palm Trees Test (Howard and Patterson, 1992). This combination seeks to maximise the possibility that participants were being assessed on their synaesthetic metaphor directionality preferences, in a paradigm that has proven useful within the metaphor testing literature whilst following a participation format that has been proven to be navigable by individuals with a diagnosis of schizophrenia. The first question was how to present stimuli and response choices. A presentation format that synthesised the approaches described in Howard and Patterson (1992) and Glucksberg et al. (1997) was developed, which looks as follows:

SYNAESTHETIC PRIME

NOUN A

NOUN B

This design is useful because it allows participants to be blinded to the metaphor creation process. It is not made explicit in any specific event nor the experiment as a whole that pairing a synaesthetic prime with either noun will produce a novel synaesthetic metaphor. This allows for control of the *awareness* of metaphor creation, which would introduce unwanted noise.

The next design question was what to allocate to which position. CCT experiments have presented synaesthetic adjectives as pairs for sentence completion and also as minimal context adjective-noun pairs (Shen and Aisenmann, 2008). They have done so in ways that make it difficult to isolate the effects of syntactic variation alone. These experiments have not examined the influence of joint-modification on directionality preferences *outside of a sentence context* either. The decision was thus made to operationalise synaesthesias as joint-modifying adjectives in the prime position (as shown above). This departure is preferable because the adjectives appear in minimal contexts. They can be varied independently of the confounders inherent to sentence contexts (like variations in part-of-speech categories or attachment to determiners), and yet there remains some theoretical basis for this decision because CCT has previously examined joint-modification *within sentence contexts* (although, as argued previously,

not very well). Because CCT argues that ‘mapping from a more concrete concept onto a less concrete one is more natural than the inverse’ (Shen and Aisenmann, 2008, p.17) in the case of synaesthesia *and metaphor mapping in general*, it made sense to operationalise choices A and B as concrete and abstract nouns. This design allows for a test of whether the mapping directionality of the joint-modifiers influences the selection of either a concrete or abstract noun in a metaphor production context known to be navigable by individuals with schizophrenia (by reducing cognitive load).

This approach also allows for some examinations of the claims made by the categorisation view (Holyoak and Stamenković, 2018). The prime-response approach, where the prime is a joint-modifying adjective pair, constitutes a form of conceptual combination (Holyoak and Stamenković, 2018). Conceptual combination, as described earlier, is a good candidate for a mechanism through which categorisation can apply to novel metaphors (Holyoak and Stamenković, 2018). The metaphors produced in the DoLI task are certainly not conventional (by design). In fact, items were screened for novelty as an additional control for conventionality (see Delgaram-Nejad et al. 2022/Appendix II), and so this presentation format is useful for examining novel metaphor processing and conceptual combination.

In addition, predication theory (Kintsch, 2000), being compatible with conceptual combination, is said to involve spreading activation, which is thought to be implicated in formal thought disorder (Minzenberg et al. 2002; McKenna and Oh, 2005). Predication Theory also supports a view of directional differences (rendering it compatible with CCT), suggesting that the associates of the source have a greater effect than the associates of the target (Holyoak and Stamenković, 2018). Adopting a prime-response

approach allows for some later discussion of this, too. Because Kintsch (2000) is cautious about applying predication theory to complex literary metaphors, the present experiment is also well suited to examining that concern. Lastly, the response options of concrete or abstract allow for an exploration of another categorisation view claim, namely that sources have two potential (literal concrete and abstract categorical) meanings (Holyoak and Stamenković, 2018). Section 4.8.2., below, provides further detail about how ‘literal concrete’ and ‘abstract categorical’ were operationalised at the semantic and psychometric levels.

One area of difference from predication theory is that participants choosing a literal concrete item could be said to be making an ontological metaphor (representing abstract concepts in literal terms) under the conceptual mapping view (Lakoff and Johnson, 1980). Under the analogical and categorisation views, however, these selections would be closer to literal, albeit odd and decontextualised, statements. This is explored later.

4.7.2. Stimuli selection and norming

The next design step was to consider the confounders in stimuli selection. Holyoak and Stamenković (2018) have alluded to a widespread lack of stimuli norming in metaphor experiments. Given operational limitations, such as time constraints and a small eligible participant pool, a corpus procedure was developed. Drawing from a corpus has two main benefits. The first is about the actual study aims. The experiment intends to say something about everyday language use in a clinical population, and psycholinguistic

experiments are notorious for lacking ecological validity (Clark and Bangerter, 2004).

This point is beautifully expressed by Christianson and colleagues (2022, p.51) as follows:

Participants in psycholinguistic experiments are typically asked to read or listen to dozens of individual, uncontextualized, disconnected sentences, ranging from perfectly normal to extremely odd in one or more respects [...] consider the possibility that a nontrivial number of participants are not terribly motivated to process such sentences in a “typical” manner (Christianson et al., 2022, p.51).

Drawing stimuli from a corpus allows for an experimental design that, while not ever fully mitigating the issues inherent to lab-based language testing, can at least undertake an earnest effort to inject some of the everyday into the experimental process (Christianson et al., 2022). The second benefit of drawing from a corpus is that it is completely non-invasive. Potential participants do not need to enlist in a preliminary survey norming effort that prohibits their later involvement in an experiment that they may have actually wanted to engage with (because they have not only seen but also ‘normed’ the items).

The main barrier in the case of schizophrenia is the accessibility of the vocabulary. Semantic memory is affected in schizophrenia and other conditions (Hwang et al., 2021), and so it is of great importance that participants are aware of the meaning of all of the items present in the stimuli set (see Section 4.8.5. for further discussion of why this is critical). This necessitated a search for relevant items. The search began with sensory adjectives. The vocabulary level lists (Nation, 2004) provided with AntWordProfiler 1.5.1. (Antony, 2021) were trialled before moving the search to the BNC at large. Nation’s (2004) lists are derived from the most common (10,000) word families in the BNC. The

sensory adjectives pulled from these lists were insufficient in number and quite inaccessible. This step also revealed the need to define sensory adjectives according to some operational criteria. This is discussed later in the section.

The ability to generate custom frequency lists within the BNC interface presented several opportunities to impose psycholinguistic controls, by filtering potential stimuli by grammatical class and so on. The BNC classifies adjectives as either general (AJ0), comparative (AJC), or superlative (AJS). Comparative adjectives were excluded because they draw attention to their counterparts, and superlative adjectives were excluded because they emphasise scalar endpoints. This produced a list of the most commonly occurring general adjectives.

The BNC categorises nouns as number neutral common (NN0), singular common (NN1), and singular and plural proper (NP0). All but singular common were excluded to rule out variations in grammatical number and references to proper single entities. This produced a list of the most frequent singular common nouns in the BNC. Readers wanting to replicate this step can do so by registering to use BNCweb (<http://bncweb.lancs.ac.uk/bncwebSignup/user/login.php>), logging in to BNCweb, clicking 'frequency lists', choosing 'AJ0' from the 'POS tag' list, selecting 'containing' for 'word pattern', selecting 'whole BNC' for 'range of texts', clicking 'show list', selecting 'download whole frequency list' from the 'new frequency list' dropdown, clicking 'go' and repeating the above steps for 'NN1'.

The next step was about defining sensory adjectives. The UCREL Semantic Analysis System (USAS; Rayson et al., 2004) was used from within Wmatrix 4 (Rayson, 2008). USAS is a tool for automatic semantic analysis. Its taxonomy of 21 major discourse fields

and 232 categories contains *taste* (X3.1), *sound* (X3.2), *touch* (X3.3), *sight* (X3.4), and *smell* (X3.5) subcategories. It assigns these tags using robust methods (see Rayson et al., 2004). The general adjectives list was USAS tagged, and only those captured by the sensory tags above were retained.

The same process was used to create operational definitions for concrete and abstract nouns. Concrete nouns were screened against the *general object* (O2) category, and abstract nouns were screened against the *thought, belief* (X2.1) category. Single categories were chosen instead of groups of related subcategories to minimise noise. Readers wanting to replicate this step can do so by opening the downloaded 'AJ0' and 'NN1' frequency lists, copying them into spreadsheet software, extracting the word column only (without the 'word' header), creating new word-only lists, registering to use Wmatrix 4 or 5, clicking 'tag wizard', clicking 'browse' and selecting the word-only 'AJ0' list, clicking 'upload now', downloading the USAS tagged output (not CLAWS), extracting only 'AJ0' words tagged 'X3.1–X3.5', and repeating the above steps for 'NN1' by instead extracting only words tagged 'O2' and 'X2.1'.

The final step involved controlling for valence and psychometric overlap. This was done with the sentiment analysis tool, Linguistic Inquiry and Word Count (LIWC; Pennebaker et al., 2015). LIWC uses an internal dictionary with psychometric properties. Its taxonomy covers 82 variables including *affect* and *perceptual processes*. All items (adjectives and nouns) tagged with affect were excluded to rule out valence loading. This is particularly important in the case of adjective metaphors, because they have a tendency to invoke negative meanings (Sakamoto and Utsumi, 2014). All *thought, belief* nouns tagged with *perceptual processes* were also removed to distinguish concrete and

abstract response options at the psychometric level. This step also allowed for the creation of a concrete ground, as discussed below. Readers wanting to replicate this step can do so by registering to use LIWC2015 or LIWC-22 (<https://www.liwc.app>), installing/running LIWC2015 or LIWC-22, clicking ‘category options’, clicking ‘select none’, selecting ‘affect’ and ‘perceptual processes’, clicking ‘OK’, clicking ‘categorise words’, selecting the word-only ‘AJO’ list, clicking ‘file’, choosing ‘save results’, repeating the above steps for ‘NN1’, and excluding and retaining items accordingly.

Table 14, below, shows the USAS and LIWC categories used by item type and inclusion/exclusion criteria.

Table 14 - USAS and LIWC screening

	USAS inclusion	LIWC inclusion	LIWC exclusion
prime	sensory	perceptual processes	affect
concrete noun	general object (O2)	perceptual processes	affect
abstract noun	thought, belief (X2.1)	n/a	affect, perceptual processes

The above steps have resulted in a set of stimuli with the following properties:

- *semantically* sensory, non-affective, *psychometrically* perceptual general adjectives with the highest BNC frequency (making them arguably the most accessible)
- *semantically* concrete, non-affective, *psychometrically* perceptual *general object* nouns with the highest BNC frequency (making them arguably the most accessible)
- *semantically* abstract, non-affective, *psychometrically* non-perceptual *thought*,

belief nouns with the highest BNC frequency (making them arguably the most accessible)

Another important consideration is that of the ‘chemical’ senses. Taste and smell words are considered as more emotionally valenced than those of other senses (Winter, 2016). The evidence for this is both neural and behavioural. Taste and smell words produce measurable neurophysiological effects associated with both sensory and emotion processing (e.g. amygdala activity) regardless of whether they are presented in an emotional context (Phillips and Heining, 2002). Behaviourally, taste and smell words are strongly associated with nostalgia and autobiographical memory (Waskul et al. 2009). The discrepancy between chemical and non-chemical senses therefore represents a stark potential confounder. Accordingly, efforts were made to evenly distribute chemical sense combinations across the stimuli set.

The resulting stimuli demonstrate the value of semi-automated, corpus-driven selection and norming procedures (see also Delgaram-Nejad et al., 2022). These approaches improve experimental rigour while mitigating operational barriers to a traditional norming study. This specific process did not hold all potentially confounding variables constant, however, and so Section 4.8.2. describes further attempts to improve the experimental design with these in mind. While the work covered in this section is specific to the (psycho)linguistic properties of stimuli components, Sections 4.8.3. focuses on conceptual and theoretical confounders and unsuccessful stimuli controls, such as the presence or absence of a metaphoric ground and the scalar and affective properties of sensory adjectives. Section 4.7.4 reports additional control steps relevant to the wider design beyond stimuli.

4.8.2.1. *Introducing a ground*

The DoLI task is fundamentally a metaphor production task. Prominent theories of metaphor suggest that a metaphor's ground, or the elements shared by source and target that render them similar, is quite important for metaphor (Black, 1962; Holyoak and Stamenković, 2018). The question of what to do about ground came up during the stimuli selection phase (see Section 4.8.2).

It was thought that clinical participants may lean in the direction of the concrete nouns, in line with the work reviewed in Chapters Two and Three (namely due to concretism in the negative symptom space and impairments in both conventional and novel metaphor comprehension across schizophrenia presentations). The task arguably favours the abstract choices overall because it involves synaesthesia and joint modification. Both of these are associated with literary uses of language, which tends to be more abstract (Bailey, 2003). Sensory adjectives and *thought, belief* nouns could also be said to share 'between-domain similarity', or similar positions within dissimilar domains (Tourangeau and Sternberg, 1981), as in *warm regards*. This might lead them to be judged as more apt than the concrete nouns, which may be said to offer neither between- nor within-domain similarity. The design proceeded under these assumptions. To counter the strong likelihood that abstract choices would be more plausible targets (not least because the experiment itself is quite abstract), a ground was operationalised only for the concrete nouns. This was implemented in the hope that a ground specific to the concrete target would offset any push (toward the abstract) on the part of primes. The aim was equivalent plausibility for distinct theoretical reasons:

- concrete noun selection would produce a content similarity-based metaphor (under the categorisation view) in which prime and target shared a ground (with content similarity said to play a weaker role in driving interpretations), whereas
- abstract noun selection would produce a domain similarity-based metaphor in which prime and target shared no ground but occupied similar between-domain positions (i.e. had more aptness)

The significance of a metaphor's ground is disputed across theories of metaphor (End, 1986; Gildea and Glucksberg, 1983; Holyoak and Stamenković, 2018), and metaphor production behaviour in schizophrenia is less well-understood than metaphor comprehension behaviour (Despot et al., 2021). Restricting the ground only to the concrete nouns made sense in this case because it allowed for an examination of the role of ground distinct from the role of domain similarity in a manner that would also emphasise the concrete-abstract choice distinction potentially relevant to the (non)clinical group variable. The essential idea was that abstract selections would require truly abstract/overinclusive reasoning, given the absence of a ground, whereas concrete choices would more likely be based on similarity/concretism, which a ground offers. This addressed the anticipated problem of not knowing how much concrete thinking influenced concrete choice selection in this context (compared to the design), given the abstract nature of metaphor creation and its potential to bias respondents in the direction of abstract selections (as noted above). Group differences on these measures could inform discussion on the role of ground across groups as well as the potential influences of concrete and overinclusive thinking. To ensure that this measure was implemented properly, abstract stimuli that appealed to the ground were screened

out to minimise noise. This was achieved with LIWC. The ground was operationalised using the LIWC *perceptual processes* dimension and situated at a psychometric level because it was expected that some individuals in the clinical group might have impaired semantic knowledge (Hwang et al., 2021). The semantically-controlled nouns were also distinguished on this LIWC category for the same reasons. These decisions exemplify issues specific to designing for cohorts (clinical and comparison) who differ in their (psycho)linguistic functioning (Hwang et al., 2021).

Table 14 (first shown above) is repeated below to remind readers of which stimuli and response options were subjected to which controls.

Table 15 - Table 14 repeated

	USAS inclusion	LIWC inclusion	LIWC exclusion
prime	sensory	perceptual processes	affect
concrete noun	general object (O2)	perceptual processes	affect
abstract noun	thought, belief (X2.1)	n/a	affect, perceptual processes

Assigning the ground unidirectionally was a risk because the literature is light on studies involving the experimental manipulation of metaphor grounds. It was worthwhile, however, as it provided an opportunity to examine both the role of metaphor grounds in experimental contexts and balance the experiment such that individuals in the clinical group had access to a choice option that accounted for their symptomatology (based on the view that metaphor comprehension deficits could affect metaphor production).

These stimuli selection choices also appeal to Glucksberg and colleagues' (1997) observation that unambiguous sources perform best as primes, and the better targets are those that constrain their possible attributes. Sensory adjectives denote unambiguous constructs, the multidimensionality of some sensory words

notwithstanding, and limiting nouns to a single USAS category was effective in constraining target attributes. Sensory adjectives nevertheless remain subjective, and this is even more pronounced in the case of scalar or gradable adjectives. These are the subject of the next section.

4.8.2.1. Unsuccessful stimuli controls

The procedures described above were intended to ensure that stimuli were accessible (denoted by their high frequency in everyday usage) and categorised semantically and psychometrically according to robust methods (USAS, Rayson et al., 2004; LIWC, Pennebaker et al., 2015) because sensory adjectives are subject to multiple psycholinguistic confounders (Huisman and Majid, 2018). It was unfortunately not possible to hold the adjectives constant on scalar type (gradable versus non-gradable) and scale structure. It was also not possible to exclude problematic items because the design required a minimum of three adjectives per modality (see Appendix II). This requirement had administration and statistical implications (discussed at length in Delgaram-Nejad, 2022). Part of the problem is that sensory adjectives are both surprisingly few in number and high in lexical complexity, and so the pool of candidate words was small to begin with (see Appendix II). Having only one or two adjectives per modality complicated attempts to balance pairings, vary syntax (to study directionality), and counterbalance (see Section 4.8.2.). Exclusion of these items would have resulted in only one viable touch adjective, for instance. The decision was therefore made to include the minimum number of required stimuli that passed all screening stages, accepting that a minority of these were hardly ideal and would call for a more cautious interpretation of the results. Table 16, below, displays information about each item's

type and scale structure (as defined by Kennedy and McNally, 2005), as well as Cruse (1980) and Yoon (1996)'s total-partial typology. These adjectives take total and partial pairs, with the former representing the zero value of the latter. An example would be *safe*, which represents the total, zero value of *dangerous* (see Rotstein and Winter, 2004, for a detailed discussion of how adjectival modifiers influence the truth and acceptability conditions of these items).

Table 16, below, lists the adjectives used in the experiment and their relevant scalar properties.

Table 16 - variations in adjective type and scale structures

Adjective	gradable/non-gradable	extreme/absolute/classifying (non-gradable)	relative/absolute (gradable)	total/partial	scale structure
visual	gradable	n/a	relative	n/a	fully open
watchful	gradable	n/a	absolute	n/a	partly closed (minimum)
scanned	gradable	n/a	absolute	n/a	partly closed (minimum)
quiet	gradable	n/a	relative	partial	fully open
silent	non-gradable	extreme	n/a	total	n/a
deaf	gradable	n/a	absolute	total	fully closed
aromatic	gradable	n/a	relative	n/a	fully open
fragrant	gradable	n/a	relative	n/a	fully open
smelly	gradable	n/a	relative	n/a	fully open
sour	gradable	n/a	relative	n/a	fully open
spicy	gradable	n/a	relative	n/a	fully open

salty	gradable	n/a	relative	n/a	fully open
rough	gradable	n/a	relative	n/a	fully open
smoothed	non-gradable	absolute	n/a	n/a	n/a
stroked	non-gradable	classifying	n/a	n/a	n/a

As shown above, some modalities load heavier on non-gradable adjectives (such as touch), while others load more on specific scale types (as in sight). *Silent* is a non-gradable, extreme adjective. These types function similarly to superlatives, emphasising a directional endpoint.

More broadly, gradable adjectives depend heavily on context. This makes their measurement and classification difficult (Qing and Franke, 2014). People assess gradable adjectives through reference to their personal baselines (Verheyen et al., 2018): *tall* means different things to people of different heights. ‘Relative’ gradable adjectives are considered more context-dependent than ‘absolute’ gradable adjectives (Weicker and Schulz, 2020). ‘Relative’ gradable adjectives are called such because their meaning can be vague and context-dependent, whereas ‘absolute’ gradable adjectives have the opposite properties (non-vague, context independent). In the table above, *watchful*: is gradable because there can be degrees of *watchfulness*; is ‘absolute’ because is it not vague nor context mediated; and is ‘partly closed’ because there is a minimum value (a point at which *watchfulness* has begun to occur) but no maximum amount (e.g. the possibility of full *watchfulness*). *Deaf* is gradable because: there can be degrees of *deafness*; is ‘absolute’ for the same reasons as *watchful*; and is ‘fully closed’ because there are both minimum and maximum thresholds. *Stroked* is non-gradable and classifying because, in its adjective form, its meaning appears to be specific. For

example, 'stroked engine' classifies a type of engine. The unavoidable inclusion of *stroked* is one of the larger limitations of the present stimuli set.

These variations in adjective and scale type represent confounders. They also highlight some limitations in using semi-automated approaches to control experimental stimuli. Holding constant these types of variation was attempted and found to be unviable in the present context. This is partly due to the rarity and complexity of sensory adjectives, which yielded a pool of candidate words too small for further screening. It was still important to track these variations, at least, to potentially explain unexpected response patterns later.

Designing robust psycholinguistic experiments is challenging, and the involvement of adjectives, sensory modalities, synaesthesia, and schizophrenia requires further (practical and theoretical) consideration. There are considerable challenges inherent to the controlled experimental study of linguistic features for which norms may not involve lexico-semantic neutrality. The evidence suggests that sensory language, sensory processing, and affect are at least partially linked, although it is not yet clear whether this differs in schizophrenia cohorts. Semi-automated approaches are helpful in holding stimuli constant on a number of variables, but human involvement is necessary to screen those items that are unsuitable for reasons better identified by humans. In the present case, items such as *stroked* [of *engine*] had to be retained to meet superordinate design specifications (e.g. minimum item counts). Replacing these problematic items with alternatives selected by other means was avoided, as this would have undermined the use of the semi-automated techniques by rendering their

application inconsistent. In more favourable conditions, though, human checks would allow these items to be screened out.

The previous section has explored issues relevant to stimuli selection/creation and norming in this context. The next section reviews wider design practices that supplement the prior stimuli controls, such as exposure counts, randomisation, and counterbalancing.

4.7.3. Building item lists

This stage focused on constants and confounders through design-level approaches (compared to the stimuli-level work described above). These included stimuli-list construction, group allocation, and (block) randomisation techniques. The present section outlines these steps and their rationale. A fuller description is available in Delgaram-Nejad et al. 2022 (see Appendix II). What follows here is a condensed version.

CCT is ultimately a syntactic theory. It argues for a cognitive preference for particular syntactic orders, and so any experimental test of CCT must treat syntax as an independent variable. Previous CCT studies (Shen and Aisenmann, 2008) have presented two syntactic variations within a single event, with an event being a single instance of stimuli exposure. This approach does not control for interstimulus priming, which is what occurs when exposure to a stimulus of one directionality influences subsequent exposure to a stimulus of the opposing directionality (Bonini et al., 1999; Frazier et al. 2008). An example would be *warm bitterness* influencing later processing of *bitter warmth*.

Shen and Aisenmann (2008) split their participant pool into two groups and provided each group with a distinct list. Participants receiving the first list saw one stimuli arrangement (e.g. *warm bitterness* followed by *bitter warmth*), and those receiving the second list saw a mirror image of the first (e.g. *bitter warmth* followed by *warm bitterness*). While this is an appropriate method for controlling *order effects* (i.e. the influence of item order on response behaviour), it does not adequately control for *interstimulus priming*. This is because there is no reason to expect that the interstimulus priming experienced under list A is comparable to that experienced under list B (and thus mutually negatable through counterbalancing). The two groups instead each experience their own kind of within-list interstimulus priming, and so the result is not a control but rather an increase in the types of bias and thus noise. This approach is also not ideal because differences in syntactic variation are a core component of the theory, and so any empirical test of CCT stands to benefit from a design where participants judge one syntactic order/directionality independent of the influence of the other.

Control of interstimulus priming was critical for the present study because semantic priming effects in schizophrenia appear specific to formal thought disorder (Pomarol-Clotet et al., 2008). It was important to ensure that any priming effects observed could be attributed to variations within the clinical group data rather than to noise generated by confounders.

These considerations also revealed an important theoretical question: are syntactic variations (*aromatic fragrant vs fragrant aromatic*) counterbalanced forms of one experimental unit or two different units? The answer determines whether a repeated measures or independent groups design is used. This answer is *linguistically* focused (on

two different units) at this point because syntactic differences impact the semantic properties of words and phrases (Van Valin Jr, 1997). This decision also influenced list construction and the selection of inferential tests.

Given the above, stimuli lists have been designed such that exposures to various stimuli properties were held constant wherever possible and confounders such as order effects and interstimulus priming were handled with list allocation. This has resulted in two item lists in which the number of primes, total concrete nouns, total abstract nouns, individual adjectives, and individual nouns are repeated equally across lists. To control for interstimulus priming, 'non-directional primes' are paired with 'concrete first' nouns and 'directional primes' are paired with 'abstract first' nouns (list A) and 'directional primes' paired with 'concrete first' nouns and 'non-directional primes' are paired with 'abstract first' nouns (list B). This not only controlled for interstimulus priming for primes but also order effects for nouns and prime by noun/interstimulus by order interactions. The number of exposures to each modality pairing (e.g. *sight-sound*) has been held constant across lists. Modality pairings are also controlled, similarly to primes and nouns, such that no modality pairing appears in both possible orders (*sight-sound* vs *sound-sight*) within a single list. Table 17, below, shows these main item list characteristics.

Table 17 - main item list characteristics (Appendix VII)

These approaches were extended to the practice and distractor item lists.

'Duplicate' primes, or primes composed of repeated adjectives (e.g. *visual visual*) were used for practice items because they more clearly signalled their status as non-items.

'Duplicate' primes, prime modalities, and individual adjectives appeared equally across lists. Specific to each list, for counterbalancing, were concrete nouns (list A) and abstract nouns (list B). These appear equally within lists. Table 18, below, shows these practice list characteristics.

Table 18 - practice item list characteristics

	Practice list A	Practice list B
duplicate primes	15	15
smell primes	3	3
taste primes	3	3
sight primes	3	3
sound primes	3	3
touch primes	3	3
concrete nouns	30	0
abstract nouns	0	30
visual	2	2
watchful	2	2
scanned	2	2
quiet	2	2
silent	2	2
deaf	2	2
aromatic	2	2
fragrant	2	2
smelly	2	2
sour	2	2
spicy	2	2
salty	2	2
rough	2	2

smoothed	2	2
stroked	2	2
edge	10	0
sharpener	10	0
boomerang	10	0
opinion	0	10
attitude	0	10
consideration	0	10

‘Single-modality’ primes, or primes composed of adjectives from the same modality (e.g. *visual watchful*), have been used for distractor items because they more closely resembled the main items. Their syntactic order is varied across lists as per the main items. ‘Single-modality’ primes, prime modalities, and individual adjectives appear equally across lists. Specific to each list, for counterbalancing, are abstract nouns (list A) and concrete nouns (list B). These appear equally within lists. Table 19, below, shows these distractor list characteristics.

Table 19 - distractor item list characteristics

	Distractor list A	Distractor list B
single-modality primes	15	15
smell primes	3	3
taste primes	3	3
sight primes	3	3
sound primes	3	3
touch primes	3	3
concrete nouns	0	30
abstract nouns	30	0

visual	2	2
watchful	2	2
scanned	2	2
quiet	2	2
silent	2	2
deaf	2	2
aromatic	2	2
fragrant	2	2
smelly	2	2
sour	2	2
spicy	2	2
salty	2	2
rough	2	2
smoothed	2	2
stroked	2	2
edge	0	10
sharpener	0	10
boomerang	0	10
opinion	10	0
attitude	10	0
consideration	10	0

As shown below in Table 20, the effects of the ‘chemical’ senses (Winter, 2016) constitute a significant potential confounder. Because ‘chemical’ modalities exert effects that the ‘non-chemical’ modalities do not, the control method only needed to distinguish between pairs that were ‘balanced’ (where both modalities were either ‘chemical’ or ‘non-chemical’) or ‘imbalanced’ (where one modality was ‘chemical’ and

another was ‘non-chemical’). These have been evenly distributed (i.e. counterbalanced) across all lists. This was achieved by spreading ‘imbalanced’ pairs evenly across the main item lists and ‘balanced’ pairs evenly across the main, practice, and distractor lists.

It was not possible to balance the *types* of ‘imbalanced’ pairings. In pathway A (i.e. where a participant receives all ‘A’ lists), there are four ‘non-chemical’ preceding ‘chemical’ pairings and two ‘chemical’ preceding ‘non-chemical’ pairings. The reverse is true in pathway B. This is a consequence of the restrictions imposed by other design elements, such as those intended to control for interstimulus priming. The order or directionality of these pairs is not theoretically important for CCT but, as it may provide an alternative explanation for the experimental findings, remains a noteworthy limitation. Table 20, below, shows these characteristics.

Table 20 - modality and chemicality combinations

Pathway	combination	B/IB	#B	#IB
A	sight-smell	IB(NC+C)	6	6
	sight-sound	B(NC+NC)		
	sight-taste	IB(NC+C)		
	sight-touch	B(NC+NC)		
	smell-taste	B(C+C)		
	touch-smell	IB(NC+C)		
	smell-sound	IB(C+NC)		
	taste-sound	IB(C+NC)		
	touch-sound	B(NC+NC)		
	touch-taste	IB(NC+C)		

B	smell-sight	IB(C+NC)	6	6
	sound-sight	B(NC+NC)		
	taste-sight	IB(C+NC)		
	touch-sight	B(NC+NC)		
	taste-smell	B(C+C)		
	smell-touch	IB(C+NC)		
	sound-smell	IB(NC+C)		
	sound-taste	IB(NC+C)		
	sound-touch	B(NC+NC)		
	taste-touch	IB(C+NC)		
A	practice— chemical	B(C+C)	1	0
B	practice—non- chemical	B(NC+NC)	1	0
B	distractor— chemical	B(C+C)	1	0
A	distractor—non- chemical	B(NC+NC)	1	0

It was also not possible to balance exposures to *sight-sound* pairings with those of the other modality pairings. This is because (1) *sight-sound* and *sound-sight* pairings were outnumbered by the other pairings (within each list) at a ratio of 1:9, (2) it was practically very challenging to do so without sacrificing several other constants and controls, and (3) *sight-sound* pairings are said to exert a neutral directionality effect in relation to CCT's claims (Shen and Aisenmann, 2008), and so, ultimately, inequality of exposures to these pairs was not considered as a confounder.

4.7.4. Miscellaneous controls

One concern associated with the control of interstimulus priming is the introduction of reverse priming, where participants attempt to correct for a “perceived” bias (in this case, the absence of both syntactic orders within a single list/experimental run). While participants are unlikely to track exposure to both orders due to the lack of any explicit instruction to do so, item randomisation, item similarity, and the use of distractor items, these alone were not considered satisfactory controls. This is because reverse priming effects are commonly reported in syntactic priming studies (Forster, 1998) and thought to occur independently of conscious awareness (Glaser and Banaji, 1999; Laran et al., 2011; Uleman, 2005). That said, full control of reverse priming is complicated because it is hard to predict what participants will interpret as a bias. This is why reverse priming effects are usually discovered, if at all, at the end of studies as unexpected effects (see Banse, 2001, and Hermans et al., 2003 for examples).

Control of interstimulus priming was prioritised while *attempting* to control for reverse priming wherever feasible. The former required that no participant see both syntactic variations of the same adjective pair, which constitute distinct experimental units under this design. The latter required equal exposures to all types of syntactic variation and noun order, in a counterbalanced format, for all participants. All participants therefore saw the same number of ‘directional’ and ‘non-directional’ primes and ‘concrete first’ and ‘abstract first’ noun orders, but each list presents these in unique combinations, as shown in Table 17, above, and repeated in part, below, for convenience:

Extract from Table 17

	list A	list B
directional prime, concrete first noun	0	45
non-directional prime, concrete first noun	45	0
directional prime, abstract first noun	45	0
non-directional prime, abstract first noun	0	45

This was intended to control reverse priming (and order effects) at the levels of modality pairs and noun order, but any control of reverse priming at the level of specific stimuli would require cancellation of the interstimulus priming controls, which was avoided.

This approach also allowed any effects produced by the interaction of ‘prime directionality’ and ‘noun order’ *combined* to be isolated as a discrete variable. Such effects are expected here, given that the task involves combining prime and noun elements regardless of whether participants are aware that the result is a novel metaphor. Blinding participants to their metaphor creation also functions as a reverse priming control.

The practice and distractor item lists are also potential sources of reverse priming, and so these were controlled with counterbalancing by ensuring that a ‘concrete-only’ practice list was paired with an ‘abstract-only’ distractor list and vice versa. This measure requires practice and distractor items to hold equivalent influence over participant responses, which may not be the case given the primacy position of the practice items. Both types (practice and distractor) were ultimately considered equivalent on account of there being only a brief delay (of a few seconds in most cases) between completing the practice items and beginning the experiment proper.

Item novelty was also important for controlling familiarity effects and establishing the synaesthetic primes as valid *novel* metaphor components. Human raters were used to assess novelty in Shen and Aisenman (2008). In this case, it made sense to extend the (corpus-driven) stimuli norming approach mentioned above. Each prime and noun pair was queried within the BNC using the search operator <<s>>. This counts how often a term appears in the same sentence⁵ (in a typical British context), not necessarily side-by-side. All primes and noun pairs co-occurred in this way at rates of fewer than 20 per 100 million words.

A 950ms, blank screen interstimulus interval (ISI) was used to separate stimuli. Fixation crosses were avoided due to their semiotic properties (e.g. their potential to denote *and*; Johansen, 2005), particularly because this may appeal to overinclusive thinking in schizophrenia. There was no stimulus onset asynchrony (SOA; primes and response options were presented simultaneously). Stimulus duration was dictated by participant response (times). Wording, font, font size, and spacing were consistent throughout. Participants responded by clicking or touching their choice or its surrounding area to avoid the problems associated with Shen and Aisenmann's (2008) response method. Having participants interact directly with the items was also theoretically important, as the experiment focuses on sensory language and tests a hypothesis rooted in embodiment.

⁵ It is important to note that the BNC spoken and written are formatted/transcribed differently (grammatical sentences versus comma-punctuated utterances). 'Appears in the same sentence' refers to the sentence length value (derived from w-tags per s-unit) common to both the written BNC and the spoken BNC. w-tags are considered comparable to words, and s-units are considered comparable to sentences.

Items were randomised at multiple levels. Main and distractor list allocation was randomised for each presentation, as were the individual list items. This means that each time a list (main or distractor) was randomly selected, an item from within that list was randomly presented. Patterns of randomisation were unique to each participant. List allocations were block randomised, meaning that every participant was randomly assigned to either pathway A or B.

Matching on linguistic ability is also highly important in schizophrenia research (Heinrichs and Zakzanis, 1998). This is usually done with verbal IQ subscales or non-verbal reasoning tasks (Chatzidamianos et al., 2018). The Cognitive Linguistic Quick Test (CLQT; Helm-Estabrooks, 2001) was used here because it is more sensitive to domain-specific impairments than the Mini Mental Status Exam (MMSE; Kerlowicz and Wallace, 1999) and can be administered in as little as fifteen minutes, thereby reducing fatigue effects. This test uses subtasks that ask participants to generate items beginning with a specified letter or within a semantic category. Few researchers attempt to control for the priming effects of these assessments, and it was expected that asking participants to repeat *m words* for one minute and related tasks would have some influence on their task performance. The order of the screening measure was therefore block randomised (separately from that of the pathway allocation). This means participants sat their CLQT(+) subtasks either before or after the experiment on random assignment. This was intended to counterbalance any priming effects caused by the CLQT(+). Visual overviews of the list allocations and block randomisations are available in Delgaram-Nejad et al., 2022 (see Appendix II).

4.7.5. Example presentations and participant instructions

This section briefly provides example presentations for reader benefit.

Figures 2 and 3, below, show the differences in practice items across pathways.

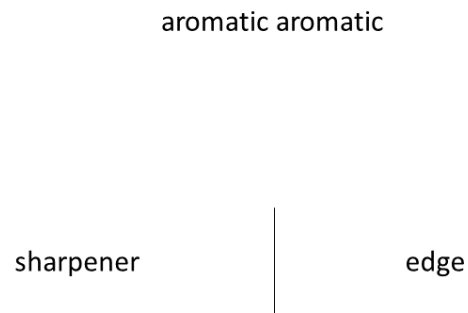


Figure 2 - pathway A practice item

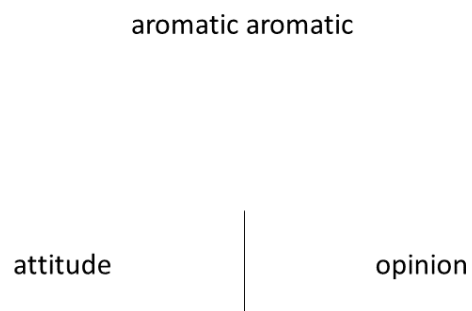


Figure 3 - pathway B practice item

Figures 4 and 5, below, show the differences in distractor items across pathways.

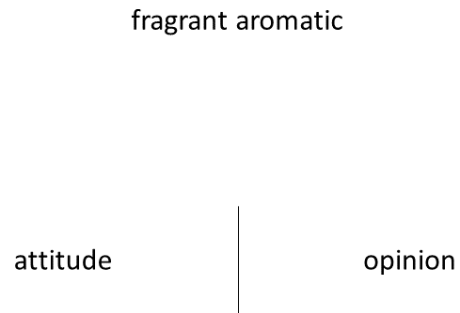


Figure 4 - pathway A distractor item

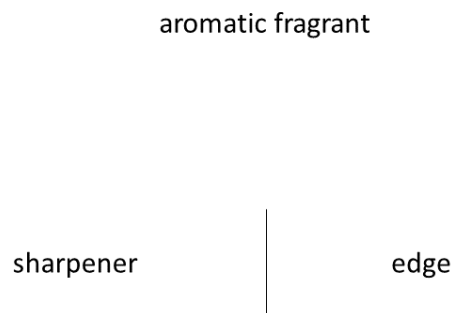


Figure 5 - pathway B distractor item

Figures 6 and 7, below, show the differences in main items across pathways.

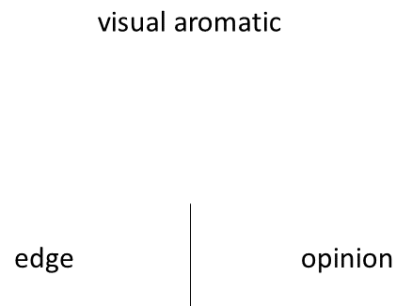


Figure 6 - pathway A main item

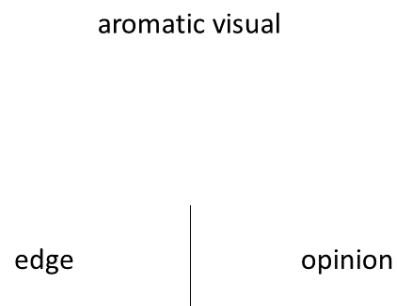


Figure 7 - pathway B main item

Readers are thus reminded that the core item differences across lists are as follows:

- noun type was varied across practice lists with primes held constant
- noun type *and* prime directionality were varied across distractor lists
- prime syntax was varied across the main items with noun type and order held constant

At the start of the experiment, participants were given the following instructions:

'your task is to read the words at the top of the screen and match them with one of the two below. PC users can use the mouse to click their choices. Phone and tablet users can use the touchscreen. You can take as much time as you want. There are no incorrect responses. You will get to practice before starting the experiment. Click or tap here to start the practice items.'

After completing the practice items, participants were given the following prompt:

'You've completed the practice items. Click or tap here to start the experiment.'

4.7.6. Power analyses

Power analyses were run for a non-parametric, one-way between-subjects ANOVA

(Kruskal-Wallis with post-hoc Bonferroni corrections) and multiple logistic regression,

using an effect size derived from a metaanalysis of premorbid IQ differences (Khandaker et al. 2011). The ANOVA and multiple logistic regression were selected to test

hypotheses about group and list-level differences. The effect size estimate was drawn

from IQ differences due to the lack of similar experimental studies and the significance

of IQ in psycholinguistic schizophrenia research. The ANOVA required a total sample of 51 participants, and the multiple regression required a total sample of 49 participants. These figures were not reached, partly due to recruitment challenges involving the COVID pandemic. Section 3 thus employs a case study approach: to assess the value of the methodological steps reported previously and inform future replications of the experiment proper.

4.7.7. Summary

The lme4 R package (Bates, 2010) can be used to model the data and generate the values needed to run the inference tests relevant to the hypotheses (such as Mann Whitney U for the difference testing of means, split plot ANOVA for the difference testing of group by list interactions, multiple linear regression for the difference testing of group by list by sublist interactions). It can also be used where the two one-sided test/TOST is applied for the equivalence testing of any nonsignificant findings (Lakens, 2017; Lakens and Scheel, 2018; Lužar-Stiffler and Stiffler, 2002). A Bayesian mixed effect probit model is a potential non-frequentist alternative (Zloteanu, 2022), but this would require some modifications to the assumptions that underpin the experimental design (i.e. whether there is a “correct” response).

This section covered attempts to control individual stimuli and their impact on the more general requirements of experimental design. These decisions influence the practicalities of experimental and inferential testing, and designers often fail to critically examine (or even document) the required compromises. This experiment benefits from having well-controlled stimuli, but it suffers from the limitations of working with both

syntax as a variable and sensory language as a lexical pool from which stimuli can be drawn. These factors, alone and in combination, problematise attempts to design a well-controlled experiment. While it was possible in this case, it was largely due to good fortune. Designers who apply these steps to other linguistic devices and variables may not experience the same positive results. The next section presents a case study that locates the work described in previous sections within the context of observed and reported participant behaviours. Recommendations on future uses of the experiment follow, alongside a discussion of its role within the experimental design and metaphor production literatures.

4.8. Case study: participant <18UG15>

Unique identifiers for each participant were composed by combining select information from the day, month, and hour of participation (i.e. 18UG15 participated on 18th August at 15:00).

4.9. Logistics statement

Initial data collection plans involved a lab-style administration. The COVID-19 pandemic created a need for remote administration. This was achieved with Superlab Remote (Cedrus, 2020). It was clear early on that obtaining a sufficient sample was unlikely, and so more recruitment effort went into the work described in Chapter Five. Information relating to this transition appears in the next chapter for the reader's convenience. Recruitment lasted for one year (2020–21).

4.10. Experimental data

11 participants completed the experiment overall. This was due to the COVID pandemic and is not enough to justify any quantitative claims. The distributions discussed below are not guaranteed to bear out in a larger dataset, and no inferential work was carried out for the usual reasons under a frequentist position (post-hoc power analyses are not recommended practice, small datasets inflate effect sizes, etc.) As such, this section focuses not on what the data shows, but on why the experiment should be repeated with larger samples. Readers are cautioned against confusing the present approach (qualitative claims based on incomplete quantitative data) for insufficiently supported quantitative claims.

4.10.1. Demographics

The only clinical participant (male) sat pathway A. Of the 10 comparison participants (eight female, two male), four sat pathway A (three female, one male) and six sat pathway B (five female, one male). Seven sat the CLQT before the experiment (five female, two male), and three sat the CLQT after (two female, one male).

Table 21, below, displays demographic information in brief.

Table 21 - demographic information

ID	sex	cohort	pathway	CLQT(+) order
<18UG15>	male	clinical	1	pre
<02AR17>	male	comparison	2	post
<09AR14>	female	comparison	1	post
<16OV11>	female	comparison	1	pre

<17AR13>	female	comparison	2	pre
<19OV10>	female	comparison	2	post
<23CT18>	male	comparison	1	pre
<23CT19>	female	comparison	1	pre
<23OV14>	female	comparison	2	pre
<26CT11>	female	comparison	2	post
<28CT11>	female	comparison	2	pre

4.10.2. Response times

Response times were recorded for each event/presentation of stimuli (prime and response options). Response time denotes the time spanning onset of the stimuli to the point of response. Each participant's mean response time was calculated, excluding the practice and distractor items. The latter data are available for further analysis (see Appendix III) but are not included here given the methodological decisions discussed above.

The figures below show mean response times for items overall, items involving directional primes (i.e. those that CCT claims should be preferred), and items involving nondirectional primes.

Figure 8, below, shows mean response times by experimental pathway.

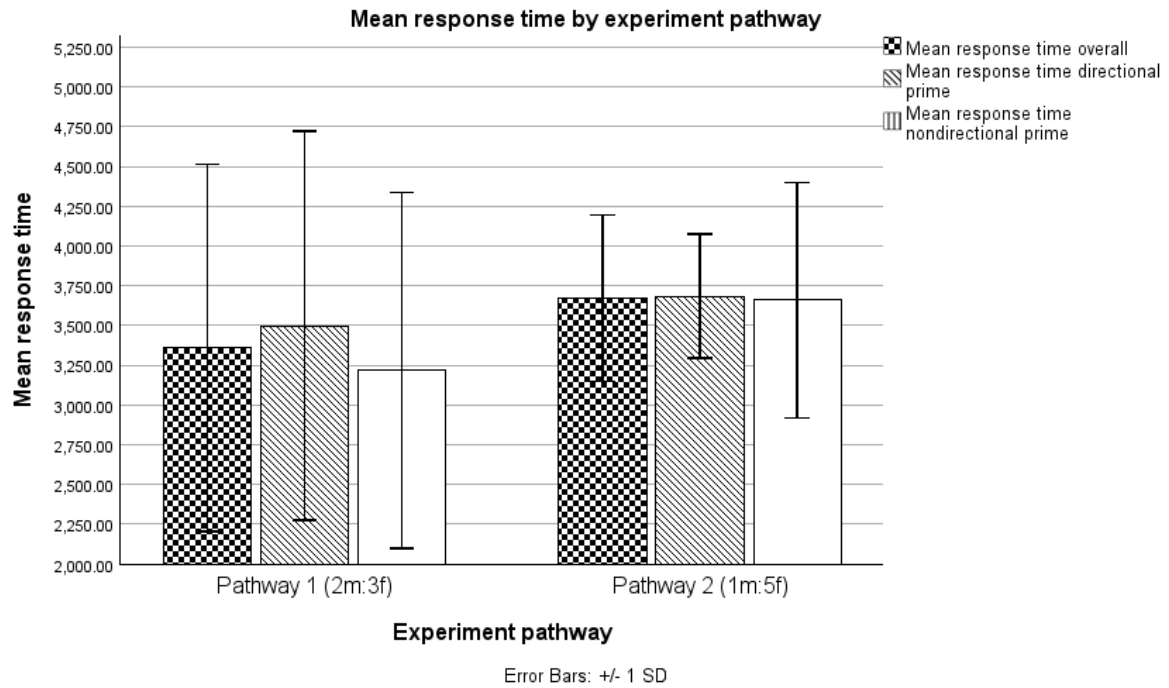


Figure 8 - mean response times by experimental pathway

Pathway A (two males and three females) resulted in greater variance in mean response time than Pathway B (five females, one male). Mean response times and their dispersions were *roughly* equivalent within pathways. Mean response times were slightly longer in the case of directional primes and slightly shorter in the case of nondirectional primes but only for pathway A.

Figure 9, below, shows mean response times by sex.

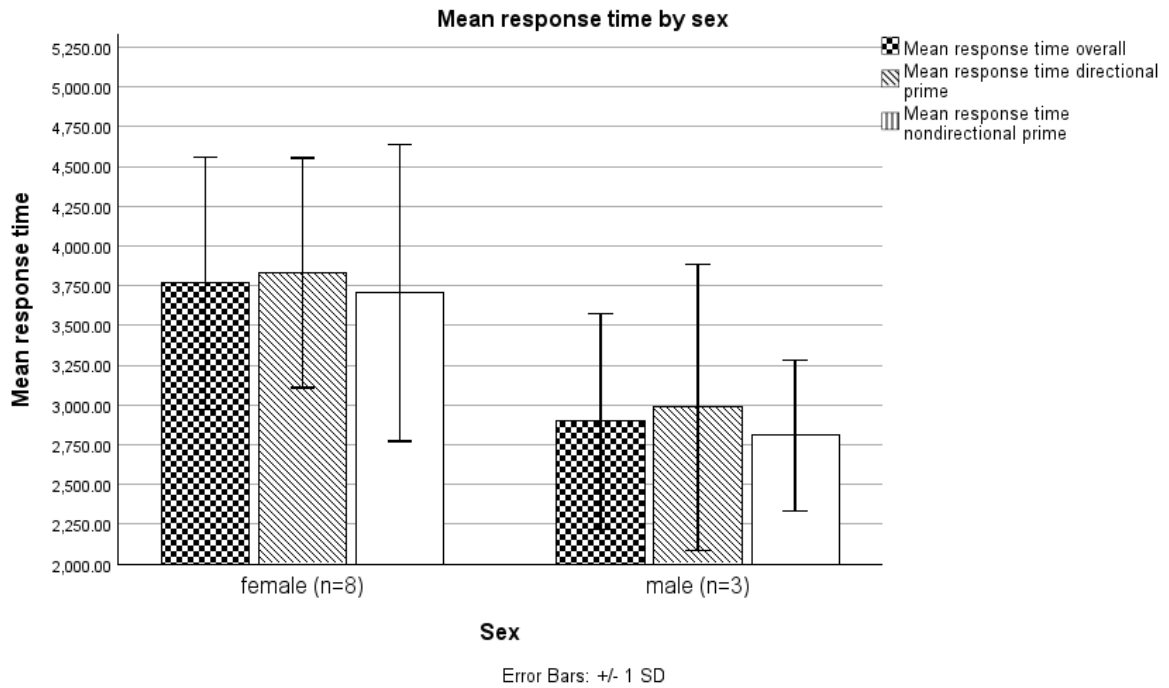


Figure 9 - mean response times by sex

Female participants (eight) displayed longer mean response times than male participants (three). Male mean response times did not exceed 3,000 milliseconds across pathways. Dispersions were greatest for directional primes and smallest for nondirectional primes in males. Dispersions were greatest for nondirectional primes and smallest for directional primes in females. Dispersions were roughly equivalent across sexes for overall response times.

Figure 10, below, displays mean response times by group.

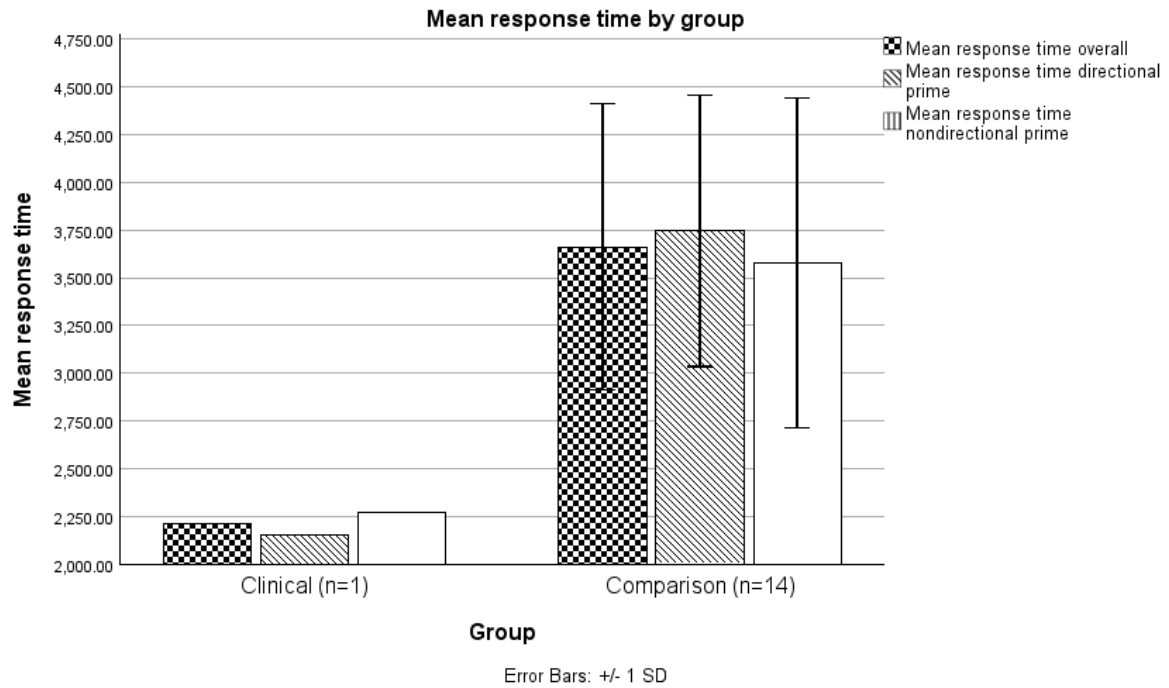


Figure 10 - mean response time by group

The clinical participant displayed the shortest mean response times of all participants. Mean response times were roughly equivalent across item types for both groups. The clinical participant displayed shorter response times for directional primes. This is contrary to the pattern observed in previous figures, suggesting less time spent considering each presentation.

Figure 11, below, shows mean response times by CLQT order.

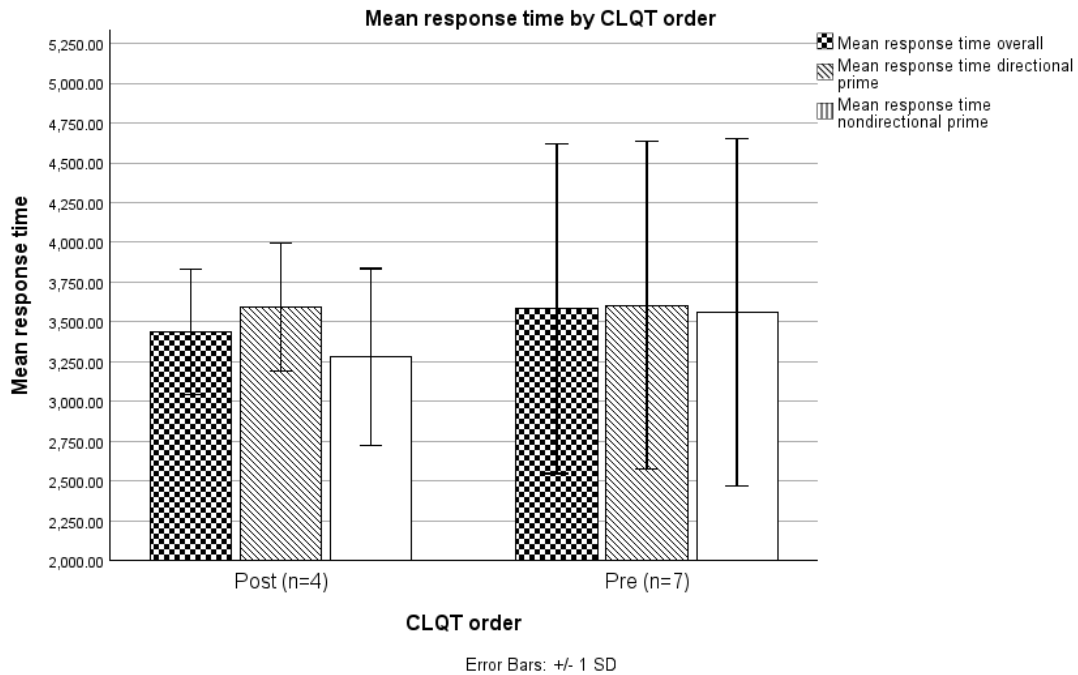


Figure 11- mean response time by CLQT(+) order

Although it is not usual psycholinguistic practice to control for the priming effects of pre-study assessments, it was expected that the order of the CLQT(+) would influence participant behaviour nonetheless because this measure contains linguistic assessment tasks that involve heavy engagement with semantic and phonetic categories (see Delgaram-Nejad et al. 2021/Appendix II). The order of assessment (pre- or post-experiment) was block randomised similarly (but separately) to the pathway allocations. The preliminary results suggest that this step was worthwhile. Pre administrations resulted in greater variance in mean response time than post administrations. Mean response times and their dispersions were roughly equivalent within conditions. Mean response times were slightly longer in the case of directional primes and slightly shorter in the case of nondirectional primes but only for the post condition. The post and pre response time patterns mirror the pathway A and pathway B response time data respectively. However, the pattern of distributions is reversed.

It should be noted, though, that pre-study CLQT(+) administrations are overrepresented in the sample (seven pre, four post). This is because pathway and CLQT order were block randomised separately in advance of recruitment. Of the pre CLQT(+) allocations, four were allocated to pathway A and three were allocated to pathway B. Of the post CLQT(+) allocations, two were allocated to pathway A and two to pathway B. This helps in considering the extent to which pathway allocations may have influenced (through overlapping block randomisations) the CLQT(+) order data. It is also important to consider sex weightings within the CLQT randomisation. Of the pre CLQT(+) allocations, two were male and five were female. Of the post CLQT(+) allocations, one was male and three were female.

Figure 12, below, shows mean response times by individual speaker.

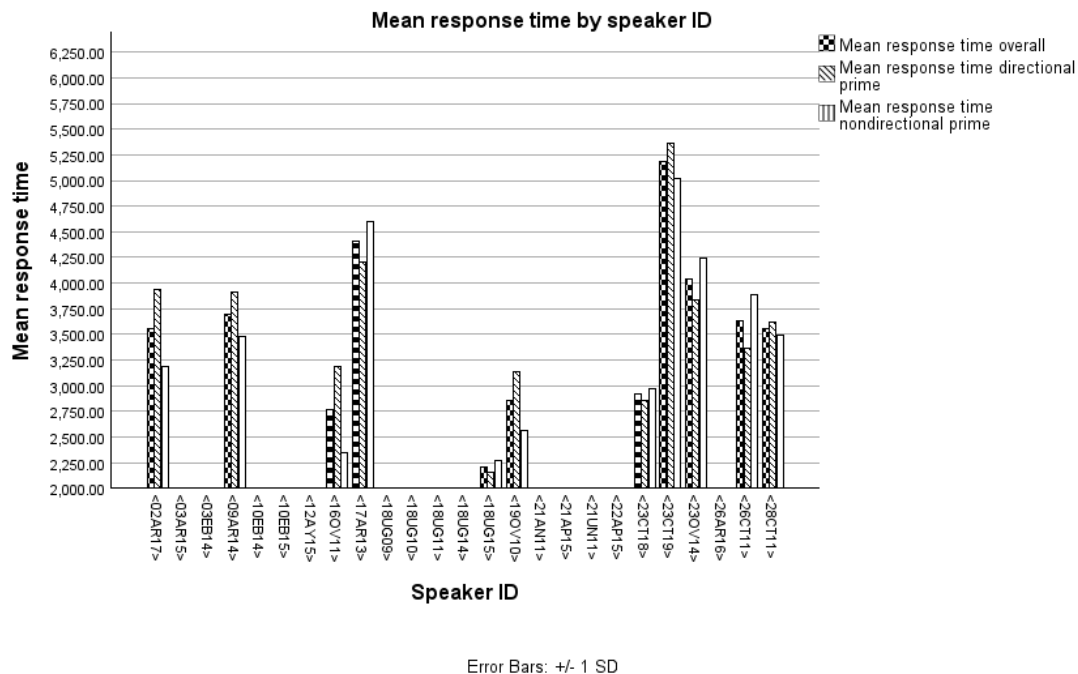


Figure 12 - mean response time by speaker ID

Six of eleven participants (five female, one male) took longer to respond to directional items. Five participants (three female, two male) took longer to respond to

nondirectional items. Participants for which there is no data did not sit the experiment.

The data generated by *all* participants is discussed in Chapter Five.

The *preliminary* response time data indicates that pathway, sex, and group membership are potentially influential variables. The tendency for each to exert subtle effects may suggest a multifactorial process, and this is complicated by the differences in sex weightings across pathways. Pathway B sees females outnumber males 5:1, whereas pathway A sees females and males balance more at a ratio of 3:2. This obscures pathway- and sex-specific differences for pathway B data. The presence of only one clinical participant problematises any discussion of the group variable because the clinical “group” is an individual. The data does suggest, however, that if prime directionality is important, it is potentially dependent on participant characteristics and context (as operationalised here, namely pathway-specific differences in list construction). Further work is needed to understand the effects of prime directionality on response times. Repeating the experiment with a larger sample is recommended to avoid duplicated efforts.

4.10.3. Noun selection

Superlab records participant responses for each item and presents results in the orders of randomisation specific to each given experimental run. Thus, for each participant, the raw Superlab output was transferred to spreadsheet software before item rows were grouped by prime directionality using the sort function. Practice and distractor data were excluded in the process, and choice counts were calculated for both overall choices

and (prime) directionality specific choices. As above, all original outputs are available for inspection and further analysis in the Appendix III.

Figure 13, below, shows mean choice by experiment pathway.

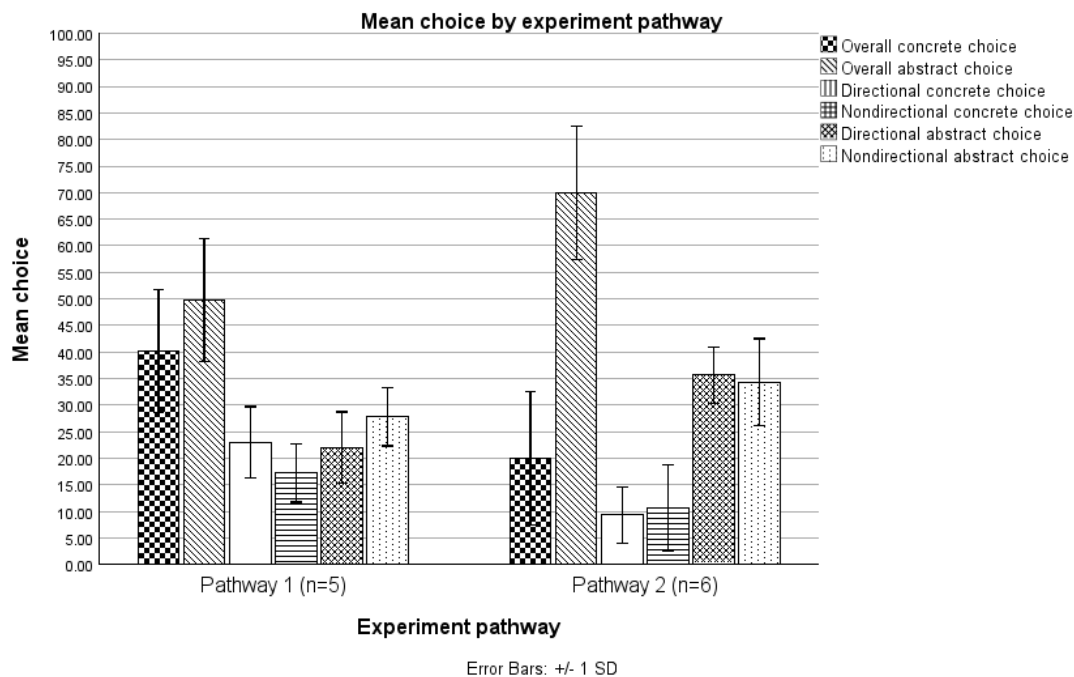


Figure 13 - mean choice by experiment pathway

It is important to point out that the experiment contains 90 main item events/stimuli presentations. The choice counts shown therefore reflect values out of 90. Pathway A respondents were more balanced in their response pattern, showing only a slight preference for abstract choices overall. Nondirectional primes prompted the lowest concrete choice mean (within pathway). Directional primes produced comparable means for concrete and abstract choices (within pathway). Nondirectional primes produced the largest abstract choice mean (within pathway). Pathway B respondents

displayed a clearer preference for abstract choices overall. Nondirectional primes prompted the highest concrete choice mean (within pathway). Directional primes produced the lowest concrete choice mean (within pathway). Nondirectional primes produced the lowest abstract choice mean (within pathway), and directional primes produced the highest abstract choice mean (within pathway). Dispersions were comparable across pathways for overall concrete choice and overall abstract choice. Dispersions were smaller in pathway B for directional concrete and directional abstract choices. They were also larger in pathway B for nondirectional concrete and nondirectional abstract choices. Readers are reminded that the balance of participant number was relatively even across pathways (pathway A: 5, pathway B: 6) but pathway B weighed heavier on female representation (pathway A: 3:2; pathway B: 5:1).

Figure 14, below, shows mean choice by sex.

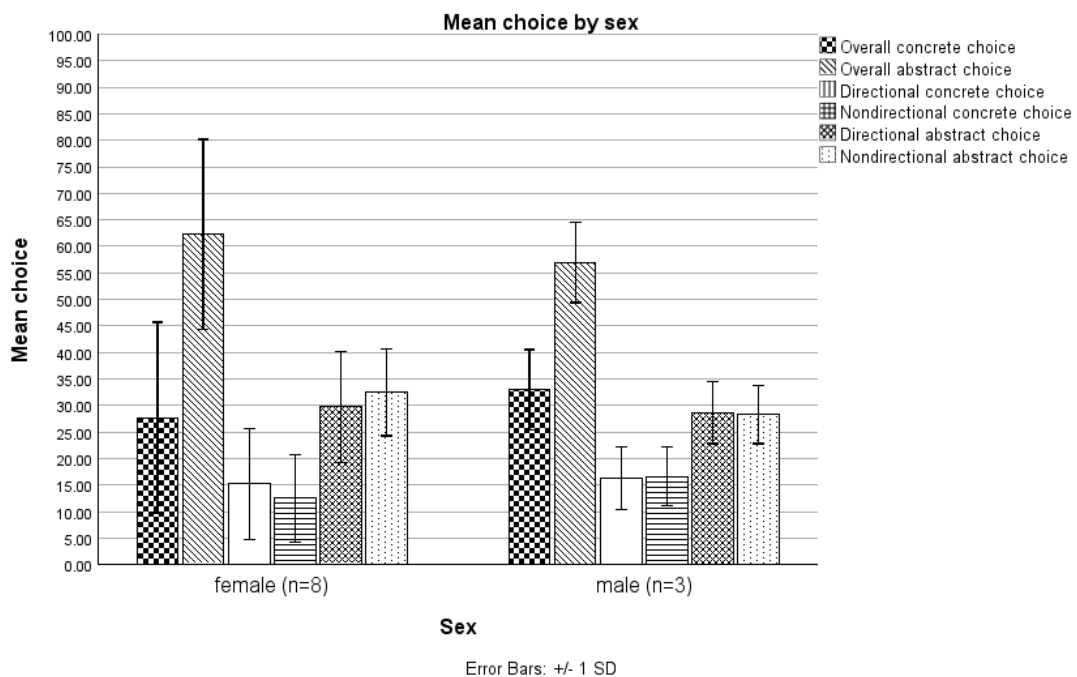


Figure 14 - mean choice by sex

Similar patterns of response preference are seen in both male and female respondents, despite the overrepresentation of females. Females show some preference for pairing directional primes with concrete nouns and non-directional primes with abstract nouns. Males show a more balanced choice pattern that slightly favours the reverse: pairing non-directional primes with concrete nouns and directional primes with abstract nouns. Dispersions are greater for overall and directionality specific choice means in females.

Figure 15, below, shows mean choice by group.

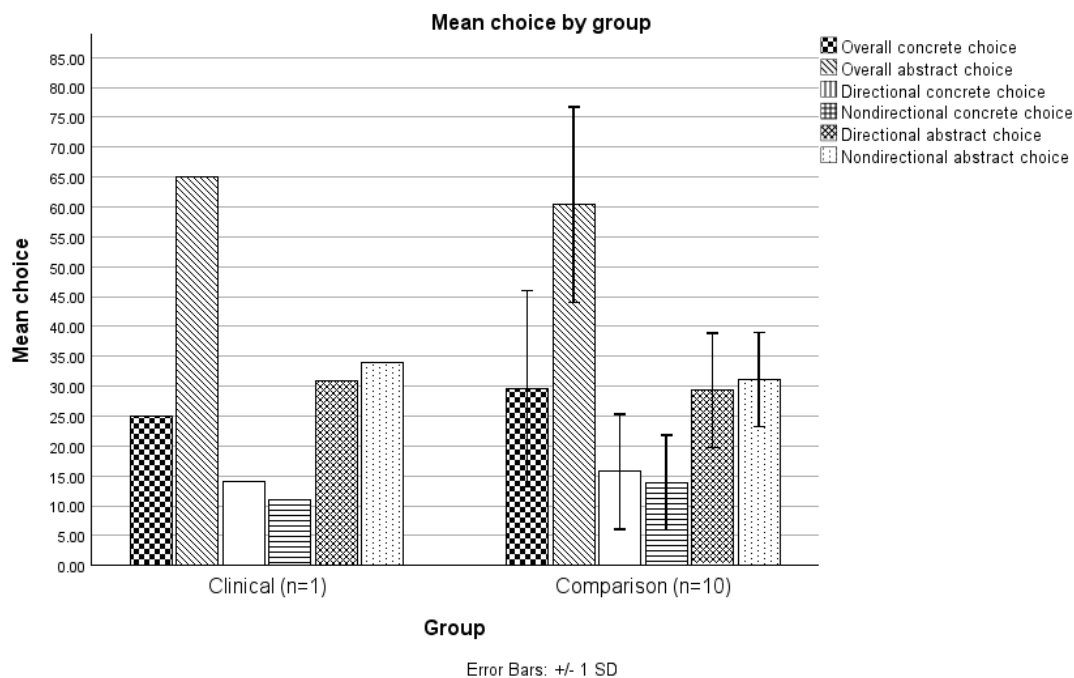


Figure 15 - mean choice by group

Among the most interesting results are the near identical patterns across clinical and comparison cohorts, despite comparison overrepresentation at a ratio of 10:1. As with all other results discussed in the context of the group variable, little can be said due to the presence of only one clinical participant. It is difficult to hypothesise based on the data provided by the sole clinical participant because the data generated do not appear

in line with expectations about how schizophrenia group participants would perform. This may suggest that the participant was considerably more high functioning than the population average. More study with a larger sample is needed to understand whether the present participant is an outlier.

Figure 16, below, shows mean choice by CLQT order.

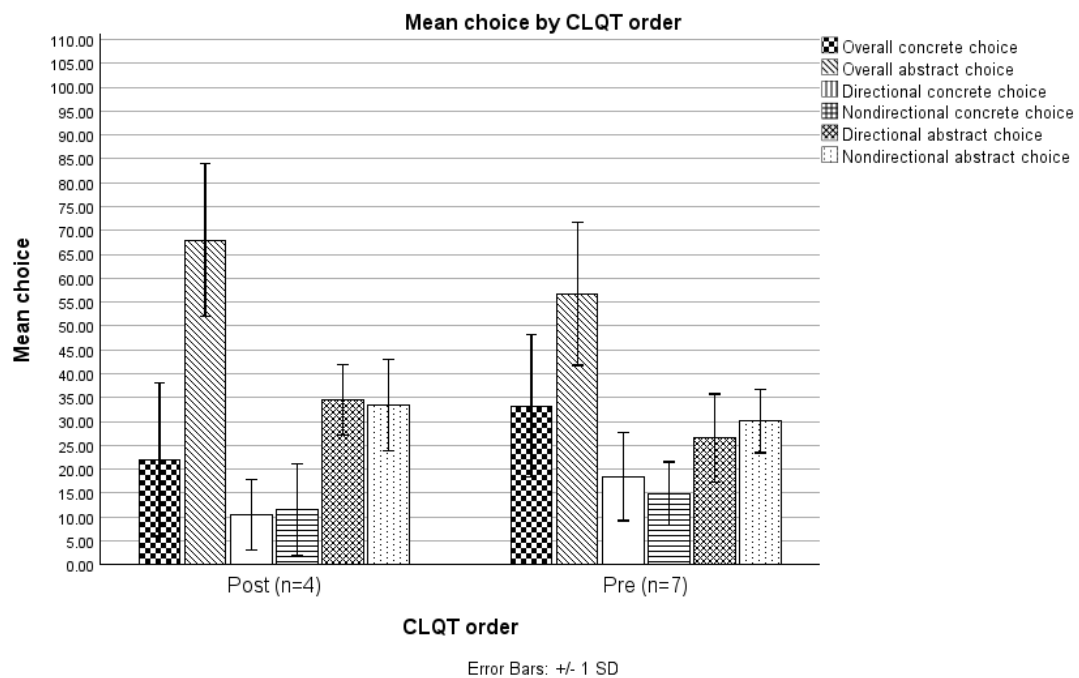


Figure 16 - mean choice by CLQT order

CLQT(+) order appears to have influenced choice means similarly to experimental pathway. The overall concrete choice mean was lower and the overall abstract choice mean was higher in the post condition (across conditions). Additionally, the directional concrete choice mean was lower than the nondirectional concrete choice mean (within post), and the nondirectional abstract choice mean was lower than the directional abstract choice mean (within post). The overall abstract choice mean was lower and the overall concrete choice mean was higher in the pre-condition (across conditions). Finally,

the directional concrete choice mean was higher than the nondirectional concrete choice mean (within pre), and the directional abstract choice mean was lower than the nondirectional abstract choice mean (within pre).

To further contextualise the above, Figures 17 and 18 below show mean overall choice and mean (non)directional choice by speaker ID.

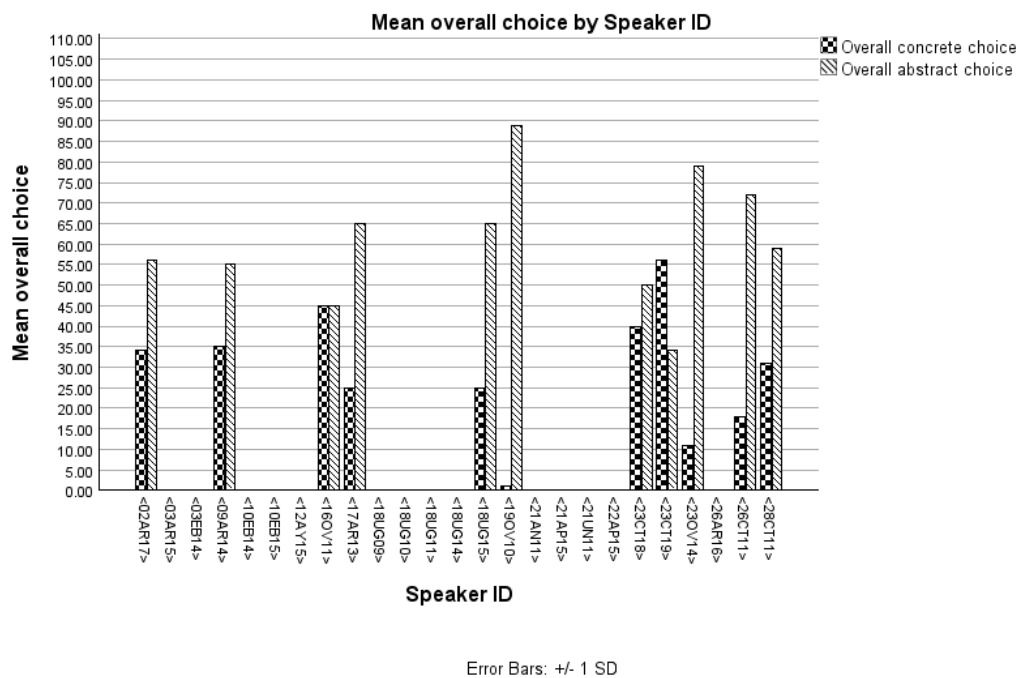


Figure 17 - mean overall choice by speaker ID

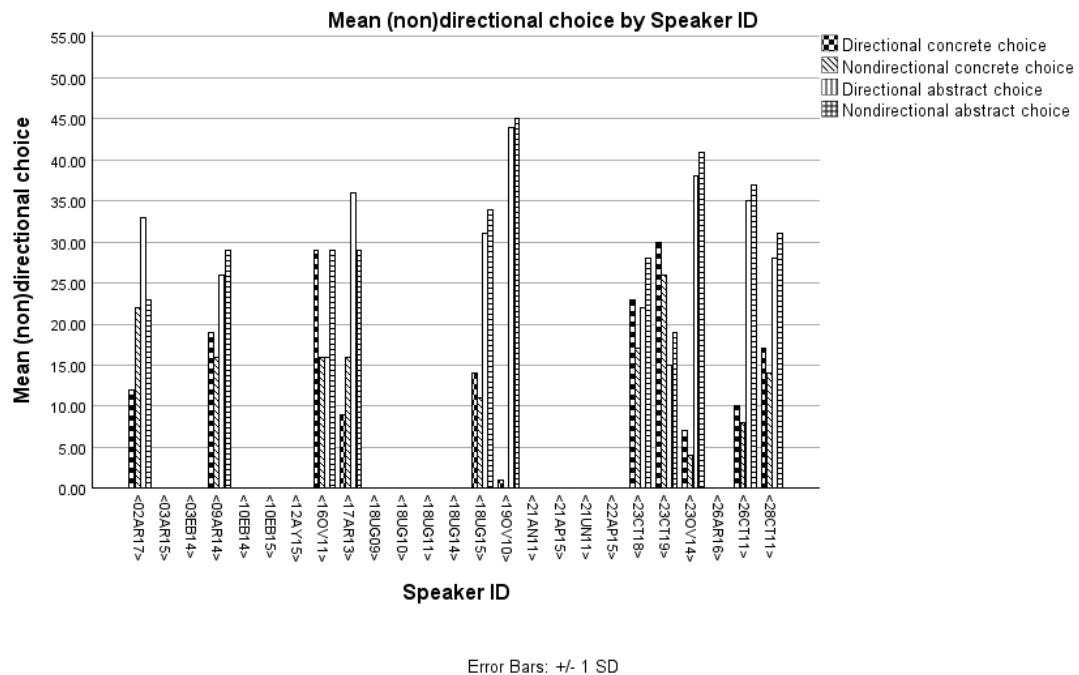


Figure 18 - mean (non)directional choice by speaker ID

Although the majority of respondents (10) favour abstract choices overall irrespective of prime directionality, preference extent varies significantly by individual speaker (suggesting that individual differences play a role in the present experiment).

The next section discusses the use of the CLQT(+), its subtasks, and the experimental results in the context of CLQT scoring differences.

4.10.4. Language cognition

The CLQT(+) was administered to all experimental participants. The aphasia pathway was used with the clinical participant, whereas the standard CLQT was used with the healthy volunteers. The CLQT allows for scores from both pathways to be compared. The original plan was to administer the CLQT(+) in full, meaning all of its subtasks. For operational reasons owing to the COVID-19 pandemic and the need to transition to

remote administration (described more fully in the next chapter), only those subtasks that were likely to retain their validity and reliability when administered remotely were retained. Tasks such as clock drawing were unlikely to generate valid data when converted to a remote data collection process, because the data collection procedure would need to be adapted so drastically that it would no longer resemble the original measures. Those tasks whose administration were unlikely to be affected by administration were confrontation naming, story retelling, and generative naming. These were retained.

Confrontation naming deficits can indicate aphasia, and delays on this task can suggest mild word-retrieval difficulties. Elaborated responses may indicate verbosity. Story retelling assesses auditory working memory, auditory processing, and verbal production skills. Generative naming examines word search and retrieval by superordinate semantic and phonetic categories (animals and ‘m’ words). Qualitative performance assessment, such as clinical judgement, is also possible for this task, and a perseveration score on this above 0.08 indicates brain damage (Pearson Clinical, 2017).

Table 22, below, displays the clinical participant’s CLQT+ subtask scores alongside the mean of comparison participants’ CLQT scores (n=10). As with the experimental data, all raw CLQT(+) scores are available in full in Appendix III. Note that no inferential statistics were calculated for the CLQT+ data for the same reasons as the main experimental data (see Section 4.10.).

Table 22 - CLQT(+) scores by group

confrontation	story 1	story 2	story total	story score
----------------------	--------------------	--------------------	------------------------	------------------------

clinical mean	9.5	6	0	6	3
comparison mean	9.6	13.3	2.8	16.2	8.3

	generative 1	generative perseveration	generative 2	generative subscore	generative score
clinical mean	17	0.11	12	29	6
comparison mean	28.3	0.02	17.2	45.5	8.8

The clinical participant showed a preserved confrontation naming score but difficulties on story retelling and generative naming, including a high generative naming perseveration score. The clinical participant was highly articulate, and so low story retelling scores were more likely due to difficulties in the areas of auditory working memory and auditory processing than verbal production (Menon et al., 2001). Word search and retrieval also appear to be affected.

4.10.5. Experimental summary

It is interesting that response times were slightly longer in the case of directional primes and slightly shorter in the case of nondirectional primes in both pathways, with the effect more pronounced in pathway A. This is contrary to the CCT claim that directional primes are processed faster due to being more cognitively accessible (Shen and Aisenmann, 2008). Factors specific to pathway A appear to pronounce this effect.

Response times were longer overall for female participants, but this group is overrepresented within the sample. It is therefore not presently clear how response times are influenced by sex. There is even less clarity on the issue of dispersions. Dispersions were greatest for directional primes and smallest for nondirectional primes in males. Dispersions were greatest for nondirectional primes and smallest for directional primes in females. Dispersions were roughly equivalent across sexes for overall response times, regardless of female overrepresentation. This seems independent of the sex weightings across pathways (pathway A: 3:2; pathway B: 5:1).

The clinical participant displayed the shortest mean response times of all participants. Some of the variation in Pathway A response times might be explained by the clinical participant's allocation to pathway A and, by extension, this participant having the lowest mean response times of all participants. Mean response times were roughly equivalent across prime directionalities and overall for both groups. Comparisons on the group dimension are not possible, however, due to the presence of only one clinical participant. Further work is needed to examine all of these preliminary indications, and this is especially important in the case of the group variable.

The differences in noun selection across pathways do not appear to be related to each pathway's differing sex weightings (pathway A: 3:2; pathway B: 5:1) or group status (one clinical; 10 comparison). This would indicate that differences in stimuli properties across pathways were more significant influencers over choice than the demographic (sex and group) factors. The main differences between pathways were the properties of the practice items and distractor items, the distribution of (non-)chemical senses across

practice and distractor lists, and the *combinations of* prime directionality and noun order. All else was either held constant or counterbalanced *within or across* lists.

Readers are reminded that the design counterbalances these list-specific differences, when two populations are involved, by splitting each population into two subgroups (each assigned to either pathway A or pathway B), and later pooling the subgroup data for each population. When the same design is applied to a single population, again split into two subgroups (each assigned to either pathway A or pathway B), these list differences may be treated as levels of an independent variable. This is because the latter approach allows the pathways to be treated as separate experimental conditions, rather than differences counterbalanced across the two populations. Readers are also reminded that some controls are counterbalanced via crossover (such as the differences specific to practice and distractor items) while others are counterbalanced within pathways (such as order and exposure effects). It is therefore still important to administer both lists when adapting the design for the study of one population and the treatment of the crossover counterbalances as levels of an independent variable. Administering only one list will effectively break the experiment by creating numerous imbalances. Analysis can be performed on individual lists/pathways, however, as shown in this chapter, providing that both lists are administered across the sample(s). The rest of the control variables are hard constants. Noun type and order were held constant across pathways for the main items (with prime directionality being the only variation), ruling out order effects. Directional and non-directional primes occurred at equal rates across lists, ruling out exposure effects.

Viable explanations include a priming effect of the practice items, as pathway A practice items used only concrete nouns, a reverse priming effect of the distractor items, as pathway A distractors used only abstract nouns, and/or a complex effect produced by the unique combinations of prime directionality and noun order. Namely, pathway A presented non-directional primes with concrete-first nouns and directional primes with abstract-first nouns; pathway B presented directional primes with concrete-first nouns and non-directional primes with abstract-first nouns. This is interesting because CCT argues that directional primes are cognitively simpler and easier to process, and yet abstract nouns are more cognitively complex: concrete nouns are processed more quickly than their abstract counterparts (West and Holcomb, 2000), and concrete word visualisation is associated with early event related potential (ERP) intervals (Anguilli et al. 2015). It would then be reasonable to expect more CCT-compliant primes paired with concrete nouns. The reverse is seen in both lists for most participants and by demographic. The only exception is pathway A, where some list-specific features appear to have inflated the rate of concrete responses *and* deflated the rate of abstract responses. In fact, pathway A provides support for CCT's accessibility claim: the mean of directional concrete choices is higher than the mean of nondirectional concrete choices, and the mean of directional abstract choices is lower than the mean of nondirectional abstract choices. The conditions of pathway A may be said to elicit an effect supportive of CCT's cognitive simplicity/ease of processing argument, whereas the conditions of pathway B appear to mask it: concrete means are lower and abstract means are higher regardless of prime directionality. Another potential factor is the role of chemical senses. These also varied across lists. Pathway A used chemical practice primes and non-chemical distractor primes, whereas pathway B used non-chemical practice primes and

chemical distractor primes. The (reverse) priming effects of chemical vs non-chemical senses are thus also potentially important for understanding the differences observed across pathways.

Although pathway-specific differences appeared to influence the data more than demographic factors, the tendency for females to show some preference for pairing directional primes with concrete nouns and non-directional primes with abstract nouns, along with the opposite trend to a lesser extent in the male data, is interesting. The female participants were more likely to make selections that are potentially supportive of the CCT claim that directional primes are more easily processed (if ease of processing is said to be indicated by the appropriation of concrete nouns). This needs to be considered alongside the female cohort's response time data, though, which indicates greater response times for directional primes and the overrepresentation of females in pathway B.

The similarity across clinical and comparison cohorts is among the most interesting of the preliminary findings. Further work is needed to understand whether the similarity is also observed in a larger sample that more broadly represents the range of symptom heterogeneity and cognitive functioning seen in schizophrenia cohorts at large.

CLQT(+) order appears to have influenced choice means similarly to experimental pathway, with the pre-experimental order appearing to influence responses similarly to the pathway A allocation. This does not appear to be explained by overrepresentation of pathway A in the pre-experimental condition, however. Pre-experiment condition responses are more consistent with the ease-of-processing claim made under CCT, with

directional primes paired more regularly with concrete nouns and nondirectional primes paired more regularly with abstract nouns.

On individual differences, it is presently unclear why participants varied significantly in their choice *rates*. One explanation could be that different participants have different tolerance levels for the extent of perceived repetition, something that many participants highlighted in their post-participation interviews (see Section 4.12.1.). I say perceived repetition because some participants described item repetition in a manner that implies having seen the same prime more than once, which does not occur within a single list/pathway. Although primes do not repeat in either list, the noun choices repeat throughout. This is one exposure effect that could not be well controlled, and different participants may have become fatigued by the repetition of these nouns idiosyncratically—such that it occurred at a different point in the experimental run for each participant. While these and other individual differences are not yet clearly explained, the presence of broad preferences for abstract noun selection across pathways does suggest that some of this preference may be resistant to the effects of the concrete ground condition and pathway-specific differences (namely reverse priming).

It is thus possible that the effects reported in Shen and Aisenmann (2008) are a legitimate cognitive phenomenon but one sensitive to context and demographic factors that can also be disrupted by (reverse) priming effects (of noun type and chemical/non-chemical sense loadings) and/or the sum of prime directionality and noun order *combinations*. Further work, likely also requiring continued exploration of the present study design, is needed to understand this data and its implications for CCT.

It is interesting that the clinical participant's task performance closely resembled healthy volunteers despite marked CLQT(+) differences on auditory working memory, auditory processing, and word search and retrieval. This may suggest that the preferences expressed by participants do not depend heavily on inner speech/phonetic or semantic knowledge factors. This would in some ways suggest that design choices relating to accessibility were at least partly successful. It also raises questions about the role of spreading activation in and outside of formal thought disorder and the relevance of Kintsch's (2000) predication theory to the present design. The task does not tax auditory working memory, and so that finding is unsurprising. Future replications with a sufficiently-sized sample are crucial for understanding the candidate factors described above and their potential (lack of) relationships to cognitive linguistic differences among clinical and non-clinical cohorts.

It is also important to highlight that theory of mind is thought to play a greater role in tasks involving mental or psychological metaphors (i.e. the abstract noun choices), than physical metaphors (i.e. the concrete noun choices; Tonini et al. 2023). Theory of mind is implicated in figurative language processing, particularly proverb interpretation as discussed in Chapter 2, and so theory of mind deficits may lead some clinical participants to favour concrete noun choices over abstract noun choices (Parola et al., 2018). In the case of the clinical participant, the balance of concrete and abstract selections was near-identical to comparison participants. This may suggest that theory of mind abilities are preserved in this participant. Further work with a larger sample is needed to establish whether theory of mind difficulties influence choice behaviour on the DoLI task.

The next section discusses participant interview data in the context of prior sections, with the aim of contextualising the preliminary experimental results.

4.11. Interview data

4.11.1. Interviews

This section discusses the clinical participant's interview data within the context of earlier sections of this chapter. Space and scope do not allow a qualitative study of all interviewees' experiences of the experiment. The data is nevertheless available for that purpose in the Appendix IV. The emphasis here is on the clinical participant's experience of navigating the experiment. However, widespread (dis)agreement is noted where appropriate.

Participants who sat the experiment were asked to reflect on their choices in an unstructured interview that followed the measures described in Section 2: regardless of whether participants sat the CLQT pre or post experiment, the interview was always the last measure. Each interviewee was asked an open-ended initiating question ("how was the experiment?"). No other questions were pre-determined, but questions used in the first interview were repeated in subsequent interviews when the interviewer felt that a participant had naturally found their way to a topic that could be probed by a question asked in prior interviews. This decision was made to balance the benefits of unstructured interviewing (a naturalistic context) with the benefits of semi-structured interviewing (comparison of responses to the same questions). All transcripts are available for inspection in Appendix IV/the Discussing Abstract Ideas in Schizophrenia Corpus (DAIS-C, 2023). Fuller details about the interview methodology are provided in Chapter Five, to save unnecessary repetition.

4.11.2. Participant <18UG15>

Excerpt 1

<INT> brilliant right so erm how was the experiment? </INT>

<18UG15> erm I don't know it was erm annoying </18UG15>

<INT> oh OK </INT>

<18UG15> yeah </18UG15>

<INT> erm do you do you mind telling me sort of more how it was </INT>

<18UG15> erm yeah because I I couldn't I couldn't see a link at all in any of them not not once er erm like er a lot of it I cos I think some of them repeated </18UG15>

It is interesting that the participant identified repetition as a reason for task difficulty in Excerpt 1 (above), because repetition was intended to lower task difficulty. This is consistent with other participants' experiences, namely that exposure effects associated with noun repetition may have influenced response behaviour idiosyncratically. A replication study that draws noun choices from a larger pool of candidate words could be used to explore whether/ how this factor operates as a confounder.

Excerpt 2

<INT> yeah so erm wh </INT>

<18UG15> but I I the mm when they were repeating <Gr> I couldn't remember what my response to them before </Gr> and I guess it was all guesswork all the way through I don't know whether that had changed </18UG15>

The participant mentioned difficulty remembering past choices when presented with the same or similar stimuli. This was echoed by comparison participants. The stimuli layout, use of randomisation, and repetition of nouns likely confounded orientation attempts. Participants were not expected to respond in a rule-based way, and so this was not a core design consideration. This experience may also be common to psycholinguistic testing overall.

Excerpt 3

<INT> erm and so they the same words kept popping up because of the way that we had to choose specific words so that we could kind of narrow things down but erm it's so that's kind of what what the experiment was doing but erm I I can understand how because the words kept repeating and stuff </INT>

<18UG15> yeah </18UG15>

Participants were briefed early in each interview on the function of primes and noun choices so that they could report on whether various design choices achieved their intended effects in each case.

Excerpt 4

<18UG15> because erm er especially because when they were repeating I noticed some of them repeating erm but I couldn't it's not as though <WS> I could think remember why </WS> I chose that so I'll choose that again </18UG15>

The participant indicated a desire to apply selections consistently based on the stimuli arrangement/presence of specific words and difficulty in doing so. This was also reported by comparison participants. Comparison participants, however, reported the rules they (believed they had) formed and greater ease in applying them (cf Excerpt 5 below). The rules formed varied in terms of whether they were based on either prime components or noun selections. The clinical participant reported difficulty with thinking or remembering the reasons for their prior selections (see, e.g., 'think remember why') but see also their last utterance below.

Excerpt 5

<18UG15> it's not like I could remember in my mind so oh I've just seen this before I'll click the same one as I saw before </18UG15>

<INT> I see cos that's something that's coming up a lot when we ask people how did it feel they say erm well it felt like I had to like come up with a rule </INT>

<18UG15> yeah </18UG15>

<INT> for responding </INT>

<18UG15> that's what I felt yeah </18UG15>

Several participants reported a need to establish a response pattern or rule. This would lend some support to the analogical and categorisation positions (Holyoak and Stamenković, 2018). An interest in being consistent could suggest comparisons typical of analogical and categorisation reasoning, rather than those in which individual events are processed case-by-case. In designing the experiment, a case-by-case approach was expected because primes do not repeat. The repetition of the nouns may have communicated an expectation of consistency, however, and thus invited categorisation or analogical engagement.

The frustration the participant reports on item repetition may suggest that the experiment elicits and yet confounds conceptual combination. The experimental design and stimulus layout echoes coherence as described in the conceptual combination literature (Holyoak and Stamenković, 2018): source and target are (visually) separated (by stimuli arrangement), compared (by participants), and integrated (by noun selection). Unlike coherence, though, the experiment does not ask participants to generate a meaning for the source-target relation they select, the presence of two nouns requires two comparisons, and the presence of a compound modifier confounds interpretation (see Maguire and Cater, 2010). Participants may be reporting frustration due to an inability to track their past comparisons and integrations or with general task difficulty due to synaesthetic metaphor processing being more taxing overall.

Some of this effect can be explained by the instruction wording, which states that 'your task is to read the words at the top of the screen and match them with one of the two below'. An expectation that participants will match sources and targets is therefore implied at the instructional and visual levels. This is unavoidable to some degree

because the task focuses on source target *relations*. The basis on which primes and noun choices are mapped is not specified by the wording, although the instructions are clear that *both parts of the prime* ('match *them* with') need to be attached to *only one* of the two nouns. The fact that participants did not seem aware that each pair of adjectives was unique to any given experimental event suggests that the nouns may have received more attention than primes and thus had more influence over matching behaviour. This may be related to the metaphor interference effect (MIE), which sees metaphoric interpretations occur automatically in circumstances where only a literal interpretation is required (Al-Azary, 2021). The MI applies to modifier-noun combinations. This may also be because of the instruction wording, due to a learning or exposure effect produced by the repetition of nouns, both, or neither.

It may be the case for synaesthetic adjective pairs that participants default to category formation or analogical reasoning based on the nouns because the source adjectives are synaesthetic. It makes sense to think that conceptual combination becomes harder when the source is composed of two adjectives that each represent distinct sensory modalities. This does somewhat go against the view that sources define categories (Holyoak and Stamenković, 2018), and so the effect can be further examined by looking at the distractor item responses. Those primes were composed of adjectives from a single modality and noun choices were limited to either concrete or abstract semantic categories depending on the pathway. These items therefore represent an inversion of the main items in terms of whether adjectives and nouns involve mixed categories. A closer examination of response times for these items, alongside the selections that participants made for specific item types (and across pathways), could aid further

understanding of whether category formation and analogical reasoning are elicited during this task. Single domain primes and single category choices would also help in understanding how the main item variables influence response behaviour. Also, because category statement formation is not well understood in the case of novel metaphors (Holyoak and Stamenković, 2018), any categorisation view of participant response behaviour needs to be applied cautiously.

Kintsch's (2000) predication theory is also potentially consistent with these reports. Predication theory assumes that participants develop stable meanings for the source and target, identify words closely associated with the *source only* via spreading activation to produce a set of words that can apply to both source *and* target, and match these to generate the meaning as a whole. While predication theory might explain participant behaviour in the context of this task, the task may also simultaneously confound the processes explained by the theory. This could account for why Kintsch is cautious about applying predication theory to literary metaphors (Holyoak and Stamenković, 2018). Further work on this design might reveal that the theory can be successfully applied in the case of novel synaesthetic metaphors. Applying predication theory is still challenging here, though, because the participants do not identify the words that can apply to both source and target themselves. They are instead trying to fit words that have been provided as part of the design (the nouns) to the source. This does not disqualify predication theory as an explanatory theory, but it does need to be highlighted that the design requires consideration of how the order of processes outlined within the theory might need to be altered to accommodate the design.

Excerpt 6

<INT> were there any words that stood out more than others or </INT>

<18UG15> yeah I think I was thinking that some people might not know all these words like the word aromatic </18UG15>

<INT> yeah </INT>

<18UG15> is quite a singular word I'm not sure I like what if you didn't know what the word meant then the experiment would be void wouldn't it but if you don't know what you're ch what you're you know </18UG15>

<INT> responding to yeah yeah </INT>

<18UG15> yeah exactly </18UG15>

The participant suggested that the word 'aromatic' may be inaccessible to some participants, and I agree. This demonstrates in practice some of the challenges involved in creating an experiment that uses accessible vocabulary when the topic of study is synaesthetic metaphor and thus involves sensory language, which is generally restricted and inaccessible (Lievers and Winter, 2018). Even when accessibility was operationalised as word frequency in everyday usage within a representative corpus, additional design stages led to the exclusion of several more frequently occurring terms that may have been more practically useful. The necessity, if not utility, of the semantic and psychometric control steps is therefore debatable. While they offered theoretical and methodological benefits, the experiment may ultimately have benefitted from a less theoretically controlled stimuli pool that used more frequently occurring terms.

Excerpt 7

<18UG15> yeah they're strange words like boomerang you know what I mean you don't use that in the day to day do you </18UG15>

The participant highlights how drawing from a corpus of everyday speech does not always yield everyday examples. 'Boomerang' entered the item pool after several rounds of semantic and psychometric filtering and was widely reported to be a problematic item. Participants report that they 'took issue' with that specific item and any primes that contained it, for example. Frequency in use, although the main priority, was diluted by each additional control step.

It is common practice in experimental psycholinguistics to hold syllabic and phonetic properties constant across words and nonwords (Hunter et al., 1989), and some of the difficulties with items like 'aromatic' and 'boomerang' may be related to their syllabic and/or phonetic properties. These types of control step are unsuited to the current design, but future, similar studies may want to consider their inclusion where viable.

Excerpt 8

<INT> erm what did it feel like you were doing when you were doing the experiment

</INT>

<18UG15> erm I don't know erm just erm that there's ninety questions and er er I guess gotta go go go </18UG15>

<INT> just going through </INT>

<18UG15> yeah </18UG15>

<INT> yeah erm so then like </INT>

<18UG15> because it because because I didn't really couldn't see a connection as to I tried to move on quick but s to see if I could find a connection in other questions so I thought oh I don't know that one maybe I'll know the next one </18UG15>

The clinical participant's CLQT scores and reports of difficulty seeing a connection between source and target has relevance to the role of spreading activation within Kintsch's (2000) predication theory. The theory suggests that individuals identify words closely associated with the *source only* via spreading activation to produce a set of words that can apply to both source and target. In fact, it is arguable that the design skips the spreading activation step in its truest sense by providing candidate nouns that participants must choose between. This might explain why the clinical participant reported finding the task more challenging than comparison participants but produced a similar choice ratio.

The clinical participant also later describes difficulties with sensory adjectives specifically compared to concrete nouns, which may suggest some concretism or a greater influence of the metaphor ground condition in the context of the clinical group. The clinical participant's CLQT scores and reports of difficulty making connections, together with reports generated by comparison participants (who more often reported making successful but odd or unsatisfactory connections) would suggest support for the role of spreading activation in Kintsch's (2000) predication theory, but this does not explain the tendency for the clinical participant's selection behaviour to so closely resemble comparison participants' behaviour. Something additional to a categorisation process must be occurring, such as the present task negating the need for spreading activation

or some other processes such as those detailed by the conceptual mapping view (Holyoak and Stamenković, 2018).

Excerpt 9

<18UG15> because like boomerang you see a boomerang and that's it but with the word aromatic I couldn't really visualise it </18UG15>

<INT> oh OK so like do you mind telling me a bit more about the v visualisation </INT>

<18UG15> yeah so erm so when I saw the word boomerang it instantly in my head I saw like a wooden like the actual pic like you know er but aromatic is more abstract I can't really not very tangible </18UG15>

<INT> I see </INT>

<18UG15> it's it's like out there </18UG15>

<INT> did you picture a specific boomerang as well </INT>

<18UG15> yeah I saw a boomerang in my head in my mind I could it I could when I read the word I could see the word boomerang I could see the p picture of a boomerang as though I'd just seen </18UG15>

The clinical participant referred to visualising the primes and nouns, whereas comparison participants tended to focus on forming associations between primes and nouns. This is an interesting point of difference that requires further work. It may suggest that category formation, analogical reasoning, and/or spreading activation are affected by schizophrenia symptomatology such that developing source target relations is more difficult for clinical participants (see Kreher et al. 2008).

Excerpt 10

<INT> and does that happen with a lot of words that you hear or read or </INT>

<18UG15> erm yeah I guess erm like erm it it takes my mind less time to think of like a concrete noun than than some like abstract word </18UG15>

Some of the visualisation reported by the clinical participant may be related to schizophrenia symptomatology (Silverstein, 2016), and so further work will benefit from including symptom severity information within their analysis.

4.12. Interview summary

The repetition of the noun choices added to task difficulty and may have influenced response behaviour via learning and/or exposure effects. Participants struggled to orient themselves throughout the task and sought to apply consistency to their selections. This need for consistency may have been elicited by the design elements. For example, the instructions to participants suggest a linearity of sources preceding targets that is also mirrored visually and the stimuli layout parallels coherence as it is described in the conceptual combinations literature. The task involves some additional complexity, however, because there are two modifiers requiring two comparisons, which confound interpretation.

It is not clear whether participants who formed rules based on the nouns did so due to exposure effects (repetition of choice nouns), reverse priming effects (correcting for a perceived bias of sources preceding targets), or because of distinctions among choices (i.e. physical metaphors with a ground versus mental metaphors with no ground).

The preliminary data nevertheless shows that response behaviour in line with categorisation and analogical positions can be *elicited* by the task. It is just not clear whether this is occurring due to design features (such as pathway specific features, list design elements, etc.) or due to the nature of task engagement. Further work is needed to examine these questions, and the involvement of an adequately sized clinical cohort is essential.

The task is a good candidate for providing support for predication theory (Kintsch, 2000), but the theory needs to be applied cautiously due to the involvement of literary metaphors and joint modification and the absence of participants' ability to nominate a target, which excludes the spreading activation stage in its truest sense. It can be argued that spreading activation still occurs in this task in an attempt to relate sources to targets, but the similarity of scores across participants with and without semantic impairments suggests that it is not critical in determining the overall scores.

Accessible vocabulary is a core requirement of psycholinguistic tests designed for clinical cohorts (Delgaram-Nejad et al., 2022). Despite thorough efforts to achieve accessible stimuli that were also well controlled for confounding variables, items remained in the list that may not be comprehensible to all clinical participants. The clinical participant illustrated well that data derived from an everyday corpus context does not always yield everyday examples when factored as an experimental item. One solution to this is to build item lists from specialised corpora representative of the experimental populations. The next chapter, Chapter Five, describes the construction of such a specialised corpus.

On the issue of extending the operational definition of linguistic creativity in schizophrenia outlined in Chapter Three, the theoretical and case study material

covered in the present chapter together suggest that the widespread impairments seen in metaphor comprehension may not extend to metaphor production in task contexts. More work is needed to understand what features of the DoLI task led the clinical participant to produce similar scores to comparison participants. One explanation is that the clinical participant is very high functioning, although there appears to be more to consider even under that assumption, given the similarities in response patterns despite lower scores on the story retelling task and high perseveration scores on the generative naming task. It may be that the task does not tax the cognitive processes measured by those tasks, and so performance on the DoLI task remains comparable to comparison participants for that reason. Another possibility is that synaesthetic metaphors, when presented in such a task context, employ processes that are not involved in the widespread linguistic impairments described in Chapter Three. It is also possible that the mode of task administration had an impact on task performance in those studies, such as poor instruction wording or inadequate practice opportunities. Further work is needed to understand where the DoLI task sits in relation to the wider metaphor production and comprehension literature, but the present data does provide some encouragement that some aspects of metaphor production may be spared in schizophrenia.

CHAPTER FIVE: BUILDING A SPOKEN SCHIZOPHRENIA CORPUS

5.1. Background

Research question: How is creative language output manifested in schizophrenia?

5.1.1. Why build a corpus

Corpus linguistics is gaining popularity as a research method, in and outside of linguistics itself (see Mouritsen, 2019 for practical applications in law; Mitkov, 2022). This has led to an increase in the production of reference and specialised corpora. Reference corpora tend to be larger and aim to represent language varieties as a whole, such as the British National Corpus (BNC, 2007) or Corpus of Contemporary American English (COCA, 2015), whereas specialised corpora focus on specific linguistic contexts and communities.

Researchers wanting to use corpora to answer a research question will need to check for existing corpora or build one if nothing suitable exists. Corpus design stems from the original research question. A corpus is not just a text database. It is a body of texts curated to answer a set question (Randi, 2010).

There is no quantitative answer to the question of how big a corpus should be.

Representativeness describes the extent to which a corpus accounts for the language variety it samples. A corpus of an author's collected works, for example, would be completely representative. This is impractical in most cases, and enough data for an accurate representation usually suffices (Adolphs and Knight, 2010).

Representativeness is more challenging with respect to schizophrenia. One reason is symptom heterogeneity (Oomen et al., 2022). Schizophrenia symptoms range in nature and degree and affect linguistic production and comprehension (McKenna and Oh, 2005). It is possible that we cannot currently assess representativeness in this

population because the true extent of linguistic variation is not yet understood (McKenna and Oh, 2005; Mikesell and Bromley, 2016).

This chapter discusses the design and characteristics of the DAIS-C (Discussing Abstract Ideas in Schizophrenia Corpus), which was built to answer the following question: *is there a relationship between linguistic creativity and formal thought disorder in schizophrenia?*

Despite an increase in corpus linguistic applications, no British English corpus of speech in schizophrenia prior to the DAIS-C existed. A reference schizophrenia corpus would be a phenomenal undertaking, one exceeding the scope of a thesis. A specialised corpus built to explore linguistic creativity in this population offers a useful first step, nonetheless. The next sections review best practices in the design of small, specialised, and spoken corpora. These are synthesised to form a set of requirements for the DAIS-C. A description of how I approached these requirements (section 5.1.4.) as well as a summary of the DAIS-C's main characteristics follow.

5.1.2. Building spoken language corpora

Spoken language corpora fall under the class of specialised corpora, meaning that they do not necessarily seek to represent the full extent of a language variety but rather a special case of language use. Prominent examples like the BNC spoken (there are two versions of the BNC: written and spoken) represent speech orthographically and sample from a range of spoken contexts such as lectures, speeches, and conversations. More recent work has taken interest in informal conversation (CANCODE; McCarthy, 1998).

FTD manifests in speech and writing, but more work has sampled FTD in spoken contexts. Historic work has noted that FTD in speech is more readily elicited in the context of proverb interpretation tasks and comprehension subsets of standardised intelligence tests (Marengo et. al. 1986). These approaches have been replicated substantially. Indeed, much of this work was reviewed systematically in Delgaram-Nejad et al. (2020; Chapter Three). It is important to point out that although interactional, these tasks remain only semi-naturalistic events due to their location within the context of formal testing. Less work has examined FTD in the context of fluid, informal conversation (Mikesell and Bromley, 2016).

Several best practices exist for the construction of spoken corpora. There are both general construction guidelines and guidance specific to particular construction stages. Sinclair (2005) provides some of the most formal, comprehensive, and general (reproduced here from Adolphs and Knight, 2010, p.39):

1. The contents of a corpus should be selected without regard for the language they contain, but according to their communicative function in the community in which they arise.
2. Corpus builders should strive to make their corpus as representative as possible of the language from which it is chosen.
3. Only those components of corpora which have been designed to be independently contrastive should be contrasted.
4. Criteria for determining the structure of a corpus should be small in number, clearly separate from each other, and efficient as a group in delineating a corpus that is representative of the language or variety under examination.

5. Any information about a text other than the alphanumeric string of its words and punctuation should be stored separately from the plain text and merged when required in applications.
6. Samples of language for a corpus should wherever possible consist of entire documents or transcriptions of complete speech events, or should get as close to this target as possible. This means that samples will differ substantially in size.
7. The design and composition of a corpus should be documented fully with information about the contents and arguments in justification of the decisions taken.
8. The corpus builder should retain, as target notions, representativeness and balance. While these are not precisely definable and attainable goals, they must be used to guide the design of a corpus and the selection of its components. Any control of subject matter in a corpus should be imposed by the use of external, and not internal, criteria.
9. A corpus should aim for homogeneity in its components while maintaining adequate coverage, and rogue texts should be avoided.

It is recognised that complete adherence to Sinclair's guidelines is challenging in practice. There is good agreement, however, that they function well as guiding ideals (Adolphs and Knight, 2010). A corpus design that makes reasonable attempts to follow this advice as closely as possible stands a better chance of being reflective of the language variety under study and being usable to the wider research community.

The importance of metadata is also stressed, and it is helpful to consider collecting editorial, analytic, descriptive, and administrative types of metadata (Burnard, 2005).

'Editorial' metadata provides information about how corpus components relate to original sources. 'Analytic' metadata provides information about interpretation and analysis. 'Descriptive' metadata provides classification data on internal and external properties. 'Administrative' metadata provides information about the corpus itself, such as title, revisions, etc.

The ethics of spoken corpus construction require careful thought. Informed consent, despite being essential, should not only specify consent to record but also to distribute (Leech et al., 1995; Thompson, 2005). Anonymisation also requires care. Data that could potentially identify a participant must be located and obscured (Du Bois et al., 1992), and not all identifying features are immediately obvious. 'Raw' audio records may contain unique phonetic features that can potentially identify individuals (Adolphs and Knight, 2010). Anonymisation may also extend to sensitive topics (Wray et al., 1998).

Guidelines on audio recording in the construction of spoken corpora emphasise audio quality alongside an adequate account of the environmental features of a spoken interaction (Strassel and Cole, 2006). The transcription of spoken language is a complex task. Spoken language is fundamentally multimodal, with meaning constructed from textual, prosodic, gestural, and environmental elements (Adolphs and Knight, 2010). Representing this interplay in writing can be challenging, and investigators can quickly become consumed by attempts to capture the full richness of the data (Cook, 1990; McCarthy 1998; Carter, 2004; Halliday, 2004). Transcription ultimately boils down to theorising (Ochs, 1979; Edwards, 1993; Thompson 2005), and there is significant tension between validity and reading ease (Graddol et al., 1994).

There is a growing interest in and a need for spoken language corpora that deal with naturalistic interactions (Batinić et al., 2021). FTD can be elicited in informal spoken contexts, particularly when the discussion focuses on open, abstract topics. Best practices for the construction of spoken language corpora emphasise careful and systematic corpus construction, consideration of technical and environmental factors relevant to spoken discourse, collecting comprehensive metadata, practising ethical corpus construction, and transcribing on a robust theoretical basis. The next section discusses guidance on the development of small, specialised corpora.

5.1.3. Building small, specialised corpora

Specialised corpora are gaining popularity (Flowerdew, 2014) and represent a departure from the established trend of compiling sizable reference corpora (cf. BNC, 2007). These smaller corpora focus on specific genres and registers.

Small corpora are unsuitable for some analyses because not all linguistic features manifest in small samples. Many lexical features are so rare that only a few examples appear in corpora composed of hundreds of millions of words. Grammatical patterns do occur with enough regularity for reliable analysis within small corpora nonetheless (Carter and McCarthy, 1995). Smaller corpora also allow analysts to be more precise about the original contexts of use, because there tends to be less contextual variation (Flowerdew, 2004). Builders and analysts of small corpora are usually one and the same, and familiarity with the context allows analysts to supplement their quantitative observations with supportive qualitative analyses (Flowerdew, 2004; O’Keeffe, 2007).

The present investigation is interested not only in schizophrenia and FTD but also the relationship between linguistic disturbances and their interactional contexts. Specialised corpora allow for a deeper examination of this context and the potential to build contextual variation into the design. A specialised corpus can be specialised in several ways: purpose of investigation (what), contextualisation (where, who, why), genre, type of text (conversation), subject matter, and variety of English (Flowerdew, 2004). They can also contain specialised sub-corpora, such as in the Hong Kong Corpus of Spoken English (Warren, 2004), which contains conversation, as well as business, academic, and public sub-corpora. It is also recommended that builders of spoken, specialised corpora transcribe laughter and related features where the objective is to analyse interaction (Koester, 2010).

Even builders of specialised corpora are required to factor representativeness into their design. This has been defined as the extent to which the full range of variability is captured by the sample (Biber, 1993), with variability expressed as being either situational or linguistic (Biber, 1993; Koester, 2010). Situational variability refers to the spread of registers or genres in the population, whilst linguistic variability refers to the extent of linguistic variety in the population. It is argued that situational representativeness must be defined first to allow for the subsequent analysis of linguistic representativeness: the main thing is to ensure that samples are taken from a range of typical situations (Koester, 2010). Linguistic representativeness can be achieved with samples of 1000 words, and genres or registers can be well represented with samples as low as five in some cases, although ten is preferable according to Biber (1990).

Authors building specialised corpora for reuse by others can factor future use into their designs. Transcription conventions for specialised corpora tend toward ‘one-offness’ or the tendency for annotation to cater only to the needs of a given project (Koester, 2010). Planning for reuse by others can (and, where possible, arguably should) inform later design stages.

Larger corpora can also be used to support specialised corpus work, such as by checking whether high frequency words in the specialised corpus are more or less frequent in general usage (Koester, 2010). Specialised corpora therefore need not exist in a vacuum.

Interest in specialised corpora is increasing, especially among those interested in the role of context in interaction (Lin, 2017). Although not suitable for all analyses, they are well positioned for analysts interested in a close examination of features that appear reliably in small samples. They also suit analysts with a disposition toward mixed methods. Linguistic examinations of schizophrenia and FTD stand to benefit from a specialised corpus approach because general reference corpora do not adequately represent schizophrenia populations (Gabrić et al., 2021). Representativeness remains a consideration, but this can be partly addressed by sampling from a range of situational contexts. The next section brings together the guidance for building small, specialised corpora and spoken corpora as a set of operational requirements for the DAIS-C.

5.1.4. Requirements for the DAIS-C

The DAIS-C needed to permit an investigation of linguistic creativity, schizophrenia, and FTD. None of these concepts are particularly well defined *linguistically* (as indicated in Chapter One). Requirements relevant to the research question are outlined below:

- allows for linguistic creativity and FTD comparison
- compares schizophrenia and nonpsychiatric cohorts
- compares semi-naturalistic (experimental) and naturalistic (conversational) contexts

Guidelines on the creation of spoken and specialised corpora were also important to the design. The spoken corpus requirements for the DAIS-C can be summarised as follows:

- close compliance with Sinclair's (2005; Adolphs and Knight, 2010, p.39) general guidance
- good audio quality and transcription of relevant environmental features
- comprehensive metadata covering editorial, analytic, descriptive, and administrative dimensions
- informed consent to record and also archive data via a repository for use by other researchers, comprehensive anonymisation, the avoidance of sensitive topics unless agreed by the participant, and, if applicable, the destruction of raw audio
- detailed and relevant transcription that captures key textual, prosodic, gestural, and environmental elements while preserving reading ease

The specialised corpus requirements for the DAIS-C can be summarised thusly:

- samples from a range of linguistic and situational contexts within the population
- gathers detailed contextual information
- aims for a minimum of 1000 words per speaker
- aims for a minimum of five samples per register or genre

- builds potential reuse by others into the planning and design

A corpus that allows for an exploration of both the 4TD Framework and linguistic creativity stands to benefit from a combination of best practices in the design of specialised and spoken corpora. The next section recounts the construction process through reference to the requirements above in combination with in-text examples.

5.2. Building the DAIS-C

5.2.1. Design statement

Sinclair's (2005) first recommendation about corpus building raises important questions about where language disturbance in schizophrenia sits in relation to corpus linguistic theory:

The contents of a corpus should be selected without regard for the language they contain, but according to their communicative function in the community in which they arise (cited in Adolphs and Knight, 2010, p.39).

Individuals with schizophrenia represent a speech community⁶. They also experience a heterogeneous set of symptoms that affect linguistic production and comprehension (McKenna, 2007; McKenna and Oh, 2005)⁷. Some such symptoms correspond reliably to linguistic manifestations (see Chapters Two and Three). The act of observing

⁶ This statement is difficult to justify because it remains a matter of debate how to define a speech community. Given, however, that many individuals with schizophrenia experience shared linguistic impairments, such as difficulty with metaphor comprehension, there is an argument to be made about their tendency to engage with language according to a shared set of standards or norms that may be governed by language disability.

⁷ And so it can also be argued that there is too much variation within schizophrenia speakers as a whole to justify their description as a speech community. I would nonetheless argue that the existence of the FTD concept does speak to some shared language features that can be perceived as (un/intentional) usage rules.

schizophrenia symptoms results in embedded assumptions about the linguistic potential of an individual's speech (Andreasen, 1979a; Andreasen, 1979b). Someone with pronounced negative symptoms has a good chance of showing poverty of speech, for example (Andreasen, 1982; Fervaha et al., 2016). According to the guidelines, one should build a corpus based not on specific language features but instead on contents that reflect the 'communicative function in the community in which they arise' (Adolphs and Knight, 2010, p.39). The problem in this case, though, is that the contents that reflect those communicative functions also happen to imply specific language features. This chapter recounts how this was managed at the design and construction levels, in accordance with Sinclair's (2005; Adolphs and Knight, 2010, p.39) seventh recommendation:

The design and composition of a corpus should be documented fully with information about the contents and arguments in justification of the decisions taken.

5.2.2. Patient public involvement/engagement (PPI/E)

Version 1.0 of all participant-facing study material was approved by the end of 2018. A favourable ethical opinion was granted by the Health Research Authority (HRA; IRAS ID: 225295) following review by The South West – Plymouth and Cornwall REC on 3 July 2018. The study was also reviewed and approved by the Manchester Metropolitan University's Research Ethics and Governance team (EthOS ID: 5342) on 4 December 2018.

5.3. Ethics

5.3.1. Ethical review

Participants were asked to provide separate statements of consent for audio recording and data archival/distribution (as per Leech et al., 1995 and Thompson, 2005). Consent was also sought for GP notification, as the General Medical Council (GMC) recommends notifying participants' GPs, with their consent, of their involvement in research (GMC, 2013) regardless of their group allocation. Neither GP notification nor consent to archival were conditions of participation. The referring psychiatrists handled this process for clinical participants unless this was deemed unnecessary by the participant and/or their treating clinician. Comparison participants who consented to this were advised to share the latest participant information sheet (IS; v.3.2. 13 October 2020) with their GPs. All participants signed the latest approved version of the informed consent form (ICF; v.2.2., 13 October 2020) and medical declaration (MD; v.1.0, 12 February 2020) after reviewing the IS for a second time and raising any questions they might have had with the interviewer. IS and MD documents were distinct for each group.

Tables 23 and 24 below show consents per participant.

Table 23 - DAIS-C-CL: informed consent, GP consent, and archival consent

Speaker ID	informed consent	GP consent	archival consent
<21AN11>	yes	yes	Yes
<03EB14>	yes	yes	Yes
<10EB14>	yes	yes	Yes
<10EB15>	yes	yes	Yes

<03AR15>	yes	yes	Yes
<26AR16>	yes	yes	Yes
<21AP15>	yes	yes	Yes
<22AP15>	yes	yes	Yes
<12AY15>	yes	yes	Yes
<21UN11>	yes	yes	Yes
<18UG09>	yes	yes	Yes
<18UG10>	yes	yes	Yes
<18UG11>	yes	yes	Yes
<18UG14>	yes	yes	Yes
<18UG15>	yes	yes	Yes

Table 24 - DAIS-C-CO: informed consent, GP consent, and archival consent

Speaker ID	informed consent	GP consent	archival consent
<23CT18>	yes	no	Yes
<23CT19>	yes	no	Yes
<26CT11>	yes	no	Yes
<11AR18>	yes	yes	Yes
<16UN13>	yes	no	Yes
<16UN16>	yes	no	No
<23EB14>	yes	yes	Yes
<02AR17>	yes	yes	Yes
<09AR14>	yes	yes	Yes
<16OV11>	yes	yes	Yes
<17AR13>	yes	no	Yes
<19OV10>	yes	no	Yes
<23OV14>	yes	yes	Yes

<28CT11> yes yes Yes

5.4. Recruitment

5.4.1. Identification and approach

Clinical participants (n=15) were recruited through North East London NHS Foundation Trust (Jane Atkinson Centre) and Lancashire and South Cumbria NHS Foundation Trust (Guild Lodge). Collaborating clinicians identified and approached potentially eligible participants. Potential participants received an IS (v.3.2., 13 October 2020), a verbal summary of the content of the IS in the referring clinician’s own words, and contact details for the interviewer.

Comparison participants self-referred in response to flyers placed in GP surgeries and a recruitment call listed on the Call for Participants website (<https://www.callforparticipants.com>)

Tables 25 and 26 present recruitment information.

Table 25 - DAIS-C-CL recruitment

Approached	25
Unreachable	5
Declined	3
Withdrawn (capacity)	1
Completed	16
Audio excluded (<26AN12>)	1
Final total	15
<i>All measures</i>	1

Interview only 14

Participant <26AN12>'s audio was not transcribed because the amount of inaudible speech exceeded the amount of audible speech, affecting the transcript's validity. Inaudible speech resulted from a combination of low audio quality and articulation difficulties.

Table 26 - DAIS-C-CO recruitment

Volunteered	18
Declined	3
Completed	15
Audio deleted (<30CT09>)	1
Final total	14
<i>All measures</i>	10
<i>Interview only</i>	4

Participant <30CT09>'s audio file was not transcribed due to errors in data collection.

The interviewer's speech is missing from <23EB14>'s interview. This was due to the use of poorly configured screen-recording software. Desktop audio settings were correct but desktop microphone settings were not.

5.4.2. Inclusion and exclusion criteria

5.4.2.1. *Clinical group*

Collaborating clinicians were asked to identify potentially eligible clinical participants who met the following inclusion criteria, from the latest approved study protocol (v.3.2., 13 October 2020):

- a formal, historic diagnosis of schizophrenia
- prescription of, and compliance with, antipsychotic medication (identified by referral and/or self-report)
- deemed to hold capacity, and suitable, via SCA (structured capacity assessment)
- referred by principal investigators and/or local collaborators

Eligible potential participants were not approached or were withdrawn if they met the following exclusion criteria, from the latest approved study protocol (v.3.2., 13 October 2020):

- comorbid neuropathology external to the scope of the research question—e.g. traumatic brain injury (identified by both the self-declaration and the CLQT—Cognitive Linguistic Quick Test Plus)
- deemed unsuitable following SCA
- part one participants belonging to groups A and B who, due to a change of circumstances, no longer meet the relevant inclusion criteria and/or have since met the relevant exclusion criteria

5.4.2.1. Comparison group

Comparison participants who self-referred in response to public advertisement needed to meet the following inclusion criteria, from the latest approved study protocol (v.3.2., 13 October 2020):

- no formal, historic diagnosis of schizophrenia
- deemed to hold capacity, and suitable, via SCA

Eligible potential participants were withdrawn if they met the following exclusion criteria, from the latest approved study protocol (v.3.2., 13 October 2020):

- comorbid neuropathology external to the scope of the research question—e.g. traumatic brain injury (identified by both the self-declaration and the CLQT—Cognitive Linguistic Quick Test Plus)
- deemed unsuitable following SCA
- historic and/or current prescription of antipsychotic, antidepressant, and/or mood-stabilising medication (identified by self-declaration)

These criteria are consistent with Sinclair’s (2005) fourth recommendation:

Criteria for determining the structure of a corpus should be small in number, clearly separate from each other, and efficient as a group in delineating a corpus that is representative of the language or variety under examination (cited in Adolphs and Knight, 2010, p.39).

The aim of the DAIS-C is to create a small, specialised spoken language corpus that permits comparison of groups (clinical and comparison) on the basis of homogenous factors (such as interview question, mode of administration, etc.). This is consistent with Sinclair’s (2005) ninth recommendation:

A corpus should aim for homogeneity in its components while maintaining adequate coverage, and rogue texts should be avoided (cited in Adolphs and Knight, 2010, p.39).

Here, the exclusion criteria offer protection against ‘rogue texts’. Sinclair and Wynne (2004) define these as texts that stand out as unrepresentative of the variety in

question. The homogenous distinctions between individuals with schizophrenia and nonpsychiatric comparison speakers are important for the creation of the DAIS-C and its distinct sub-corpora. Within these sub-corpora, it is important that samples taken from both groups of speakers are as free from competing clinical noise as possible. This is particularly important because, in the case of comorbid neuropathology, noise and signal are difficult to distinguish. The suggestion that FTD may represent a form of dysphasia, for example, is neither a conceptually nor linguistically light one.

5.4.3. Remuneration and reimbursement

I did not compensate participants for their time. This decision followed several discussions within and outside of the research team. I consulted the sponsor's representatives, the REC, collaborating NHS Trusts, and the participant payments literature: opinions varied. I considered not only clinical and economic vulnerability but also payment logistics for the forensic cohort.

Limited work on the risks and benefits of paying economically vulnerable participants was available at the time of the decision. Later work has highlighted the importance and benefits of paying economically vulnerable research participants (Gelinias et al., 2020). This will be integrated into future work that expands the corpus.

One design benefit of not paying participants is that interview lengths can be said, with some confidence, to accurately reflect the amount of time that each participant was genuinely willing to give to the topic. Participants due to receive payment may have felt

an obligation to stay longer than was personally natural. This is important for Sinclair's (2005) sixth recommendation:

Samples of language for a corpus should wherever possible consist of entire documents or transcriptions of complete speech events, or should get as close to this target as possible. This means that samples will differ substantially in size (cited in Adolphs and Knight, 2010, p.39).

I did offer reimbursement of out-of-pocket expenses incurred in association with participation, such as travel expenses. I felt that it was fair to offer this because the forensic cohort had no travel requirements, being based at Guild Lodge. Developing a payment system for those participants was challenging, and I refused to pay some participants but not others because this would amount to differential/unethical treatment.

5.4.4. COVID-19

All in-person participation was conducted in compliance with COVID regulations. I supplied all in-person participants with personal protective equipment (PPE). The ICF asked participants to confirm that they had received and were wearing PPE.

5.5. Sampling

5.5.1. Clinical group

Collaborating clinicians applied a purposive, maximum variation sampling approach to the eligible participant pool. Clinicians did not select participants based on predefined

linguistic criteria but rather as part of an attempt to represent the range of symptom heterogeneity expressed in schizophrenia populations as a whole. This is consistent with Sinclair's (2005) first and second recommendations:

The contents of a corpus should be selected without regard for the language they contain, but according to their communicative function in the community in which they arise (cited in Adolphs and Knight, 2010, p.39).

Corpus builders should strive to make their corpus as representative as possible of the language from which it is chosen.

It is reasonable to expect clinicians' familiarity with a participant's linguistic style to be problematic for the above. This was addressed by using an unstructured interviewing approach and blinding clinicians to the interview questions and their order of assignment. Clinicians were nevertheless aware of the broad study aims as listed on the IS and the general direction of interviews as described in the study protocol:

From the IS (v.3.2., 13 October 2020)

'What is this study about?

This study is about creative language and schizophrenia. I want to see if there is a relationship between creativity and the speech changes that can sometimes occur with schizophrenia. The findings from this study could advance our understanding of these speech changes and may prompt clinicians to think about language differently.

What do you mean by creative language?

By creative language, we mean the language of creative writers. Poets and novelists often break the 'rules' of language to achieve their effects: to inspire unique feelings, ideas, and perspectives.'

From the protocol (v.3.2., 13 October 2020)

'Participants will be asked to speak freely on the topic of their participation experiences and/or any other uncontested topics.'

Reasonable attempts were made to ensure that clinicians could exercise clinical judgement about participant suitability and apply a maximum variation sampling approach that did not introduce significant linguistic bias in the form of their familiarity with potential participants' linguistic styles. This familiarity is closer to the definition of external (rather than internal) corpus construction criteria, as it is difficult to anticipate a participant's level and style of engagement when the line of questioning is not known: 'In general, external criteria can be determined without reading the text in question, thereby ensuring that no linguistic judgements are being made' (Atkins et al., 1991, p.8). Clinicians were surprised by the extent of variation in subject matter on viewing the transcripts, which suggests that the blinding was successful.

It is also important to point out that the interactional context on which the clinicians' familiarity is based differs substantially from that of the interviews and the corpus. These were informal conversations that performed no clinical or therapeutic function. This may have further helped to separate selection and corpus construction factors.

Another important factor guiding participant selection with reference to corpus construction is that clinicians are trained in the assessment of language pathology in a

manner that differs from a detailed linguistic analysis. This also provides some protections against the (hypothetical but reasonable) view that clinician knowledge of speaker style may negatively impact the design.

Sampling a clinical population whose symptoms affect linguistic production and comprehension is challenging for corpus designers. Schizophrenia symptoms that affect language ability are arguably external criteria, yet their correspondence to specific linguistic manifestations makes it difficult to construct a corpus for this population that completely avoids building on internal criteria. The fact that symptoms correlate with certain manifestations, however, does not guarantee prediction of what language a corpus involving those symptoms will contain.

5.5.2. Comparison group

Self-selection sampling was used for comparison participants. Potential comparison participants responded to public advertisement. Their role in the corpus design process is much simpler. Self-selection sampling entirely avoids the problem of a corpus builder making linguistic judgements about speakers in this cohort.

Their lack of homogenous membership within a specific linguistic community is also beneficial as a point of contrast. This speaks to Sinclair's (2005) third recommendation:

Only those components of corpora which have been designed to be independently contrastive should be contrasted (cited in Adolphs and Knight, 2010, p.39).

The ability to compare speech in a clinical subgroup against that of a comparison subgroup was an integral aspect of the design. Early plans included no collection of

comparison interview data due to the availability of the BNC. A general reference corpus does not, however, offer an increase in the homogenous components within the corpus. This can be achieved by including a comparison cohort and is consistent with Sinclair's (2005) ninth recommendation:

A corpus should aim for homogeneity in its components while maintaining adequate coverage, and rogue texts should be avoided (cited in Adolphs and Knight, 2010, p.39).

Relying on the BNC for comparison would have effectively produced a sub-corpus of 'rogue texts', because the DAIS-C's interactional contexts are not reflected in the BNC. It is preferable in the context of a specialised corpus to compare clinical and comparison speech drawn from the same interactional contexts. This leverages the main strength of specialised corpora.

5.6. Data collection

5.6.1. Logistics statement

Early data collection plans assumed in-person participation and the involvement of one NHS Trust. All operational decisions were made (and initial approvals rested) on this basis. Between the introduction of the GDPR and the onset of the COVID-19 pandemic, the project underwent five substantial amendments. The development of a multisite presence was among the larger changes. Many operational decisions considered the project's position as an unfunded study, ineligible for Clinical Research Network (CRN) Portfolio adoption. The project succeeded only because two clinicians volunteered their time.

The UK lockdowns were periods of great uncertainty, and NHS services were particularly pressured. Data collection often occurred at short notice, and, in the midst of this, the collection of detailed demographic information was largely neglected in the case of the clinical group. Greater attention was paid to the collection of the corpus data itself, its preparation, and its transcription.

Some metadata fields are incomplete as a result. This is not ideal, but it is one of the few areas where operational oversights were affordable. Demographic metadata collection was mainly intended to support interpretation and discussion of the experimental results. They are supplied in their incomplete form within the DAIS-C because they can still provide valuable contextual information at the individual speaker level. They are less suitable for exploring differences at the group level, but they were never intended for this purpose in the corpus context. Those data that were gathered for variation or comparison are complete.

Participants were given a choice of two participation routes to maximise the chance of successful data collection. One involved a brief cognitive assessment, a psycholinguistic experiment, and an interview. The other involved only the interview. Both routes could be taken in person or remotely. Remote administration involved a video call for all measures and a telephone call for interview only. I offered this choice for two reasons: data collection coincided with the ongoing COVID-19 lockdowns, and the collaborating clinicians advised that not all clinical group participants would have the technical knowledge and/or abilities to participate in all measures.

Interview length varied across the participation routes. Participants who sat all measures had already engaged in two previous tasks. This likely reduced the overall interview time

for these participants due to fatigue effects. The Call for Participants recruitment material also specified that participation for all measures and interview only routes would not exceed one hour. This likely set participant expectations for interview duration. The cognitive assessment and experiment were usually completed within 20 to 30 minutes. This is another important consideration when considering the role of question and context on interview length and token count. This is not necessarily problematic as our design requirements included a need for data from both formal testing and informal conversational contexts, but it is worth noting that fatigue effects and the advertising literature likely influenced differences to some degree.

The tables below present information on measures, pathway assignment, mode of interaction with the experiment, CLQT(+) variation, and CLQT order.

Table 27 - DAIS-C-CL: interview only

Speaker ID	interview only
<21AN11>	yes
<03EB14>	yes
<10EB14>	yes
<10EB15>	yes
<03AR15>	yes
<26AR16>	yes
<21AP15>	yes
<22AP15>	yes
<12AY15>	yes
<21UN11>	yes
<18UG09>	yes

<18UG10>	yes
<18UG11>	yes
<18UG14>	yes
<18UG15>	no

Table 28 - DAIS-C-CO: interview only

Speaker ID	interview only
<23CT18>	no
<23CT19>	no
<26CT11>	no
<11AR18>	yes
<16UN13>	yes
<16UN16>	yes
<23EB14>	yes
<02AR17>	no
<09AR14>	no
<16OV11>	no
<17AR13>	no
<19OV10>	no
<23OV14>	no
<28CT11>	no

Table 29 - DAIS-C-CL: experiment pathway and mode, CLQT(+), and CLQT order

Speaker ID	experiment pathway	experiment mode	CLQT(+)	CLQT order
<21AN11>	n/a	n/a	n/a	n/a
<03EB14>	n/a	n/a	n/a	n/a
<10EB14>	n/a	n/a	n/a	n/a

<10EB15>	n/a	n/a	n/a	n/a
<03AR15>	n/a	n/a	n/a	n/a
<26AR16>	n/a	n/a	n/a	n/a
<21AP15>	n/a	n/a	n/a	n/a
<22AP15>	n/a	n/a	n/a	n/a
<12AY15>	n/a	n/a	n/a	n/a
<21UN11>	n/a	n/a	n/a	n/a
<18UG09>	n/a	n/a	n/a	n/a
<18UG10>	n/a	n/a	n/a	n/a
<18UG11>	n/a	n/a	n/a	n/a
<18UG14>	n/a	n/a	n/a	n/a
<18UG15>	P1	face-to-face	CLQT+	pre-experiment

Table 30 - DAIS-C-CO: experiment pathway and mode, CLQT(+), and CLQT order

Speaker ID	experiment pathway	experiment mode	CLQT(+)	CLQT order
<23CT18>	P1	remote	CLQT	pre-experiment
<23CT19>	P1	remote	CLQT	pre-experiment
<26CT11>	P2	remote	CLQT	post-experiment
<11AR18>	n/a	n/a	n/a	n/a
<16UN13>	n/a	n/a	n/a	n/a
<16UN16>	n/a	n/a	n/a	n/a
<23EB14>	n/a	n/a	n/a	n/a
<02AR17>	P2	remote	CLQT	post-experiment

<09AR14>	P1	remote	CLQT	post- experiment
<16OV11>	P1	remote	CLQT	pre- experiment
<17AR13>	P2	remote	CLQT	pre- experiment
<19OV10>	P2	remote	CLQT	post- experiment
<23OV14>	P2	remote	CLQT	pre- experiment
<28CT11>	P2	remote	CLQT	pre- experiment

5.6.2. Interviewing

FTD can be elicited in informal spoken contexts, particularly when the discussion focuses on open, abstract topics (Marengo et. al. 1986). These interviews tend to be administered by clinicians in a test or clinical interactional context. Less work has looked at how individuals with schizophrenia converse in more informal (less clinical), deliberately “conversational” contexts.

Interviews were unstructured and involved participants being asked one of three initiating questions⁸ (described below). Only one such question was asked per participant, and two of the questions were randomised across participants. Each question sought to better understand participants’ creative uses of language and did not

⁸ One question was reserved, in turn, for participants who had also completed a psycholinguistic task. It was only used with one clinical speaker, and the referring clinician did not know in advance which of the referred participants would complete all measures or only the interview.

broach clinical topics unless they were raised by the participants. These topics were only explored with participants' consent.

The three initiating questions were developed to allow for representation of three concepts important to the research question.

The first question explores whether creativity is defined narrowly or broadly. The psycholinguistic experiment described in Chapter Four of this thesis (and also in Delgaram-Nejad, 2022) offers a narrow, experiential definition. In that experiment, participants may make creative choices but only under restrictive linguistic conditions. This question is important for eliciting information on broad concepts confined to a limited experiential frame. The opposite of this involves inviting participants to define linguistic creativity themselves. This provides more opportunity for digression and abstraction but can be intimidating for respondents. Varying these question types allowed for data capture at both extremes.

The second concept is designed to explore the role of an open or closed initiating question. Open questions invite a range of responses, whereas closed questions offer less (usually affirmative, negative, or forced-choice responses). As an initiating question, closed questions allow for the quick categorisation of participants' viewpoints before the reasoning is unpacked with a subsequent open question. It was important to capture data on both question types in the initiation (or cue) position for two reasons: (1) because wh-questions and closed questions exert different effects in interview contexts (Waterman et al., 2001); (2) because some individuals with schizophrenia perform poorly on tests of social cognition and open questions place greater demands on those (and broader cognitive) resources; question type studies in childhood-onset

schizophrenia suggest difficulty with wh-questions independent of cognitive functioning and/or the presence of FTD (Abu-Akel, 2000). A corpus including data reflective of both types provides helpful information on interviewing styles as they relate to schizophrenia cohorts, response formulation and structure by genre, and more.

The third concept was about whether emphasis fell on language or creativity. One question framed creativity as an action that could involve language, whereas another framed language as a tool that could be exploited for creative purposes. This ensured that responses within the corpus were generated from a variety of conceptual prompts.

These variations in question type aimed to be consistent with the idea that samples should be taken from a range of typical situations (Koester, 2010). Descriptions of interview behaviour tend to make up a smaller part of corpus design (as in Pizarro Pedraza, 2019).

The questions are as follows:

[1] 'How was the experiment?'

This question was used only with participants who had completed the psycholinguistic task described in Chapter Four (and Delgaram-Nejad, 2022). It was intended to gather data for the 'open initiating' and 'narrow creativity context' genres.

[2] 'Do you feel like you do creative things with language?'

This question was randomised across all participants who did not take part in the psycholinguistic task. It was intended to gather data for the 'closed initiating' and 'broad creativity context' genres. Emphasis was placed on affect ('feel' - to prompt abstract

reasoning) and creativity as an action that could involve language ('do creative things with').

[3] 'Do you feel like you use language creatively?'

This question was also randomised across all participants who did not take part in the psycholinguistic task. It was intended to gather data for the 'closed initiating' and 'broad creativity context' genres. As above, emphasis was placed on affect ('feel' - to prompt abstract reasoning) and, in this case, language as a tool that could be exploited for creative purposes ('use language creatively').

These decisions represented attempts to observe Sinclair's (2005) eighth recommendation:

The corpus builder should retain, as target notions, representativeness and balance. While these are not precisely definable and attainable goals, they must be used to guide the design of a corpus and the selection of its components. Any comparison of subject matter in a corpus should be imposed by the use of external, and not internal, criteria (cited in Adolphs and Knight, 2010, p.39).

Tables 31 and 32 below show the allocations of initiating questions.

Table 31 - DAIS-C-CL: interview question and question type

Speaker ID	interview question	question type
<21AN11>	do you feel like you do creative things with language?	closed
<03EB14>	do you feel like you use language creatively?	closed

<10EB14>	do you feel like you do creative things with language?	closed
<10EB15>	do you feel like you do creative things with language?	closed
<03AR15>	do you feel like you use language creatively?	closed
<26AR16>	do you feel like you use language creatively?	closed
<21AP15>	do you feel like you do creative things with language?	closed
<22AP15>	do you feel like you do creative things with language?	closed
<12AY15>	do you feel like you use language creatively?	closed
<21UN11>	do you feel like you use language creatively?	closed
<18UG09>	do you feel like you do creative things with language?	closed
<18UG10>	do you feel like you use language creatively?	closed
<18UG11>	do you feel like you do creative things with language?	closed
<18UG14>	do you feel like you use language creatively?	closed
<18UG15>	how was the experiment?	open

Table 32 - DAIS-C-CO: interview question and question type

Speaker ID	interview question	question type
<23CT18>	how was the experiment?	open
<23CT19>	how was the experiment?	open
<26CT11>	how was the experiment?	open
<11AR18>	do you feel like you use language creatively?	closed

<16UN13>	do you feel like you use language creatively?	closed
<16UN16>	do you feel like you do creative things with language?	closed
<23EB14>	do you feel like you do creative things with language?	closed
<02AR17>	how was the experiment?	open
<09AR14>	how was the experiment?	open
<16OV11>	how was the experiment?	open
<17AR13>	how was the experiment?	open
<19OV10>	how was the experiment?	open
<23OV14>	how was the experiment?	open
<28CT11>	how was the experiment?	open

The interviewer used an unstructured approach with the chief goal of maximising ecological validity. The interviewer spent the interaction processing participants' responses to one of the initiating questions and developing follow-up questions in real time. This approach was about communicating interactional parity, as both interviewer *and* interviewee had to formulate their contributions in real time. The interviewer would ask for clarification of specific concepts and elaboration on certain terms, focusing on points of metalinguistic awareness. The interviewer reintroduced creativity as a topic only if the participant had deviated significantly *and* reached the point where they could no longer advance the conversation themselves. The interviews were concluded when participants indicated that they had said all that they wished to. They were advised at the start of the conversation that they could do this at any time, and the interviewer checked participant views on this at various points throughout the interview. The interviewer signalled this point in the interaction with a closed (and closing) question: 'is

there anything that you'd like to talk about that we haven't talked about?' This is consistent with Sinclair's (2005) sixth recommendation:

Samples of language for a corpus should wherever possible consist of entire documents or transcriptions of complete speech events, or should get as close to this target as possible. This means that samples will differ substantially in size (cited in Adolphs and Knight, 2010, p.39).

Many participants sought a definition of linguistic creativity, even though one was provided on the IS. The interviewer provided their own opinions on this and other topics when asked, again to sustain ecological validity and communicate interactional parity. The interviewer would even offer alternative points of view. These were introduced because naturalistic interaction regularly requires the navigation of difference (Colomina-Almiñana, 2015), something often missing from traditional qualitative interviewing paradigms (Kelly et al., 2010). The interviewer never insisted upon their views, though, and events where this was situationally appropriate were rare.

5.6.3. Recording

Audio quality, interview duration, recording date, and recording time were documented (as per Strassel and Cole, 2006). This allows for calculations of words per audio minute and other analyses.

Tables 33 and 34 below display this information.

Table 33 - DAIS-C-CL: audio quality, duration, recording date, and recording time

Speaker ID	audio quality	duration	minutes	recording date	recording time
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<21AN11>	acceptable	01:25:16	85.27	21-Jan-21	11:00
<03EB14>	good	01:43:28	103.47	03-Feb-21	14:00
<10EB14>	good	00:33:37	33.62	10-Feb-21	14:00
<10EB15>	good	00:47:51	47.85	10-Feb-21	15:00
<03AR15>	good	00:30:34	30.57	03-Mar-21	15:00
<26AR16>	good	00:43:32	43.53	26-Mar-21	16:00
<21AP15>	good	00:31:17	31.28	21-Apr-21	15:00
<22AP15>	good	00:11:21	11.35	22-Apr-21	15:00
<12AY15>	good	00:25:38	25.63	12-May-21	15:00
<21UN11>	good	00:19:12	19.20	21-Jun-21	11:00
<18UG09>	excellent	00:11:02	11.03	18-Aug-21	09:00
<18UG10>	excellent	00:05:11	5.18	18-Aug-21	10:00
<18UG11>	excellent	00:28:18	28.30	18-Aug-21	11:00
<18UG14>	excellent	00:33:23	33.38	18-Aug-21	14:00
<18UG15>	excellent	00:14:59	14.98	18-Aug-21	15:00

Table 34 - DAIS-C-CO: audio quality, duration, recording date, and recording time

Speaker ID	audio quality	duration	minutes	recording date	recording time
<23CT18>	good	00:14:14	14.23	23-Oct-20	18:00
<23CT19>	good	00:09:57	9.95	23-Oct-20	19:00
<26CT11>	good	00:17:33	17.55	26-Oct-20	11:00
<11AR18>	excellent	00:30:45	30.75	11-Mar-21	18:00
<16UN13>	excellent	00:29:51	29.85	16-Jun-21	13:00

<16UN16>	excellent	00:56:48	56.80	16-Jun-21	16:00
<23EB14>	excellent	00:46:15	46.25	23-Feb-21	14:00
<02AR17>	excellent	00:09:58	9.97	02-Mar-21	17:00
<09AR14>	excellent	00:14:13	14.22	09-Mar-21	14:00
<16OV11>	excellent	00:08:59	8.98	16-Nov-21	11:00
<17AR13>	excellent	00:14:05	14.08	17-Mar-21	13:00
<19OV10>	excellent	00:26:55	26.92	19-Nov-21	10:00
<23OV14>	excellent	00:23:36	23.60	23-Nov-21	14:00
<28CT11>	excellent	00:19:25	19.42	28-Oct-21	11:00

Information about the devices used by the interviewer and participant and interview recording arrangements was also logged to contextualise the audio quality tables above. Some participants were interviewed via telephone, with the speakerphone function activated, which was then recorded using a desktop condenser microphone. This degrades the final audio signal because the speech data is filtered at several points. This had transcription implications that are discussed later and was a significant factor in the need to exclude <26AR12>'s data.

Tables 35 and 36 below display this information.

Table 35 - DAIS-C-CL: interviewer device, participant device, and recording setup

Speaker ID	interviewer device	participant device	recording setup
<21AN11>	telephone (mobile)	telephone (mobile)	speakerphone to microphone

<03EB14>	telephone (mobile)	telephone (mobile)	speakerphone to microphone
<10EB14>	telephone (mobile)	telephone (landline)	speakerphone to microphone
<10EB15>	telephone (mobile)	telephone (mobile)	speakerphone to microphone
<03AR15>	telephone (mobile)	telephone (mobile)	speakerphone to microphone
<26AR16>	telephone (mobile)	telephone (mobile)	speakerphone to microphone
<21AP15>	telephone (mobile)	telephone (mobile)	speakerphone to microphone
<22AP15>	telephone (mobile)	telephone (mobile)	speakerphone to microphone
<12AY15>	telephone (mobile)	telephone (mobile)	speakerphone to microphone
<21UN11>	telephone (mobile)	telephone (mobile)	speakerphone to microphone
<18UG09>	desktop microphone	n/a	microphone to laptop
<18UG10>	desktop microphone	n/a	microphone to laptop
<18UG11>	desktop microphone	n/a	microphone to laptop
<18UG14>	desktop microphone	n/a	microphone to laptop
<18UG15>	desktop microphone	n/a	microphone to laptop

Table 36 - DAIS-C-CO: interviewer device, participant device, recording setup

Speaker ID	interviewer device	participant device	recording setup
<23CT18>	desktop computer	desktop/laptop computer	recording software
<23CT19>	desktop computer	desktop/laptop computer	recording software

<26CT11>	desktop computer	desktop/laptop computer	recording software
<11AR18>	desktop computer	desktop/laptop computer	recording software
<16UN13>	desktop computer	desktop/laptop computer	recording software
<16UN16>	desktop computer	desktop/laptop computer	recording software
<23EB14>	desktop computer	desktop/laptop computer	recording software
<02AR17>	desktop computer	desktop/laptop computer	recording software
<09AR14>	desktop computer	desktop/laptop computer	recording software
<16OV11>	desktop computer	desktop/laptop computer	recording software
<17AR13>	desktop computer	desktop/laptop computer	recording software
<19OV10>	desktop computer	desktop/laptop computer	recording software
<23OV14>	desktop computer	desktop/laptop computer	recording software
<28CT11>	desktop computer	desktop/laptop computer	recording software

5.7. Demographics

5.7.1. Age, sex, gender, and education

Data on biological sex (female or male) and gender identity (woman, man, or a specified alternative) were recorded because both influence outcomes in clinical research (Clayton and Tannenbaum, 2016). Data on age range and education level is missing for some clinical participants due to errors in data collection, although some education

information has been recovered as it is referenced in the transcripts. Education was recorded as positioning in relation to the UK National Qualifications Framework (NQF).

Tables 37 and 38 show the available data for age, sex, gender, and education level as reported by participants.

Table 37 - DAIS-C-CL: age range, sex, gender, and education

Speaker ID	age range	sex	gender	education
<21AN11>	50–60	male	man	no data
<03EB14>	no data	male	man	no data
<10EB14>	no data	male	man	no data
<10EB15>	no data	female	woman	L7
<03AR15>	no data	male	man	no data
<26AR16>	60–70	female	woman	L6
<21AP15>	no data	male	man	no data
<22AP15>	no data	male	man	L3
<12AY15>	no data	female	woman	no data
<21UN11>	no data	male	man	no data
<18UG09>	20–30	male	man	no data
<18UG10>	30–40	male	man	no data

	40–			no data
<18UG11>	50	male	man	
	40–			no data
<18UG14>	50	male	man	
	20–			no data
<18UG15>	30	male	man	

Table 38 - DAIS-C-CO: age, sex, gender, and education

Speaker ID	age range	sex	gender	education
<23CT18>	20– 30	male	man	L7
<23CT19>	20– 30	female	woman	L8
<26CT11>	50– 60	female	woman	L7
<11AR18>	30– 40	female	woman	L8
<16UN13>	20– 30	male	man	L7
<16UN16>	30– 40	female	woman	L7
<23EB14>	40– 50	female	woman	L6
<02AR17>	30– 40	male	man	L6
<09AR14>	20– 30	female	woman	L6
<16OV11>	20– 30	female	woman	L8
<17AR13>	30– 40	female	woman	L6
<19OV10>	50– 60	female	woman	L7

30–
<23OV14> 40 female woman L7

30–
<28CT11> 40 female woman L6

5.7.2. Setting and geography

A design benefit of offering multiple participation routes (in-person, remote, all measures, interview only) was that it provided situational variety (Koester, 2010).

Genres and registers can be well represented with samples spanning the five to ten range (Biber, 1990).

Tables 39 and 40 below present information on interview modality, interview location, and participants' geographic region.

Table 39 - DAIS-C-CL: interview mode, interview location, and participant locale

Speaker ID	interview mode	interview location	geographic region
<21AN11>	telephone	home address	London (North East)
<03EB14>	telephone	home address	London (North East)
<10EB14>	telephone	residential care home	London (North East)
<10EB15>	telephone	home address	London (North East)
<03AR15>	telephone	home address	London (North East)
<26AR16>	telephone	home address	London (North East)
<21AP15>	telephone	home address	London (North East)

<22AP15>	telephone	home address	London (North East)
<12AY15>	telephone	home address	London (North East)
<21UN11>	telephone	home address	London (North East)
<18UG09>	face to face	open ward (forensic)	Lancashire
<18UG10>	face to face	open ward (forensic)	Lancashire
<18UG11>	face to face	open ward (forensic)	Lancashire
<18UG14>	face to face	open ward (forensic)	Lancashire
<18UG15>	face to face	open ward (forensic)	Lancashire

Table 40 - DAIS-C-CO: interview mode, interview location, and participant locale

Speaker ID	interview mode	interview location	geographic region
<23CT18>	video call (video on)	home address	South West
<23CT19>	video call (video on)	home address	South West
<26CT11>	video call (video off)	home address	London (Greater)
<11AR18>	video call (video on)	home address	South East
<16UN13>	video call (video off)	home address	South Wales
<16UN16>	video call (video off)	home address	North West
<23EB14>	video call (video on)	home address	South West
<02AR17>	video call (video on)	home address	South West

<09AR14>	video call (video on)	home address	South West
<16OV11>	video call (video on)	home address	North West
<17AR13>	video call (video on)	home address	South West
<19OV10>	video call (video on)	home address	South West
<23OV14>	video call (video on)	home address	Midlands
<28CT11>	video call (video on)	home address	London (Greater)

5.7.3. Clinical features

Data on diagnosis, extrapyramidal side effects (EPSEs) status, and clozapine status were recorded to contextualise the clinical transcripts. Participants confirmed clozapine status using the latest approved MD (v.1.0., 12 February 2020), and referring clinicians confirmed the presence or absence of EPSEs. EPSEs can interfere with speech production, and cases of clozapine-induced stuttering leading to speech disorganisation have been reported (Li et al., 2009; Lyall et al., 2007; Grover et al., 2012).

Table 41 below presents the clinical features data.

Table 41 - DAIS-C-CL: diagnosis, EPSEs, and clozapine status

Speaker ID	diagnosis	EPSEs	clozapine
<21AN11>	paranoid schizophrenia	no	yes
<03EB14>	schizophrenia	no	yes
<10EB14>	schizophrenia	no	yes
<10EB15>	schizophrenia	no	yes

<03AR15>	schizophrenia	yes	no (depot)
<26AR16>	schizophrenia	yes	no (depot)
<21AP15>	schizophrenia	no	yes
<22AP15>	schizophrenia	no	yes
<12AY15>	schizophrenia	no	yes
<21UN11>	schizophrenia	no	yes
<18UG09>	schizophrenia	no	no
<18UG10>	schizophrenia	no	yes
<18UG11>	schizophrenia	no	no
<18UG14>	schizophrenia	no	no
<18UG15>	schizophrenia	yes	no

5.7.4. Language cognition

Participants who sat the psycholinguistic task were administered three subtasks from the Cognitive Linguistic Quick Test (CLQT; Estabrooks, 2017). The test was chosen because it offers valuable information on verbal and non-verbal cognitive functioning, can be administered and scored quickly, and is available in two administration pathways (CLQT and CLQT+, aphasia pathway) which generate scores that can be analysed together. The aphasia pathway was used with the clinical group, and the standard CLQT was used with the comparison group. It has been used in studies of aphasia, Parkinson's, and right hemisphere disorder (Bartels-Tobin and Hinckley, 2005; Parashos et al., 2009). It is considered to have an advantage over the Mini Mental State Examination (MMSE; Kerlowicz and Wallace, 1999) because it provides cognitive-domain-specific information (Parashos et al., 2009).

The subtasks used were confrontation naming, story retelling, and generative naming. Confrontation naming errors are evident in aphasia secondary to various forms of brain injury (Estabrooks, 2017). Story retelling provides information about auditory working memory, comprehension, and processing, and verbal production (Estabrooks, 2017). Generative naming assesses word search and retrieval within a superordinate semantic category (animals) and a phonetic category (m words; Estabrooks, 2017).

The original plan for in-person participation involved administering the assessment in full. Only the three subtasks above were retained after remote administration was introduced. This is because the other subtasks do not lend themselves well to remote administration (such as clock drawing and symbol cancellation). This was deemed acceptable because the scores were not intended for analysis, only matching.

Remote administrations of the CLQT were handled through screen sharing. The visual cues present in the stimulus booklet were scanned to produce digital versions. The original sizing was maintained to minimise differences in the administration, although there was no room to control for differences in participant device or screen size. This was one of several modifications made to render data collection viable during the pandemic. There was neither time nor opportunity for equivalence testing, but reasonable efforts were made to ensure equivalence in administration. In the case of the one participant who sat the subtasks in a face-to-face setting, the digital CLQT presentation employed during remote administrations was presented via the study laptop. All participants, remote and face-to-face, experienced the adapted digital version.

Data on these measures were only collected for matching on the psycholinguistic task and to support decisions relating to the study’s exclusion criteria. It is nevertheless included here as supplementary metadata to contextualise the audio recordings.

The tables below present the CLQT(+) data.

Table 42 - DAIS-C-CL: confrontation naming scores

Speaker ID	summary
<21AN11>	n/a
<03EB14>	n/a
<10EB14>	n/a
<10EB15>	n/a
<03AR15>	n/a
<26AR16>	n/a
<21AP15>	n/a
<22AP15>	n/a
<12AY15>	n/a
<21UN11>	n/a
<18UG09>	n/a
<18UG10>	n/a
<18UG11>	n/a
<18UG14>	n/a
<18UG15>	9.5

Table 43 - DAIS-C-CO: confrontation naming scores

Speaker ID	summary
<23CT18>	10

<23CT19> 9.5
 <26CT11> 9.5
 <11AR18> n/a
 <16UN13> n/a
 <16UN16> n/a
 <23EB14> n/a
 <02AR17> 9.5
 <09AR14> 10
 <16OV11> 9.5
 <17AR13> 9.5
 <19OV10> 9.5
 <23OV14> 9.5
 <28CT11> 9.5

Table 44 - DAIS-C-CL: story retelling subscores, total, and summary scores

Speaker ID	subscore 1	subscore 2	total	summary
<21AN11>	n/a	n/a	n/a	n/a
<03EB14>	n/a	n/a	n/a	n/a
<10EB14>	n/a	n/a	n/a	n/a
<10EB15>	n/a	n/a	n/a	n/a
<03AR15>	n/a	n/a	n/a	n/a
<26AR16>	n/a	n/a	n/a	n/a
<21AP15>	n/a	n/a	n/a	n/a
<22AP15>	n/a	n/a	n/a	n/a
<12AY15>	n/a	n/a	n/a	n/a
<21UN11>	n/a	n/a	n/a	n/a
<18UG09>	n/a	n/a	n/a	n/a

<18UG10>	n/a	n/a	n/a	n/a
<18UG11>	n/a	n/a	n/a	n/a
<18UG14>	n/a	n/a	n/a	n/a
<18UG15>	6	0	6	3

Table 45 - DAIS-C-CO: story retelling subscores, total, and summary scores

Speaker ID	subscore 1	subscore 2	total	summary
<23CT18>	12	3	15	8
<23CT19>	13	1	14	7
<26CT11>	12	3	15	8
<11AR18>	n/a	n/a	n/a	n/a
<16UN13>	n/a	n/a	n/a	n/a
<16UN16>	n/a	n/a	n/a	n/a
<23EB14>	n/a	n/a	n/a	n/a
<02AR17>	15	3	18	8
<09AR14>	13	3	16	9
<16OV11>	16	3	19	8
<17AR13>	15	3	18	8
<19OV10>	11	3	14	10
<23OV14>	11	3	15	7
<28CT11>	15	3	18	9

Table 46 - DAIS-C-CL: generative naming subscores, perseveration ratio, total, and summary scores

Speaker ID	subscore 1	subscore 2	perseveration	total	summary
<21AN11>	n/a	n/a	n/a	n/a	n/a
<03EB14>	n/a	n/a	n/a	n/a	n/a

<10EB14>	n/a	n/a	n/a	n/a	n/a
<10EB15>	n/a	n/a	n/a	n/a	n/a
<03AR15>	n/a	n/a	n/a	n/a	n/a
<26AR16>	n/a	n/a	n/a	n/a	n/a
<21AP15>	n/a	n/a	n/a	n/a	n/a
<22AP15>	n/a	n/a	n/a	n/a	n/a
<12AY15>	n/a	n/a	n/a	n/a	n/a
<21UN11>	n/a	n/a	n/a	n/a	n/a
<18UG09>	n/a	n/a	n/a	n/a	n/a
<18UG10>	n/a	n/a	n/a	n/a	n/a
<18UG11>	n/a	n/a	n/a	n/a	n/a
<18UG14>	n/a	n/a	n/a	n/a	n/a
<18UG15>	17	12	0.11	29	6

Table 47 - DAIS-C-CO: generative naming subscores, perseveration ratio, total, and summary scores

Speaker ID	subscore 1	subscore 2	perseveration	total	summary
<23CT18>	36	18	0	54	9
<23CT19>	25	13	0	38	8
<26CT11>	23	23	0.04	46	9
<11AR18>	n/a	n/a	n/a	n/a	n/a
<16UN13>	n/a	n/a	n/a	n/a	n/a
<16UN16>	n/a	n/a	n/a	n/a	n/a
<23EB14>	n/a	n/a	n/a	n/a	n/a
<02AR17>	28	17	0	45	9
<09AR14>	30	17	0	47	9
<16OV11>	29	10	0.06	39	8
<17AR13>	25	22	0	47	9

<19OV10>	33	14	0.108	47	9
<23OV14>	27	21	0.06	48	9
<28CT11>	27	17	0	44	9

5.7.5. Handedness

Information on handedness was collected to support discussion of the experimental results. It is included here to contextualise the transcripts, as language localisation and lateralisation are relevant to FTD in schizophrenia. Language bilateralisation is slightly more prevalent in left-handed individuals (McCarthy and Warrington, 1990). Information on multilingual status was not sought but is evident in the interview content for some participants (cross-linguistic influence or explicit language switching).

Tables 48 and 49 below display this information.

Table 48 - DAIS-C-CL: handedness and multilingual status

Speaker ID	handedness	multilingual
<21AN11>	no data	no data
<03EB14>	no data	no data
<10EB14>	no data	no data
<10EB15>	no data	no data
<03AR15>	no data	no data
<26AR16>	no data	yes
<21AP15>	no data	no data
<22AP15>	no data	no data
<12AY15>	no data	no data
<21UN11>	no data	no data
<18UG09>	no data	no data

<18UG10>	no data	no data
<18UG11>	no data	no data
<18UG14>	no data	no data
<18UG15>	right	no data

Table 49 - DAIS-C-CO: handedness

Speaker ID	handedness	multilingual
<23CT18>	right	no data
<23CT19>	right	no data
<26CT11>	right	no data
<11AR18>	no data	no data
<16UN13>	no data	no data
<16UN16>	no data	yes
<23EB14>	no data	no data
<02AR17>	right	no data
<09AR14>	right	no data
<16OV11>	right	no data
<17AR13>	left	no data
<19OV10>	right	no data
<23OV14>	right	yes
<28CT11>	right	no data

5.8. Transcription

5.8.1. Conventions

Transcription conventions were developed by modifying those present in the BNC User

Manual and Reference Guide (v.1.1., Lancaster University, 2014). The original BNC

formatting and approaches were retained wherever possible. When adaptations were necessary, they were designed to work with existing BNC conventions.

This part of the design stage was about identifying textual, prosodic, gestural, and environmental elements (as per Adolphs and Knight, 2010) useful to the present study of linguistic creativity and schizophrenia. Attention was given to features that might also benefit other researchers (especially where they coincide with the aims of the current study). The general aim was a lightweight set of broadly useful conventions that capture those environmental properties that contribute to the multimodality of spoken language (Strassel and Cole, 2006). The selection of transcription elements therefore focused on those of potential relevance to spoken interactions overall, clinical cohorts and creativity, *and* the broadest levels of linguistic analysis: phonology, morphology, syntax, semantics, and pragmatics.

Table 50, below, displays the conventions used in the DAIS-C.

Table 50 - DAIS-C transcription conventions, modified from the BNC 2014

Tags	description
<XXXXXX> </XXXXXX>	speaker label/ID
<INT> </INT>	interviewer speech
<FAM> </FAM>	family members
<DOC> </DOC>	clinicians
<Lh> </Lh>	laughing
<Ch> </Ch>	coughing
<Sh> </Sh>	sighing
<Sn> </Sn>	sniffing
<Cl> </Cl>	lateral clicking

<InAu> </InAu>	inaudible speech
<Noi=description> </Noi>	miscellaneous noise
<An> </An>	anonymised data
<Mis> </Mis>	missing data
mm	voiced pause
mhm	voiced pause, affirmative
er	filler sound, as in 'her'
erm	filler sound, as in 'term'
ah	filler sound, as in 'car'
oh	filler sound, as in 'toe'
ay	filler sound, as in 'stay'
w, wh, l, la	truncated words
cos, wanna, gotta	standardised contractions
pleasure, P L E I S U R E	words spelled aloud

Most conventions follow the Extensible Markup Language (XML) format, having an opening and closing tag. This decision was made to improve the end-user experience, especially within corpus analysis software. This approach also allows those interested in more granular analyses to situate these features at any point in the raw text, as in the following example:

<Lh>al</Lh>right then

This approach was not required for the present study, but the text has been prepared such that others can adopt this approach if they choose (see Table 50).

XML tags are also easy to extract en-masse, allowing for rapid and precise token/word counts of both features of interest and of the raw text. This approach is consistent with Sinclair's (2005) fifth recommendation:

Any information about a text other than the alphanumeric string of its words and punctuation should be stored separately from the plain text and merged when required in applications (cited in Adolphs and Knight, 2010, p.39).

Speaker labels are composed of participants' unique identifiers, which were developed using the study debrief sheet (DS; v.1.1, 13 June 2018).

Laughter, coughing, sighing, and sniffing were included because they provide valuable paralinguistic information about participant status, potential emotional state, and so on. Lateral clicks were recorded for both their paralinguistic value and for their potential relevance to EPSEs and clozapine (Chung et al., 2009). Inaudible speech was coded to provide a qualitative account of missing speech. It was not possible to discriminate the number of inaudible utterances in all cases, and so the convention is catch-all for the word and phrase levels. Miscellaneous noise, given its variability, was covered with a single code that allowed for transcriber comments. Specifics about the nature of the noise (e.g. whether it was a human voice, a motor vehicle, or music in the distance) was added within this layout. Anonymised information and missing data are treated separately for record-keeping purposes.

Anonymisation was carried out at the transcription stage. All personally identifiable information (PII), such as names and e-mail addresses was redacted and processed in accordance with the latest approved study protocol (v.3.2. 13 October 2020). Data that

was not PII but may still have been identifying in some circumstances was also removed (as per Du Bois et al., 1992). Examples include reference to frequented locations and landmarks, sites of previous hospital admission, and anecdotes about other people. There are instances where the identity of public figures can be inferred despite anonymisation, such as the following:

Excerpt 11

*but princess <An> </An> and I met <An> </An> he came to er the hospital in <An> </An>
princess <An> </An> and like the patients were very upset because then you got
celebrities coming in and just taking the piss out of the patients y I mean you know and
then you have people like er <An> </An> lady <An> </An> I do like lady <An> </An> she's
the one person that I like in the royal family yeah*

This is not problematic in itself as these figures are widely known. Thought was given, though, to whether this speaker's reference to meeting said figures while an inpatient could be identifying. The ultimate determination was that it could not, as none of the details, when anonymised and combined, indicated without doubt any one hospital or occasion.

Hyphenation was avoided for compounds but retained for orthographic number (e.g. 'fifty-five'), as were pauses and sentence boundaries. It became clear early in the transcription process that any attempt to delineate sentence units (as in s-units in the BNC) in the more disorganised examples required considerable time and effort. Given that doing so would not be of great benefit to the research question, it has not been done in this version. It would be possible to introduce them later, however.

Pauses were annotated in early transcription attempts. This greatly slowed transcription, which was already taking some time. There was also much agonising over the value that timed pauses would offer other researchers, their potential relevance to speech disorganisation in schizophrenia (given what they may reveal about executive function), and the work involved in their inclusion. Pauses were ultimately dropped, and the audio files were destroyed on the production of a final transcript. The knowledge that the files could not be retained for further transcription also shaped the approach taken here. A great deal of data had to be discarded, such as detailed prosodic information of potential interest to speech and language therapists and phoneticians. The desire to transcribe with ever-increasing precision (Cook, 1990; McCarthy 1998; Carter, 2004; Halliday, 2004) was particularly apparent at this stage. To ensure that not all prosodic information was lost, an economical (and unusual) form of (what might be called onomatopoeic) transcription was employed (shown below):

Excerpt 12

<21AN11> because they see something good but they don't like it it it upsets them like they have a problem with me listening y I mean if I was a lis er f if I'm a very good listener y I mean I I I listen in reality I listen crystal clear it's mm I may not think the other way the way other people think but I think the way I think </21AN11>

The phonetic properties of the participant's speech are represented in examples like 'y I mean', and truncated words are presented as they sounded on the recording 'lis er f if'. This form of representation was chosen because the DAIS-C is not a written corpus, dysfluencies and their articulatory properties are potentially relevant to the research question and certainly relevant to the language community and interactional context

under study, and the method (although non-standard) allows for the detailed representation of phonological information without the use of intensive phonemic or phonetic annotation. It also avoids the problem of estimating the intended word in the case of truncation, which was often not possible with any confidence. In the rare cases where this form of representation conflicted with standard orthography, for example where 'well' truncated to 'we' would lead to confusion with the pronoun, an alternative that still conveyed the main concept was used: 'w'. This is a good example of how transcription is indeed highly theoretical (Ochs, 1979; Edwards, 1993; Thompson 2005). This approach attempts to tread the difficult line between validity and reading ease (Graddol et al., 1994).

5.8.2. Software

EasyTranskript, a free-to-use transcription environment, was used to process audio files.

The software was chosen because it allows for the quick production of timestamps.

These are provided as a separate file group within the corpus file structure.

5.9. Storage

The corpus data are presented variously across a range of file types and formats, to counter the problem of 'one-offness' common to the development of specialised corpora (Koester, 2010).

Interactional files contain both interviewer and participant dialogue, presented in a running sequence as shown below:

Excerpt 13

<INT> wow </INT>

<03EB14> so but that it it that is about it really that is about it so I write a poem </InAu>

</InAu> it's the first time in a long long time but it is mostly songwriting that I get

creative with so </03EB14>

<INT> what's the the thing you like about the songwriting more than the poetry </INT>

Timestamped files mirror the interactional files but contain only the timestamps

associated with each speaker's turn, as shown below:

Excerpt 14

<03EB14> #00:06:11-5# </03EB14>

<INT> #00:06:08-4# </INT>

<03EB14> #00:06:34-6# </03EB14>

Disruptions in the chronological order, as above, can be used to infer overlaps. This is

because timestamp markers correspond to the end of each speaker's utterance,

irrespective of the order of turns.

'Speaker Only_XML' files contain only the participant's turns and all XML annotation, as

shown below:

Excerpt 15

<03EB14> yeah erm I I sorry </03EB14>

<03EB14> erm I I use erm what I do is erm I will I w I will build like a a single PNG like

what what w one moment one d is one way of doing it is to create many individual

'Speaker Only_Raw' files contain only the participant's turns, with all but the plain text removed as shown below:

Excerpt 16

erm yeah

is that what

sorry

erm

I erm could be may erm that erm erm if I if I hadn't hadn't had all this erm like say like bad stuff in

These decisions focus mainly on Sinclair's (2005) fifth recommendation:

Any information about a text other than the alphanumeric string of its words and punctuation should be stored separately from the plain text and merged when required in applications (cited in Adolphs and Knight, 2010, p.39).

5.10. DAIS-C characteristics

5.10.1. Corpus characteristics

The tables below show the total number of tokens, audio hours, and audio minutes across the DAIS-C as a whole and also by sub-corpora. It is important to note that tokens account for speakers only, whereas audio hours and minutes account for the interaction as a whole (speaker and interviewer).

Tables 51, 52, and 53 display this information.

Table 51 - token count, audio duration, and audio minutes

	tokens	audio hours	audio minutes
DAIS-C	97,357	21:24:50	1284.8
DAIS-C-CL	58,444	15:47:28	947.5
DAIS-C-CO	33,025	05:37:22	337.4

Table 52 - token count, mean, and standard deviation

	tokens	mean	SD
DAIS-C	97,357	3154	3011
DAIS-C-CL	58,444	3896	3700
DAIS-C-CO	33,025	2358	1864

Table 53 - audio minutes, mean, and standard deviation

	audio minutes	mean	SD
DAIS-C	1284.8	29.21	22.31
DAIS-C-CL	947.5	34.97	27.12
DAIS-C-CO	337.4	23.04	14.19

5.10.2. Speaker characteristics

5.10.2.1. Overrepresentation

The corpus is characterised by two forms of overrepresentation at the group level. The first is the distribution of females and males and the second is the distribution of interview contexts.

Tables 54, 55, and 56 show this in cross tabular format.

Table 54 - sex

	female	male	total
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Group	clinical	3	12	15
	comparison	11	3	14
total		14	15	29

Table 55 - interview only

		no	yes	total
group	clinical	1	14	15
	comparison	10	4	14
total		11	18	29

Table 56 - topic breadth

		broad	narrow	total
Group	clinical	14	1	15
	comparison	4	10	14
total		18	11	29

Education is arguably a third source of overrepresentation, as comparison participants range L6 to L8 on the NQF. A full comparison against the clinical cohort is not possible due to insufficient data, though there is data suggesting clinical representation of L3, L6, and L7.

The above are clearly problematic for Sinclair’s (2005) ninth recommendation:

A corpus should aim for homogeneity in its components while maintaining adequate coverage, and rogue texts should be avoided (cited in Adolphs and Knight, 2010, p.39).

The design included plans to recruit an equal number of males and females and to spread the questions and contexts evenly across groups. Achievement of demographic representation was largely dependent on illness severity and suitability, availability, and interest in or inclination toward taking part in the study. Variations in participation route arose mainly in response to the situational and operational challenges presented by the pandemic, and question type was tied to the experimental approaches, particularly the block randomisation processes, described in Chapter Four (and Delgaram-Nejad, 2022).

Schizophrenia and FTD affect language acutely, chronically, and markedly (McKenna, 2007; McKenna and Oh, 2005). Sociolinguistic influences relating to sex and education follow a different pattern and course. Context has a more acute effect, but sociolinguistic influence and language pathology are sufficiently distinct to allow for the detection of schizophrenia-specific effects within the DAIS-C. Their sociolinguistic and contextual dependencies will require a larger corpus (but perhaps not a reference corpus, as covered in Delgaram-Nejad (2021) and further study, and corpus expansion can correct the demographic imbalances of this early version⁹.

5.10.2.2. *Corpus data*

⁹ It is important to state that the corpus was intended to be representative of a broad range of manifestations of language disturbance in schizophrenia, including speakers with and without FTD. Recruitment challenges have meant that it did not fully meet this aim. Most of the clinical participants are male, and so the present corpus can only be said to be representative of language in schizophrenia in males. Further work is needed to expand the corpus so that it can fulfil its original intended aim of being more broadly representative of language in schizophrenia in males and females.

Tables 57 and 58 below show the number of tokens per speaker and their contribution to the total corpus and their respective sub-corpora as percentages.

Table 57 - DAIS-C-CL: tokens, % of corpus, and % of sub-corpus

Speaker ID	tokens	% of corpus	% of sub-corpus
<03AR15>	3800.00	3.90	6.50
<03EB14>	15473.00	15.89	26.47
<10EB14>	2345.00	2.41	4.01
<10EB15>	4274.00	4.39	7.31
<12AY15>	2040.00	2.10	3.49
<18UG09>	2344.00	2.41	4.01
<18UG10>	186.00	0.19	0.32
<18UG11>	2288.00	2.35	3.91
<18UG14>	5239.00	5.38	8.96
<18UG15>	1066.00	1.09	1.82
<21AN11>	6499.00	6.68	11.12
<21AP15>	4137.00	4.25	7.08
<21UN11>	1686.00	1.73	2.88
<22AP15>	1179.00	1.21	2.02
<26AR16>	5888.00	6.05	10.07

Table 58 - DAIS-C-CO: tokens, % of corpus, and % of sub-corpus

Speaker ID	tokens	% of corpus	% of sub-corpus
<02AR17>	819.00	0.84	2.48
<09AR14>	1693.00	1.74	5.13
<11AR18>	3371.00	3.46	10.21
<16OV11>	477.00	0.49	1.44

<16UN13>	4210.00	4.32	12.75
<16UN16>	4867.00	5.00	14.74
<17AR13>	1289.00	1.32	3.90
<19OV10>	1692.00	1.74	5.12
<23CT18>	1330.00	1.37	4.03
<23CT19>	939.00	0.96	2.84
<23EB14>	7031.00	7.22	21.29
<23OV14>	1842.00	1.89	5.58
<26CT11>	1210.00	1.24	3.66
<28CT11>	2255.00	2.32	6.83

Figure 19 shows the distribution of token counts.

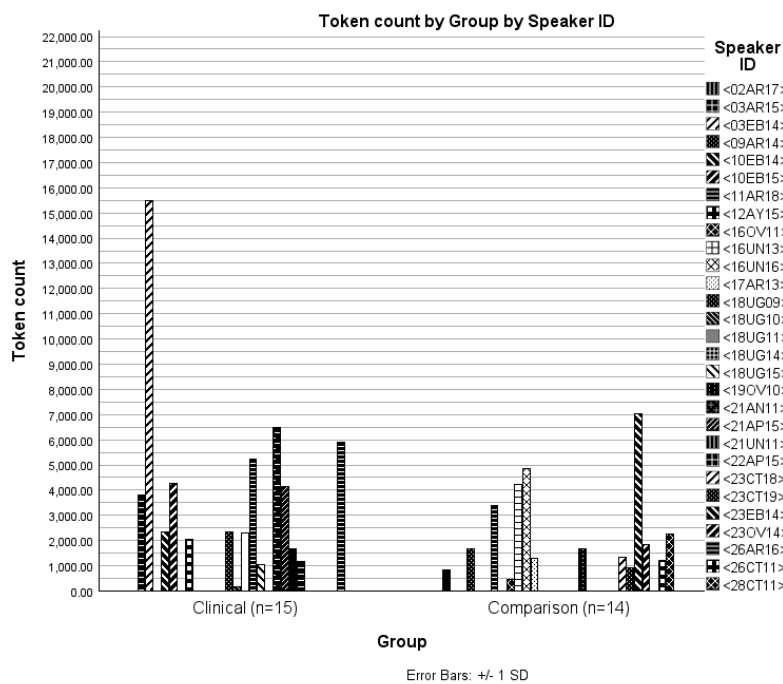


Figure 19 - Token count by group by speaker ID

13 comparison speakers and 11 clinical speakers are within the 0–5000 token range. One comparison speaker and three clinical speakers are in the 5,000–10,000 token range. One clinical speaker is an outlier, being within the 15,000–20,000 token range.

Figure 20 below shows the distribution of audio minutes per speaker.

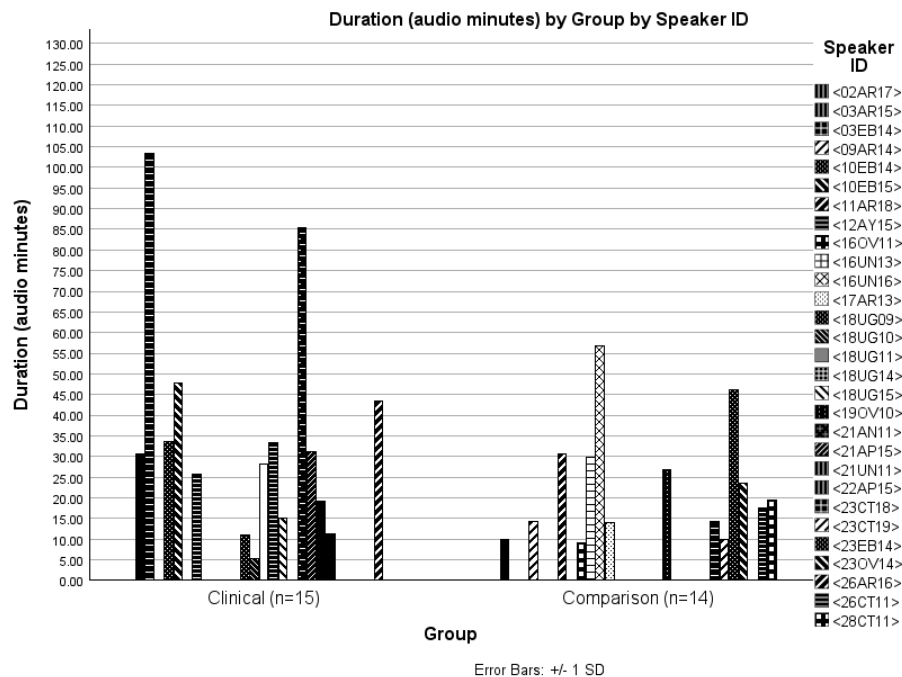


Figure 20 - duration (audio minutes) by group by speaker ID

Eight comparison speakers and five clinical speakers are within the 0–20 minute range. Four comparison speakers and six clinical speakers are within the 20–40 minute range. Two comparison speakers and two clinical speakers are within the 40–60 minute range. Two clinical speakers are outliers, one being within the 80–100 minute range and another being within the 100–120 minute range.

These values suggest some success in sampling according to Sinclair’s (2005) sixth recommendation:

Samples of language for a corpus should wherever possible consist of entire documents or transcriptions of complete speech events, or should get as close to this target as possible. This means that samples will differ substantially in size (cited in Adolphs and Knight, 2010, p.39).

One challenge associated with this recommendation is that samples of various sizes can skew relative contributions to the corpus, with some speakers constituting a much larger portion than others. It is worth reviewing each speaker’s contributions on the level of their specific sub-corpora and that of the wider corpus.

Figure 21 below shows each speaker’s contribution to their relevant sub-corpus as a percentage.

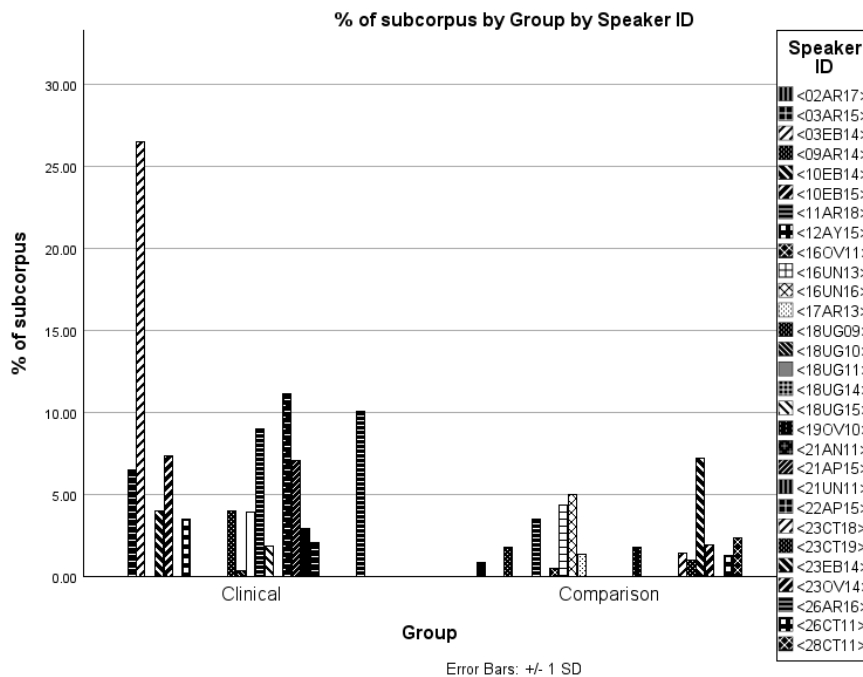


Figure 21 - % of subcorpus by group by speaker ID

14 comparison speakers and 13 clinical speakers are within the 0–10% range. One clinical speaker is in the 10–20% range. One clinical speaker is an outlier, being within the 20–30% range.

Figure 22 below shows each speaker’s contribution to the overall corpus as a percentage.

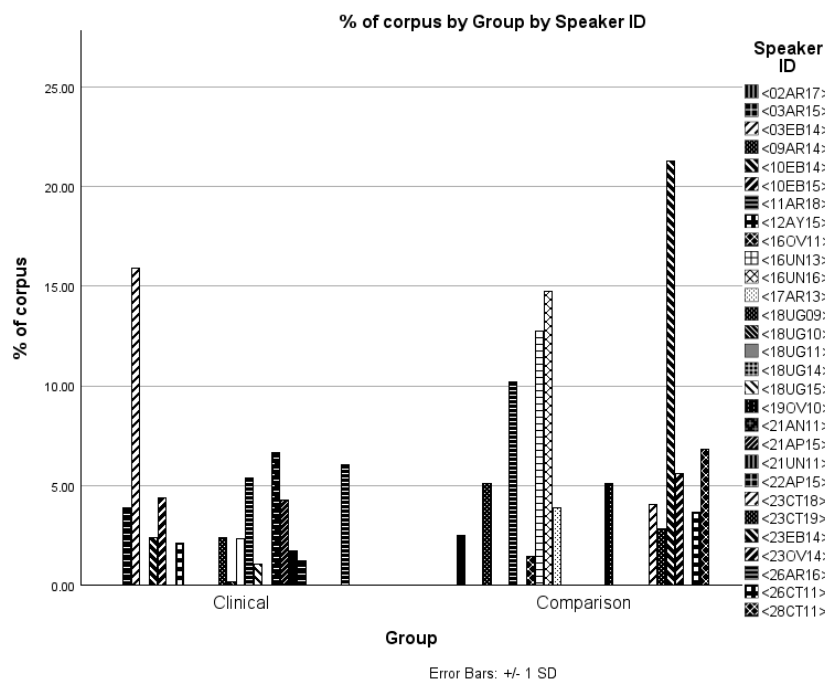


Figure 22 - % of corpus by group by speaker ID

6 comparison speakers and 9 clinical speakers are within the 0–5% range. Four comparison speakers and three clinical speakers are within the 5–10% range. Three comparison speakers are in the 10–15% range. One clinical speaker is in the 15–20% range. One comparison speaker is in the 20–25% range.

The DAIS-C incorporates complete speech events, resulting in samples varying significantly in size. The rates of these variations are somewhat balanced across groups,

but speaker overrepresentation is apparent at the sub-corpus and corpus levels. The result is a fair compromise between numerical uniformity and participant heterogeneity.

It is also important to review interviewer token data, as differences in interviewer behaviour are likely to influence participant behaviour.

Figure 23 below shows the distribution of interviewer token counts.

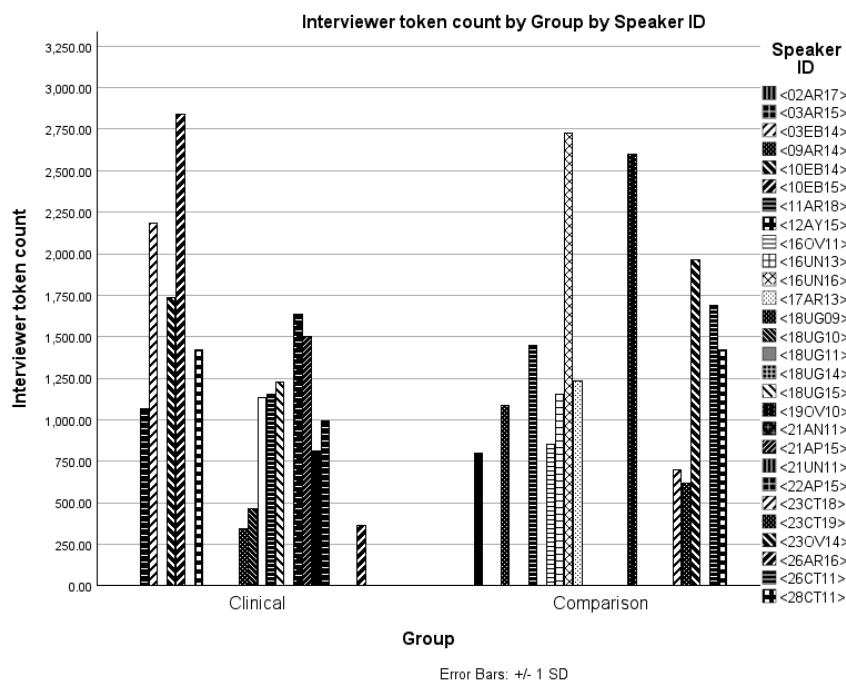


Figure 23 - interview token count by group by speaker ID

Interviewer tokens range 0–1000 for four comparison and five clinical speakers.

Interviewer tokens range 1000–2000 for seven comparison and eight clinical speakers.

Interviewer tokens range 2000–3000 for two comparison and two clinical speakers.

Interviewer token data is missing for one clinical participant: <23EB14>.

Figure 24 below shows the distribution of speaker to interviewer token ratios.

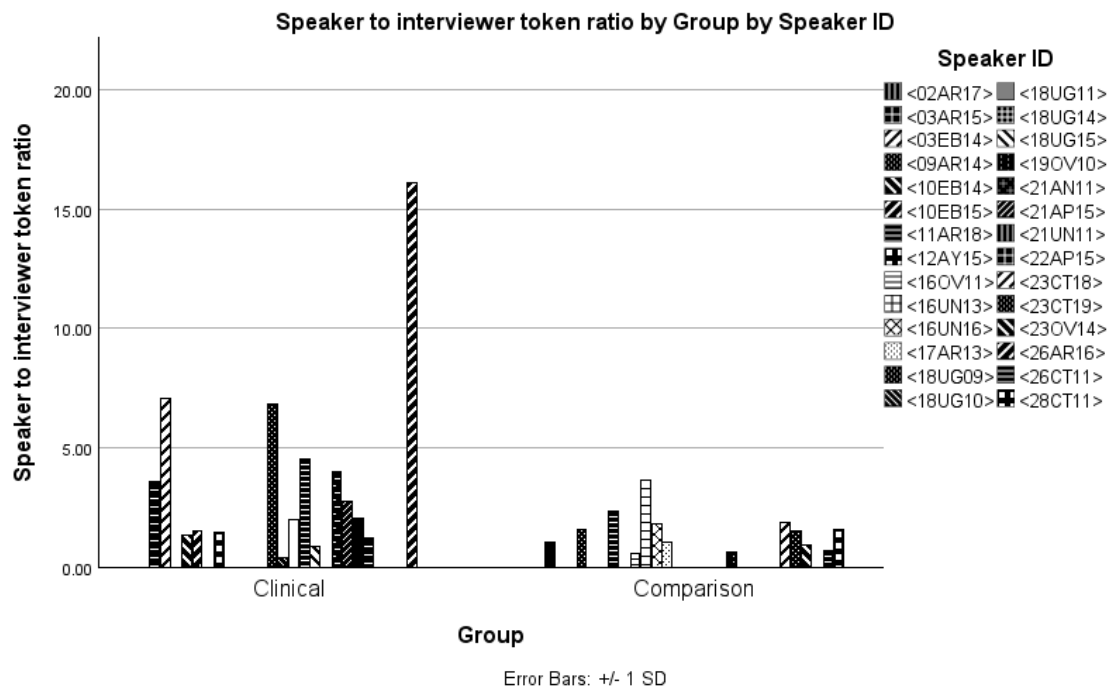


Figure 24 - speaker to interviewer token ratio by group by speaker ID

Token count ratios (describing the number of speaker tokens¹⁰ for each interviewer token) are relatively balanced across groups. 13 (14 including the missing value for <23EB14>) comparison ratios and 12 clinical ratios fell within the 0–5 range. There are two clinical outliers in the 5–10 range. There was one clinical outlier in the 15–20 range.

5.10.3. Group characteristics

5.10.3.1. Overrepresentation

It is worth examining the speaker characteristics discussed in Section 5.10.2. in relation to the overrepresentation issues presented in Section 5.10.3., because these may contextualise the results and discussion.

¹⁰ Here, ‘token’ refers to an instance of a word. The same word repeated twice would thus be two tokens.

5.10.3.2. Mean differences by sex

Figure 25 below shows the mean token counts across groups by speaker sex.

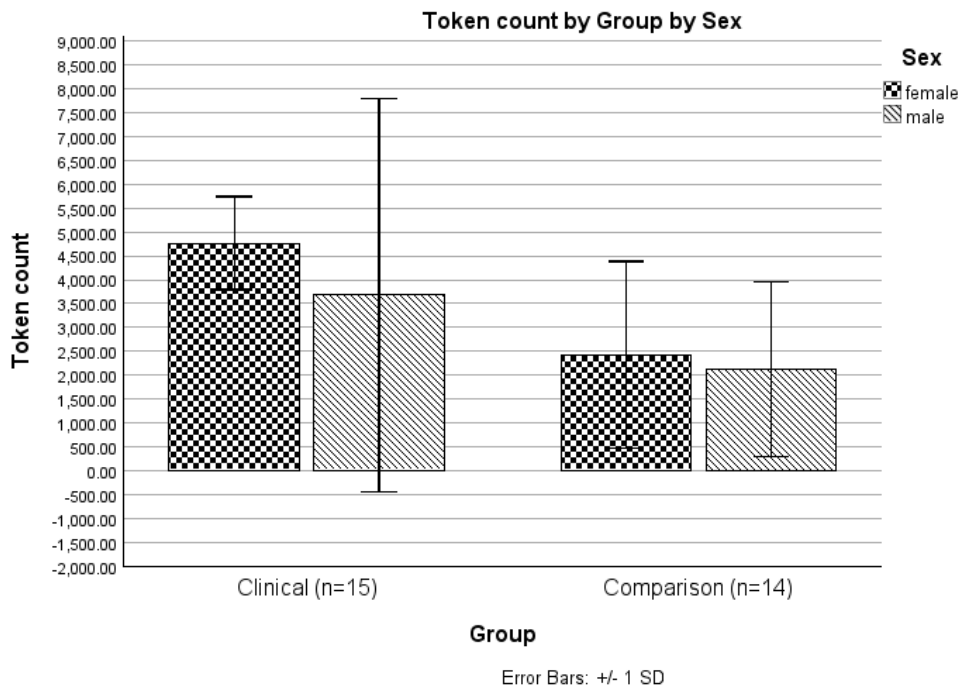


Figure 25 - token count by group by sex

Female comparison participants show a higher token mean than male comparison participants, with the means and dispersions in this group being somewhat similar.

Female clinical participants show a higher token mean than male clinical participants, despite male overrepresentation in this cohort, alongside a smaller dispersion than the male clinical participants and comparison participants overall. This may have to do with the interview's focus on collaborative talk (Opina, 2017). The presence of a male interviewer is also likely to affect the gendered language dynamics in the present dataset. Male clinical participants show a higher token mean than comparison females and males but with the overall largest dispersion across groups. Readers are reminded of

the following: comparison females (n=11), comparison males (n=3), clinical females (n=3), clinical males (n=12).

Figure 26 below shows duration in audio minutes by group by sex.

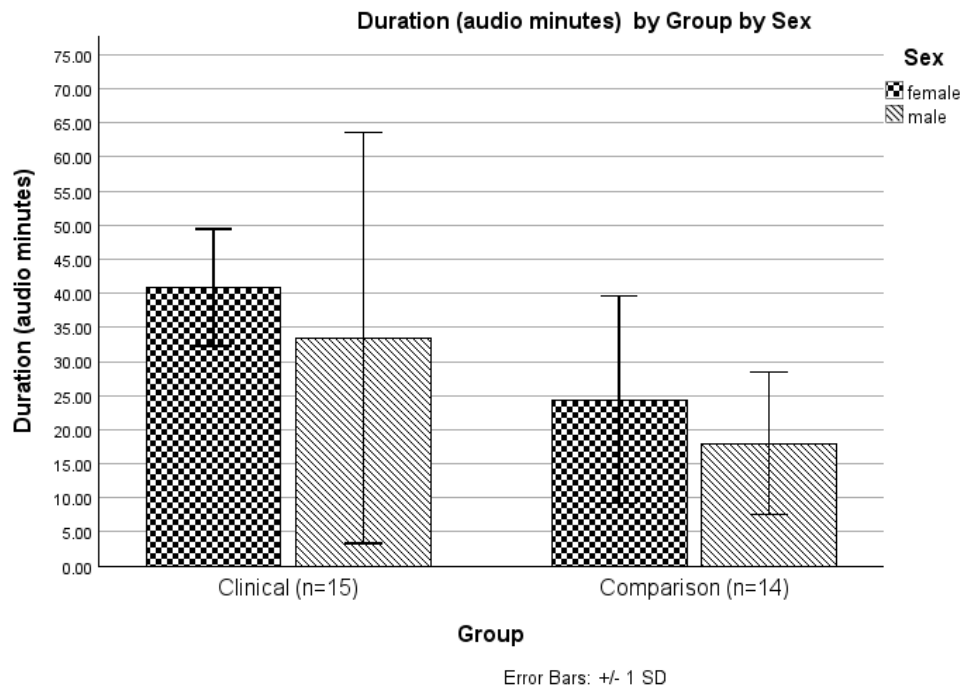


Figure 26 - duration (audio minutes) by group by sex

Female comparison participants show a higher duration mean than male comparison participants, with the comparison means and comparison dispersions being somewhat similar. Female clinical participants show a higher duration mean than male clinical participants, despite male overrepresentation in this cohort. And, again, female clinical participants display a smaller dispersion than the male clinical participants and comparison participants overall. Male clinical participants show a higher token mean than comparison females and males but with the overall largest dispersion. Readers are

reminded of the following: comparison females (n=11), comparison males (n=3), clinical females (n=3), clinical males (n=12).

Figure 27 below shows mean % of sub-corpus by group by sex.

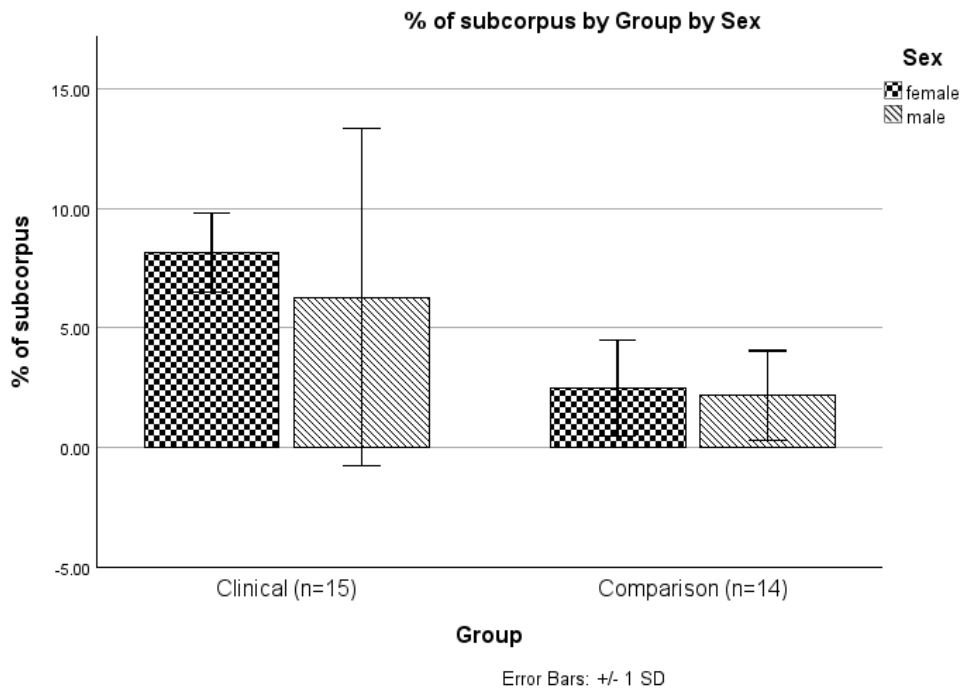


Figure 27 - mean % of sub-corpus by group by sex

Female comparison participants show a higher sub-corpus contribution than male comparison participants, with the comparison means and comparison dispersions being somewhat similar. Female clinical participants show a higher sub-corpus contribution than male clinical participants, despite male overrepresentation in this group. And, as above, there is a smaller dispersion in the female clinical subgroup than the male clinical participants and the comparison participants overall. Male clinical participants continue to show the largest dispersion. Readers are reminded of the following: comparison females (n=11), comparison males (n=3), clinical females (n=3), clinical males (n=12).

Figure 28 below shows mean % of corpus by group by sex.

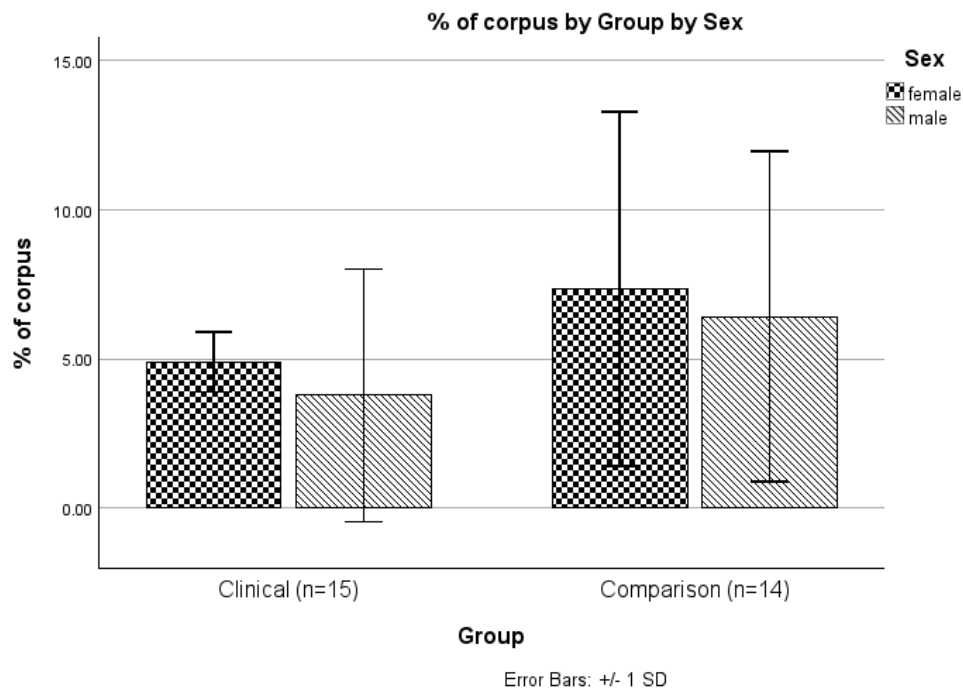


Figure 28 - mean % of corpus by group by sex

Female comparison participants show a higher corpus contribution than male comparison participants and clinical participants overall, with the comparison means and comparison dispersions being somewhat similar. Notably, comparison dispersions are larger than that seen for clinical males. Female clinical participants show a higher corpus contribution than male clinical participants, despite male overrepresentation in this group. This is interesting as sex differences in verbosity are not well documented in schizophrenia and FTD. As above, female clinical participants display a smaller dispersion than male clinical participants and the comparison participants overall. Male clinical participants show the lowest corpus contribution, despite being the over representative demographic in the clinical group. Readers are reminded of the following: comparison females (n=11), comparison males (n=3), clinical females (n=3), clinical males (n=12).

In the DAIS-C, on average, female clinical participants produced more tokens, spoke for longer, contributed more to their respective sub-corpus, and contributed more to the overall corpus than clinical males despite being demographically underrepresented at a ratio of 1:4. Female clinical participants also showed the least variance across all sex indices. The reasons for this are not entirely clear. It may be the case that speaking on abstract topics elicits more language content in females than males with schizophrenia. It may also be that the females included in the clinical sample were higher on positive symptoms and the male participants were higher on negative symptoms. Further work is needed with a larger sample that also incorporates a symptomatology component, such as Positive and Negative Symptom (PANS) scores.

5.10.3.3. Mean differences by topic breadth (open versus closed: broad versus narrow)

Figure 29 below shows the mean token counts across groups by topic breadth.

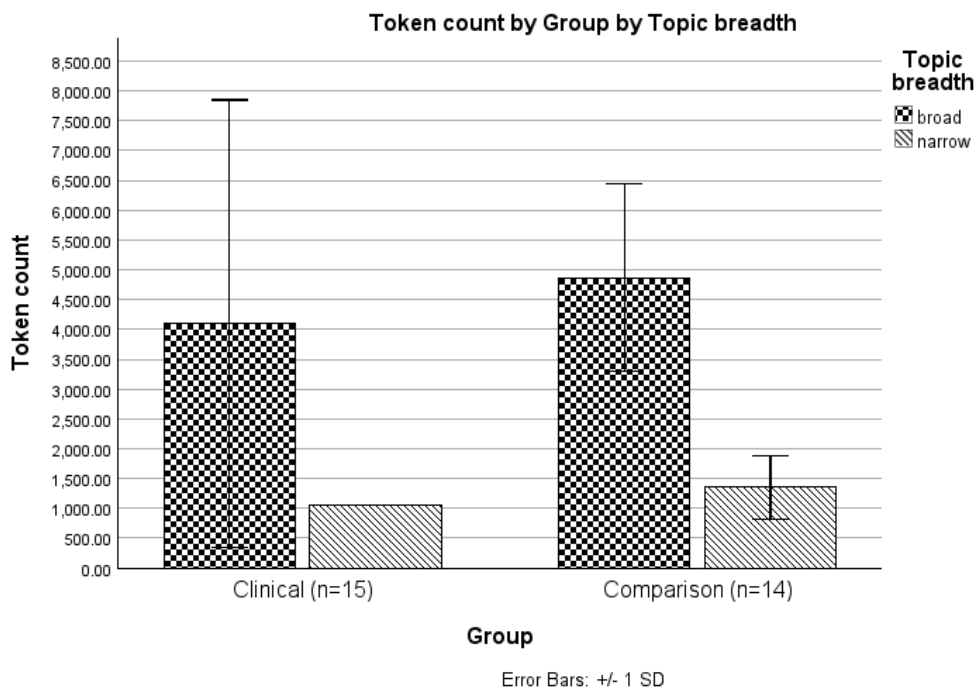


Figure 29 - token count by group by topic breadth

Comparison participants show a higher token mean on the broad topic than the narrow topic and the highest token mean across groups, despite overrepresentation of the narrow topic in the comparison group and overrepresentation of the broad topic in the clinical group. Comparison dispersions were closer to the comparison means. Clinical participants also produced a higher token mean on the broad topic than the narrow topic, but the broad topic dispersion is much greater. Comparison participants addressing the narrow topic showed the smallest dispersion overall. Readers are reminded of the following: comparison broad (n=4), comparison narrow (n=10), clinical broad (n=14), clinical narrow (n=1). These results suggest a general broad topic effect, across groups.

Figure 30 below shows the mean duration in audio minutes by group by topic breadth.

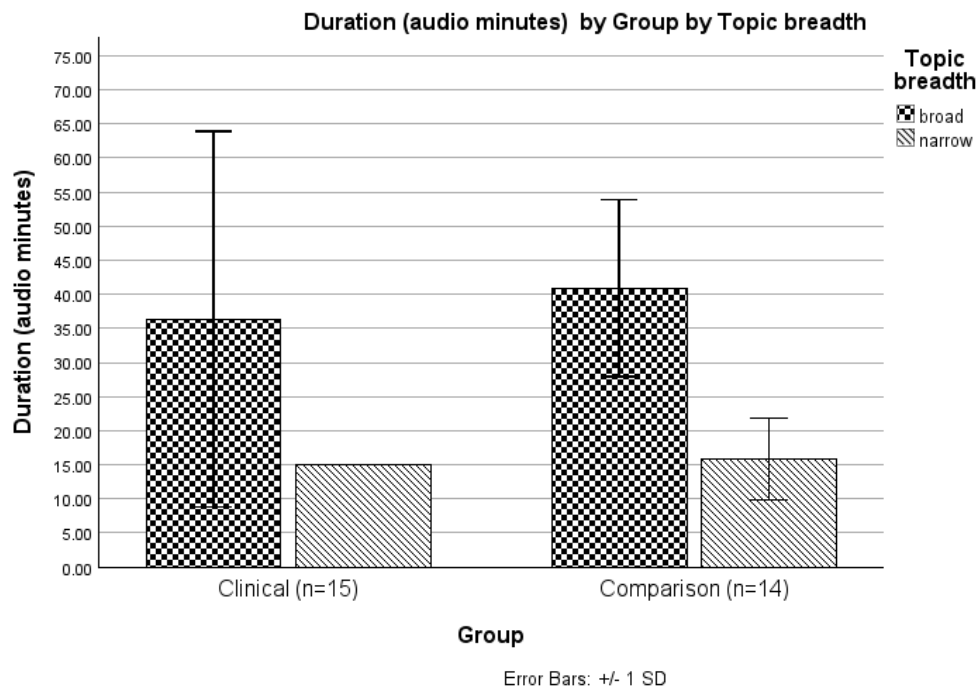


Figure 30 - duration (audio minutes) by group by topic breadth

Comparison participants show a higher duration mean on the broad topic than the narrow topic and the highest duration mean overall, despite overrepresentation of the narrow topic in the comparison group and overrepresentation of the broad topic in the clinical group. Comparison dispersions were closer to the comparison means. Clinical participants also produced a higher duration mean on the broad topic, but the broad topic dispersion is much greater. Readers are reminded of the following: comparison broad (n=4), comparison narrow (n=10), clinical broad (n=14), clinical narrow (n=1).

Figure 31 below shows the mean % of sub-corpus by group by topic breadth.

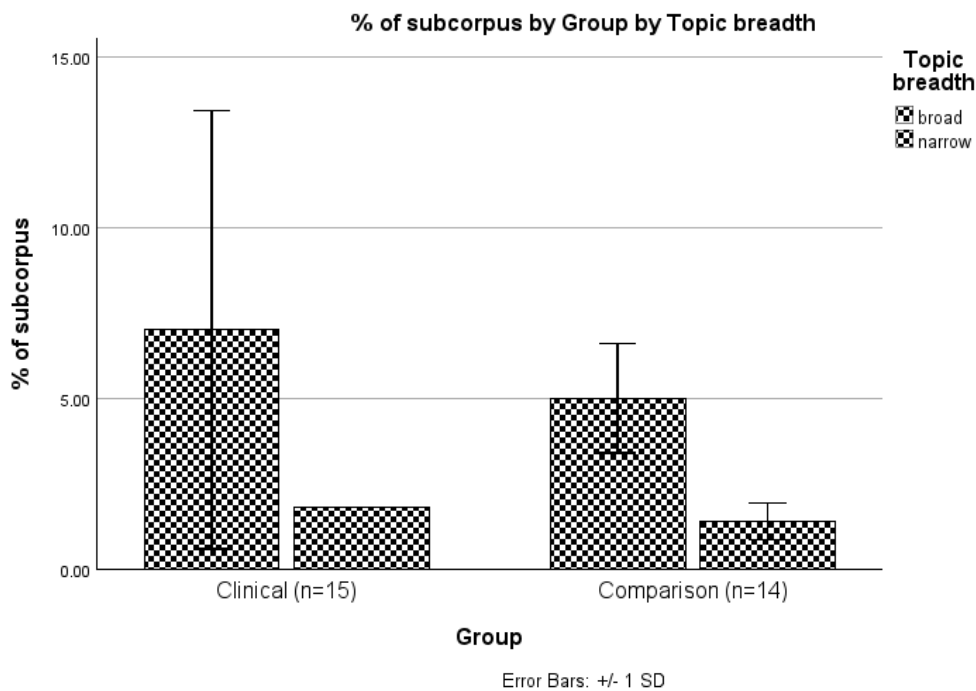


Figure 31 - mean % of sub-corpus by group by topic breadth

Clinical and comparison participants show the highest sub-corpus contributions in the broad genre, with clinical participants contributing more to their respective sub-corpus

per speaker than the comparison group. This is at odds with the extant literature on reduced verbosity in schizophrenia (see Barch and Berenbaum, 1997). Comparison participants show the highest sub-corpus contributions in the broad genre, despite overrepresentation of the narrow topic in the comparison group. The dispersion is much larger for the clinical group. Clinical participants show higher sub-corpus contributions than the comparison group for the narrow genre, as well, with the comparison group producing the smallest dispersion. Readers are reminded of the following: comparison broad (n=4), comparison narrow (n=10), clinical broad (n=14), clinical narrow (n=1).

Figure 32 below shows the mean % of corpus by group by topic breadth.

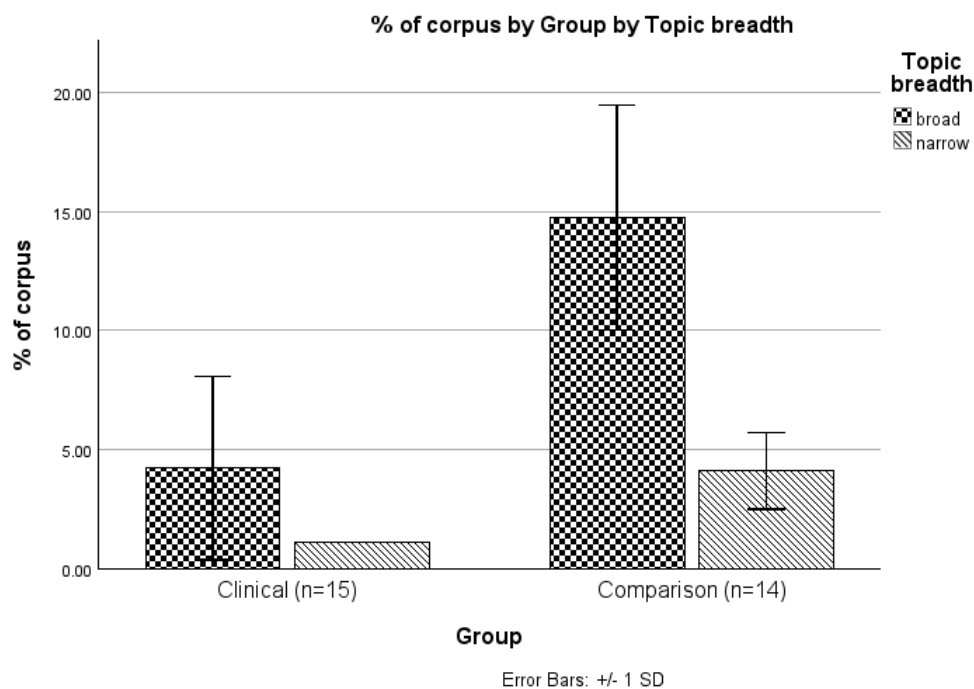


Figure 32 - mean % of corpus by group by topic breadth

Comparison participants show the highest contributions in the broad genre, despite overrepresentation of the narrow genre in this cohort. This is also one of only two cases

(the other being mean % of corpus by sex) where dispersion is greater in the comparison group than the clinical group. Clinical group participants show higher contributions in the broad genre than the narrow genre. Comparison group participants show higher contributions in the narrow genre than the clinical participants in the narrow genre. Dispersion was smallest in the comparison narrow genre. Readers are reminded of the following: comparison broad (n=4), comparison narrow (n=10), clinical broad (n=14), clinical narrow (n=1).

Broad genre comparison participants produced more tokens, spoke for longer, contributed more to their respective sub-corpus, and contributed more to the corpus overall than narrow genre comparison participants despite being situationally underrepresented at a ratio of 1:3.6. This suggests that the comparison participants found it easier to be more abstract. Comparison participants showed the greatest variance for % of corpus by sex and % of corpus by topic breadth.

5.10.4. Summary

The DAIS-C was built with close reference to best practices in the development of spoken and specialised corpora (Sinclair, 2005; Flowerdew, 2004). Design issues were expected on the topics of internal versus external building criteria, sampling and selection bias, and recruitment factors (pandemic aside). Reasoned attempts at mitigation followed, and a review of corpus characteristics suggest that they were generally successful. Demographic overrepresentation issues, although inconvenient, do not compromise the data collected so far. They simply limit the extent of viable analyses and their conclusions. These issues can be resolved in time with corpus expansion work.

A review of group-level data suggests that overrepresentation has had little effect on mean token count, mean duration, mean contributions to respective sub-corpora, or mean contributions to the corpus as a whole. On average, female clinical participants produced more tokens, spoke for longer, contributed more to their respective sub-corpus, and contributed more to the overall corpus than clinical males despite being demographically underrepresented at a ratio of 1:4. This is of particular interest as sex-specific language effects in schizophrenia are much understudied. Broad genre comparison participants produced more tokens, spoke for longer, contributed more to their respective sub-corpus, and contributed more to the corpus overall than narrow genre comparison participants despite being situationally underrepresented at a ratio of 1:3.6. This suggests that interactional context plays an important role in determining the amount of speech produced by individuals with and without a diagnosis of schizophrenia. Female clinical participants also showed the least variance across all sex indices. Comparison participants showed the greatest variance for % of corpus by sex and % of corpus by topic breadth.

The UK Data Service has confirmed acceptance of the corpus for archival through its ReShare repository. Version 1.0 of the DAIS-C will be made available in late 2023.

The present chapter has outlined the design and development of a small, specialised, corpus of naturalistic speech in schizophrenia. The next chapter describes two empirical studies that use this dataset.

CHAPTER SIX: FTD AND LINGUISTIC CREATIVITY IN SCHIZOPHRENIA

6.1. Introduction

Research question: How is creative language output manifested in schizophrenia?

Chapter Five described the design and characteristics of a specialised corpus of spoken language in schizophrenia (DAIS-C, 2023). This corpus is the first British English corpus of spoken language in schizophrenia that has a comparative element. This chapter presents two studies that employ the dataset.

Study One is an empirical test of the '4TD Framework' described in Chapter Two. This framework was developed using a top-down approach, drawing on historic and more contemporary descriptive approaches to FTD to identify four common symptom domains: grammar, word selection, thought completion, and discourse tracking. These domains were operationalised as a tag set, allowing for manual annotation of the corpus. The development of these tags is described in the next section. Study One compares the frequencies at which features captured by this annotation occur in the clinical and comparison subcorpora (reflective of 15 and 14 speakers respectively) and also examines concordance lines, which are lines of text taken from a corpus and anchored around a keyword, of the extracted features to identify and compare patterns in error/deviation type. These results are then discussed in terms of their impact on the work described in Chapter Two.

Study Two explores how participants engaged with the initiating questions described in Chapter Five, namely how they addressed the topic of linguistic creativity when it was framed within broad (open interpretation) and narrow (psycholinguistic task) contexts. This study uses word- and semantic-level keyword analyses, which focus on differences in the occurrence rates of keywords across two corpora, to explore the ways in which

linguistic creativity is conceptualised by speakers in the clinical and comparison corpora.

These results are discussed in relation to the work described in Chapter Three.

6.1.1. Method of annotation

An annotation scheme was developed to capture features relevant to the 4TD

Framework described in Chapter Two. Operational definitions of these broad

dimensions were necessary because FTD lacks a clear definition in schizophrenia

specifically (see Chapter Two). To ensure that only features relevant to the framework

were tagged, general exclusion criteria were set for all tags. These were:

- obvious self-editing and self-corrections (e.g. 'it just I'm always like I feel sad for people')
- false starts (e.g. 'and you might have li I like')
- stuttering (e.g. 'w w what')
- dialectical, literacy, and EAL features (e.g. 'it sort of pops into me head'; 'I do all different places')
- elision (e.g. 'like (.) trying to look at the books now there's like yeah just bits of everything really')
- listing (e.g. 'animals psychology the medical stuff')
- repetitions (e.g. 'yeah sensory language is a is a is a big thing')

These features were excluded because they are common to spoken language generally.

They were excluded to reduce noise in the dataset.

Each 4TD Framework element was assigned its own tag. All tags followed the XML format (i.e. opening and closing tags). Table 59, below, displays the inclusion criteria and additional (to the general) exclusion criteria for each tag.

Table 59 - 4TD tagging criteria

Code	4TD level	criteria
<Gr> </Gr>	4TD-grammar	includes: <ul style="list-style-type: none"> grammatical errors or deviations additionally excludes: <ul style="list-style-type: none"> ungrammatical solely due to <WS> (e.g. ‘then <WS> <u>sharped</u> </WS> starting to use’) or <TC> (e.g. ‘whatever <u>it you</u> have to take them to to another web page’)
<WS> </WS>	4TD-word selection	includes: <ul style="list-style-type: none"> word selection errors or deviations (e.g. ‘sike’ instead of ‘so like’)
<TC> </TC>	4TD-thought completion	includes: <ul style="list-style-type: none"> abandonment of words, phrases, or sentences (e.g. ‘whatever it you have to take them to to another web page’) additionally excludes: <ul style="list-style-type: none"> topic shifts signalled by a transitional (e.g. ‘because’), hedge (e.g. ‘probably’), or filler (e.g. ‘like’).
<DT> </DT>	4TD-discourse tracking	includes: <ul style="list-style-type: none"> speaker’s reference to or queries about their own topic relevance: metalanguage (e.g. ‘as I said’, ‘like I’m talking about’)

The grammar level includes all types of grammatical error or deviation bar those that are produced by features at the word selection or thought completion levels. This general grammatical level was selected because grammatical disturbances are not fully understood in schizophrenia, and the work in Chapter Two illustrates how varied expressions of FTD can be. The word selection level includes all types of word selection errors and deviations, including archaic or unusually high-registered vocabulary. The reason for this approach is similar to that of the grammatical level. The thought

completion level includes all abandonment of words, phrases, or sentences not signalled by a transitional, hedge, or filler. Again, this broad approach was selected to leave open the possibility of capturing the full range of linguistic manifestations of FTD whilst excluding those features common to spoken language overall. This level is thus restricted to self-interruptions only. The discourse tracking level includes all self-reference to or queries about the speaker's topic relevance. Unlike the other levels, this one was narrowed to focus only on specific elements for operational reasons. There was not time for a comprehensive pragmatic annotation that accounted for all possible forms of discourse tracking behaviour.

These criteria were chosen to minimise assumptions about the linguistic properties of 4TD elements, as discussed in Chapter Two, while also ensuring that the tags did not capture features that are relatively common to spoken language in general, such as hedging, fillers, and so on.

6.2. Study One: Testing the 4TD Framework

6.2.1. Feature counts and concordances

Raw and normalised counts of the occurrence rates of each feature were calculated for clinical and comparison speakers. Normalisation is a process that allows counts from corpora of differing sizes to be compared. Normalisation is calculated by dividing the source word counts by the feature counts and multiplying by a normalisation figure, in this case 1000. Figure 33, below, shows the number of raw and normalised (per 1000 words) grammar features by group/sub corpus.

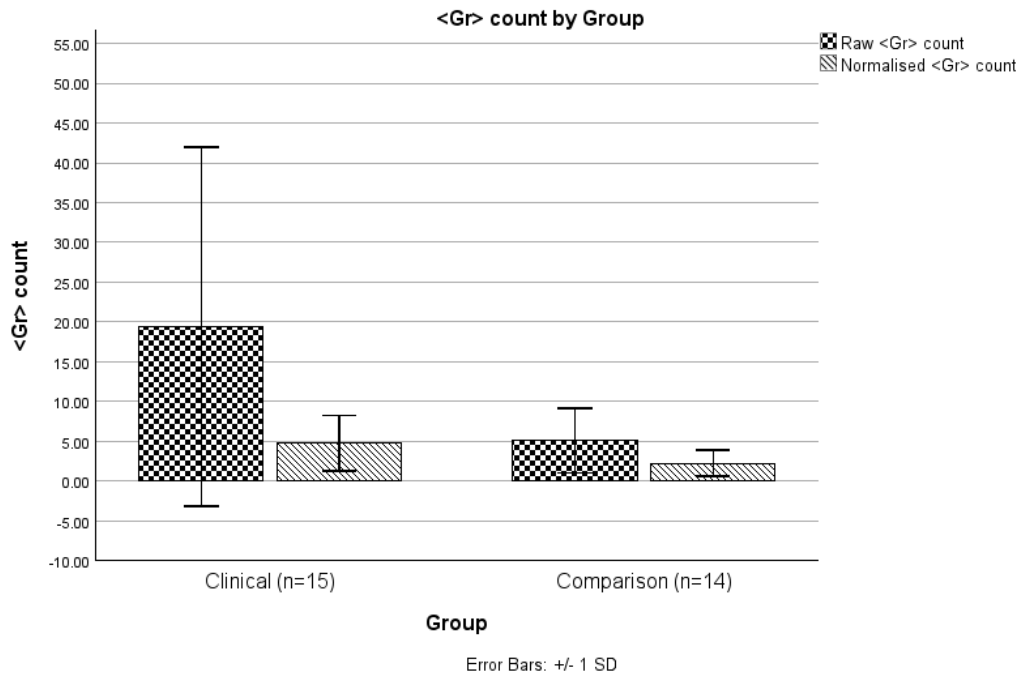


Figure 33 - grammar mean counts by group

Both raw and normalised counts were greater in the clinical group. Raw count dispersions were greater than normalised count dispersions across groups, suggesting greater variation across individual clinical speakers. This is consistent with current thinking on the heterogeneous expression of schizophrenia and FTD, namely that individuals with schizophrenia will show varying levels of features associated with FTD (Docherty et al., 2003). The clinical group had the largest raw count dispersion, and the comparison group had the smallest normalised count dispersion. Dispersions were roughly equivalent for normalised clinical and raw comparison counts. Taken together, this data suggests an overall greater number of grammatical errors per thousand words in the clinical group, independent of the heterogeneity illustrated by the raw counts and dispersions. This is consistent with the extant literature on grammatical disturbances in FTD in schizophrenia (Çokal et al., 2019; Tovar Torres et al., 2019).

The most evident differences between groups were on the grammar features. Raw grammatical deviations were much higher in the clinical group than the comparison group, and the raw dispersions were also greater in the clinical group. Some of this will be influenced by the corpus characteristics described in Chapter Five, with some speakers being outliers in terms of for how long they spoke and thus their relative contributions to the corpus and its subcorpora. Yet this distinction was also reflected, to a lesser extent, in the normalised scores. This would suggest that corpus characteristics played a role but that grammatical errors do also occur more often (on a per thousand word basis) in schizophrenia speakers.

An examination of concordance lines, which present a target word in rows of sentence contexts, is useful for identifying broad patterns between clinical and comparison speakers. In this case, it is helpful to see whether participants across groups are making similar or distinct error types. This allows us to see not only whether there is a quantitative difference, as shown above, but also whether there are qualitative differences. The concordance line work below is not intended to exhaustively categorise every error annotated in the subcorpora but rather identify broad patterns that may be assistive in contextualising the present study results and guiding further inquiry.

Table 60, below, organises a selection (at random, by extracting random lines) of concordance lines from each subcorpus into categories of grammatical error type. These are provided here to illustrate the types of annotation used and features identified.

Table 60 - concordance lines and grammatical error types by subcorpus (Appendix VII)

Error/deviation	clinical	comparison
------------------------	-----------------	-------------------

<p>ambiguous: extracts that are only erroneous based on context, which is unclear in the transcript</p>	<p><Gr> <u>talk create</u> using language </Gr></p> <p><Gr> that I 'm <u>up with</u> <u>creativity</u> cos </Gr></p> <p><Gr> I 'm <InAu> </InAu> write </Gr></p> <p><Gr> I <u>used still</u> write </Gr></p> <p><Gr> I <u>did used to</u> </Gr></p> <p><Gr> can do anything you want <u>it</u> so you 're dealing with like </Gr></p> <p><Gr> that is mostly well <u>it</u> to be creative so like </Gr></p> <p><Gr> <u>they got folder</u> as a workspace </Gr></p>	<p><Gr> you sort of know that reading it </Gr></p> <p><Gr> technical university bachelor and master </Gr></p> <p><Gr> leaning <u>more to</u> <u>using</u> them to describe something </Gr></p>
<p>omission</p>	<p><Gr> I 'd <u>(.)</u> a way </Gr></p> <p><Gr> going out for <u>(.)</u> drink </Gr></p> <p><Gr> that kind of wants to withdraw and <u>find</u></p>	<p><Gr> because <u>(.)</u> something to be smelly </Gr></p> <p><Gr> and I think <u>(.)</u> can </Gr></p>

communication difficult	<Gr> like black clouds or
</Gr>	fog or mist or like <u>(.)</u>
<Gr> I build like maybe	storm </Gr>
like a toolkit <u>(.)</u> could call it	<Gr> and I think <u>(.)</u> might
</Gr>	always need to be better
<Gr> I 've got like <u>(.)</u>	at it with adults </Gr>
hundred songs I 've	<Gr> and you know <u>(.)</u>
written </Gr>	ask people every day at
<Gr> cos <u>(.)</u> er terrible	work to keep diaries
brain fade </Gr>	</Gr>
<Gr> it 's <u>(.)</u> bit erm </Gr>	<Gr> all I wanted to be
<Gr> and I get <u>(.)</u> so it 's	<u>(.)</u> an art therapist </Gr>
not raining </Gr>	<Gr> as as <u>(.)</u> art
<Gr> like <u>(.)</u> coke can	therapist </Gr>
</Gr>	<Gr> so like a bit a like
<Gr> I 'm not sure erm	lot <u>(.)</u> what I said </Gr>
that 's <u>(.)</u> say to me it it	<Gr> they retell <u>(.)</u> story
always felt </Gr>	</Gr>
<Gr> rather than <u>(.)</u>	<Gr> you 'd maybe sort
technical side </Gr>	<u>(.)</u> throw that in there
<Gr> but <u>(.)</u> the	</Gr>
schizophrenia the	<Gr> if someone from
	me <u>(.)</u> example </Gr>

psychosis will go or not I <Gr> went for (.)
do n't know </Gr> technical er degree </Gr>
<Gr> I (.) have any
feelings </Gr>
<Gr> they (.) all happy
</Gr>
<Gr> I (.) tell you
something </Gr>
<Gr> all I want (.) peace of
mind peace of mind I want
my life </Gr>
<Gr> I would never (.)
been in this <WS> [sic]
predictament </WS>
</Gr>
<Gr> why (.) I doubting it
</Gr>
<Gr> you 're not finishing
to (.) courtesy </Gr>
<Gr> how did you get
away from the children (.)
dad </Gr>

<Gr> who that happening

(.) that Mrs </Gr>

<Gr> I should (.) never

cooperated </Gr>

addition

<Gr> a weekly from the

getting the depot </Gr>

<Gr> I want it to use my

creative abilities </Gr>

<Gr> there 's was n't

really </Gr>

<Gr> with the depot with

my muscles become tight

</Gr>

<Gr> first 's line got ta be

taken out </Gr>

<Gr> a whole section of

the game that might take

them six months to build it

</Gr>

<Gr> it 's it 's comes out

</Gr>

<Gr> if I was like I 'm am

building a website </Gr>

<Gr> because of the

differing tastes that

people could have the

same for </Gr>

<Gr> or what they want

it to happen </Gr>

<Gr> I 've always it liked

those sort of erm books

</Gr>

<Gr> you can use a very

dull language </Gr>

<Gr> that a per certain

adjective </Gr>

<Gr> when when will

you have written and

everything up </Gr>

<Gr> but there 's not
much not much hands on
code thing </Gr>

<Gr> probably only set
any language you want
</Gr>

<Gr> it 's like you need it
now in years ago you
</Gr>

<Gr> a plastic bag that
they they do n't want it
</Gr>

<Gr> so I had to got </Gr>

<Gr> I 've got kids make a
mischief </Gr>

agreement (tense, plural)

<Gr> not really kind of
expression </Gr>

<Gr> designed to
explaining kind of the day
to day </Gr>

<Gr> the bigger the worst
</Gr>

<Gr> kind of associate
and emotion </Gr>

<Gr> them now I 'm like
driving along like with a
lump in my throat </Gr>

<Gr> I 've always been
<WS> interesting </WS>

<Gr> are kind of reduce in reading at more
</Gr> creative writing
<Gr> within them with <Gr> I definitely felt like I
inside that </Gr> 've misread something
<Gr> when I first had the </Gr>
er schizophrenia I see <Gr> facts and figures
</Gr> and erm statistic
<Gr> a couple of year ago whatever </Gr>
</Gr> <Gr> those sort of books
<Gr> the software that </Gr>
the IDE that they 'd be <Gr> there was some
using are absolutely free that linked quite well
</Gr> </Gr>
<Gr> I have win premium <Gr> what 's the human
bonds </Gr> brain 's capable of </Gr>
<Gr> I have so much
marks </Gr>
<Gr> now I 'm on the
depot then I feel </Gr>
<Gr> because my feelings
is blocked to have kids
</Gr>

	<Gr> yeah money 's not a	
	issue </Gr>	

part of speech shift	<Gr> not really	<Gr> I 'll just like <u>stream</u>
	opportunity <u>to er language</u>	<u>of consciousness</u> a bit
	<u>in a different way</u> </Gr>	</Gr>
	<Gr> a <u>weekly</u> from the	<Gr> I think clicking
	getting the depot </Gr>	<u>similar</u> every time </Gr>
	<Gr> what I think of	
	<u>creative</u> </Gr>	

Grammatical processing difficulties are associated with schizophrenia and also with formal thought disorder (Walenski et al., 2010). Grammatical difficulties in the present dataset include include omission of prepositions, of singular pronouns (first person 'I', second person 'you'), and articles. There are also the addition of articles, conjunctions, and possessives. Tense disagreements, somewhat consistent with the tense issues identified by Walenski et al., (2010), are also evident. Pluralisation disagreements are also present, as are part of speech shifts.

It is important to point out that, since spoken language does not follow the grammatical conventions of written language exactly (Zhang, 2013), it can be difficult to determine whether a portion of speech is or is not grammatical. The clause and phrase boundaries of spoken language are not well defined in some cases. As a result, some examples that were deemed ungrammatical at the point of annotation become ambiguous when

viewed outside of the wider discursive context. The speakers may have given the impression of ungrammaticality in transcript form but not in the recording itself due to the presence of additional paralinguistic information. In the following example, '<Gr> they got folder as a workspace </Gr>', it is not clear whether the speaker is referring to a generic folder (a folder) or a named entity (folder). This could be argued to be ungrammatical in the case of the former but not the latter. In a different example, '<Gr> I did used to </Gr>' may be argued to be an error or it may indicate a self-correction. There is a good deal of similarity in all error types captured by the grammar tag. Omitted words, particularly articles, are common across both subcorpora. Examples include 'a' in '<Gr> like black clouds or fog or mist or like (.) storm </Gr>' or '<Gr> going out for (.) drink </Gr>'. It is difficult to state precisely which intended words were left out, but plausible candidates include prepositions, such as 'for' being plausible in '<Gr> because (.) something to be smelly </Gr>' and pronouns, such as 'you' in '<Gr> I build like maybe like a toolkit (.) could call it </Gr>'. Verbs such as 'are' are also plausible in cases such as '<Gr> they (.) all happy </Gr>'.

Additions are also common to both subcorpora. Superfluous words include pronouns, as in '<Gr> or what they want it to happen </Gr>', '<Gr> a whole section of the game that might take them six months to build it </Gr>', '<Gr> I want it to use my creative abilities </Gr>', and '<Gr> or what they want it to happen </Gr>'. There are also verbs, such as '<Gr> if I was like I 'm am building a website </Gr>'. Redundant prepositions and articles are also evident: '<Gr> because of the differing tastes that people could have the same for </Gr>', '<Gr> with the depot with my muscles become tight </Gr>', '<Gr> it 's like you need it now in years ago you </Gr>' '<Gr> a weekly from the getting the depot </Gr>'.

Issues of agreement, particularly of tense and pluralisation, are also common across the subcorpora, providing further support for the view that FTD in schizophrenia involves disturbances to grammatical processing. Tense examples include '<Gr> are kind of reduce </Gr>', '<Gr> I have win premium bonds </Gr>', and '<Gr> now I 'm on the depot then I feel </Gr>'. Pluralisation examples include '<Gr> a couple of year ago </Gr>', '<Gr> facts and figures and erm statistic whatever </Gr>', and '<Gr> those sort of books </Gr>'.

Other relevant errors include the shifting of certain parts of speech, such as the adverb 'weekly' being used in place of the noun 'week' in '<Gr> a weekly from the getting the depot </Gr>' or the verb 'creative' replacing the noun 'creativity' in '<Gr> what I think of creative </Gr>'. It is worth adding that this might not be an error, as it is possible that the speaker was trailing off (as in 'what I think of creative [language]'). It is difficult to determine either way whether this is a codable feature. In these cases, the decision was made on the basis of what information was present in the text (rather than what might have been left out). Other examples include entire phrases being used as verbs '<Gr> I 'll just like stream of consciousness a bit </Gr>', adjectives replacing adverbs '<Gr> I think clicking similar every time </Gr>', and nouns replacing verbs '<Gr> not really opportunity to er language in a different way </Gr>'.

The grammatical dimension of FTD is one that has been somewhat neglected in more contemporary approaches, particularly the TLC Scale. The TLC item for 'incoherence' captures some of the features described here, such as the omission of function words and articles. The TLC Scale describes these forms of disturbance as relatively rare, however, with mild forms thought to be uncommon (Andreasen, 1986), but this is not

what it is seen in the present data. Grammatical errors make up the largest error type in the set, and there is stability in the error types across clinical and comparison speakers (making it a feature of speech). Comparison speakers exhibit a mild form, with severity increasing in the clinical group but only at around twice the comparison rate (see Figure 39). The core point of difference is the extent of frequency, with clinical speakers showing the same types of errors as those seen in the comparison sample but in greater number. It needs to be highlighted that the grammar tag, as operationalised here, is sufficiently broad that it has the potential to capture linguistic features that may be covered by 'incoherence' exclusion criteria within the TLC Scale. This may partly explain the discrepancy.

Figure 35, below, shows the number of raw and normalised word selection features by group.

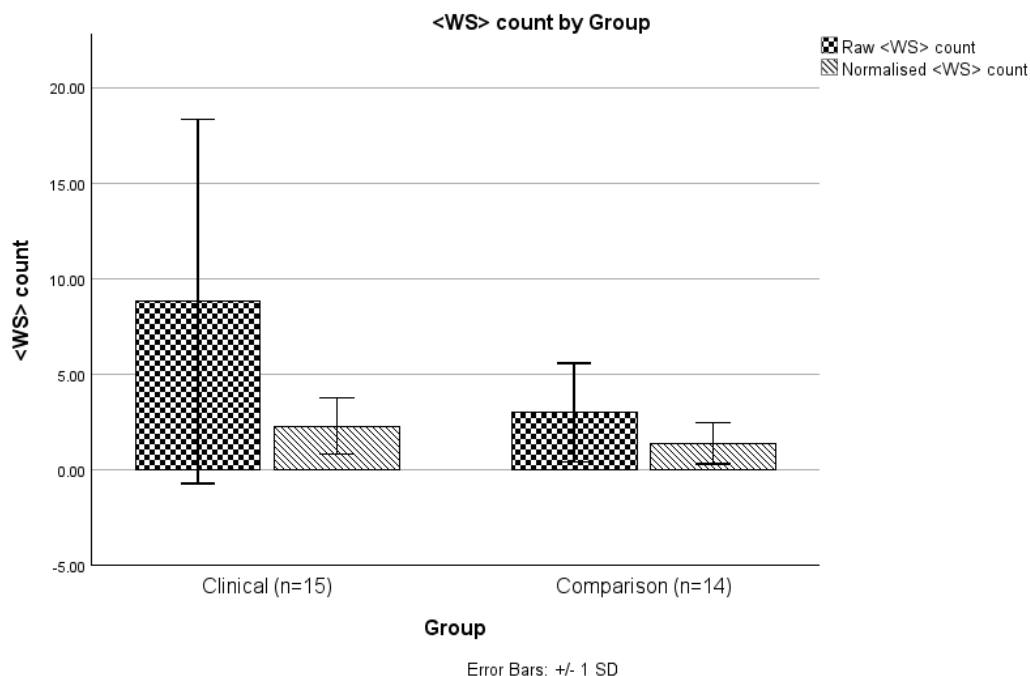


Figure 35, word selection feature mean counts by group

Both raw and normalised counts were greater in the clinical group. Raw count dispersions were greater than normalised count dispersions across groups. The clinical group had the largest raw count dispersion, and the comparison group had the smallest normalised count dispersion. The comparison raw count dispersion was slightly larger than that of the clinical normalised count. Clinical and comparison normalised dispersions were roughly equivalent.

Raw counts and dispersions are greater for the clinical group. As with grammatical errors, the role of corpus characteristics is important for understanding the raw count results. The normalised count is also greater for the clinical group, but the normalised dispersions across clinical and comparison groups are roughly equal. This provides a further indication that acknowledgement of the corpus characteristics is important for interpreting the raw count data.

Table 61, below, organises a random selection of concordance lines from each subcorpus into categories of word selection error type.

Table 61 - concordance lines and word selection error types by subcorpus (Appendix VII)

Error/deviation	clinical	comparison
approximation	<WS> when </WS> (for what)	<WS> smart lab </WS> (super lab)
	<WS> amends </WS> (for amendments)	<WS> exit expressing </WS>
	<WS> regret </WS> (regret)	<WS> create cr er critiqued </WS>
	<WS> stay </WS> (play)	

<WS> assan </WS>	<WS> quantic physics
(assassinated)	</WS> (quantum physics)
<WS> their </WS> (that)	<WS> sharpened </WS>
<WS> up tangent </WS>	(sharpener)
(off tangent)	<WS> dottom </WS>
<WS> recap </WS> (recall)	(bottom)
<WS> singles from you	<WS> tor </WS> (story)
signals </WS>	<WS> accept associate
<WS> predicament	</WS>
</WS> </Gr>	<WS> old one out </WS>
(predicament)	(odd one out)
<WS> corroperated	<WS> took </WS> (taken)
</WS> (corroborated)	
<WS> corroperated	
</WS> (corroborated)	
<WS> ansed </WS>	
(asked)	
<WS> arcsed </WS>	
(asked)	
<WS> occup er occupied	
observation </WS>	
<WS> quate creativity	
</WS>	

<WS> when I 'm reaning it

</WS>

<WS> borry you do n't

flame </WS>

<WS> skimpy </WS>

(pinky)

<WS> excalate </WS>

(escalate)

archaic or unusual word

<WS> fillip </WS>

<WS> brain splattered

<WS> cliques </WS>

</WS>

<WS> stolid </WS>

<WS> banal </WS>

<WS> zippy </WS>

<WS> confabulate </WS>

<WS> originally </WS>

<WS> flourish the

<WS> fertile </WS>

conversation </WS>

<WS> colourfully </WS>

<WS> abstracting </WS>

<WS> vociferously </WS>

<WS> impetus </WS>

blend

<WS> sike </WS> (on like)

<WS> lifescape </WS>

<WS> thair </WS> (share
things)

<WS> creativeiveness
</WS>

<WS> tobably </WS>

<WS> creativ-ness </WS>

(probably, totally)

<WS> spart </WS> (part of
speech)

	<p><WS> interpretate </WS></p> <p>(interpret, ?)</p> <p><WS> ansk </WS></p> <p>(answer, ask)</p> <p><WS> tveven </WS></p> <p>(twelve, eleven)</p>
phonemic	<p><WS> that kinda ring</p> <p></WS> (for that kind of thing)</p> <p><WS> needs to </WS> (for leads to)</p>
opposite	<p><WS> logical </WS></p> <p>(illogical)</p>
onomatopoeia	<p><WS> poom </WS></p> <p><WS> gagging </WS></p> <p><WS> sweeping road and bang bang bang </WS></p> <p><WS> just boop because Dettol kill </WS></p>

The presence of approximations and phonemic paraphasias are consistent with historic and TLC (Andreasen, 1986) accounts of FTD features. These features are more consistent with traditional descriptions of FTD in schizophrenia.

Similarly to the grammar tag outputs, the errors isolated by the word selection tag are broadly similar across groups/subcorpora. Approximations, or words that are phonetically or semantically proximate to the intended word (usually given later in the concordance), were common in both groups. Examples include ‘<WS> smart lab </WS> (super lab)’, ‘<WS> exit expressing </WS>’, ‘<WS> quantic physics </WS> (quantum physics)’, ‘<WS> singles from you signals </WS>’, ‘<WS> up tangent </WS> (off tangent)’, and ‘<WS> predictament </WS> </Gr> (predicament)’. Archaic or unusual words were also common to both groups. Examples include ‘<WS> fillip </WS>’, ‘<WS> banal </WS>’, ‘<WS> confabulate </WS>’, ‘<WS> impetus </WS>’, ‘<WS> cliques </WS>’, and ‘<WS> stolid </WS>’. Blends, which see two or more words combined as a neologism or similar, were seen in both groups also. Examples include ‘<WS> thair </WS> (share things)’, ‘<WS> tweven </WS> (twelve, eleven)’, ‘<WS> ansk </WS> (answer, ask)’, ‘<WS> lifescape </WS>’ (life, landscape), and ‘<WS> spart </WS> (part of speech)’.

Phonemic errors, where a word was phonetically related to its target but not semantically, were only seen in the clinical group. Examples include ‘<WS> that kinda ring </WS> (for that kind of thing)’ and ‘<WS> needs to </WS> (for leads to)’. Opposite forms, which convey the opposite of the intended meaning, were also limited to the clinical group ‘<WS> logical </WS> (illogical), although there is only one example of this’. Finally, onomatopoeia was also limited to the clinical group. Examples include ‘<WS> poom </WS>’, ‘<WS> gagging </WS>’, ‘<WS> sweeping road and bang bang bang </WS>’, and ‘<WS> just boop because Dettol kill </WS>’.

The word selection data provides support for the role of phonemic paraphasias (Andreasen, 1986) and also suggests that there may be some potential value in monitoring the use of onomatopoeic language. As with the grammatical tag data, approximated terms, archaic and unusual terms, and blends are relevant but seen in both groups, potentially suggesting a similar subclinical to clinical distinction as that noted for the grammatical features: that they are a feature of unprepared/spontaneous speech at subclinical levels.

Figure 36, below, shows the number of raw and normalised thought completion features by group.

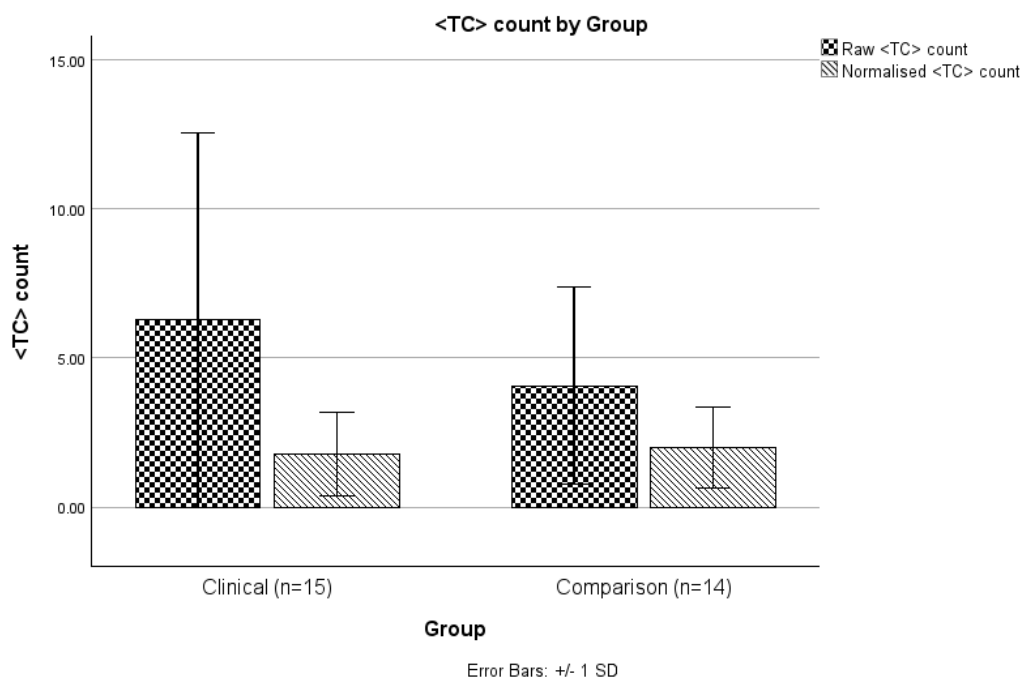


Figure 36, thought completion feature mean counts by group

Raw feature counts were greater in the clinical group. Normalised feature counts were roughly equivalent across groups, with the comparison group counts slightly exceeding clinical group counts. This is interesting and may be explained by features captured by

the <TC> tag representing a more “normative” speech event. The clinical raw count dispersion was the largest overall, followed by the comparison raw count dispersion.

Dispersions were roughly equivalent across groups for normalised counts.

Although the clinical raw count exceeds the raw comparison count, normalised counts are roughly equivalent. This suggests that much of the difference in raw counts is due to corpus characteristics, such as individual speakers in the clinical group having higher rates of thought completion features than others. Thought completion features may prove to be useful in separating schizophrenia and comparison speakers in a larger dataset, however the preliminary data does not support its inclusion within the framework proposed in Chapter Two.

A concordance line analysis may not be all that informative here, given that the annotation was limited to a single criterion (self-interruption) and the rough equivalence in normalised counts.

Nonetheless, Table 62, below, organises a random selection (chosen at random) of concordance lines from each subcorpus into categories of thought completion error type.

Table 62 - concordance lines and thought completion error types by subcorpus (Appendix VII)

Error/deviation	clinical	comparison
'I' interruptions: phrases that are abandoned and restarted with 'I'	<TC> the opportunities I suppose the answer is yes </TC>	<TC> I wish I did I feel a </TC>
	<TC> when I 'm ill I 'm really kind of </TC>	<TC> I rea I wish </TC>
		<TC> not very I 'm probably </TC>

<TC> I 'm I was kind of <TC> I ca n't really no I do
</TC> n't think </TC>

<TC> that I have to be kind <TC> I will I wo n't </TC>
of I feel a bit like I 'm </TC> <TC> not very I 'm
<TC> that I have to be kind probably </TC>
of I feel a bit like I 'm </TC> <TC> I think I do n't </TC>

<TC> I like I 'm I do <TC> just more I think
websites </TC> </TC>

<TC> I build erm I blog as
well </TC>

<TC> that 's my what 's so
good with erm I used to
struggle for ideas </TC>

<TC> I wrote a bl I can
write with pencil and
paper </TC>

<TC> it 's the kind of thing
my brain I I I write each
line </TC>

<TC> it 's <Gr> I did used
to </Gr> </TC>

<TC> and it was I read this
on somebody 's blog </TC>

<TC> I do n't kn I suppose

</TC>

<TC> I 'd I 've </TC>

<TC> this has been I been

going through </TC>

<TC> I 'm not I I may be

</TC>

<TC> I tend to I mean

</TC>

<TC> do you I know </TC>

<TC> telling I 'm he </TC>

<TC> I 'm highly I 'm h I 'm

a kind of </TC>

<TC> I like I 'm always

</TC>

other interruptions:

phrases that are

abandoned and restarted

with features other than 'I'

<TC> are n't always there

's no real </TC>

<TC> that 's one of are the

struggles </TC>

<TC> like it every other

line rhymes </TC>

<TC> with like first time in

quite a long time </TC>

<TC> how lots of people

but they just </TC>

<TC> somebody narrative

I guess </TC>

<TC> I have actual funnily

enough </TC>

<TC> those it 's interesting

</TC>

<TC> tell me show me	<TC> those work those
</TC>	words work together
<TC> every why is it </TC>	</TC>
<TC> my my this has been	<TC> for by myself </TC>
going </TC>	

Both subcorpora involve self-interruptions that begin with the first person singular 'I'. Examples include '<TC> the opportunities I suppose the answer is yes </TC>', '<TC> and it was I read this on somebody 's blog </TC>', '<TC> I rea I wish </TC>'. Other interruption types were more variable, with some beginning with conjunctions '<TC> how lots of people but they just </TC>', verbs '<TC> tell me show me </TC>', nouns '<TC> somebody narrative I guess </TC>', and adverbs '<TC> are n't always there 's no real </TC>'.

A deeper analysis of self-interruptions across groups would benefit from a study of timed pauses, as the clinical literature from which the tag was derived tends to focus more on phrasal abandonment in the context of thought block. Thought block was not incorporated into the present annotation scheme because pauses and timed pauses were not annotated due to time constraints, and that information is important for any examination of phrasal abandonments that precede pauses in clinical and comparison speakers.

The present features are more likely to be related to normative speech behaviour due to the roughly equal occurrence rates. It is worth noting, however, that a preliminary review of the concordance lines suggests that there are more 'I' interruptions in the

clinical subcorpus than the comparison subcorpus. These would need to be calculated and normalised for a proper comparison, however, as the token counts for each subcorpus are quite different. Future work should explore this further, nonetheless, given that increased 'I' pronoun usage has been found to mark language in psychosis in other studies (e.g. Lundin et al. 2023).

Figure 37, below, shows the number of raw and normalised discourse tracking features by group.

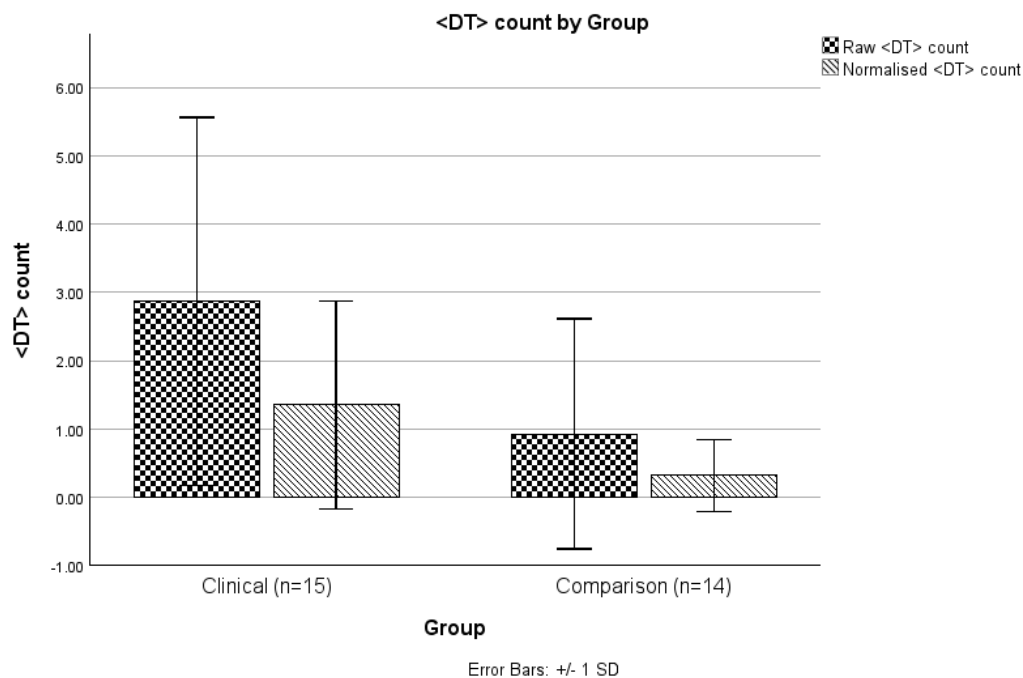


Figure 37, discourse tracking feature mean counts by group

Both raw and normalised counts were greater in the clinical group. The clinical normalised count was greater than the comparison normalised count. The clinical raw count had the greatest dispersion overall, followed by the raw comparison count. The normalised count dispersions varied, with the clinical normalised dispersion being closer

to the comparison raw dispersion. The comparison normalised dispersion was the smallest overall.

A pattern more typical of grammatical and word selection features is evident for discourse tracking features. Clinical raw counts exceed comparison raw counts, and normalised counts reflect the balance of raw counts. Dispersions also reduced in the normalised counts. It is particularly interesting that schizophrenia speakers made more explicit topic references and marked the discourse more often than comparison participants. This may be partly due to the presence of schizophrenia group speakers with no history of FTD and thus more metalinguistic awareness (Goss, 2011). It may also be that schizophrenia speakers are more aware of a tendency to deviate from topic (in others, independent of lack of insight into one’s own symptomatology; Startup, 1997) and thus greater attention is paid to the management and avoidance of this, as in ‘<DT> is this what we 're supposed to be talking about </DT>’. Again, further work is needed with a larger sample to establish whether these effects are due to the small participant pool’s individual characteristics and relative corpus contributions or whether these results may generalise to schizophrenia and comparison populations more broadly.

Table 63, below, organises a random selection of concordance lines from each subcorpus into categories of discourse tracking error type.

Table 63 - concordance lines and discourse tracking error types by subcorpus (Appendix VII)

Error/deviation	clinical	comparison
topic	<DT> we 've kind of covered the what I think	<DT> it 's outside the topic </DT>

	happened and what I think	<DT> it 's outside the
	's really	study sorry </DT>
	<DT> we 've been quite	<DT> sorry it 's not related
	comprehensive </DT>	to this study </DT>
	<DT> we 've talked about	
	it have n't we </DT>	

uncertainty	<DT> I hope that er what I	<DT> I think I deviated
	've said will be helpful to	from your question </DT>
	you for your project </DT>	<DT> I do n't know if I
	<DT> I do n't know if that	answered your question
	could be cu called creative	</DT>
	or not what do you think	<DT> hopefully it 's not a
	</DT>	digression </DT>
	<DT> I 'm not sure	<DT> if this is something
	whether I completely	that is interesting to you
	understand that question	</DT>
	</DT>	<DT> I do n't know if that
	<DT> maybe I did n't really	makes any sense </DT>
	understand the question	
	</DT>	

<DT> I said I do n't think

that 's answering your

question sorry </DT>

<DT> I do n't know how

this helps you with your

<Lh> </Lh> research

though </DT>

<DT> well have I said

anything that 's helpful to

you or has it all been a load

o

<DT> I do n't want to sort

of turn it into a a rant <Lh>

</Lh> or something that

<DT> are we going off the

tracks here </DT>

<DT> is this what we 're

supposed to be talking

about </DT>

<DT> well have I answered

your questions </DT>

<DT> if that 's got anything

to do with your question

</DT>

<DT> if that 's got anything

to do with it </DT>

<DT> as you say you asked

me a question what do you

mean what 's your

meaning of

own speech

<DT> like I 'm talking

about </DT>

<DT> I 've forgotten what I

was gon na say now </DT>

<DT> was saying before

</DT>

<DT> as I mentioned

</DT>

<DT> as I say </DT>

<DT> I may have gone off

tangent </DT>

<DT> I 've rambled on and

you 've picked something

up and you 've delivered it

ba

<DT> as I said </DT>

<DT> like I said </DT>

<DT> ca n't think of
 anything sorry about this
 </DT>
 <DT> as I said </DT>
 <DT> like I said before
 </DT>
 <DT> as I said </DT>
 <DT> I know I I 'm going
 on a bit </DT>

others' speech	<DT> as you mentioned before </DT> <DT> what were you talking about what what did you say </DT> <DT> as you say </DT> <DT> we 're going on to you talking </DT>	<DT> what you 've just said </DT> <DT> what you just said there </DT>
----------------	--	--

Both subcorpora involve similar discourse tracking feature types. References to topic relevance are present in both subcorpora. Examples include ' <DT> it 's outside the topic </DT>', ' <DT> we 've been quite comprehensive </DT>', ' <DT> we 've talked about it have n't we </DT>', and ' <DT> sorry it 's not related to this study </DT>'. Expressions of uncertainty about topic relevance are also present across speakers. These features include hopeful expressions ' <DT> I hope that er what I 've said will be helpful to you for

your project </DT>', '<DT> hopefully it 's not a digression </DT>', expressions of uncertainty about whether the contributions were helpful '<DT> I do n't know if I answered your question </DT>', '<DT> I do n't know how this helps you with your <Lh> </Lh> research though </DT>', and indications of or speculations about potential misunderstandings '<DT> is this what we 're supposed to be talking about </DT>', '<DT> maybe I did n't really understand the question </DT>', '<DT> I said I do n't think that 's answering your question sorry </DT>', and '<DT> I 'm not sure whether I completely understand that question </DT>'. In addition, references to the speaker's own speech, as in '<DT> I know I 'm going on a bit </DT>', '<DT> as I said </DT>', and '<DT> ca n't think of anything sorry about this </DT>', as well as others' speech as in '<DT> as you say </DT>' and '<DT> what you just said there </DT>' are also evident in both subcorpora. As with grammatical features and, to some extent, word selection features, the frequency of occurrence appears to be more indicative of subcorpora/group membership than the nature of features themselves, meaning that the counts appear more important for distinguishing groups than the content properties of each feature type.

Figure 38, below, shows the results presented in previous figures (normalised counts for each 4TD feature type) within a single graph.

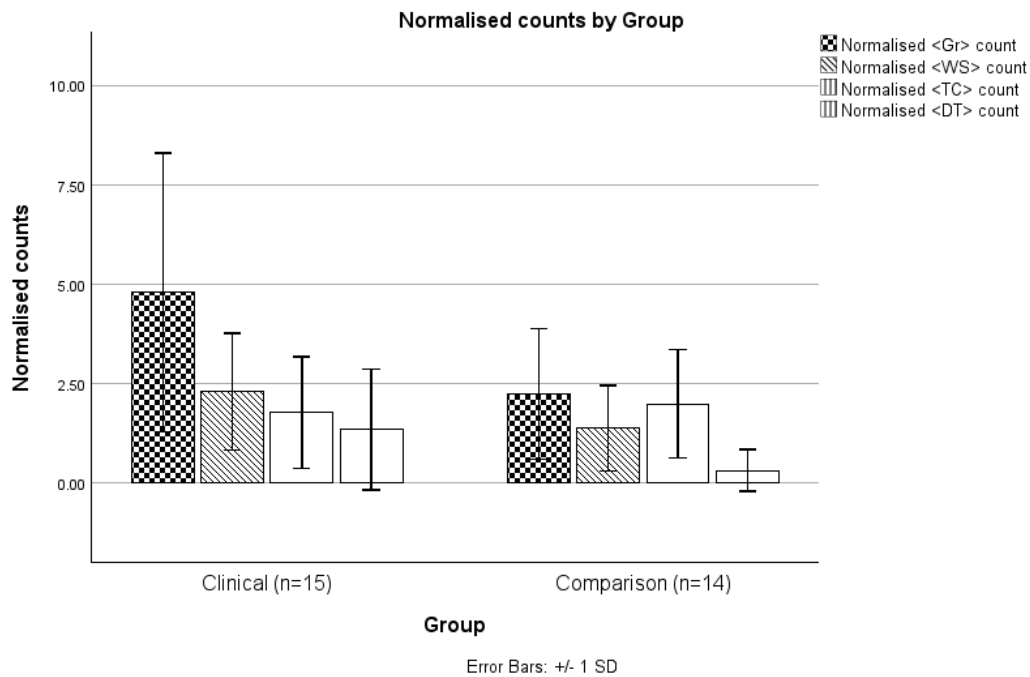


Figure 38, normalised mean 4TD counts by group

The figure above illustrates some important points. First, grammatical errors are the most prominent error types across the clinical and comparison subcorpora. This is at odds with the TLC Scale position on incoherence being a relatively rare feature in FTD contexts. More contemporary research has focused on grammatical errors in FTD and found support for their importance (Çokal et al., 2018), but the TLC Scale, still widely used, departed from the pre-TLC historic descriptions of grammatical disturbance and assigned these features a lesser role in the literature (Andreasen, 1986). It is important to point out that some errors captured by the 4TD grammar tag may include what Andreasen defines as exclusions within the TLC. Future research should nevertheless prioritise the importance of grammatical errors broadly in FTD, because the present analysis suggests that even grammatical errors that do not qualify for Andreasen’s definition of incoherence may still be useful in distinguishing clinical and nonclinical

speakers. It is also important to note that the corpus was not annotated for other TLC Scale criteria that may also prove to occur at much higher rates. Whereas the present study focused on an annotation model that represents a compromise of pre- and post-TLC descriptions of FTD, other models may see higher feature counts emerge from the same corpus. Additionally, word selection and discourse tracking errors are also higher in the clinical subcorpus, suggesting that these error types may also be potentially important for distinguishing speakers. The differences in normalised counts are relatively small, however. Further work, like that implied above that may involve alternative annotation approaches to the corpus data, may reveal further patterns of importance in identifying features that distinguish clinical and comparison speakers. More participants would be needed for a deeper statistical examination, but qualitative insights from alternative approaches to the present data would also be beneficial. Figure 39, below, compares the mean normalised counts for clinical and comparison speakers, subdivided according to the historic presence/absence of FTD.

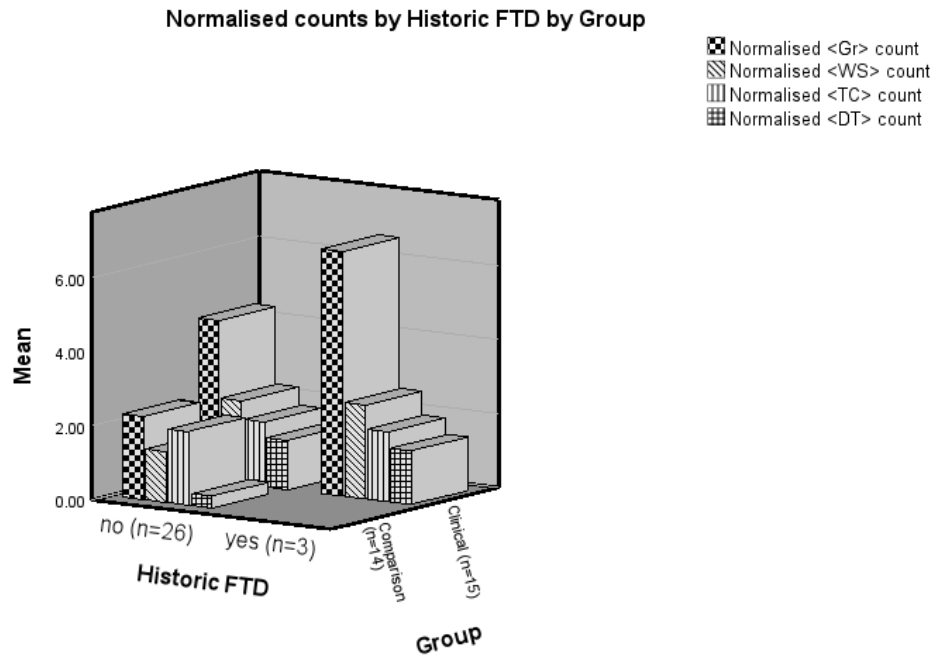


Figure 39, normalised mean 4TD counts by historic FTD by group

Clinical participants with a clinical history of FTD (n=3) showed the highest mean counts for raw and normalised grammar, word selection, and discourse tracking features.

Clinical participants with no clinical history of FTD (n=12) exceeded comparison participant mean counts for grammar, word selection, and discourse tracking.

Comparison participants had the lowest overall raw and normalised mean counts.

It is interesting that when the data are separated according to the presence or absence of historic FTD, a trend of graduated severity is evident for the grammar features.

Individuals with schizophrenia but no historic mention of FTD show higher mean rates of (raw and normalised) grammatical errors than comparison participants but lower mean rates than individuals with a diagnosis of schizophrenia and historic evidence of FTD.

This is consistent with several studies in the extant literature that compare schizophrenia with FTD and schizophrenia without FTD cohorts (McKenna and Oh,

2005). It is also consistent with findings related to the reliability, sensitivity, and factor structure of the Thought and Language Index (Liddle et al., 2018): ‘some mild speech aberrations occurring in the speech of healthy individuals appear to be attenuated forms of the florid disorders characteristic of schizophrenia’ (Liddle et al., 2018, p.326). The same pattern is seen to a lesser extent in the cases of word selection and discourse tracking features. One speculative interpretation (that needs to be expressed tentatively) is that FTD exists on a continuum, with elements (likely representative of normative/unplanned speech) being present at the lowest degree in comparison speakers. Individuals with schizophrenia without historic FTD appear to show these elements to a moderate degree, and cases where FTD is considered particularly evident or pronounced appear to show the most and may thus represent the extreme end. Readers are reminded that only three of fifteen clinical speakers were noted as having a history of FTD, and so the differences described above may be due to underrepresentation and/or the lack of an adequate sample. It is also possible that some clinical participants, while having no formalised clinical history of FTD, had developed FTD later in the course of their illness. A larger corpus in which speakers are clearly demarcated on the presence/absence of FTD is needed to understand the pattern shown in these preliminary data. That said, these results do also suggest that operationalising such a clear demarcation may be challenging.

Thought completion features do not appear to vary much across thought disorder and group indices. Further work with a larger speaker sample is required to determine whether these patterns bear out in a larger corpus. This would allow us, in turn, to determine whether the thought completion element of the proposed framework is

necessary/useful. Ultimately, a representative schizophrenia corpus is needed to allow for generalisable claims about the nature of these framework elements and their relationship to FTD in schizophrenia and schizophrenia independent of FTD. At present, however, there is sufficient information to justify further research into the proposed 4TD Framework as a means to describe language in schizophrenia and potentially FTD, because select features captured by the framework differ reliably across groups/subcorpora. The possibility of FTD existing on a continuum should also be explored, as these preliminary findings indicate that FTD features are present at low levels in comparison speakers, moderate levels in schizophrenia overall, and a more pronounced level in individuals with schizophrenia and FTD. FTD may be thought of as an increase in the frequency and severity of normal speech errors (independent of the speech errors excluded at the annotation stage, such as self-corrections).

6.2.2. Significance testing

It is important to establish whether the differences observed in feature counts are occurring at above chance rates. Traditional inferential approaches, such as t-tests, are not appropriate here given that this would require speakers to be treated as cases and there are insufficient cases for a powered test. Corpus linguistic measures of statistical significance are possible, however (albeit findings still need to be assessed sensitively). For this reason, a keyness analysis is used to assess which 4TD tags differed significantly between groups of speakers or sub corpora, using WMatrix 5. WMatrix 5 (Rayson, 2009) is a powerful corpus analysis toolkit. As previously noted, keyness analysis is a corpus linguistic technique for comparing normalised frequencies across two (sub)corpora (Gabrielatos, 2018; see also Section 6.3.). The keyword process identifies statistically significant differences in the frequency of items.

In the present analysis, Log Likelihood (LL) was the chosen measure of statistical significance and LogRatio was the chosen effect size measure. The LL significance cutoff was 6.63 (equivalent to $p = .01$). Only results with a LL of 6.63 or more were included. LogRatio shows the size of the difference between two corpora for a given keyword. LogRatio is shorthand for the 'binary log of the ratio of relative frequencies or the binary log of the relative risk' (Hardie, 2014, p.1). Relative frequencies or normalised frequencies are frequency counts that have been adjusted to control for the differences in corpus size. If a keyword occurs twice in corpus A and four times in corpus B, and corpus B is twice the size of corpus A, the relative or normalised frequency will be the same (2). Relative frequency is calculated by dividing the raw count by the corpus word count (to produce a per word value) and multiplying by the desired normalisation figure, such as 1000 or 1,000,000. The result is a per-thousand- or per-million-word value in these cases. The ratio of relative frequencies (the relative risk), derived by dividing one relative frequency by another, is converted to a logarithm to base 2 or binary logarithm. This process converts the ratio into a useful measure that illustrates the magnitude of the effect. Words four times more common in one corpus than another have a log of 2. Words eight times more likely have a log of 3, and so on. LogRatio is therefore the result of calculating two relative frequencies, then the ratio of those relative frequencies (by dividing one by the other), and then the logarithm of base 2 or binary logarithm of the ratio (Hardie, 2014). This information is provided to aid readers in their interpretation of the results discussed later in the section and also for Study Two.

Because Wmatrix does not include XML tags within its keyness analysis, 4TD tags were converted from XML tags to capitals (i.e. <Gr> became GR) for this particular test.

Table 64, below, shows which 4TD tags were identified as occurring at above chance rates. The results have been organised by effect size (LogRatio) and not significance (Log Likelihood). This is because LL highlights which keywords are used most frequently (when comparing one corpus with another), whereas LogRatio highlights keywords that are unique to a target corpus (as compared to a reference corpus) in addition to showing the size of the difference highlighted by LL.

Table 64 - keyness results for 4TD tags at $p < .01$

Item	O1	%1	O2	%2	LL	LogRatio
GR	570	0.94	138	0.46	64.65	1.03

Only the grammar tag significantly differed in the clinical sub corpus relative to the comparison sub corpus, occurring approximately twice as much in the clinical sub corpus (LogRatio of 1). The difference was quite significant, statistically speaking, producing a log likelihood score of 64.65.

When the analysis was repeated with a LL cutoff of 3.84 (equivalent to $p = .05$), discourse tracking also emerged as significantly overused in the clinical corpus, but to a lesser extent (LL = 6.15) and effect size (LogRatio = 0.79).

Table 65 - keyness results for 4TD tags at $p < .05$

Item	O1	%1	O2	%2	LL	LogRatio
GR	570	0.94	138	0.46	64.65	1.03
DT	84	0.14	24	0.08	6.15	0.79

6.2.3. Summary

The 4TD Framework proposed in Chapter Two, when operationalised as the annotation scheme described above, appears to capture linguistic features that occur at higher rates in schizophrenia speakers regardless of the presence or a history of FTD. Indeed,

the variation in dispersions within these samples may be due to the fact that the clinical group contains a mixture of speakers with and without a documented history of FTD, and so a more granular future analysis is possible and should be undertaken with larger schizophrenia samples distinguished on that basis. Such an analysis would require clearly demarcated schizophrenia with and without FTD groups. Taking this approach with the current data is not advised as the sampling approaches described in Chapter Five were not intended to produce clearly distinguished FTD and non-FTD sub groups. FTD was also not verified using a formalised symptom scale. The graph shown in Figure 39 should therefore be interpreted with caution and is only provided for exploratory purposes.

Although it is difficult to assess grammaticality in spoken language (Leech, 2000), it is evident that the grammatical errors expressed by clinical and comparison speakers overlap considerably in terms of the addition or omission of key words, mainly function words, issues of agreement, especially tense and pluralisation, and the shifting of parts of speech (see Section 6.2.). Although considered a rare occurrence in the context of the TLC Scale, the present data suggest that more attention should be paid to grammatical disturbances in speech in schizophrenia, especially given that grammatical features were the only features to differ significantly (at the $p < .01$ level) across corpora in the keyness analysis.

For word selection, approximations, archaic or unusual words and blends are shared across clinical and comparison speakers (but, like grammar features, at increased rates in clinical speakers). Unlike other feature domains, however, some aspects appear to be specific to clinical speakers. These are phonemic errors that resemble phonemic paraphasias as described in the TLC Scale (Andreasen, 1986), opposite forms, and

onomatopoeia (see Section 6.2., above). These differences were slight, though, and not found to be significant in the keyness analysis (cf. Section 6.3.).

Although thought completion rates do not appear to be much different across clinical and comparison speakers/subcorpora, it is worth pointing out that there may be some value in further exploring the role of 'I' interruptions, given that increased 'I' pronoun usage has been noted in schizophrenia samples in other studies (Lundin et al., 2023). Again, as with grammar and a select portion of word selection features, there is broad agreement across the subcorpora on the types of errors/deviations observed (Section 6.2.). That said, these differences were also not found to be significant in the keyness analysis. Were there time to transcribe the corpus for timed pauses, more information relating to thought block may have emerged. The present annotation approach is not sensitive to differences in pause length that may have distinguished thought completion features despite their broad structural similarity. Further work in this area might reveal interesting patterns or points of difference not shown in the present analysis.

On discourse tracking, and much like grammar, thought completion, and word selection, there is significant overlap in feature types across clinical and comparison sub corpora (Section 6.2.). References to topic relevance, uncertainty, speculations about potential misunderstandings, own speech, and others' speech overlap considerably. These differences were found to be significant in the keyness analysis at the $p < .05$ level.

Perhaps the most important finding is that the features typically thought to indicate FTD, when condensed into a simplified framework that brings together past and contemporary approaches to FTD description, largely capture speech errors that occur in comparison speakers and speakers with schizophrenia with no history of FTD (Section

6.2.). This would suggest that descriptive accounts of FTD are capturing, at least in part, errors of speech that become more apparent in schizophrenia overall (and potentially more so in schizophrenia with FTD), but that do not necessarily indicate features specific to FTD as a discrete construct that is absent in comparison speakers. The only exceptions to this are within the word selection domain. Phonemic paraphasias, opposite forms, and onomatopoeia appear specific to clinical speakers (but nonsignificantly in the present dataset).

These findings provide provisional support for the dyssemantic hypothesis of FTD in the case of word selection errors (Barrera et al., 2005), and the dysexecutive hypothesis could potentially explain the progressive increases in the frequency of the speech errors (seen in both cohorts) in the clinical subcorpus (Barrera et al., 2005). Although these hypotheses have traditionally been viewed as mutually-exclusive, newer approaches allow them to be considered as mutually informative (Dornelles and Telles-Correia, 2023). Failures of speech planning and discourse monitoring may originate from a point of executive dysfunction, giving rise to the greater number of such errors. This is somewhat consistent with the cognitive load literature, which sees normative speech errors (not associated with those identified under the 4TD Framework) increase alongside processing demands (Berthold and Jameson, 1999). Although features typical of everyday spoken language were excluded at the annotation stage, the majority of features identified in the present study overlap in clinical and comparison speakers, suggesting that they may also be considered normative at least at the levels seen in the comparison cohort (i.e. as features of unplanned/spontaneous speech). Schizophrenia and FTD in schizophrenia appear to be distinguishable once these features exceed

comparison levels. In addition, specific word selection errors may point to aspects of speech behaviour that are not normative at comparison levels but may instead be syndrome specific. A combination of dyssemantic and dysexecutive processes might explain why some speech in the clinical cohort is semantically aberrant while also accounting for the broader tendency toward shared error types across cohorts. The clinical concept of FTD as it stands may currently be too broad, capturing an excess of normative speech errors that do not in and of themselves constitute novel phenomena.

The present study provides tentative but incomplete support for the 4TD Framework proposed in Chapter Two, in the sense that errors captured by this framework are seen to increase in speakers with schizophrenia and even more so in speakers with schizophrenia and FTD. Grammatical errors appear to significantly distinguish clinical and comparison speakers, but much more work is needed with a larger corpus to establish the utility of the 4TD framework as a whole in relation to FTD in schizophrenia, as the present data only supports the grammar dimension. It also highlights that the feature counts, rather than their inherent properties, are potentially more useful for distinguishing clinical and comparison speakers. This would suggest that FTD, in part, complicates the production of speech such that normative errors increase in frequency, rather than produces new errors (see Section 6.2.). This thesis' findings suggest, in turn, that only some aspects of FTD, such as phonemic paraphasia, might be described in terms of the positive syndrome (Nagels et al., 2016; see Section 6.2.). Other symptoms, such as those operationalised by the 4TD Framework as outlined here, may be better explained by the disorganisation syndrome or cognitive dimension (Roche et al., 2015). Future work should focus on expanding the corpus so that other questions can be

explored. Such future work might explore which TLC Scale items are most relevant to contemporary language in schizophrenia and, with clearer demarcations between speakers with and without FTD, which TLC Scale and 4TD Framework features distinguish FTD and non-FTD speakers relative to comparison speakers.

6.3. Study Two: Conceptualising Linguistic Creativity

6.3.1. Word and semantic keyness analyses

To understand how participants conceptualised linguistic creativity, a keyness analysis was conducted using WMatrix 5. The keyness analysis described here focused specifically on (statistically) overused and underused terms. This approach was selected to respond to the issue of topic overrepresentation discussed in Chapter Five, which saw more comparison participants respond to the open, narrow topic question ‘how was the experiment?’ (n=10) than the closed, broad questions. This approach compares keywords present in both subcorpora and identifies which are over/underrepresented in the clinical subcorpus relative to the comparison subcorpus. Focusing only on keywords common to both sub corpora, via keyness analysis, partly controls for the differences in topic condition, which has some potential to skew the results. It is worth noting in addition, that broad topic comparison participants contributed more to their respective subcorpora despite being underrepresented in the comparison sample (see Section 5.10.3). That is, even though less comparison participants spoke on the broad topic, their responses made up a larger respective portion of the overall comparison sub corpus. This will have mitigated overrepresentation effects to some extent.

In the present analysis, Log Likelihood was the chosen measure of statistical significance. The significance cutoff was 6.63 (equivalent to $p < .01$). Only results with a LL of 6.63 or more were included. The effect size measure chosen was LogRatio.

Two forms of keyness analysis were performed. The first explored overused and underused words, whereas the second investigated overused and underused semantic categories. Table 66, below, highlights the statistically overused words. O1 is the clinical corpus, and O2 is the comparison corpus.

Table 66 - overused words across clinical (O1) and comparison (O2) sub corpora (Appendix VII)

References to computing and computer programming, such as 'code', 'computer', and 'programming' occurred with LogRatios of between 4 and 5. This means that they occurred between 16 and 32 times more often in the clinical sub corpus than the comparison sub corpus. This is largely due to one participant's interview length and emphasis on computing. References to 'games', 'HTML', 'netbeans', and 'PNG' are also represented by this speaker. Other speakers representative of the clinical group also tended to focus heavily on single topics, nonetheless. They included 'fishing', 'photo'/'camera'/'photography'/'picture'/'pictures', 'graphic design', 'music', and 'money'. These occurred at LogRatios ranging from 1 to 4, meaning that they occurred between twice and 16 times more in the clinical corpus than they did in the comparison sub corpus. These results suggest that participants in the clinical corpus displayed a greater preference for nonlinguistic forms of creativity, especially visual types, such as art, photography, and computer programming. Clinical speakers also linked creativity to topics not typically associated with creative activity, such as 'mentally ill', 'ill', 'cares',

'doctor', 'friend', 'happy', 'upset', 'jealous' 'hospital', 'prison', 'medication', 'paranoid', 'feelings', 'talk', 'difficult', 'people', and 'problem'. These terms suggest difficulty with the concept of linguistic creativity, difficulty maintaining the topic of linguistic creativity, and/or barriers to linguistic creative expression¹¹. This would be somewhat consistent with the literature reviewed in Chapter Three, which sees some preservation of figural originality and other nonlinguistic forms of creativity despite impairments in verbal fluency, originality, and flexibility (Sampedro, 2019). The descriptions of derailment and tangentiality reviewed in Chapter Two are also potentially relevant here, given that speakers both with and without a history of FTD display similar difficulties with maintaining the topic of linguistic creativity (see Section 6.2.).

Table 67, below, reports underused words. Note that the items at the *bottom* of this table have the largest effect size. The results are presented this way because O1 is the clinical corpus and O2 is the comparison corpus.

Table 67 - underused words across clinical (O1) and comparison (O2) sub corpora (Appendix VII)

References to 'edge', 'adjectives', 'metaphor', 'rough', 'salty', 'task', and 'experiment' can be explained by overrepresentation of the narrow creativity prompt question in the majority (n=10) of comparison respondents. Clinical participants underused these terms, leading to their overrepresentation in the comparison sub corpus. These items had LogRatios ranging -6 to -3, occurring 64 to eight times less in the clinical sub corpus.

¹¹ It is important to state that because this portion of the analysis relied on subjective judgements, the question of whether 'people' and similar terms are indeed related to creativity has not been rigorously explored (such as would have been possible with further corpus analysis involving a reference corpus such as the BNC).

Reference to 'creative writing' had the largest effect size/LogRatio overall (-6.33), meaning it was used 64 times more infrequently by the clinical group than the comparison group. There was less variation in the clinical subcorpus in terms of nonlinguistic creativity. Comparison participants focused on education - 'research', 'university', 'gcse', 'exam', 'psychology' - and language and language ability - 'language', 'descriptive', 'associate', 'understanding', 'words', 'conversation'. The same participants also focused on sense making, 'make_sense', 'sense', and information processing 'process', 'apply', 'linked', 'rule'. These topics are much more closely aligned to the narrow and broad topic prompt questions, suggesting less difficulty in the comparison cohort with maintaining the topics of the psycholinguistic task and linguistic creativity.

Table 68, below, reports overused semantic categories.

Table 68 - overused semantic categories across clinical (O1) and comparison (O2) sub corpora (Appendix VII)

References vary greatly in the clinical sub corpus and depart from the topics of language and creativity often. Material concerns feature regularly. See, for example: 'money generally', 'greed', 'money and pay', 'unemployment', 'money: lack', 'business: selling', 'money: debts', 'clothes and personal belongings', 'quantities: little', and 'getting and possession'. 'Money generally' has the largest effect size, with a LogRatio of 4.80, meaning that related terms occur between 16 and 32 times more often in the clinical sub corpus than in the comparison sub corpus. References to mortality 'dead' also occur far more often, with a LogRatio of 4.55, meaning that related terms occur between 16 and 32 times more often in the clinical sub corpus. 'Disease', 'medicines and medical treatment', 'anatomy and physiology', and 'alive' are also significant features.

References to people and relationships are common, too, See, for example: 'people: female', 'people: male', 'kin', 'relationship: intimacy and sex', 'personal relationship: general', 'reciprocal', 'helping', 'people', 'telecommunication', and 'pronouns'. Evaluative terms feature often also: 'evaluation: unauthentic', 'foolish', 'evaluation: good', 'violent/angry', and 'comparing: varied'. Some reference is made to time and space: 'vehicles and transport on land', 'places', 'time: ending', 'time: past', 'time: period', 'time: present; simultaneous', 'time: future', 'moving, coming and going', 'location and direction', and 'putting, pulling, pushing, transporting'. There is some overuse of specific sensory language: 'sensory: sound', 'substances and materials: solid'. There is also some reference to avoidance and hiding 'avoiding' and 'closed; hiding/hidden'. These topics overlap considerably with the personal concerns, circumstances, and symptomatology of people living with schizophrenia, which may suggest support for the view that discussion on abstract topics elicits FTD (Marengo et al., 1986)¹². As an extension of this idea, the present dataset may contain examples of Andreasen's TLC Scale item self-reference, which involves the tendency to refer neutral topics back to personal concerns or circumstances (Andreasen, 1986). It is arguable whether this item could be rated in the present dataset, though, as although the discussions were on neutral topics, participants were asked about their own uses of language and thus invited to refer to themselves. Reference to the arts, media, and entertainment bear the closest topic relevance to linguistic creativity and nonlinguistic creativity: 'information technology and computing', 'drama, the theatre, and show

¹² Another possible explanation may be that clinical participants are more accustomed to participating in research that more directly taps clinical measures, such as discussion of symptoms, cognitive testing, or neuroimaging. Participants may therefore associate research participation with discussion of their clinical experiences, in ways that comparison participants may not.

business', 'sports', 'music and related activities', 'arts and crafts', 'entertainment generally', 'the media', and 'the media: TV, radio and cinema'. This, again, is consistent with and provides support for the findings covered in Chapter Three. Namely, marked difficulties with verbal creativity with more preserved functioning in figural and other nonlinguistic creative domains (Sampedro et al., 2019). Consistent with the extant literature, a preference for or greater comfort with discussing nonlinguistic forms of creativity is seen in the present dataset.

Table 69, below, reports underused semantic categories. Note that the items at the *bottom* of this table have the largest effect size.

Table 69 - underused semantic categories across clinical (O1) and comparison (O2) sub corpora (Appendix VII)

Underused references suggest a much tighter pattern of topic adherence in the comparison sub corpus (O2). Overrepresentation of the narrow topic prompt question, which required participants to describe their experiences of the psycholinguistic task outlined in Chapter Four, can explain the substantial reference to sensory language by comparison speakers: 'sensory: touch', 'sensory: taste', 'sensory: smell', 'seen', 'texture', mental representations 'concrete/abstract', and mental processes 'comparing: unusual', 'mental object: means, method', 'thought/belief', 'linear order', 'comparing: different', 'mental object: conceptual object'. References to science and technology 'science and technology in general' education 'education in general', 'ability/intelligence', 'comparing: usual', 'comparing: unusual', 'investigate, examine, test, search', 'open, finding, showing', and reading 'the media: books' suggest a narrower concept of linguistic creativity and closer topic adherence in the comparison cohort (O2). There is

significant reference to degree ‘degree: minimisers’, ‘degree: diminishers’, ‘degree’, ‘degree: compromisers’, and ‘degree: boosters’. These are underrepresented in the clinical corpus, with ‘degree: minimisers’ having the largest effect size (-2.59), occurring between four and eight times more in the comparison sub corpus. Interestingly, reference to language ‘language, speech, and grammar’ is underrepresented in the clinical sub corpus, occurring between twice and four times as much in the comparison sub corpus. Given that this semantic category is arguably among the closest to the broad prompt questions, it is interesting that it is significantly underrepresented in the clinical sub corpus and occurs more in the comparison sub corpus where only four participants engaged with the broad topic prompt.

6.3.2. Summary

The greater variation in semantic categories seen in the clinical subcorpus may reflect disorganisation that would lend support to the dysexecutive and dyssemantic hypotheses of FTD (Dornelles and Telles-Correia, 2023). Speakers may have trouble interpreting the question (dyssemantic and/or dysexecutive), which is suggested by the large number of clinical participants who asked for definitions for language or linguistic creativity (dyssemantic). The extent to which topics obliquely related to the prompt question varies may reflect difficulties at the level of executive functioning, with organisation and planning impairments driving much of the topic diversity. This is consistent with the finding that FTD involves substantial executive deficits (Barrera et al., 2005). It is also interesting that, as in Study One, patterns typically associated with FTD appear across the subcorpus and to some extent in the comparison sub corpus (e.g. comparison participants referring linguistic creativity to reading, education, science and

technology, and other personal experiences and circumstances). While these are largely the result of an invitation to be self-referential, a similar pattern of graded severity is evident. Topics are much more varied in the clinical sub corpus, and a greater number of topics indicative of personal concerns and circumstances are visible alongside a reduction in topics that relate directly to the prompt questions.

Study One (see Section 6.2.) provides tentative but incomplete support for the 4TD Framework proposed in Chapter Two and suggests that FTD may be better conceptualised as existing on a continuum on which nonclinical speakers may be situated at a normative or subclinical level (see Section 6.2.). The dysexecutive and dyssemantic hypotheses (Dornelles and Telles-Correia, 2023) both stand to derive support from the present data, given that word selection errors appear to be specific to clinical speakers in the case of a handful of features (see Section 6.2.). An increase in features seen in comparison speakers points to dysexecutive phenomena (Fuentes-Claramonte et al., 2021). Study Two (see Section 6.3.) raises questions about the nature of derailment, tangentiality, and self-reference outside of the context of FTD (see Section 6.3.). The role of the initiating question appears to be important for both speaker groups, as is the role of schizophrenia symptomatology and environmental factors. The breadth of semantic categories invoked in the clinical sub corpus by the initiating question suggests potential semantic disorganisation and/or dysexecutive phenomena (cf. Dornelles and Telles-Correia, 2023).

The Conclusion chapter, following, summarises the content of previous chapters ahead of a series of recommendations for future studies.

CHAPTER SEVEN: CONCLUSION

7.1. Summary of chapters

The present thesis investigates several concepts that have historically eluded definition: creativity, linguistic creativity, and FTD. The attempts to create operational or workable definitions described here have been successful in the sense that they have permitted an investigation of linguistic creativity in schizophrenia. Consistent with the extant literature (Roche et al., 2015), language in schizophrenia can be divided into two categories: forms of impairment specific to schizophrenia and forms of impairment specific to FTD. Those specific to schizophrenia appear to be core features of the illness, whereas those of FTD appear to represent an additional syndrome that is somewhat transdiagnostic. The relationship of both types to linguistic creativity is difficult to determine, given that a robust definition of linguistic creativity is required for this. The definition offered in Chapter Three focuses on the ways in which creativity has been defined and tested, usually involving tasks that measure executive functioning (see Chapter Three). An executive functioning model of linguistic creativity (see Karatas and Aktan-Erciyas, 2022) therefore positions individuals with schizophrenia in a deficit space, as schizophrenia involves executive functioning difficulties as a core feature of its symptomatology (Clark et al., 2010). FTD also appears to have a dysexecutive component, and potentially also a dyssemantic one (see Section 6.2.). The data presented in the present thesis, while intended to constitute a stronger form of evidence than the case study and case series approaches typical of creativity and mental illness research of the past, has ended up relying heavily on case studies due to external factors affecting recruitment and data collection. These results allow for only a small

collection of tentative observations, with much of the surrounding thesis being more of a methodological and theoretical exercise. That said, the present data do suggest that some of the conceptual distinction between language in schizophrenia and language in FTD may be related, existing on a continuum of severity rather than as discrete phenomena (see Section 6.2. and Roche et al., 2015). The reason for arguing this is that the corpus data described in Chapter Six was annotated according to a theory driven model of past descriptions of FTD (see Chapter Two), rather than language in schizophrenia more broadly (McKenna, 2013). This specific focus on FTD was underrepresented in the clinical sub corpus sample, but an increase in features captured by this annotation was seen in speakers with and without FTD (see Section 6.2.). Indeed, those with FTD showed slightly higher rates of these errors, suggesting a progressive increase across the samples. Taken together, the preliminary data provide some support for a newer conceptualisation of the language changes seen in schizophrenia and FTD as potentially related (see Section 6.2.). This has implications for the transdiagnostic nature of FTD (see Section 6.2.), which may require rethinking. Specifically, if FTD is potentially situated on a continuum with normal speech (Roche et al., 2015), its transdiagnostic properties become harder to define. If FTD is not situated on a continuum with normal speech, then FTD may offer insight into the specific linguistic points of intersection between the clinical pictures for which it is transdiagnostic. Namely, the linguistic properties shared by different clinical pictures can be more clearly demarcated through the study of FTD. This will require a deeper understanding of FTD, deeper than the one available currently because much of the nature of FTD remains unexplored and undefined (Roche et al., 2015).

The top-down annotation model developed in Chapter Two revealed important points of convergence between past and more contemporary descriptive approaches to FTD in and outside of schizophrenia (see Section 2.5.). It also draws attention to the extent of changes brought about by the TLC Scale, which depart significantly in places from the work of prior authors (Bleuler, 1911; Kraepelin, 1913; Kleist, 1914; Cameron, 1938, Wing, 1974). These changes are clearly justified in some respects, capturing symptoms more commonly observed in clinical practice by discarding those perhaps more typical of the historic period from which they originated (such as *interpenetration of themes* and *loss of the central determining idea*). The results described in Chapter Six provide support for some TLC Scale elements, nonetheless, in particular phonemic paraphasia being specific to the clinical sub corpus (although these features occurred at low frequencies; see Section 6.2.). The results also challenge some assertions made within the TLC Scale, such as the notion that the grammatical disturbances that fall under incoherence are rare and lack mild expressions (Andreasen, 1986). The reverse is seen in the current dataset (see Sections 6.2. and 6.3.), and this remains one of the thesis' strongest findings. Grammatical errors are the most common and pronounced error types, and error types themselves do not differ across clinical and comparison groups (see Section 6.2.). The lack of difference points to a mechanism shared by both speaker groups, suggesting that grammatical errors may not originate specifically from schizophrenia symptomatology but may be an indirect consequence, being involved in unplanned/spontaneous speech. That is to say that grammatical errors themselves may not be a symptom of schizophrenia but increased grammatical errors may represent a consequence of schizophrenia symptoms that affect executive functioning (see Section 6.2.). The error types that do differ across groups may originate from a dyssemantic

process that is more specific to FTD in the transdiagnostic sense (see Hart, 2017). The language picture of schizophrenia and FTD therefore may involve a connection between schizophrenia and FTD disturbances on a continuum (see Section 6.2.) alongside distinct processes that are more transdiagnostic. It may be helpful, if so, to think of *some* language errors in schizophrenia as produced by non-FTD schizophrenia symptomatology, such as negative and disorganisation symptoms, and FTD proper, inclusive of its positive, negative, and disorganisation dimensions, as a distinct transdiagnostic entity (see Section 6.2.).

The question of which aspects of language disturbance in schizophrenia relate to linguistic creativity as defined in Chapter Three can be met with the dysexecutive and dyssemantic theories of FTD in schizophrenia (Dornelles and Telles-Correia, 2023). The work reviewed in Chapter Three suggests that when linguistic creativity is defined in terms of figurative language production and comprehension tasks, many of which leverage tests of executive functioning at the same time, widespread figurative language or creative linguistic impairment is evident (see Chapter Three). Under this definition, linguistic creativity is negatively impacted in schizophrenia and is related to FTD in terms of its connection to executive and semantic functioning. There does not appear to be a connection between FTD and linguistic creativity as defined here in terms of similarity of output, but there does appear to be a connection in terms of dependent or underlying processes (see Chapter Three), particularly a tendency toward linguistic playfulness (Roche et al., 2015). Attempts to be linguistically creative may not be entirely successful for some schizophrenia speakers due to difficulties with irony, proverb, humour, and metaphor, and related devices (see Chapter Three), but severe expressions of FTD may

resemble these techniques due to the dyssemantic disturbances that appear connected to phonemic paraphasia and similar FTD-specific features (see Section 6.2.; Andreasen, 1986). Unlike the linguistic creativity observed in affective psychosis, mania, and bipolar cohorts that seems to be associated with increased performance on figurative language measures (see Murray and Johnson, 2010), some apparently creative linguistic behaviour in schizophrenia may in fact be unintentional and due to impairments in semantic and executive processes (McKenna, 2013). It is possible that some linguistic output seen in nonaffective and affective psychosis cohorts will resemble each other, but the underlying intentional processes are also likely to be quite different (Richards, 2001).

The psycholinguistic task discussed in Chapter Four is theoretically helpful in suggesting that synaesthetic metaphor production, in the narrow context of a metaphor creation task, elicits similar response behaviour in one clinical participant compared to nonpsychiatric comparison participants (see Section 4.11.). This finding is independent of difficulties on auditory working memory, semantic knowledge, and perseveration. Further work is needed to establish whether participants do indeed perform similarly on the DoLI task across groups, but initial indications suggest that similar scores can be achieved independently of some executive and semantic difficulties (see Section 4.11.). This provides additional support for the suggestion that language in schizophrenia and FTD may arise out of a combined dysexecutive and dyssemantic picture (Dornelles and Telles-Correia, 2023). There is also some suggestion that participants differed in their abilities to determine rules of responding, with comparison participants developing rules that supported a mode of engagement more typical of analogical or categorisation

approaches to metaphor (see Section 4.3.). The clinical participant reported difficulty with this stage of the process, which may point to a difficulty at the levels of categorisation or analogical reasoning (Holyoak and Stamenković, 2018). At the same time, the general similarity across clinical and comparison participants in terms of the balance of concrete and abstract responses does provide some indication that factors independent of symptomatology and diagnosis are significant influencers of response behaviour (see Section 4.11.). It may be that the task elicits categorisation and/or analogical reasoning behaviour for all participants but clinical participants may find metatalk about such processes more challenging, with design decisions being more influential than cognition in this case. It is important to note that participants did nonetheless make use of metatalk in the work described in Chapter Six (see Section 6.2.). The task nevertheless provides a series of points for further study and highlights the importance of natural language data in the study of language in schizophrenia (see Section 7.3.).

Chapter Five described the design and characteristics of a small, specialised corpus of spoken language in schizophrenia. The chapter demonstrated that Sinclair's (2005) corpus construction guidance can be followed closely, having broad applicability even in the case of clinical cohorts (see Section 5.10). The resulting corpus is potentially useful in its current form to corpus linguists working in the medical humanities, because it provides them with comparative data on nonpsychiatric and psychiatric speech. Further work can be carried out on the questions posed in the present thesis. Specifically, more data on clearly demarcated FTD and non-FTD speaker groups is needed to examine whether the patterns identified in Section 6.2. are informed by FTD and non-FTD

distinctions. Other forms of analysis that were not attempted, such as sentiment analysis or more granular grammatical explorations, would likely reveal more interesting distinctions between clinical and comparison speakers because these levels of analysis would provide further context. The same can be said for understanding engagement with the subject of linguistic creativity and topic adherence. More work is needed that expands the corpus and balances the overrepresentation issues evident in the current corpus version (see Section 5.10.1). It is of particular interest to explore whether the patterns noted in Chapter Six, namely the increased rates of grammatical deviation, remain prominent when exposure to the initiating questions and topic conditions are levelled out.

Chapter Six presented two studies. The first tested the operational definition of FTD proposed in Chapter Two (see Section 2.5.). The results of Study One suggest that clinical descriptions of FTD, when operationalised as a framework (such as the 4TD), can/do capture (some) linguistic features which differ between clinical and comparison speakers (see Sections 6.2. and 6.3.). Grammatical and discourse tracking errors, operationalised as any grammatical error type and use of metalanguage respectively, differed significantly across the two sub corpora, for example. A closer examination revealed that broad types of errors and deviations did not differ across sub corpora, however (see Section 6.2.). The tendency for both groups to make similar errors but for the frequency of those errors to be significantly greater in the clinical sub corpus provides some support for extant work (Çokal et al., 2018). The dysexecutive hypothesis is a good candidate for explaining why error types do not change but frequency does (Dornelles and Telles-Correia, 2023), and the dyssemantic hypothesis can be invoked to account for

the few errors that were seen only in clinical speakers (Dornelles and Telles-Correia, 2023). Study Two revealed that topic adherence was more difficult for clinical speakers, who chose to involve more topics of individual or personal concern (see Section 6.3.). This is also consistent with prior literature (Roche et al., 2015), particularly the TLC Scale's self-reference item (Andreasen, 1986). Although it is difficult to say whether self-reference can be rated in an interview context that definitionally invited self-referential responses, it is nevertheless interesting that some features associated with FTD appear in Study Two's examination of content and not under the framework employed in Study One (see Sections 6.2. and 6.3.). The proposed 4TD framework as operationalised does not capture the full extent of features described in the TLC Scale (Andreasen, 1986), despite being designed to be broad and capture multiple error types (see Section 2.5.). The semantic categories described in Study Two reveal aspects of FTD that are not captured by the proposed framework, however, such as the self-referential and emotional concerns (see Section 6.3.). This suggests that some aspects of the TLC Scale are potentially detectable using corpus linguistic tools and methodologies, pointing to some potential for the automated detection of TLC Scale items. It is arguable whether the breadth of semantic coverage seen in clinical participants in Study Two constitutes a form of linguistic creativity (see Section 6.3.). As with the findings of Chapter Four, it appears that there is a difference between intentional deviations for creative effect and impairments that give the appearance of creative behaviour. It may be that participants' tendency to involve more semantic categories is a feature of an inability to maintain semantic coherence, due to a combination of dyssemantic and dysexecutive phenomena (Dornelles and Telles-Correia, 2023). In the latter case, failure to maintain set, as in a subordinate executive function, may partly explain the greater range of semantic

categories because difficulties in this area problematise monitoring the discourse for its relevance and social appropriateness.

7.2. Strengths and limitations

The thesis has fulfilled its aims and objectives. Chapter Two provides an operational definition of FTD specific to schizophrenia operationalised in linguistic terms. Chapter Three provides an operational definition of linguistic creativity in schizophrenia. Chapter Four describes a quantitative investigation of creative language processing in schizophrenia, although this study lacks sufficient participant numbers for a statistical analysis. See Section 7.3. for further discussion of where Chapter Four may be taken in the future. Chapter Six describes a quantitative investigation of creative language output in schizophrenia, which allowed for a discussion of interactional factors relevant to both schizophrenia and linguistic creativity.

The majority of the project's research questions have also been answered. The question 'what is FTD in schizophrenia' has been answered in Chapter Two. FTD is both a transdiagnostic phenomenon (Hart, 2017) and diagnostic criterion for schizophrenia (APA, 2013; WHO, 2022). It is present to some degree in nonpsychiatric populations (Weeks and Ward, 1988; Weeks and James, 1995) and also appears tied to schizophrenia symptoms (McKenna and Oh, 2005). This suggests that while FTD is a transdiagnostic entity when defined broadly (e.g. using the TLC Scale; Andreasen, 1986), there are forms of FTD that are picture-specific. It is not clear whether this is due to schizophrenia symptoms interacting with the baseline presentation of FTD or whether there are in fact many distinct FTDs. The question of 'what is linguistic creativity in schizophrenia' has

been answered in Chapter Three. When linguistic creativity is defined in terms of figurative language ability and executive functioning, as has been the tendency in the extant literature (Fuentes-Claramonte et al., 2021), it is characterised by widespread difficulties in verbal and nonverbal domains (with verbal fluency and flexibility being more affected; Sampedro, 2019). Originality, a core feature of creativity, is however partially spared in schizophrenia. Linguistic creativity in schizophrenia can therefore be conceptualised as a constrained form of the linguistic creativity seen in nonpsychiatric and affective psychosis cohorts. It is more difficult to answer the question ‘how is creative language processing manifested in schizophrenia’ due to insufficient experimental data. There are preliminary indications that some aspects of figurative language production are spared, and this is somewhat consistent with the limited extant literature available (Despot et al., 2021). The present experimental design used is helpful in understanding whether schizophrenia and nonpsychiatric comparison participants engage with the task in similar ways, and interview response data suggests that they might not. When presented with the same invitation to engage in categorical and analogical reasoning, participants report different thought processes and experiences. At the same time, all participants were consistent in their view that the lack of contextual fit between items was at times problematic, suggesting shared engagement on some levels. The question ‘how is creative language output manifested in schizophrenia’ is easier to answer given the availability of more interview data. Participants in the schizophrenia group involved topics of emotional and individual concern, topics that were not immediately relevant to the topic at hand, far more often. This supports the idea that abstract topics can elicit FTD in schizophrenia cohorts. Whether this form of speech can be called creative language output is another, largely

pragmatic, question. See section 7.3. for further discussion of other studies that may assist in understanding this. The project of course also suffers from several limitations. First, the 4TD Framework proposed in Chapter Two can be criticised for engaging in an ‘apples and oranges’ comparison, with the observed lack of fit between linguistic levels and descriptive phenomenology being explained simply by the stark difference in approaches. This would be true if the intention was to perform a direct comparison. In that chapter, however, the aim was not a comparison but a transposition. The purpose of the 4TD Framework is to render prior descriptions of FTD in linguistic terms. When this transposition occurs, the limitations of the source descriptions become apparent. This is slightly different from attempting a direct comparison, but the difficulty in attempting such a transposition is acknowledged as a methodological limitation. A related limitation is that the obvious self-correction exclusion criteria and thought completion 4TD annotation criteria are conceptually very similar. It was very difficult to distinguish these elements, and attempts to do so focused on whether there was any indication of a shift in tangent. When the data suggested that the speaker was correcting a phrase but remaining on the same train of thought, this was treated as a self correction. On the other hand, when the speaker appeared to abandon a phrase in favour of a new conversational direction, this was treated as a thought completion issue. Nevertheless, this distinction is woolly and at times problematic. The definition put forward in Chapter Three is also subject to some limitations, namely that the systematic search process was somewhat circular. The search criteria focused on figurative language, and creativity broadly, but did not include the term ‘linguistic creativity’. This was because ‘linguistic creativity’ yielded no results as a keyword, and so linguistic creativity had to be operationalised some other way. In the end, figurative language and

figurative devices were chosen as a ringfenced definition: given their association with FTD in the extant literature (McKenna and Oh, 2005). This is problematic because the search criteria rely on predefinition, and yet the purpose of the review was to develop a definition. This circularity is both undesirable and unavoidable, as there is simply insufficient literature to allow for a systematic search of 'linguistic creativity' in schizophrenia proper. A further limitation is the use of a quality scale to assess study quality. This is not advised for the assessment of clinical trials (Higgins, 2011), which one of the included studies was. I however saw this as acceptable as this particular systematic review generated an assessment of heterogeneous trials with no summary estimate and utilised a narrative meta synthesis approach. The DoLI task has several limitations, the chief of which being a lack of participants. In design terms, the decision to tightly control the semantic and psychometric properties of stimuli shrank the pool of candidate items to the point where item repetition may have biased responses, as preliminary data indicates in the case of noun repetition and the possible priming effects of the practice items. The DAIS-C is also subject to several limitations, namely incomplete metadata and a relatively small sample. Time and cost limitations made the construction of a much larger corpus difficult in the context of a PhD effort, but these issues can be addressed with corpus expansion work. The quantitative approach to testing the 4TD Framework relies again on some circularity. The data were coded broadly to avoid assumptions about the linguistic properties of FTD symptoms, but this broad approach still relied on predefinition to be operationalizable. The quantitative approach to creative language output suffers a similar problem, in that while interviews were unstructured and designed to flow toward any given topic they nevertheless had to start somewhere. In this case, interview questions had to be developed that would

meet both corpus building and research design criteria, leading to a mixture of interview questions and imbalanced representation of questions in the final sample. This imbalance was largely due to the COVID pandemic affecting the recruitment workflow adversely. This, again, can be corrected with corpus expansion work.

The thesis also makes several original contributions. The 4TD Framework is, while largely a descriptive effort, a usable framework for approaching language in FTD. It integrates historic and contemporary accounts of FTD, something that has not been done previously, and formulates these in practical linguistic terms. It does not incorporate some of the newest approaches to FTD assessment, such as the TALD (Kircher et al., 2014)'s rating of both objective and subjective (patient-rated) FTD (see below for rationale). Further work on the 4TD framework can be undertaken to account for both objective and subjective FTD. This is an important distinction, because principal component analysis reveals subjective FTD as a discrete factor (Kircher et al., 2014). This said, there is less work on the nature of subjective FTD than one would like, and this is partly why the distinction was not included in the work shown in Chapter Two. Operationalising subjective FTD is, additionally, likely to be challenging from a methodological standpoint because FTD problematises communication. The patient experience is nevertheless extremely important, and efforts to incorporate it into the 4TD Framework should be prioritised in the future (see Section 7.3.). The psycholinguistic task demonstrates how complex experimental controls can be accommodated without problematising the wider experimental design. Such experiments nonetheless require a complex statistical analysis. Further, the DoLI task specifically suffers problems of limited variety and repetition. These problems arise from

attempting to achieve multiple design objectives while adhering tightly to strict design and statistical principles. The thesis also demonstrates that while theoretically complex experimental designs and analyses are possible (see Chapter Four), these do not always lead to the most desirable practical outcomes.

The DAIS-C is also attached to several original contributions. These include the transcription convention developed to represent phonological information in ways that are both human- and machine-readable, not requiring knowledge of specialist transcription conventions (such as Jefferson or DuBois; see Chapter Five). The corpus is also the first English language dataset of its kind. Examples of naturalistic/spontaneous speech data in this population are limited. A Hungarian language example is the HuMenDisCo (Szabó et al., 2023), which gathered data from speakers with schizophrenia, schizoaffective disorder, and bipolar disorder in conjunction with that of nonpsychiatric comparison speakers. It is of comparable size to the DAIS-C (approximately 50,000 tokens for the schizophrenia group), but it is not publically available. The DAIS-C is publically available via the UK Data Service's ReShare Repository.

The annotation method used in Chapter Six is also a novel contribution. It can be reused in other studies in combination with the 4TD Framework (or without), for example as a method for balancing granularity and reading ease. It can also be modified to suit other research questions that focus on the distinction between language pathology and the features of everyday speech, such as by incorporating the TLC Scale (Andreasen, 1986) and comparing groups on that basis (see Chapter Six). The thesis has also shown that distinct methodological perspectives are mutually informative and in places compatible (see Chapters Four and Five). Experimental psychology stands to benefit greatly from

the involvement of linguistic expertise, something demonstrated in Delgaram-Nejad et al., (2022). The corpus norming approach described there, and to an extent in Chapter Four, which used corpus linguistic tools and theory to approach the largely psycholinguistic problem of stimuli norming is a practical example. Similarly, experimental processes and procedures provide a good model for corpus design, particularly the systematic gathering of important and often neglected metadata (see Chapter Five). The ability to offer information on handedness, diagnosis, medication, and other relevant clinical characteristics that are not often included in specialised corpora arose from the mixed-methods nature of the current studies. These benefits were direct products of doing both controlled experimentation and corpus building within a concurrent triangulation design (see Chapters Four and Five). The present thesis demonstrates the value of interdisciplinary, mixed-methods approaches. Indeed, these approaches appear to be well-suited to the types of problems addressed by this thesis: those which have historically evaded definition and categorisation (see Chapters Two and Three).

7.3. Future studies

The present thesis has identified that further studies of linguistic creativity in schizophrenia would benefit from conceptualising linguistic creativity in terms of executive and semantic functioning. This would allow for more direct comparisons that could potentially inform work on the dysexecutive and dyssemantic hypotheses of FTD in schizophrenia, which appear to be compatible and may be applicable to language in schizophrenia more broadly also. A mixture of creative performance and naturalistic

language tasks would also be beneficial in further understanding whether FTD and linguistic creativity involve shared mechanisms and functions.

As noted on page 58, the 4TD Framework described in Chapter Two would benefit from being expanded to include some operationalised version of the subjective FTD described in the TALD (Kircher et al., 2014). This is likely to be methodologically challenging, as subjective ratings of FTD require a level of metalinguistic awareness that may not be present in some schizophrenia speakers: those with advanced FTD. Such work would nevertheless be very worthwhile and could be feasible with a cautious methodological approach.

More work is needed to understand what features of the DoLI task led the clinical participant to produce similar scores to comparison participants, despite differences on CLQT(+) task performance. This is not consistent with the extant metaphor comprehension literature, particularly that described in Chapter Three. This might suggest that the DoLI task does not measure metaphor comprehension but rather measures metaphor production, for which there is some evidence of preserved ability (Despot et al., 2021). The variation in dispersions within the experimental samples may be due to the fact that the clinical group contains a mixture of speakers with and without a documented history of FTD, and so a more granular future analysis should be undertaken with larger schizophrenia samples distinguished on that basis. The DAIS-C should also be expanded to address the current overrepresentation issues evident in the current corpus version (see Section 5.10.1). It is of particular interest to explore whether the patterns noted in Chapter Six, namely the increased rates of grammatical deviation, remain prominent when exposure to the initiating questions and topic conditions are

levelled out. A preliminary review of the concordance lines suggests that there are more 'I' interruptions in the clinical subcorpus than the comparison subcorpus. These would need to be calculated and normalised for a proper comparison, however, as the token counts for each subcorpus are quite different. Future work should explore this further, nonetheless, given that increased 'I' pronoun usage has been found to mark language in psychosis in other studies (e.g. Lundin et al. 2023).

Much more work is needed with a larger corpus to establish the utility of the 4TD framework as a whole in relation to FTD in schizophrenia, as the present data only supports the grammar dimension. Future research should also prioritise the importance of grammatical errors broadly in FTD, because the present analysis suggests that even grammatical errors that do not qualify for Andreasen's definition of incoherence may still be useful in distinguishing clinical and nonclinical speakers (see Chapter Six). It is also important to note that the corpus was not annotated for other TLC Scale criteria that may also prove to occur at much higher rates. The corpus should also be expanded so that other questions can be explored. Such future work might explore which TLC Scale items are most relevant to contemporary language in schizophrenia and, with clearer demarcations between speakers with and without FTD, which TLC Scale and 4TD Framework features distinguish FTD and non-FTD speakers relative to comparison speakers. Work that expands the corpus should also consider the value of paying economically vulnerable participants (Gelinis et al., 2020).

The results from the quantitative studies suggest that some FTD features may reside on a continuum with normal speech. Further work on dimensional approaches to the

assessment of FTD is advised, as the present data support this and there has been considerable emphasis on categorical assessment approaches to date.

More mixed-methods work that combines experimental psycholinguistic and corpus linguistic work is also advised. This is because experimental psycholinguistics can be helpful for understanding language comprehension and cognition, whereas corpus linguistics is suited to understanding language production. Both production and comprehension work is required to approach questions of FTD, and this is particularly important given that metaphor production appears to be spared in schizophrenia despite widespread issues affecting metaphor comprehension (see Chapter Three). This may be the case for other areas of linguistics in schizophrenia, such as pragmatic difficulties, which could be explored in ways similar to how FTD and linguistic creativity were approached in the present thesis.

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APPENDIX I – Shen and Aisenmann (2008) Experimental Materials

Creativity: Schizophrenia's 'Missing Link'?

Test materials

IRAS ID: 225295

Contents

1. Materials 351
 - 1.1. Background 351
 - 1.2. Modality/accessibility scale: 351
 - 1.3. Permutations: 351
 - 1.4. Original adjective–noun master list 352
2. Adjusted master list (developed from Shen, 2008): 354
 - 2.1. Amendments 356
3. Task one—naturalness judgements 357
 - 3.1. Item list: 357
 - 3.1.1. Amendments 358
 - 3.2. Non-canonical (H–L) priority 360
 - 3.3. Canonical (L–H) priority 362
 - 3.4. Booklet one 364
 - 3.5. Booklet two 366
4. Task two—comprehension response times 368
 - 4.1. Item list 368
 - 4.2. Non-canonical (H–L) priority 369
 - 4.3. Canonical (L–H) priority 370
 - 4.4. Booklet one 371
 - 4.4.1. Phase one (non-canonical) 371
 - 4.4.2. Phase two (canonical) 371
 - 4.5. Booklet two 373
 - 4.5.1. Phase one (canonical) 373
 - 4.5.2. Phase two (non-canonical) 373
 - 4.6. Practice items 375

4.6.1. Booklet one practice items	375
4.6.2. Booklet two practice items	375
4.7. Distractor items	375
4.7.1. Booklet one distractor items	375
4.7.2. Booklet two distractor items	375
5. Task three—naturalness judgements	377
5.1. Item list	377
5.2. Non-canonical (H–L) directionality	378
5.3. Canonical (L–H) directionality	379
5.4. Booklet one	380
5.5. Booklet two	382
6. Task four—synaesthetic metaphor recall	384
6.1. Item list	384
6.2. Non-canonical (H–L) directionality	385
6.3. Canonical (L–H) directionality	386
6.4. Booklet one	387
6.5. Booklet two	388
6.6. Scoring procedure	389
7. Task five—context generation	390
7.1. Item list	390
7.2. Non-canonical (H–L) directionality	391
7.3. Canonical (L–H) directionality	392
7.3. Booklet one	393
7.4. Booklet two	394
8. References	395

1. Materials

1.1. Background

Cognitive Constraint Theory (CCT) expands on earlier work—e.g. Ullman (1957); Tsur (1992); Day (1996); Cytowic (1989; 1993)—by proposing that perceptual hierarchies emerge from a cognitive precedent; further, provides an explanation for the popularity of metaphoric constructions that favour source-target domain mappings in which a 'lower' sense occupies the source position.

For example:

'A hot bitterness'

Source (adjective) target (noun)

Touch taste low–high mapping

is preferable to

'A bitterish hotness'

Source (adjective) target (noun)

Taste touch high–low mapping

1.2. Modality/accessibility scale:

1st: sight (highest)

2nd: sound

3rd: smell

4th: taste

5th: touch (lowest)

1.3. Permutations:

1st and 2nd 1st and 3rd 1st and 4th 1st and 5th

2nd and 3rd 2nd and 4th 2nd and 5th

3rd and 4th 3rd and 5th

4th and 5th

1.4. Original adjective-noun master list¹³

List of Items used in the experiments

SIGHT - SMELL

An aromatic darkness - a dark aroma

A reeky suntan - A suntanned reek

SIGHT - SOUND

A murmuring darkness - a dark murmur

A screaming dazzle - a dazzling scream

SOUND - SMELL

A scented murmur - a murmurous scent

a still stink - a stinking stillness

SOUND - TASTE

A sour scream - a screaming sourness

A pungent whisper - A whispering pungency

¹³ Provided by Professor Yeshayahu Shen (on 13/03/2017), Department of Literature, Tel Aviv University: presented as received.

SMELL - TASTE

A salty stink - a stinking saltiness

A bitterish scenting - a scented bitterness

SMELL - TOUCH

A sharp reek - a reeky sharpness

a rough aroma - an aromatic roughness

TASTE - TOUCH

A hot bitterness - a bitterish heat

A salty bluntness - a blunt saltiness

TOUCH - SIGHT

A suntanned sharpness - a sharp suntan

A hot paleness - a pale heat

TOUCH - SOUND

A whispering roughness - a rough whisper

A still bluntness - a blunt stillness

TASTE - SIGHT

A pale sourness - a sour paleness

A dazzling pungency - a pungent dazzle

2. Adjusted master list (developed from Shen, 2008):

Adjective (source/figure/vehicle)	Noun (target/ground/tenor)	Modality (source/figure/vehicle)	Modality (target/ground/tenor)	Directionality
Aromatic	darkness	smell (3 rd)	sight (1 st)	L-H
Dark	aroma	sight (1 st)	smell (3 rd)	H-L
Reeky	suntan	smell (3 rd)	sight (1 st)	L-H
Suntanned	reek	sight (1 st)	smell (3 rd)	H-L
Murmurous	darkness	sound (2 nd)	sight (1 st)	L-H
Dark	murmur	sight (1 st)	sound (2 nd)	H-L
Screaming	dazzlement	sound (2 nd)	sight (1 st)	L-H
Dazzling	scream	sight (1 st)	sound (2 nd)	H-L
Scented	murmur	smell (3 rd)	sound (2 nd)	L-H
Murmurous	scent	sound (2 nd)	smell (3 rd)	H-L
Stinky	stillness	smell (3 rd)	sound (2 nd)	L-H
Still	stink	sound (2 nd)	smell (3 rd)	H-L
Sour	scream	taste (4 th)	sound (2 nd)	L-H
Screaming	sourness	sound (2 nd)	taste (4 th)	H-L
Pungent	whisper	taste (4 th)	sound (2 nd)	L-H
Whispery	pungency	sound (2 nd)	taste (4 th)	H-L
Salty	stink	taste (4 th)	smell (3 rd)	L-H
Stinky	saltiness	smell (3 rd)	taste (4 th)	H-L
Bitterish	scent	taste (4 th)	smell (3 rd)	L-H
Scented	bitterness	smell (3 rd)	taste (4 th)	H-L
Sharp	reek	touch (5 th)	smell (3 rd)	L-H
Reeky	sharpness	smell (3 rd)	touch (5 th)	H-L
Rough	aroma	touch (5 th)	smell (3 rd)	L-H
Aromatic	roughness	smell (3 rd)	touch (5 th)	H-L
Hot	bitterness	touch (5 th)	taste (4 th)	L-H
Bitterish	hotness	taste (4 th)	touch (5 th)	H-L
Blunt	saltiness	touch (5 th)	taste (4 th)	L-H
Salty	bluntness	taste (4 th)	touch (5 th)	H-L
Sharp	suntan	touch (5 th)	sight (1 st)	L-H
Suntanned	sharpness	sight (1 st)	touch (5 th)	H-L
Hot	paleness	touch (5 th)	sight (1 st)	L-H
Pale	hotness	sight (1 st)	touch (5 th)	H-L
Rough	whisper	touch (5 th)	sound (2 nd)	L-H

Whispery	roughness	sound (2 nd)	touch (5 th)	H-L
Blunt	stillness	touch (5 th)	sound (2 nd)	L-H
Still	bluntness	sound (2 nd)	touch (5 th)	H-L
Sour	paleness	taste (4 th)	sight (1 st)	L-H
Pale	sourness	sight (1 st)	taste (4 th)	H-L
Pungent	dazzlement	taste (4 th)	sight (1 st)	L-H
Dazzling	pungency	sight (1 st)	taste (4 th)	H-L

2.1. Amendments

Original (Shen, 2008)	Amendment ¹⁴	Rationale
'Dazzle'	'dazzlement'	orthographical ¹⁵ : translation revised
'Scenting'	'scent'	grammatical: verb form (gerund) transposed to noun form
'Stinking'	'stinky'	grammatical: verb form (participle as adjective) transposed to adjective form (positive)
'Heat'	'hotness'	lexical: noun form revised (<i>'hot/heat'</i> pairing transposed to <i>'hot/hotness'</i> —in place of <i>'heated/heat'</i> —for congruence)
'Whispering'	'whispery'	grammatical: verb form (participle as adjective) transposed to adjective form (positive)

¹⁴ Wherever possible, Shen's original materials were favoured over viable alternatives; verb forms (participles) functioning as adjectives were replaced with their (positive) adjective variants (however, this was not possible in four cases—i.e., *'suntanned'*, *'screaming'*, *'scented'*, and *'dazzling'*—in which the *'-ed'* and *'-ing'* suffixes are represented equally).

¹⁵ For consistency, orthographical revisions were conducted using only the Collins English Dictionary (12th ed., 2014—updated 2016).

3. Task one—naturalness judgements

3.1. Item list:¹⁶

She wanted for a ____ and a ____ grace. (suntanned/reeky)

The student perceived a ____ and a ____ intolerance. (dark/murmurous)

The teacher noticed a ____ and a ____ disinterest. (still/scented)

He longed for a ____ and a ____ generosity. (whispery/pungent)

Jenny's day was loaded with a ____ and a ____ knowledge. (aromatic/bitterish)

David's plan was charged with a ____ and a ____ potential. (stinky/sharp)

He yearned for a ____ and a ____ fortune. (salty/blunt)

She wished for a ____ and a ____ disloyalty. (pale/hot)

The student sensed a ____ and a ____ compassion. (screaming/rough)

The teacher detected a ____ and a ____ hostility. (dazzling/sour)¹⁷

David's appointment was packed with a ____ and a ____ idiosyncrasy. (still/bitterish)

Jenny's manner was stocked with a ____ and a ____ grief. (pale/sharp)¹⁸

¹⁶ Developed in accordance with the three examples detailed in Shen (2008, p.14): all employ the third person; utilise the simple past tense; and begin with either a singular pronoun, a proper article, or the definite article as prefix to a singular common noun. Two items denote the female sex and the third is sex-generic. As twelve items were required, this ratio was adjusted (see amendments) to accommodate counterbalancing (i.e., four instances of the singular pronoun—two male and two female; four of the proper article—two male and two female; four of the definite article as prefix—four generic). Additionally, to account for factors highlighted by Sakamoto and Utsumi (2014), which may potentially confound, abstract nouns with a dominant connotation of either positive, neutral, or negative sentiment are represented equally (i.e., four positive, four neutral, and four negative).

¹⁷ Items one–ten: each modality combination is represented equally (i.e., one instance). No adjectives were duplicated; each adjective coupling is unique.

¹⁸ Items eleven and twelve: by necessity, two modality combinations (the sound-taste and sight-touch couplings were elected at random) and a selection of their adjectives were duplicated—whilst these adjectives appear in items one–ten, the couplings themselves remain novel.

3.1.1. Amendments

Original (Shen, 2008)	Amendment	Rationale
'Life was'	'day was'	lexical: adjusted for congruence in light of other amendments.
'Hoped for a'	'wanted/longed/yearned/wished for a'	"
'Was full of a'	'was loaded/charged/packed/stocked with a'	grammatical: adjective form (positive) transposed to verb form (participle); operational: adjusted to control for verb (participle) 'filled', which, when repeated, emphasises the 'sight' domain.
'Patient felt'	'student/teacher'; 'perceived/noticed/sensed/detected'	ethical: singular common noun adjusted in light of clinical focus; operational: adjusted to control for verb (participle) 'felt', which, when repeated, emphasises the 'touch' domain.
'She'; 'Sara'; 'the patient'	'he/she'; 'David/Jenny'; 'the student/teacher'	lexical: pronouns, proper articles, and singular common nouns adjusted for congruence (female,

'Luck'; 'worry'; 'pain' 'grace'; 'disinterest'; 'grief'

female, and generic
transposed to male,
female, and generic);
operational: adjusted
for counterbalancing.
lexico-semantic:
abstract nouns adjusted
for congruence
(positive, negative, and
negative transposed to
positive, neutral, and
negative); operational:
adjusted for
counterbalancing

3.2. Non-canonical (H–L) priority¹⁹

She wanted for a ____ and a ____ grace. suntanned
reeky

The student perceived a ____ and a ____ intolerance. dark
murmurous

The teacher noticed a ____ and a ____ disinterest. still
scented

He longed for a ____ and a ____ generosity. whispery
pungent

Jenny's day was loaded with a ____ and a ____ knowledge. aromatic
bitterish

David's plan was charged with a ____ and a ____ potential. stinky
sharp

He yearned for a ____ and a ____ fortune. salty
blunt

She wished for a ____ and a ____ disloyalty. pale
hot

The student sensed a ____ and a ____ compassion. screaming
rough

The teacher detected a ____ and a ____ hostility. dazzling

¹⁹ Within adjective pairs, non-canonical (H–L) directionality precedes canonical (L–H) directionality.

sour

David's appointment was packed with a ____ and a ____ idiosyncrasy. still
bitterish

Jenny's manner was stocked with a ____ and a ____ grief. pale
sharp

3.3. Canonical (L–H) priority²⁰

She wanted for a ____ and a ____ grace. reeky
suntanned

The student perceived a ____ and a ____ intolerance. murmurous
dark

The teacher noticed a ____ and a ____ disinterest. scented
still

He longed for a ____ and a ____ generosity. pungent
whispery

Jenny's day was loaded with a ____ and a ____ knowledge. bitterish
aromatic

David's plan was charged with a ____ and a ____ potential. sharp
stinky

He yearned for a ____ and a ____ fortune. blunt
salty

She wished for a ____ and a ____ disloyalty. hot

²⁰ Within adjective pairs, canonical (L–H) directionality precedes non-canonical (H–L) directionality.

pale

The student sensed a ____ and a ____ compassion. rough

screaming

The teacher detected a ____ and a ____ hostility. sour

dazzling

David's appointment was packed with a ____ and a ____ idiosyncrasy. bitterish

still

Jenny's manner was stocked with a ____ and a ____ grief. sharp

pale

3.4. Booklet one²¹

She wanted for a ____ and a ____ grace. suntanned
reeky

The student perceived a ____ and a ____ intolerance. dark
murmurous

The teacher noticed a ____ and a ____ disinterest. still
scented

He longed for a ____ and a ____ generosity. whispery
pungent

Jenny's day was loaded with a ____ and a ____ knowledge. aromatic
bitterish

David's plan was charged with a ____ and a ____ potential. stinky
sharp

He yearned for a ____ and a ____ fortune. blunt
salty

She wished for a ____ and a ____ disloyalty. hot
pale

The student sensed a ____ and a ____ compassion. rough

²¹ Items one–six: non-canonical (H–L) directionality; items seven–twelve: canonical (L–H) directionality. All items are to be administered in random order.

screaming

The teacher detected a ____ and a ____ hostility. sour

dazzling

David's appointment was packed with a ____ and a ____ idiosyncrasy. bitterish

still

Jenny's manner was stocked with a ____ and a ____ grief. sharp

pale

3.5. Booklet two²²

She wanted for a ____ and a ____ grace. reeky

suntanned

The student perceived a ____ and a ____ intolerance. murmurous

dark

The teacher noticed a ____ and a ____ disinterest. scented

still

He longed for a ____ and a ____ generosity. pungent

whispery

Jenny's day was loaded with a ____ and a ____ knowledge. bitterish

aromatic

David's plan was charged with a ____ and a ____ potential. sharp

stinky

He yearned for a ____ and a ____ fortune. salty

blunt

She wished for a ____ and a ____ disloyalty. pale

hot

²² Items one–six: canonical (L–H) directionality; items seven–twelve: non-canonical (H–L) directionality. All items are to be administered in random order.

The student sensed a _____ and a _____ compassion. screaming
rough

The teacher detected a _____ and a _____ hostility. dazzling
sour

David's appointment was packed with a _____ and a _____ idiosyncrasy. still
bitterish

Jenny's manner was stocked with a _____ and a _____ grief. pale
sharp

4. Task two—comprehension response times

4.1. Item list

She wanted for a ____ and a ____ grace. (suntanned/reeky)

The student perceived a ____ and a ____ intolerance. (dark/murmurous)

The teacher noticed a ____ and a ____ disinterest. (still/scented)

He longed for a ____ and a ____ generosity. (whispery/pungent)

Jenny's day was loaded with a ____ and a ____ knowledge. (aromatic/bitterish)

David's plan was charged with a ____ and a ____ potential. (stinky/sharp)

He yearned for a ____ and a ____ fortune. (salty/blunt)

She wished for a ____ and a ____ disloyalty. (pale/hot)

The student sensed a ____ and a ____ compassion. (screaming/rough)

The teacher detected a ____ and a ____ hostility. (dazzling/sour)

David's appointment was packed with a ____ and a ____ idiosyncrasy. (still/bitterish)

Jenny's manner was stocked with a ____ and a ____ grief. (pale/sharp)

4.2. Non-canonical (H–L) priority

She wanted for a suntanned and a reeky grace.

The student perceived a dark and a murmurous intolerance.

The teacher noticed a still and a scented disinterest.

He longed for a whispery and a pungent generosity.

Jenny's day was loaded with an aromatic and a bitterish knowledge.

David's plan was charged with a stinky and a sharp potential.

He yearned for a salty and a blunt fortune.

She wished for a pale and a hot disloyalty.

The student sensed a screaming and a rough compassion.

The teacher detected a dazzling and a sour hostility.

David's appointment was packed with a still and a bitterish idiosyncrasy.

Jenny's manner was stocked with a pale and a sharp grief.

4.3. Canonical (L–H) priority

She wanted for a reeky and a suntanned grace.

The student perceived a murmurous and a dark intolerance.

The teacher noticed a scented and a still disinterest.

He longed for a pungent and a whispery generosity.

Jenny's day was loaded with a bitterish and an aromatic knowledge.

David's plan was charged with a sharp and a stinky potential.

He yearned for a blunt and a salty fortune.

She wished for a hot and a pale disloyalty.

The student sensed a rough and a screaming compassion.

The teacher detected a sour and a dazzling hostility.

David's appointment was packed with a bitterish and a still idiosyncrasy.

Jenny's manner was stocked with a sharp and a pale grief.

4.4. Booklet one²³

4.4.1. Phase one (non-canonical)

She wanted for a suntanned and a reeky grace.

The student perceived a dark and a murmurous intolerance.

The teacher noticed a still and a scented disinterest.

He longed for a whispery and a pungent generosity.

Jenny's day was loaded with an aromatic and a bitterish knowledge.

David's plan was charged with a stinky and a sharp potential.

4.4.2. Phase two (canonical)

He yearned for a blunt and a salty fortune.

She wished for a hot and a pale disloyalty.

The student sensed a rough and a screaming compassion.

The teacher detected a sour and a dazzling hostility.

David's appointment was packed with a bitterish and a still idiosyncrasy.

²³ Items one–six: non-canonical (H–L) directionality; items seven–twelve: canonical (L–H) directionality. All items are to be administered in random order.

Jenny's manner was stocked with a sharp and a pale grief.

4.5. Booklet two²⁴

4.5.1. Phase one (canonical)

She wanted for a reeky and a suntanned grace.

The student perceived a murmurous and a dark intolerance.

The teacher noticed a scented and a still disinterest.

He longed for a pungent and a whispery generosity.

Jenny's day was loaded with a bitterish and an aromatic knowledge.

David's plan was charged with a sharp and a stinky potential.

4.5.2. Phase two (non-canonical)

He yearned for a salty and a blunt fortune.

She wished for a pale and a hot disloyalty.

The student sensed a screaming and a rough compassion.

The teacher detected a dazzling and a sour hostility.

²⁴ Items one–six: canonical (L–H) directionality; items seven–twelve: non-canonical (H–L) directionality. All items are to be administered in random order.

David's appointment was packed with a still and a bitterish idiosyncrasy.

Jenny's manner was stocked with a pale and a sharp grief.

4.6. Practice items²⁵

4.6.1. Booklet one practice items

David's plan was charged with a scented and an aromatic scheme.

Jenny's manner was stocked with a salty and a pungent approach.

4.6.2. Booklet two practice items

Jenny's day was loaded with a bitterish and a sour time.

David's appointment was packed with a reeky and a stinking meeting.

4.7. Distractor items²⁶

4.7.1. Booklet one distractor items

Jenny's day was loaded with a bitterish and a sour time.

David's appointment was packed with a reeky and a stinking meeting.

4.7.2. Booklet two distractor items

²⁵ Developed in accordance with the descriptions provided by Shen (2008, p.16). These were 'constructed in the same way as the other items, but with no difference between the literal/metaphorical level of the two nouns or adjectives.' This was taken to imply that the practice and distractors are augmentations of the main items; that the abstract nouns are synonymous, in both the literal and metaphorical senses; also, that the synonymous adjectives used belong to the same perceptual modality. Both practice and distractor items were weighted equally with respect to sex (i.e., four male and four female); due to necessity, only the items commencing with proper articles were used—as no other item type recruits more than one noun. All items are to be presented in random order.

²⁶ As per practice items.

David's plan was charged with a scented and an aromatic scheme.

Jenny's manner was stocked with a salty and a pungent approach.

5. Task three—naturalness judgements

5.1. Item list

Canonical directionality (L–H)	Non-canonical directionality (H–L)
An aromatic darkness	a dark aroma
A reeky suntan	a suntanned reek
A murmurous darkness	a dark murmur
A screaming dazzlement	a dazzling scream
A scented murmur	a murmurous scent
A stinky stillness	a still stink
A sour scream	a screaming sourness
A pungent whisper	a whispery pungency
A salty stink	a stinky saltiness
A bitterish scent	a scented bitterness
A sharp reek	a reeky sharpness
A rough aroma	an aromatic roughness
A hot bitterness	a bitterish hotness
A blunt saltiness	a salty bluntness
A sharp suntan	a suntanned sharpness
A hot paleness	a pale hotness
A rough whisper	a whispery roughness
A blunt stillness	a still bluntness
A sour paleness	a pale sourness
A pungent dazzlement	a dazzling pungency

5.2. Non-canonical (H–L) directionality

a dark aroma

a suntanned reek

a dark murmur

a dazzling scream

a murmurous scent

a still stink

a screaming sourness

a whispery pungency

a stinky saltiness

a scented bitterness

a reeky sharpness

an aromatic roughness

a bitterish hotness

a salty bluntness

a suntanned sharpness

a pale hotness

a whispery roughness

a still bluntness

a pale sourness

a dazzling pungency

5.3. Canonical (L–H) directionality

an aromatic darkness

a reeky suntan

a murmurous darkness

a screaming dazzlement

a scented murmur

a stinky stillness

a sour scream

a pungent whisper

a salty stink

a bitterish scent

a sharp reek

a rough aroma

a hot bitterness

a blunt saltiness

a sharp suntan

a hot paleness

a rough whisper

a blunt stillness

a sour paleness

a pungent dazzlement

5.4. Booklet one²⁷

an aromatic darkness a dark aroma

a reeky suntan a suntanned reek

a murmurous darkness a dark murmur

a screaming dazzlement a dazzling scream

a scented murmur a murmurous scent

a stinky stillness a still stink

a sour scream a screaming sourness

a pungent whisper a whispery pungency

a salty stink a stinky saltiness

a bitterish scent a scented bitterness

a sharp reek a reeky sharpness

²⁷ Within item pairs, canonical (L–H) directionality precedes non-canonical (H–L) directionality; items descend in accordance with the (5.1.) item list and are to be administered in random order.

a rough aroma an aromatic roughness

a hot bitterness a bitterish hotness

a blunt saltiness a salty bluntness

a sharp suntan a suntanned sharpness

a hot paleness a pale hotness

a rough whisper a whispery roughness

a blunt stillness a still bluntness

a sour paleness a pale sourness

a pungent dazzlement a dazzling pungency

5.5. Booklet two²⁸

a dazzling pungency a pungent dazzlement

a pale sourness a sour paleness

a still bluntness a blunt stillness

a whispery roughness a rough whisper

a pale hotness a hot paleness

a suntanned sharpness a sharp suntan

a salty bluntness a blunt saltiness

a bitterish hotness a hot bitterness

an aromatic roughness a rough aroma

a reeky sharpness a sharp reek

a scented bitterness a bitterish scent

²⁸ Within item pairs, non-canonical (H–L) precedes canonical (L–H) directionality; items descend contrary to the (5.1.) item list and are to be administered in random order.

a stinky saltiness a salty stink

a whispery pungency a pungent whisper

a screaming sourness a sour scream

a still stink a stinky stillness

a murmurous scent a scented murmur

a dazzling scream a screaming dazzlement

a dark murmur a murmurous darkness

a suntanned reek a reeky suntan

a dark aroma an aromatic darkness

6. Task four—synaesthetic metaphor recall

6.1. Item list²⁹

Canonical directionality (L–H)	Non-canonical directionality (H–L)
An aromatic darkness	a dark aroma
A scented murmur	a murmurous scent
A stinky stillness	a still stink
A pungent whisper	a whispery pungency
A salty stink	a stinky saltiness
A sharp reek	a reeky sharpness
A rough aroma	an aromatic roughness
A blunt saltiness	a salty bluntness
A sharp suntan	a suntanned sharpness
A rough whisper	a whispery roughness
A blunt stillness	a still bluntness
A pungent dazzlement	a dazzling pungency

²⁹ Twelve items, selected randomly from the previous item list (5.1.). Bar elision, their order remains unaltered. The items were reduced from twenty–twelve to limit cognitive load and exclude the 'sight–sound' combinations, as per Shen (2008, p.21). All other permutations are accounted for (by necessity, two combinations are once represented—the 'sight–smell' and 'taste–sight' combinations were elected at random; all others are twice represented).

6.2. Non-canonical (H–L) directionality

a dark aroma

a murmurous scent

a still stink

a whispery pungency

a stinky saltiness

a reeky sharpness

an aromatic roughness

a salty bluntness

a suntanned sharpness

a whispery roughness

a still bluntness

a dazzling pungency

6.3. Canonical (L–H) directionality

an aromatic darkness

a scented murmur

a stinky stillness

a pungent whisper

a salty stink

a sharp reek

a rough aroma

a blunt saltiness

a sharp suntan

a rough whisper

a blunt stillness

a pungent dazzlement

6.4. Booklet one³⁰

a dark aroma

a murmurous scent

a still stink

a whispery pungency

a stinky saltiness

a reeky sharpness

a rough aroma

a blunt saltiness

a sharp suntan

a rough whisper

a blunt stillness

a pungent dazzlement

³⁰ Items one–six: non-canonical (H–L) directionality; items seven–twelve: canonical (L–H) directionality; items descend in accordance with the (6.1.) item list. All items are to be administered in the listed order.

6.5. Booklet two³¹

a dazzling pungency

a still bluntness

a whispery roughness

a suntanned sharpness

a salty bluntness

an aromatic roughness

a sharp reek

a salty stink

a pungent whisper

a stinky stillness

a scented murmur

an aromatic darkness

³¹ Items one–six: non-canonical (H–L) directionality; items seven–twelve: canonical (L–H) directionality; items descend contrary to the (6.1.) item list. All items are to be administered in the listed order.

6.6. Scoring procedure³²

Descriptor	Score	Value	Criterion
Full recall	two points	2	full phrase (i.e. adjective with noun)
Partial recall	one point	1	adjective without noun; noun without adjective; phrasal interpenetration (i.e. noun of one combined with the adjective of another, or vice versa)
No recall	zero points	0	no phrase (i.e. neither adjective nor noun)

³² Developed in accordance with the task four scoring protocol as outlined by Shen (2008, p.22).

7. Task five—context generation

7.1. Item list³³

Canonical directionality (L–H)	Non-canonical directionality (H–L)
An aromatic darkness	a dark aroma
A reeky suntan	a suntanned reek
A scented murmur	a murmurous scent
A stinky stillness	a still stink
A sour scream	a screaming sourness
A pungent whisper	a whispery pungency
A salty stink	a stinky saltiness
A bitterish scent	a scented bitterness
A sharp reek	a reeky sharpness
A rough aroma	an aromatic roughness
A hot bitterness	a bitterish hotness
A blunt saltiness	a salty bluntness
A sharp suntan	a suntanned sharpness
A hot paleness	a pale hotness
A rough whisper	a whispery roughness
A blunt stillness	a still bluntness
A sour paleness	a pale sourness
A pungent dazzlement	a dazzling pungency

³³ Eighteen items, selected from the task three item list (5.1.). Bar elision, their order remains unaltered. The items were reduced from twenty to eighteen to exclude the 'sight-sound' combinations, as per task four (6.1.).

7.2. Non-canonical (H–L) directionality

a dark aroma

a suntanned reek

a murmurous scent

a still stink

a screaming sourness

a whispery pungency

a stinky saltiness

a scented bitterness

a reeky sharpness

an aromatic roughness

a bitterish hotness

a salty bluntness

a suntanned sharpness

a pale hotness

a whispery roughness

a still bluntness

a pale sourness

a dazzling pungency

7.3. Canonical (L–H) directionality

an aromatic darkness

a reeky suntan

a scented murmur

a stinky stillness

a sour scream

a pungent whisper

a salty stink

a bitterish scent

a sharp reek

a rough aroma

a hot bitterness

a blunt saltiness

a sharp suntan

a hot paleness

a rough whisper

a blunt stillness

a sour paleness

a pungent dazzlement

7.3. Booklet one³⁴

an aromatic darkness

a reeky suntan

a scented murmur

a stinky stillness

a sour scream

a pungent whisper

a salty stink

a bitterish scent

a sharp reek

an aromatic roughness

a bitterish hotness

a salty bluntness

a suntanned sharpness

a pale hotness

a whispery roughness

a still bluntness

a pale sourness

a dazzling pungency

³⁴ Items one–nine: canonical (L–H) directionality; items ten–eighteen: non-canonical (H–L) directionality; items descend in accordance with the (7.1.) item list and are to be administered in random order.

7.4. Booklet two³⁵

a pungent dazzlement

a sour paleness

a blunt stillness

a rough whisper

a hot paleness

a sharp suntan

a blunt saltiness

a hot bitterness

a rough aroma

a reeky sharpness

a scented bitterness

a stinky saltiness

a whispery pungency

a screaming sourness

a still stink

a murmurous scent

a suntanned reek

a dark aroma

³⁵ Items one–nine: canonical (L–H) directionality; items ten–eighteen: non-canonical (H–L) directionality; items descend contrary to the (7.1.) item list and are to be administered in random order.

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A tutorial on norming linguistic stimuli for clinical populations

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ABSTRACT

Stimuli norming (the process of controlling experimental items to minimise bias) is important for the validity of psycholinguistic experiments. Survey norming (asking large numbers of people to rate or otherwise define the items) is typically used for this purpose but requires large samples. Clinical populations are not always large, nor easy to reach. Clinical participants often have ongoing symptomatology, and some cohorts experience language and communication difficulties. We present a corpus-linguistic method suitable for clinical populations for which survey norming is difficult or inappropriate. We also include the experiment generated, which measures metaphor-comprehension behaviour in schizophrenia to test Cognitive Constraint Theory (CCT) in clinical and nonclinical populations (see S2.1). We describe the design rationale before outlining the design stages in tutorial form. This allows us to show readers why the approach was needed and support them to consider and respond to the challenges that we encountered. We conclude that it is easier to consider norming and design practices in parallel when experimental units are defined linguistically. Corpus stimuli norming provides a versatile alternative when survey norming is prohibitive, especially in speech pathology.

1. Introduction

This paper is both a case for greater corpus norming (the name we give to the process for which we're arguing) uptake and an illustrative tutorial for those seeking to involve applied linguists within their experimental work. Our primary audience is applied (corpus) linguists, whose expertise is of particular value to experimental psycholinguists. We ask readers to view this as a position paper first and tutorial second, as our main argument is about the value of linguistic corpora in the design of language experiments. This generally calls for more dialogue between applied corpus linguists and experimental psychologists and psycholinguists, especially when engaging clinical questions and populations. The tutorial component is our way of providing evidence of a working result that also confers practical benefits to the wider research community. Note that the particulars of this experimental design relate to hypotheses of whether people with a diagnosis of schizophrenia show preferences in the syntactic variation of literary devices and whether these are consistent with those shown to some extent in nonclinical populations.

Most language use occurs in the field. Most language measurement occurs in the lab. Language loses its everyday context in the lab (Clark and Bangerter, 2004), and so language experiments suffer problems of ecological validity. Clinical language studies are primarily interested in how pathology affects everyday language, rather than task performance in controlled contexts. Our aim was a controlled experiment suitable for participants with a diagnosis of schizophrenia that would advance our understanding of everyday language use in this cohort. We are particularly interested in whether metaphor comprehension influences

formal thought disorder or incoherent speech (McKenna and Oh, 2005; Demjaha et al. 2017). We chose to begin stimuli selection with items present in linguistic corpora, so that items were taken from an everyday usage context. This approach is similar to survey norming, but the order of stimuli creation is reversed. In survey norming, stimuli are designed and then presented to large samples who rate various attributes, such as subjective visual complexity for picture items. Our corpus-norming approach filters language data derived from large samples to create stimuli. It is ideal for situations where time, cost, and feasibility limitations prohibit a standalone norming study. Corpus norming is no less reproducible, because searches (keywords, dates, full results) are easily reported and compared. See Burnard's (2002) appraisal of British National Corpus (BNC; 2007) construction for other metrics.

Reproducibility is especially important for experiments based on Relevance Theory, where pragmatically different stimuli generate mixed findings (Nicolle & Clarke, 1999; Van Der Henst and Sperber, 2004). This is important because such experiments are used to study pragmatic disability. Corpus norming also provides insights about the patterns that language users tend to overlook, providing data that survey approaches cannot. Our main suggestion is that corpus norming shows potential and would benefit from greater uptake.

Our reasons for writing this tutorial are closely tied to our reasons for developing the method. The problem is a lack of interdisciplinary design. We required an experiment that combined linguistic, psychological/psycholinguistic, and psychiatric viewpoints. We developed our own because we could not find an extant example relevant to our research question. This may have to do with language experiments being

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uncommon in linguistics (Gilquin and Gries, 2009). Linguistic theory is also uncommon in experimental psychology. Design errors in language experiments tend to be mainly linguistic or methodological for these reasons. Linguists and psychologists are trying to do independently what requires the sum of their knowledge and skills. This manifests conceptually as one reference to 'experimentation' in *The Oxford Handbook of Cognitive Linguistics* (Geeraerts & Cuyckens, 2007) and no reference to 'corpora' in the *Handbook of Psycholinguistics* (Fernández et al., 2018). It occurs practically in examples like Ferber (1996), where reliability and validity issues were identified in a corpus of verbal slips. These could have been anticipated during construction with psychological input.

A handful of studies have successfully used corpora to support experimental studies directly or indirectly. Much of this small body of work has been about the latter. Schreuder and Kerkman (1987) highlighted the importance of word frequency for language cognition and corpora as reliable sources of that information. The London-Lund Corpus was used to generalise estimates of speech error rates overall (Garham et al., 1982) and production mechanisms for adults and children (Wijnen, 1992) and aphasic and non-aphasic adults (Schwartz et al., 1994).

More recent and direct applications come from experimental semantics and pragmatics (Beruidenhout, 2010; Archer and Grundy, 2011). Many of these are experimental designs motivated by corpus findings. This makes sense because corpus analyses generate correlational findings and causal findings require experimentation (De Ruiter, 2013). Spender's (2002) corpus study of presupposition accommodation, where 'my dog...' is accommodated by presupposing *has a dog*, recommended further work on presupposition triggers: *too*, the aspectual adverbs *still* and *already*, and definite noun phrases. This motivated experimental work on reading times and acceptability ratings. Examples include acceptability ratings of the returned action triggers *she* and *too* by context plausibility (Singh et al. 2015), acceptability ratings for several trigger types by presuppositional context (Biemann et al., 2011), and reading time by varied noun phrase definiteness and context plausibility (L. Frazier, 2006). This extends to syntax studies of antecedent selection. Corpus work (Arnold, 1998) on preferential resolution for first-position or subject referents (such as *he* denoting *Mark* in *Mark called Dave. He was upset*) motivated clinical (autism) narrative elicitation (Arnold, 2009) and general pronoun resolution and sentence continuation tasks (Kehler, 2008). Related corpus work checked whether an antecedent's properties influence accented pronouns, before a production experiment on whether they signal topic shifts (Wolters and Beaver, 2001). Related production experiments include sentence continuation tasks (Stevenson et al., 1994), manipulations of speaker attention (Brennan, 1995), and oral story continuation combined with post-hoc corpus analyses (Arnold, 2001).

Corpus data have also challenged causal studies. Data on infants' mental-state verb use, namely differences at ages two and three between conversational and genuine references to mental states, challenged the design of false-belief tasks (Shatz et al. 1983; Bartsch and Wellman, 1995). A comparison of three conversational corpora, favouring signal response over anticipation models of turn-taking, challenged experimental findings on floor transfer onsets (FTOs), or timings calculated by subtracting offset from onset times (Heldner and Hårdlund, 2010). Further, corpus studies associate turn endings with completion points: syntactic and intonational (Caspers, 2003), complete in grammar or sound, and pragmatic, complete in purpose (Ford & Thompson, 1996). Corpus findings raise questions for experimental testing and replication issues benefit from corpus investigation.

Other uses include hypothesis formation (Westera and Brasoveanu, 2014), developing a typology (Sassoon, 2012) and acceptability ratings (Sassoon, 2013) for theory-building, ruling out explanations for experimental findings (Van Tiel et al. 2016), comparing child and adult speech (Eiteljoerge et al., 2018), and developing natural language stimuli (Degen, 2015). Some work has looked at extrapolating psycholinguistic variables from corpora using machine

learning approaches (Manders et al., 2015). This is however very different from what we describe in Section 2.

The above approaches are rarer in health research. Corpus health applications include metaphor use in chronic pain (Munday et al., 2020), metaphoricality in schizophrenia (Bligrani et al., 2020), comparing the Linguistic Inquiry and Word Count (LIWC; Pennebaker, 2017) internal dictionary to human pain ratings (Ziemer and Korkmaz, 2017), and pronoun use in patient information sheets (Isaacs et al., 2020). There is much less on developing natural language stimuli for clinical cohorts.

Researchers have been enhancing experiments with corpora for some time. The attached literature is however limited. There is even less work on the processes required to situate corpus-derived stimuli within broader study designs. This is before considering the requirements of clinical populations. The limited literature is nonetheless diverse and demonstrates how versatile corpora can be. We hope that our tutorial description and materials encourage discussion and further developments.

2. Tutorial

2.1. Overview

We cover our design in three stages: stimuli selection, building stimuli lists, and fitting lists to the experimental design. Our experience was not this linear. We worked across stages and encourage readers to do the same, although it is helpful to partition things in this way where possible. We also stress the value of record keeping.

Our experiment is about sensory metaphors and whether language pathology has any effect on them. We specifically looked at synaesthetic metaphors. Synaesthesia describes both a neurological condition and a literary technique. Linguistic synaesthesia occurs when words relating to discrete senses are grammatically combined. The example *smelly light* is a synaesthesia because the olfactory adjective modifies the visual noun. Metaphors are created by mapping source qualities onto targets.¹

We take a Conceptual Mapping Theory (CMT) approach to metaphor (Lakoff and Johnson, 1980; Gibbs and Ortony, 2008) over analogical or categorisation approaches (Holyoak and Stamenković, 2018) because our experiment tests CCT (Shen, 2002). The theory suggests that people prefer synaesthetics where a less salient (as the term is used in CMT, cf. corpus linguistics) sense modifies a more salient one. CCT argues that source-target mappings adhere to a sensory hierarchy in which vision is most salient, followed by sound, smell, taste, and touch. An example of such a preference would be using *warm/touch* to modify *glow/vision* (rather than the reverse). CCT suggests a cognitive rather than contextual basis because corpus work locates these preferences across languages, historical/temporal, and stylistic contexts. It however lacks sufficient experimental support. We therefore designed our experiment to permit a test of CCT in the nonclinical sample (to explore CCT's claims) as well as a broader group comparison of syntactic preferences for linguistic synaesthesia in clinical and nonclinical groups independent of CCT (to explore FTD in schizophrenia).

The example *smelly opinion* is a metaphor because *opinion* borrows the olfactory qualities of *smelly*. A synaesthetic metaphor is a construc-

¹ We appreciate that some definitions of metaphor require not only a source-target mapping but also for source characteristics to meaningfully contribute to understanding the target. *Smelly opinion* is therefore only a metaphor by these definitions if the qualities of *smelly* inform an understanding of *opinion*. We operationalised sensory metaphors on source-target relations alone because our experiment assesses (1) how corpus norming informs past research on syntactic preferences under a conceptual mapping approach and (2) whether individuals with a diagnosis of schizophrenia display preferences comparable to individuals with no known psychiatric history. It also made sense to hold this dimension constant because schizophrenia is associated with semanto-pragmatic difficulties that are currently difficult to control due to their heterogeneity. Our experiment could be used to explore participant approaches to ground across prominent theories of metaphor.

tion that adheres to the rules of both. We operationalised synaesthetic metaphors by splitting them into primes and responses. This allowed us to blind participants to their metaphor-creation. This is what our experiment does at the theoretical level. At the practical level, we measured preferences for combining synaesthetic pairs of sensory adjectives with concrete or abstract nouns in people with and without a diagnosis of schizophrenia. Most of our design work went into stimuli selection because sensory adjectives are sensitive to many psycholinguistic confounders (Huisman and Majid, 2018). We also considered that schizophrenia cohorts are small and hard to recruit, not least because so few people meet clinical (diagnosis of schizophrenia) and experimental (well enough to take part) criteria. This is why we talk about stimuli selection first and why it forms the bulk of our approach.

2.2. Selecting stimuli

We select control variables whenever we select stimuli. Researchers are known to select the former intuitively (Noveck and Sperber, 2004). We discourage this because it biases data. Some of the most popular picture-naming controls affect naming speed (Perret and Bonin, 2019) for example. We encourage readers to instead predict confounders and work backwards systematically, consolidating as much as possible. Our priority was accessible vocabulary. We wanted to avoid results based on lack of understanding. Vocabulary is important in schizophrenia and other conditions that affect semantic memory (Hwang et al., 2021). We operationalised accessibility through word frequency, because words common in everyday speech tend to be acquired earlier (Pagel and Meade, 2018). We avoid saying that we operationalised accessible vocabulary as age of acquisition because word frequency and age of acquisition exert different effects (Dewhurst et al., 1998). High-frequency words also benefit from high-readability and processing fluency (Chen and Meurers, 2018). We began with potential sources of linguistic bias.

We then focused on our perceptual adjectives. These are difficult to operationalise. Non-visual types (*sound, smell, taste, touch*) lack construct validity. This shows in picture tasks: representing *tall* is easier than *salty*. The same applies to internal states (*happy*) and aesthetic evaluations (*beautiful*). Context-of-use is also important. *Beautiful* can relate to visual or auditory aesthetics. *Bitter* can describe a taste or internal state. These challenges prompt inventive responses, like representing *beautiful* in terms of modified facial symmetry (Liao et al., 2016; Liao and Meskin, 2017).

We wanted maximum accessibility, construct validity, and representation ease with minimal polysemy. Our approach resembled a waterfall process (Bomarius et al., 2009). We essentially listed potential limitations, ranked them, and used this to determine our item-development priorities. Accessible vocabulary was the highest priority, and so we began there. We first searched for accessible sensory adjectives in the vocabulary level lists (Nation, 2004) provided with AntWordProfiler 1.5.1. (Antony, 2021). These lists are derived from the most common word families in the British National Corpus (BNC, 2007). We found a few in the higher vocabulary brackets. There were not enough, and they were quite inaccessible. This step also revealed the need for an operational definition for sensory adjectives. We then stepped back from vocabulary profiling based on 10,000 word families and instead looked at word frequency across the BNC at large. The BNC allows users to generate custom frequency lists. We saw this as an opportunity to introduce experimental controls. BNC adjectives are tagged as general (AJ0), comparative (AJC), and superlative (AJS). We excluded AJC types because comparatives draw attention to their counterparts. We excluded AJS types because scalar endpoints emphasise one end of a scale. This gave us a list of the most frequent general adjectives in the BNC. The BNC categorises nouns as number neutral common (NN0), singular common (NN1), plural common (NN2), and singular and plural proper (NPO). We excluded all but *singular common* to rule out variations in grammatical

number and references to proper single entities. This gave us a list of the most frequent *singular common* nouns in the BNC.

Replicating this step

- register to use BNCweb (<http://bncweb.lancs.ac.uk/bncwebSignup/user/login.php>)
- login to BNCweb
- click 'frequency lists'
- choose 'AJ0' from POS tag list
- select 'containing' for 'word pattern'
- select 'Whole BNC' for 'range of texts'
- click 'show list'
- select 'Download whole Frequency List' from the 'New Frequency List' dropdown
- click 'go'
- repeat the above steps for 'NN1'

We then extended this approach to address other limitations. This is what we mean by consolidation. Our next stage was about defining sensory adjectives. We used the UCREL Semantic Analysis System (USAS; Rayson et al., 2004), within Wmatrix 4 (Rayson, 2008). USAS is a tool for automatic semantic analysis. Its taxonomy of 21 major discourse fields and 232 categories contains *taste* (X3.1), *sound* (X3.2), *touch* (X3.3), *sight* (X3.4), and *smell* (X3.5) subcategories. It assigns these tags using robust methods (see Rayson et al., 2004). We screened our adjective frequency list for the sensory tags above. This gave us a reduced frequency list of sensory adjectives. We also screened our *singular common* noun frequency list for *general object* (O2) and *thought, belief* (X2.1) subcategories. This gave us a reduced frequency list of *semantically concrete* and *abstract* nouns. We chose single subcategories rather than groups of related subcategories to minimise noise.

Replicating this step²:

- open the downloaded 'AJ0' and 'NN1' frequency lists
- copy list content into spreadsheet software
- extract word column only (without 'word' header)
- create new word-only lists
- register to use Wmatrix 4 or 5 (<https://ucrel.lancs.ac.uk/wmatrix/>)
- login to Wmatrix 4 or 5
- click 'tag wizard'
- click 'browse' and select word-only 'AJ0' list
- click 'upload now'
- download USAS tagged output (not CLAWS)
- extract only 'AJ0' list words tagged 'X3.1'-'X3.5'
- repeat the above steps for 'NN1'
- extract only NN1 words tagged O2 and X2.1

We extended the approach again using LIWC (Pennebaker, 2017). LIWC is a sentiment analysis tool that uses an internal dictionary with psychometric properties (Pennebaker et al., 2015). Its taxonomy covers 82 variables including *affect* and *perceptual processes*. We excluded everything tagged with *affect* to rule out valence. We kept sensory adjectives and *general object* nouns tagged with *perceptual processes*. We excluded *thought, belief* nouns tagged with *perceptual processes*. This step yielded two further reduced frequency lists, controlled for valence and psychometric overlap.

Replicating this step³:

- register to use LIWC2015 or LIWC22 (<https://www.liwc.aapp>)
- install/run LIWC2015 or LIWC22
- click 'category options'

² Note that this step was carried out in Wmatrix4 and is reported here as it was carried out at the time. Wmatrix5 has since been released and may involve slightly different steps.

³ Note that this step was carried out in LIWC2015 and is reported here as it was carried out at the time. LIWC2022 has since been released and may involve slightly different steps.

- click 'select none'
- select 'affect' and 'perceptual processes'
- click 'OK'
- click 'categorise words'
- select word-only 'AJO' list
- click 'file'
- choose 'save results'
- repeat the above steps for 'NN1'
- exclude and retain items accordingly

This procedure created two lists of potential stimuli with the following properties:

- highest BNC frequency *semantically* sensory, non-affective, *psychometrically* perceptual general adjectives
- highest BNC frequency *semantically* concrete, non-affective, *psychometrically* perceptual general object nouns
- highest BNC frequency *semantically* abstract, non-affective, *thought*, *belief* nouns

We draw reader attention to how each stage informed surrounding stages. Sensory was operationalised *semantically* (USAS, *sensory*) and *psychometrically* (LIWC, *perceptual processes*). Most important is how the LIWC stage (combined with others) allowed us to introduce a linguistic-pragmatic aspect between *sensory adjectives* and *general object nouns*, with *perceptual processes* operationalised as a source of shared contextual meaning. We operationalised contextual meaning *psychometrically* because our total sample included people with and without impaired semantic knowledge. Concrete was operationalised *semantically* (USAS, *general object*), *psychometrically* (LIWC, *perceptual processes*), and *pragmatically* (LIWC, *perceptual processes*). Abstract was operationalised *semantically* (USAS, *thought*, *belief*), *psychometrically* (LIWC, *not perceptual processes*), and *pragmatically* (LIWC, *not perceptual processes*).

We then revisited our research aims to decide how many adjectives and nouns to extract from these final lists.

2.3. Building stimuli lists

Our experiment measures blinded metaphor-creation preferences in clinical and non-clinical groups, and most of Section 2.2, was about that. We also wanted it to test OCT. OCT experiments have looked at synaesthetic metaphors both as word pairs and as within sentence contexts (Shen and Aisenman, 2008).

We broke the metaphor-creation task into prime and response components. We operationalised synaesthetic word pairs within the prime component. We paired *sensory adjectives* from different modalities (e.g. *touch* and *vision*) to form primes. We operationalised metaphoricality within the response component. Participant responses were about noun selection. This means that a prime functions as a synaesthetic word pair before the participant chooses a noun. It also means that the prime functions as a joint-modifier to the noun after the choice is made. The prime is non-metaphoric but synaesthetic in isolation. The nouns are non-metaphoric and non-synaesthetic in isolation. Choosing a noun transforms the prime and noun into synaesthetic metaphor components. Task engagement alters the stimuli properties for prime and response. OCT experiments suggest that the preference holds for both synaesthetic metaphors and (non-metaphoric) synaesthetic word pairs in sentence contexts (Shen and Aisenman, 2008). We therefore considered it reasonable to combine them into a single task. We needed to be able to vary syntactic/grammatical order easily because OCT is ultimately a syntactic theory. We found it easier to vary the order of the adjectives/primes and responses/nouns separately by using this metaphor-splitting approach. This brought us back to our final frequency lists and stimuli list construction.

We used tables to keep track and encourage readers to consider the same. This stage became increasingly complex and quick visual overviews resolved many points of confusion. We calculated permutations of the *sensory subcategories*. Permutations are for when order

matters. This is true for syntax. We calculated permutations without repetition, meaning no duplicates (*small-smell*). We had five *sensory subcategories* ($n = 5$) and wanted them in pairs ($r = 2$). This gave us 20 permutations. We separated them according to OCT. 10 followed the *preferred syntax* (*touch-sight*) and 10 the other (*sight-touch*). We spent considerable time working out how many adjectives were needed to ensure that each adjective (*visual*), adjective-pairing/prime (*visual quiet*), *sensory subcategory* (*sight*), and *sensory subcategory pairing* (*sight-sound*) repeated equally, wanting to avoid exposure effects. Our tables were especially useful here. We extracted the three highest-frequency adjectives for each *sensory subcategory* from our *adjective frequency list* (see Tables 1-3 in Appendix I). Some top-three tokens shared a lemma, like *sweet* and *sweetened*. We chose one token per lemma when this happened, namely the higher frequency one. We chose only three adjectives because (1) it was the minimum required for equal exposures given our permutations and (2) some *sensory subcategories* had only three adjectives left after Section 2.2. This gave us a list of *sensory adjectives* (Table 1), a list of 90 primes in the *preferred syntax* (Table 2), and a list of 90 primes in the *nonpreferred syntax* (Table 3). Each *sensory adjective* repeats 12 times in Table 2 and 12 times in Table 3, 24 overall. No *sensory adjective pairing* repeats. Each *sensory subcategory* repeats four times in Table 2 and four times in Table 3, eight overall. No *sensory subcategory pairing* repeats.

With adjectives, we calculated permutations of the *sensory subcategories*. We then calculated the fewest adjectives required for equal exposures. We then distributed the adjectives equally across the permutations. We calculated permutations for the nouns differently because we do not vary them across presentations in the same way as the adjectives. Participants always have a choice of concrete or abstract nouns, whereas they may see a *small-taste* prime in one presentation and a *sight-touch* prime in the next. We repeated our adjective extraction method with the final frequency list for nouns, selecting three *general object* and three *thought*, *belief*. This gave us a list of six nouns (Table 4). We then realised the need to vary the noun syntax to avoid reading order and primacy effects. We calculated permutations for the nouns themselves, without repetition. We had six nouns ($n = 6$) and wanted them in pairs ($r = 2$). This gave us 30 permutations. 12 of these were single-subcategory (*edge to omerang* being *concrete-concrete*). We set those aside because the experiment requires one concrete and one abstract noun per presentation, not two of the same subcategory. This gave us 18 permutations. We separated them into two syntactic orders. Nine were *concrete first* (Table 5) and nine were *abstract first* (Table 6). Each noun repeats three times in Table 5 and three times in Table 6, six overall. No noun pair repeats. The *concrete-abstract* subcategory pairing repeats once overall (across Tables 5 and 6) but not within Tables 5 or 6.

We also wanted to make sure that our items were novel, to control for familiarity effects. Past work has used human raters to assess novelty (Shen and Aisenman, 2008). We used a corpus approach. We queried each prime in the BNC using the search operator <<S>>. This counts how often a term appears in the same sentence⁴ (in a typical British context), not necessarily side-by-side. We did the same for noun pairs. All primes and noun pairs co-occurred in this way at rates of fewer than 20 per 100 million words. We considered this novelty and moved on.

We had two lists of primes and two lists of noun pairs at this stage. Our next step was to combine these into final stimuli lists. This required us to consider how the lists in-hand related to our broader experimental design.

⁴ It's important to note that the BNC spoken and written are formatted/transcribed differently (grammatical sentences versus comma-punctuated utterances). When we say 'appears in the same sentence', we refer to the sentence length value (deduced from w-tags per s-unit) common to both the written BNC and the spoken BNC. w-tags are considered comparable to words, and s-units are considered comparable to sentences.

2.4. Fitting lists to the design

We thought about our lists in terms of our variables, planned inferential tests, and other design decisions. We use this section to highlight how our view of language is influenced by design decisions and vice versa.

Our next step was about turning finalised item lists into final stimuli lists. We had 90 *preferred-syntax* primes, 90 *nonpreferred-syntax* primes, 9 *literal-first* noun pairs, and 9 *abstract-first* noun pairs. We wanted to avoid interstimulus priming, specifically one syntactic order biasing the other (Borini et al., 1999; Prazier et al., 2008). This is especially important here because semantic priming effects in schizophrenia appear specific to formal thought disorder (Pomarol-Clotet et al., 2008). We decided to counterbalance by allocating half of the sample to different item sets. We wanted no single participant to see both syntactic possibilities. This decision had widespread design implications. We needed to present all participants with an equal number of *preferred* and *nonpreferred-syntax* primes. We also needed to present all participants with an equal number of *literal-first* and *abstract-first* noun pairs. We also wanted the *prime-noun* combinations to differ. This was complicated by our need to work mainly with sets of 3, 5, and 9. We first cut our prime lists in half and shuffled them. This involved combining the first 45 *nonpreferred-syntax* primes with the last 45 *preferred-syntax* primes. We did the same in reverse, combining the first 45 *preferred-syntax* primes with the last 45 *nonpreferred-syntax* primes. We then distributed our 18 noun pairs across our newly shuffled prime lists. This gave us two distinct lists (Tables 7 and 8). List A (Table 7) uses *nonpreferred-syntax* primes with *literal-first* nouns (for items 1 to 45) and *preferred-syntax* primes with *abstract-first* nouns (for items 45 to 90). List B (Table 8) uses *preferred-syntax* primes with *literal-first* nouns (for items 1–45) and *nonpreferred-syntax* primes with *abstract-first* nouns (for items 45 to 90). This means that List A and B participants experience the same number of *preferred*- and *nonpreferred-syntax* primes, the same number of *literal-first* and *abstract-first* noun pairs, and the same number of the same words. It also means that List A and B participants do not experience the same *prime-response* pairings and see different words for *preferred-syntax* primes, *nonpreferred-syntax* primes, *literal-first* nouns, and *abstract-first* nouns. This helps us understand whether list-specific features influence the data. Each *sensory* adjective (*visual*) repeats 12 times in Table 7 and 12 times in Table 8, 24 overall. No *sensory* adjective pair/prime (*visual* *smelly*) repeats. Each *sensory* subcategory (*sight*) repeats 36 times in Table 7 and 36 times in Table 8, 72 overall. Each *sensory* subcategory pairing (*sight-sound*) repeats nine times in Table 7 and nine times in Table 8, 18 overall. Each *noun* (*edge*) repeats 30 times in Table 7 and 30 times in Table 8, 60 overall. Each *noun* pair (*edge* *consideration*) repeats five times in Table 7 and five times in Table 8, 10 overall. Each *noun* subcategory (*general object*/*thought*, *belief*) repeats 90 times in Table 7 and 90 times in Table 8, 180 overall. There is only one *noun* subcategory pairing (*general object*/*thought*, *belief*) in Table 7 and Table 8. We wanted to make sure that none of these elements loaded in a given direction, such as having 10 *sight* adjectives but only 8 *sound* adjectives. The actual counts are not important to this aim, only equal weightings. We discuss related limitations in Section 3.

We also remembered around this time a forgotten plan to create practice and distractor item lists. We constructed these with the items previously excluded from the main sets. This allowed us to use all generated permutations in a balanced way, except six noun subcategory pairings that we discuss later. We draw reader attention to the permutation calculations described in Section 2.3, specifically that these were conducted *without repetition*. We recalculated permutations for the *sensory* adjectives, this time *with repetition*. This gave us 25 permutations. These five extra permutations were *sensory* subcategory duplicates (*touch-touch*). It was possible to create two types of prime within this subcategory. We could repeat *sensory* adjectives (*visual*) or match different *sensory* adjectives from the same subcategory (*visual* *watchful*). Both types were not used in the main item lists. We also recalculated permutations for

the noun pairs, this time *with repetition*. This gave us 36 permutations. These six extra permutations were *single-subcategory* noun pairs (*edge-sharpener*). It was also possible to create two types of noun pair within this subcategory. We could repeat *nouns* (*edge*) or match different nouns from the same subcategory (*edge* *sharpener*). Both types were not used in the main item lists. We assigned duplicate primes (*visual*) to the practice lists because we wanted to signal that they were not proper task items. We assigned same-subcategory (*visual* *watchful*) primes to the distractor list because they more closely resembled the main items. We then distributed the unused *single-subcategory* (*touch*/*edge*) noun pairs equally across the practice and distractor lists. We had to cut six duplicates of the same noun (*edge*) to make Sections 2.2 to 2.4 work. Luckily the only items we could not place were those we did not need. This gave us two practice lists (Tables 9 and 10) and two distractor lists (Tables 11 and 12).

It was not possible to balance *concrete* and *abstract* nouns *within* these lists. This is because we were using *single-subcategory* noun pairs (*edge* *sharpener*) and working with sets of 5 and 3. We responded by counterbalancing them *across* lists. List A practice items (Table 9) used *concrete* noun pairs, and List B practice items (Table 10) used *abstract* noun pairs. List A distractor items (Table 11) used *abstract* noun pairs, and List B distractor items (Table 12) used *concrete* noun pairs. Practice lists A and B contain the same *sensory* adjective duplicates (*smelly* *smell*). Distractor lists A and B contain *single-subcategory* primes (*smelly* *fragrant*). Practice lists A and B use different noun subcategories (*concrete* in A is *abstract* in B). Distractor lists A and B use different noun subcategories (*abstract* in A is *concrete* in B). Distractor lists A and B present primes in different syntactic orders (*fragrant* *aromatic* in A is *aromatic* *fragrant* in B). Each *sensory* adjective (*visual*) repeats twice in Table 9, twice in Table 10, twice in Table 11, and twice in Table 12, eight overall. *Sensory* duplicate primes (*aromatic*) repeat across Tables 9 and 10 (but not within Table 9 or Table 10). No *single-subcategory* prime (*aromatic* *fragrant*) repeats in Table 11 or Table 12. Each *sensory* subcategory (*sight*) repeats six times in Table 9, six times in Table 10, six times in Table 11, and six times in Table 12, 24 overall. Each *sensory* subcategory pairing (*sound-sound*) repeats three times in Table 9, three times in Table 10, three times in Table 11, and three times in Table 12, 12 overall. Each *sensory* *single-subcategory* prime (*aromatic* *fragrant*) repeats once (in reverse) across Tables 11 and 12 (but not within Table 11 or Table 12). Each *concrete* noun (*edge*) repeats 10 times in Table 9 and 10 times in Table 12, 20 overall. Each *abstract* noun (*opinion*) repeats 10 times in Table 10 and 10 times in Table 11, 20 overall. Each *concrete* noun pair (*edge* *sharpener*) repeats five times in Table 9 and five times in Table 12, 10 overall. Each *abstract* noun pair repeats five times in Table 10 and five times in Table 11, 10 overall. The *general object*/*general object* subcategory pairing repeats once across Tables 9 and 12 (but not within Tables 9 and 12). The *thought*, *belief*/*thought*, *belief* subcategory pairing repeats once across Tables 10 and 11 (but not within Tables 10 and 11). This gave us two stimuli pathways, A and B. Each has its own main, practice, and distractor list (see Appendix I). These lists influenced much of the broader design.

The steps in Sections 2.2 to 2.4 led to an important theoretical question: are syntactic variations (*aromatic* *fragrant* vs *fragrant* *aromatic*) counterbalanced forms of one experimental unit or two different units? The answer determines whether a repeated measures or independent groups design is used. We answered *linguistically* (two different units) at this point because syntactic differences impact the semantic properties of words and phrases. We nonetheless tested our item lists against several designs (repeated measures and independent groups), to determine best fit and independent groups compatibility. We ruled out a 2 × 2 fully-within subjects design (when there are two independent variables, each with two levels, and all participants experience all items/orders) because it did not accommodate control of interstimulus priming and lengthened the experiment. Complete randomisation required over 2000 presentations for example. We ruled out a fully-between-subjects design (when there are two independent variables, each with two levels,

and one group experiences one set of items/order but not the other) because the only way to preserve balanced exposures and control inter-stimulus priming was by unintentionally pairing stimuli (*preferred syntax* primes with only *concrete-first* nouns). We could not use a 2×2 mixed-factorial design (when there are two independent variables, each with two levels, and one of is tested as between-subjects while the other is tested as within-subjects) because it did not accommodate balanced exposures. We then explored suitable inferential tests that accommodated independent groups and our assigning half of each population (clinical and control) to different lists. It became clear that we needed a mixed-model analysis to account for missing data (see Goos and Gilmour, 2012; Padilla and Algina, 2007; Nas et al., 2007; Bates et al., 2007). The problem was that our aim was about studying syntactic variation. We also expected exposure to both variations to bias the data. Our lists deal with this by making sure that no participant sees both orders. The differences between both orders are however what we are studying. We therefore need to compare responses to both orders in samples that experienced only one. A traditional crossover is not a solution because we have two populations. We also wanted to make participation comfortable, especially for a clinical cohort with known language difficulties. The chosen design needed to preserve equal exposures, control interstimulus priming, permit randomisation at multiple levels and more without lengthening the experiment. We required a mixed model for all of these reasons. Multi-level and mixed-effects models are incidentally neglected in corpus linguistics (Gries, 2015).

Figs. 1–2

A split-plot design (Fisher, 1960) met all criteria. Split plots are underused in behavioural research (Zhao et al., 2018) and used unknowingly elsewhere (Jones and Nachtsheim, 2009). They suit factors that are hard to vary, like our equalised but differing adjective, noun, prime, and response counts. Factors that are easier to randomise are nested within factors that are harder to randomise. This is ideal because our list structures mirror split-plot structures. We nested noun stimuli within the *sensory* subcategory pairings because the former were easier to randomise. This is why we shifted from calculating permutations of *sensory* subcategory pairings to permutations of specific noun pairs. We used a split-plot to control interstimulus priming for both factors, balance exposures, and counterbalance unintentional pairings without lengthening runs. Fig. 3 (see Appendix I) shows the relationship between participant groups, their list pathways, stimuli lists, and list contents. We draw attention to the fact that this split-plot approach only works with the main item lists. The practice and distractor items cannot be included in this analysis. We consider this acceptable given the function of practice and distractor items.

We then computerised the task. This stage gave us the opportunity to implement additional controls. We used a 950 ms, blank-screen inter-stimulus interval. We also avoided fixation crosses because of their semi-otic properties. Crosses are sometimes used to denote *and*. We wanted to avoid any implied associations between presentations, particularly because this may appeal to overinclusive thinking in schizophrenia. We kept wording, font, font size, and spacing relative to the centre line consistent throughout. We decided on mouse and touchscreen inputs. Participants respond by clicking or touching their choice or its surrounding area. We wanted the response process to be as intuitive and natural as possible due to our interest in response times. We randomised items at several levels. The main and distractor lists were randomised. This meant that the presentation order for main and distractor items was random. We randomised items within each list, per experimental run. This meant that each time a list (main or distractor) was randomly selected, an item from within that list was randomly presented. This randomisation pattern changed with each participant. We block randomised list allocations. This means that every participant was randomly assigned to pathway A or B.

Matching on linguistic ability is important in schizophrenia research (Heinrichs and Zakzanis, 1998). This is usually done with verbal IQ subscales or non-verbal reasoning tasks (Chatzidamianos et al., 2018). We did it with the Cognitive Linguistic Quick Test (CLQT; Helm-Estabrook, 2001). This test uses subtasks that ask participants to generate items beginning with a specified letter or within a semantic category. Few researchers attempt to control for the priming effects of these assessments. We expected asking participants to repeat *m* words for one minute and related tasks to have some influence on their task performance in our experiment. We therefore block randomised the order of our screening measure. This means participants sat their CLQT(+) subtasks either before or after the experiment on random assignment. We did this to counterbalance any priming effects caused by the CLQT(+). Visual overviews of our list allocations and block randomisations are under Figs. 3 and 4 (see Appendix II).

3. Discussion

The development process was a learning experience and highlighted a lack of work in the area. We hope that we have shown the value of corpus-driven norming approaches. We also hope that readers find our solutions to the challenges encountered interesting if not helpful. We would be pleased if others used our materials.

Our design of course has limitations. It for one does not allow us to tell whether the preferences expressed by participants are semantic or pragmatic in nature. This could be explored by comparing task performance across groups with and without known pragmatic disabilities. Although we controlled for interstimulus priming and made sure that items occurred at equal rates within their sets, we did not resolve the problem of differences in set sizes, such as noun pairings appearing more often than adjective pairings. We attempted several stimuli arrangements to avoid this. The one presented here is the best result from those attempts. We expect that this problem goes away when the pool of candidate words is large enough. We had to weigh the balance of having fewer but better controlled candidate words over the opposite. The fact that *sensory* adjectives are sensitive to multiple psycholinguistic confounders also had a lot to do with this, creating a need for multiple control stages that will not be necessary for all studies. We expect that this type of issue is more likely to affect scalar stimuli than function words or common words with better inherent construct validity.

We also recognise that the BNC may not reflect language in schizophrenia. Our view is supported by work that compares corpus and within-sample word frequency approaches. The within-sample approach predicted positive symptoms, and the corpus did not (Gabrić et al. 2021). This makes sense. A corpus of speech in schizophrenia should offer better symptom prediction than one built to represent an entire language variety. We used the BNC because (1) we had no specialised corpus and (2) our clinical participants experience British English. We nonetheless understand the need for a schizophrenia corpus. This is why we interviewed our experimental participants and built one. We describe that corpus and its construction in another paper.

Our main takeaways are that designing language experiments is easier when experimental units are defined (1) early on and (2) linguistically.

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Declaration of Competing Interest

We declare no competing interests.

Appendix 1

Tables 1-12

Table 1
Sensory adjectives by *semant* subcategory.

Sight (X3.4)	sound (X3.2)	smell (X3.5)	taste (X3.1)	touch (X3.3)
visual	quiet	aromatic	sour	rough
watchful	silent	fragrant	spicy	smoothed
scanned	deaf	smelly	salty	stroked

Table 2
Semantically sensory adjectives, CCT preferred syntax.

smell-sight	sound-sight	taste-sight	touch-sight	taste-smell
aromatic visual	quiet visual	sour visual	rough visual	sour aromatic
aromatic watchful	quiet watchful	sour watchful	rough watchful	sour fragrant
aromatic scanned	quiet scanned	sour scanned	rough scanned	sour smelly
fragrant visual	silent visual	spicy visual	smoothed visual	spicy aromatic
fragrant watchful	silent watchful	spicy watchful	smoothed watchful	spicy fragrant
fragrant scanned	silent scanned	spicy scanned	smoothed scanned	spicy smelly
smelly visual	deaf visual	salty visual	stroked visual	salty aromatic
smelly watchful	deaf watchful	salty watchful	stroked watchful	salty fragrant
smelly scanned	deaf scanned	salty scanned	stroked scanned	salty smelly
touch-smell	small-sound	taste-sound	touch-sound	touch-taste
rough aromatic	aromatic quiet	sour quiet	rough quiet	rough sour
rough fragrant	aromatic silent	sour silent	rough silent	rough spicy
rough smelly	aromatic deaf	sour deaf	rough deaf	rough salty
smoothed aromatic	fragrant quiet	spicy quiet	smoothed quiet	smoothed sour
smoothed fragrant	fragrant silent	spicy silent	smoothed silent	smoothed spicy
smoothed smelly	fragrant deaf	spicy deaf	smoothed deaf	smoothed salty
stroked aromatic	smelly quiet	salty quiet	stroked quiet	stroked sour
stroked fragrant	smelly silent	salty silent	stroked silent	stroked spicy
stroked smelly	smelly deaf	salty deaf	stroked deaf	stroked salty

Table 3
Semantically sensory adjectives, CCT nonpreferred syntax.

Sight-smell	sight-sound	sight-taste	sight-touch	smell-taste
visual aromatic	visual quiet	visual sour	visual rough	aromatic sour
watchful aromatic	watchful quiet	watchful sour	watchful rough	fragrant sour
scanned aromatic	scanned quiet	scanned sour	scanned rough	smelly sour
visual fragrant	visual silent	visual spicy	visual smoothed	aromatic spicy
watchful fragrant	watchful silent	watchful spicy	watchful smoothed	fragrant spicy
scanned fragrant	scanned silent	scanned spicy	scanned smoothed	smelly spicy
visual smelly	visual deaf	visual salty	visual stroked	aromatic salty
watchful smelly	watchful deaf	watchful salty	watchful stroked	fragrant salty
scanned smelly	scanned deaf	scanned salty	scanned stroked	smelly salty
small-touch	sound-smell	sound-taste	sound-touch	taste-touch
aromatic rough	quiet aromatic	quiet sour	quiet rough	sour rough
fragrant rough	silent aromatic	silent sour	silent rough	spicy rough
smelly rough	deaf aromatic	deaf sour	deaf rough	salty rough
aromatic smoothed	quiet fragrant	quiet spicy	quiet smoothed	sour smoothed
fragrant smoothed	silent fragrant	silent spicy	silent smoothed	spicy smoothed
smelly smoothed	deaf fragrant	deaf spicy	deaf smoothed	salty smoothed
aromatic stroked	quiet smelly	quiet salty	quiet stroked	sour stroked
fragrant stroked	silent smelly	silent salty	silent stroked	spicy stroked
smelly stroked	deaf smelly	deaf salty	deaf stroked	salty stroked

Table 4
Semantically concrete and abstract nouns.

Concrete (O2: general object)	abstract (X2.1: thought, belief)
edge	opinion
sharpen	attitude
boomerang	consideration

Table 5
Concrete-first noun pairs.

Concrete first (O2-X2.1)
edge opinion
edge attitude
edge consideration
sharpen opinion
sharpen attitude
sharpen consideration
boomerang opinion
boomerang attitude
boomerang consideration

Table 6
Abstract-first noun pairs.

Abstract first (X2.1-O2)
opinion edge
opinion sharpen
opinion boomerang
attitude edge
attitude sharpen
attitude boomerang
consideration edge
consideration sharpen
consideration boomerang

Table 7
Pathway A, items 1 to 45: *nonpreferred-syntax primes, Itavul-first nouns*; items 45 to 90: *preferred-syntax primes, abstract-first nouns*.

Prime	response
visual aromatic	edge opinion
wa'ichfid aromatic	edge attitude
scante d aromatic	edge consideration
visual fragrant	sharpen opinion
wa'ichfid fragrant	sharpen attitude
scante d fragrant	sharpen consideration
visual smelly	boomerang opinion
wa'ichfid smelly	boomerang attitude
scante d smelly	boomerang consideration
visual quiet	edge opinion
wa'ichfid quiet	edge attitude
scante d quiet	edge consideration
visual silent	sharpen opinion
wa'ichfid silent	sharpen attitude
scante d silent	sharpen consideration
visual deaf	boomerang opinion
wa'ichfid deaf	boomerang attitude
scante d deaf	boomerang consideration
visual sour	edge opinion
wa'ichfid sour	edge attitude
scante d sour	edge consideration
visual spicy	sharpen opinion
wa'ichfid spicy	sharpen attitude
scante d spicy	sharpen consideration
visual salty	boomerang opinion
wa'ichfid salty	boomerang attitude
scante d salty	boomerang consideration
visual rough	edge opinion
wa'ichfid rough	edge attitude
scante d rough	edge consideration
visual smoothed	sharpen opinion
wa'ichfid smoothed	sharpen attitude
scante d smoothed	sharpen consideration

Table 7
(continued)

Prime	response
visual stroked	boomerang opinion
wa'ichfid stroked	boomerang attitude
scante d stroked	boomerang consideration
visual sour	edge opinion
wa'ichfid sour	edge attitude
scante d sour	edge consideration
visual spicy	sharpen opinion
wa'ichfid spicy	sharpen attitude
scante d spicy	sharpen consideration
visual salty	boomerang opinion
wa'ichfid salty	boomerang attitude
scante d salty	boomerang consideration
visual aromatic	edge opinion
rough aromatic	edge sharpen
rough smelly	opinion boomerang
smoothed aromatic	attitude edge
smoothed fragrant	attitude sharpen
smoothed smelly	attitude boomerang
stroked aromatic	edge consideration
stroked fragrant	edge sharpen
stroked smelly	edge boomerang
aromat:k quiet	opinion edge
aromat:k silent	opinion sharpen
aromat:k deaf	opinion boomerang
fragrant quiet	attitude edge
fragrant silent	attitude sharpen
fragrant deaf	attitude boomerang
smelly quiet	consideration edge
smelly deaf	consideration sharpen
sour quiet	consideration boomerang
sour silent	opinion edge
sour deaf	opinion sharpen
spicy quiet	opinion boomerang
spicy silent	attitude edge
spicy deaf	attitude sharpen
salty quiet	attitude boomerang
salty silent	consideration edge
salty deaf	consideration sharpen
rough quiet	consideration boomerang
rough silent	opinion edge
rough deaf	opinion sharpen
smoothed quiet	opinion boomerang
smoothed silent	attitude edge
smoothed deaf	attitude sharpen
stroked quiet	attitude boomerang
stroked silent	consideration edge
stroked deaf	consideration sharpen
rough sour	opinion edge
rough spicy	opinion sharpen
rough salty	opinion boomerang
smoothed sour	attitude edge
smoothed spicy	attitude sharpen
smoothed salty	attitude boomerang
stroked sour	consideration edge
stroked spicy	consideration sharpen
stroked salty	consideration boomerang

Table 8
Pathway B, items 1 to 45: preferred-syntax primes, literal-first nouns;
items 45 to 90: nonpreferred-syntax primes, abstract-first nouns

Prime	response
amused: visual	edge opinion
amused: watchful	edge at:ititude
amused: scanned	edge consideration
fragment: visual	sharpen: opinion
fragment: watchful	sharpen: attitude
fragment: scanned	sharpen: consideration
smelly: visual	boomerang: opinion
smelly: watchful	boomerang: attitude
smelly: scanned	boomerang: consideration
quiet: visual	edge opinion
quiet: watchful	edge at:ititude
quiet: scanned	edge consideration
silent: visual	sharpen: opinion
silent: watchful	sharpen: attitude
silent: scanned	sharpen: consideration
deaf: visual	boomerang: opinion
deaf: watchful	boomerang: attitude
deaf: scanned	boomerang: consideration
sour: visual	edge opinion
sour: watchful	edge at:ititude
sour: scanned	edge consideration
spicy: visual	sharpen: opinion
spicy: watchful	sharpen: attitude
spicy: scanned	sharpen: consideration
salty: visual	boomerang: opinion
salty: watchful	boomerang: attitude
salty: scanned	boomerang: consideration
rough: visual	edge opinion
rough: watchful	edge at:ititude
rough: scanned	edge consideration
smoothed: visual	sharpen: opinion
smoothed: watchful	sharpen: attitude
smoothed: scanned	sharpen: consideration
stroked: visual	boomerang: opinion
stroked: watchful	boomerang: attitude
stroked: scanned	boomerang: consideration
sour: amused: k	edge opinion
sour: fragment	edge at:ititude
sour: smelly	edge consideration
spicy: amused: k	sharpen: opinion
spicy: fragment	sharpen: attitude
spicy: smelly	sharpen: consideration
salty: amused: k	boomerang: opinion
salty: fragment	boomerang: attitude
salty: smelly	boomerang: consideration
amused: k: rough	opinion: edge
fragment: rough	opinion: sharpen
smelly: rough	opinion: boomerang
amused: k: smoothed	attitude: edge
fragment: smoothed	attitude: sharper
smelly: smoothed	attitude: boomerang
amused: k: stroked	consideration: edge
fragment: stroked	consideration: sharpen
smelly: stroked	consideration: boomerang
quiet: amused: k	opinion: edge
silent: amused: k	opinion: sharpen
deaf: amused: k	opinion: boomerang
quiet: fragment	attitude: edge
silent: fragment	attitude: sharper
deaf: fragment	attitude: boomerang
quiet: smelly	consideration: edge
silent: smelly	consideration: sharpen
deaf: smelly	consideration: boomerang
quiet: sour	opinion: edge
silent: sour	opinion: sharpen
deaf: sour	opinion: boomerang
quiet: spicy	attitude: edge
silent: spicy	attitude: sharper
deaf: spicy	attitude: boomerang
quiet: salty	consideration: edge
silent: salty	consideration: sharpen
deaf: salty	consideration: boomerang
quiet: rough	opinion: edge
silent: rough	opinion: sharpen

Table 8
(continued)

Prime	response
deaf: rough	
quiet: smoothed	opinion: boomerang
silent: smoothed	attitude: edge
deaf: smoothed	attitude: sharper
quiet: stroked	attitude: boomerang
silent: stroked	consideration: edge
deaf: stroked	consideration: sharpen
sour: rough	consideration: boomerang
spicy: rough	opinion: edge
salty: rough	opinion: sharpen
sour: smoothed	opinion: boomerang
spicy: smoothed	attitude: edge
salty: smoothed	attitude: sharper
sour: stroked	attitude: boomerang
spicy: stroked	consideration: edge
salty: stroked	consideration: sharpen
	consideration: boomerang

Table 9
Practice List A.

Prime	response
amused: k	sharpen: edge
fragment	boomerang: edge
smelly	boomerang: sharper
sour	sharpen: edge
spicy	boomerang: edge
salty	boomerang: sharper
visual	sharpen: edge
watchful	boomerang: edge
scanned	boomerang: sharper
quiet	sharpen: edge
silent	boomerang: edge
deaf	boomerang: sharper
rough	sharpen: edge
smoothed	boomerang: edge
stroked	boomerang: sharper

Table 10
Practice List B.

Prime	response
amused: k	attitude: opinion
fragment	consideration: opinion
smelly	consideration: attitude
sour	attitude: opinion
spicy	consideration: opinion
salty	consideration: attitude
visual	attitude: opinion
watchful	consideration: opinion
scanned	consideration: attitude
quiet	attitude: opinion
silent	consideration: opinion
deaf	consideration: attitude
rough	attitude: opinion
smoothed	consideration: opinion
stroked	consideration: attitude

Table 11
Distactor List A.

Prime	response
fragrant aromatic	attitude opinion
smelly aromatic	consideration opinion
smelly fragrant	consideration at attitude
spicy sour	attitude opinion
salty sour	consideration opinion
salty spicy	consideration at attitude
watchful visual	attitude opinion
scanned visual	consideration opinion
scanned watchful	consideration at attitude
silent quiet	attitude opinion
deaf quiet	consideration opinion
deaf silent	consideration at attitude
smoothed rough	attitude opinion
stroked rough	consideration opinion
stroked smoothed	consideration at attitude

Table 12
Distactor List B.

Prime	response
aromatic fragrant	sharpened edge
aromatic smelly	boomerang edge
fragrant smelly	boomerang sharper
sour spicy	sharpened edge
sour salty	boomerang edge
spicy salty	boomerang sharper
visual watchful	sharpened edge
visual scanned	boomerang edge
watchful scanned	boomerang sharper
quiet silent	sharpened edge
quiet deaf	boomerang edge
silent deaf	boomerang sharper
rough smoothed	sharpened edge
rough stroked	boomerang edge
smoothed stroked	boomerang sharper

Appendix II

Figs. 1-4

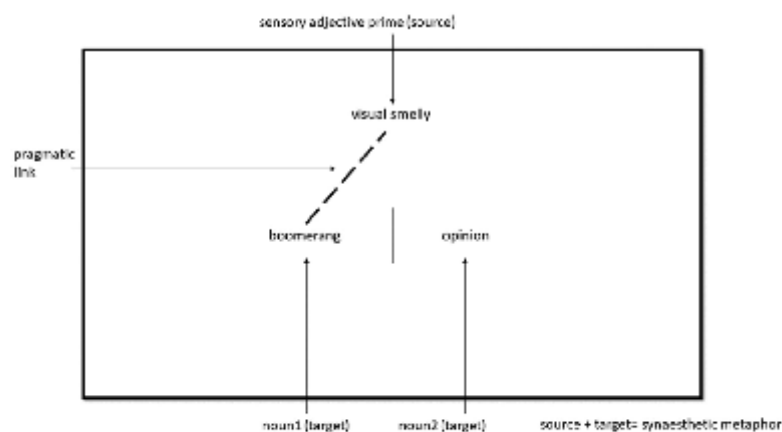


Fig. 1. Example presentation, annotated for the reader.

split-plot design (mixed design)

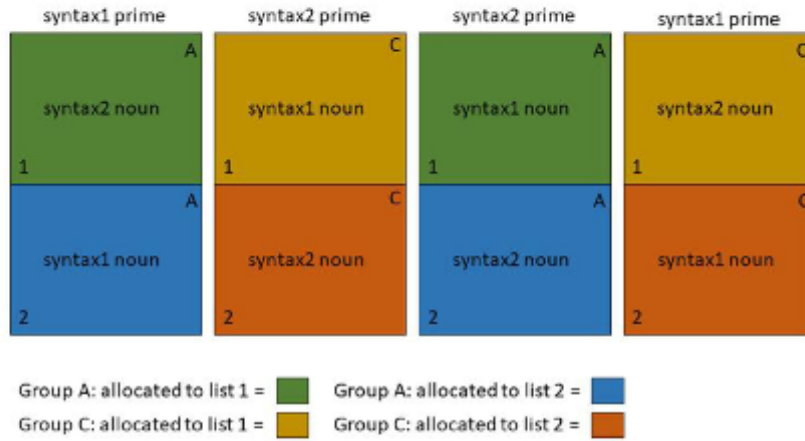


Fig. 2. Groups, pathways, main item lists, and list contents in split-plot
 Note
 syntax1 prime – OCT preferred syntax prime
 syntax2 prime – OCT nonpreferred syntax prime
 syntax1 noun – concrete-first noun pair
 syntax2 noun – abstract-first noun pair
 Group A – clinical cohort
 Group C – comparison cohort
 List 1 – pathway A (List A, Practice List A, Distractor List A)
 List 2 – pathway B (List B, Practice List B, Distractor List B).

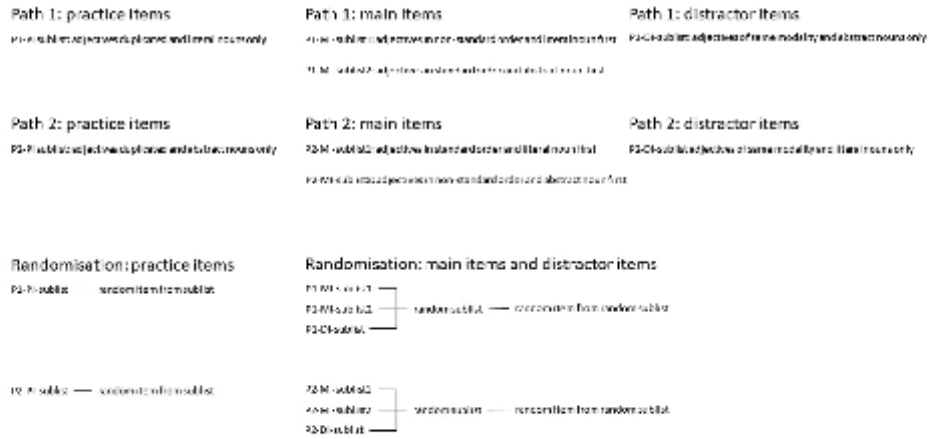


Fig. 3. List contents and randomisation.

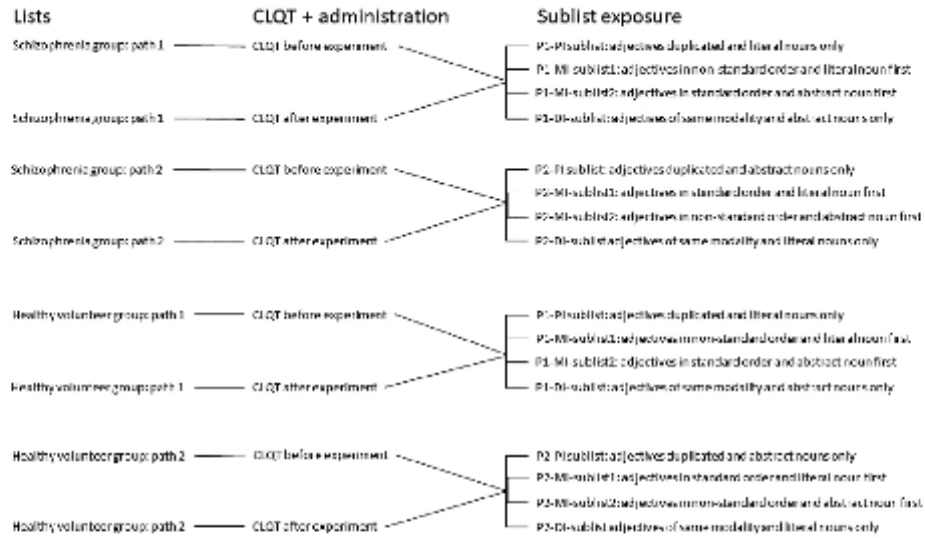


Fig. 4. Group, list, assessment, and sublist block randomizations.

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APPENDIX III – DoLI Task Experimental Data

Participant ID	group	confrontation naming score	story retelling subscore 1	story retelling subscore 2	story retelling subscore total	story retelling score	generative naming subscore 1	generative naming perseverance ratio	generative naming subscore 2	generative naming subscore total	generative naming score	observations
23CT18	C	10	12	3	15	8	36	0	18	54	9	
23CT19	C	9.5	13	1	14	7	25	0	13	38	8	
26CT11	C	9.5	12	3	15	8	23	0.043478261	23	46	9	
28CT11	C	9.5	15	3	18	9	27	0	17	44	9	
30CT09	C	10	12	3	15	8	26	0.03	12	38	8	
16OV11	C	9.5	16	3	19	10	29	0.03	10	39	8	
19OV10	C	9.5	11	3	14	7	33	0.108	14	47	9	
23OV14	C	9.5	11	3	15	8	27	0.06	21	48	9	
02AR17	C	9.5	15	3	18	9	28	0	17	45	9	slow rise' on generative naming 'animals'
09AR14	C	10	13	3	16	8	30	0	17	47	9	
17AR13	C	9.5	15	3	18	9	25	0	22	47	9	
18UG15	A	9.5	6	0	6	3	17	0.11	12	29	6	

Participant	group	pathway	CLQT(+)	NSO-OF concrete	NSO-OF abstract	SO-NOF concrete	SO-NOF abstract	NSO-NOF concrete	NSO-NOF abstract	SO-OF concrete	SO-OF abstract
23CT18	C	1	pre	17	28	23	22				
23CT19	C	1	pre	26	19	30	15				
26CT11	C	2	post					8	37	10	35
28CT11	C	2	pre					14	31	17	28
30CT09	C	2	pre					6	39	9	36
16OV11	C	1	pre	16	29	29	16				
19OV10	C	2	post					0	45	1	44
23OV14	C	2	pre					4	41	7	38
02AR17	C	2	post					22	23	12	33
09AR14	C	1	post	16	29	19	26				
17AR13	C	2	pre					16	29	9	36
18UG15	A	1	pre	11	34	14	31				

Participant	group	pathway	CLQT(+)	non-CCT pairing, concrete- first noun chose concrete	non-CCT pairing, concrete- first noun chose abstract	CCT pairing, abstract- first noun chose concrete	CCT pairing, abstract- first noun chose abstract	non-CCT pairing, abstract- first noun chose concrete	non-CCT pairing, abstract- first noun chose abstract	CCT pairing, concrete- first noun chose concrete	CCT pairing, concrete- first noun chose abstract
23CT18	C	1	pre	17	28	23	22				
23CT19	C	1	pre	26	19	30	15				
26CT11	C	2	post					8	37	10	35
28CT11	C	2	pre					14	31	17	28
30CT09	C	2	pre					6	39	9	36
16OV11	C	1	pre	16	29	29	16				
19OV10	C	2	post					0	45	1	44
23OV14	C	2	pre					4	41	7	38
02AR17	C	2	post					22	23	12	33
09AR14	C	1	post	16	29	19	26				

17AR13	C	2	pre					16	29	9	36
18UG15	A	1	pre	11	34	14	31				

Participant	group	pathway	CLQT(+)	total concrete choices	total abstract choices
23CT18	C (healthy volunteer)	1	pre	40	50
23CT19	C (healthy volunteer)	1	pre	56	34
26CT11	C (healthy volunteer)	2	post	18	72
28CT11	C (healthy volunteer)	2	pre	31	59
30CT09	C (healthy volunteer)	2	pre	15	75
16OV11	C (healthy volunteer)	1	pre	45	45
19OV10	C (healthy volunteer)	2	post	1	89
23OV14	C (healthy volunteer)	2	pre	11	79
02AR17	C (healthy volunteer)	2	post	34	56
09AR14	C (healthy volunteer)	1	post	35	55
17AR13	C (healthy volunteer)	2	pre	25	65
18UG15	A (schizophrenia)	1	pre	25	65

Condition
1

Condition
2
Condition
3
Condition
4

Participant ID	Group	Pathway	Mean response time	outliers
23CT18	C	1	2916.833333	7585, 7601, 7820, 9000, 9896
23CT19	C	1	5190.677778	10636
26CT11	C	2	3627.277778	7326, 7728, 8204, 9579, 10034, 10883, 11862, 13915
28CT11	C	2	3553.122222	7527, 7688, 7840, 9336
30CT09	C	2	2987.044444	5220, 5671, 6286, 6363, 6525, 7006, 7080, 11157, 15583
16OV11	C	1	2770.088889	6616, 6930, 7652, 12602, 14850, 16134
19OV10	C	2	2851.677778	6499, 6860
23OV14	C	2	4038.8	8022, 8263, 8728, 9055, 9111, 17863, 25463
02AR17	C	2	3562.1	8324, 9300
09AR14	C	1	3702.022222	8494, 8536, 8625, 10177, 10479, 13073, 33321
17AR13	C	2	4402.855556	10746
18UG15	A	1	2211.688889	9396

APPENDIX IV – Discussing Abstract Ideas in Schizophrenia Corpus (DAIS-C) Transcripts

Clinical transcripts

<INT> erm so there's there's only one interview question and the rest is is just a chat around that erm </INT>

<26AR16> OK OK </26AR16>

<INT> do you feel like you use language creatively </INT>

<26AR16> you know I <Gr> when I came to England at eleven 10 2 <An> </An> road </Gr> <An> </An> <An> </An> <An> </An> I went to <An> </An> infant school at the time I was eleven be <WS> tveven </WS> in December because you know was still I was so tiny for my age <Gr> I didn't look my eleven year and my dad was my step </Gr> they sent me to <An> </An> school <An> </An> <An> </An> and <Sh> </Sh> what hap <Lh> </Lh> I passed my eleven plus because you know the kids back home you had to learn I used to go to Miss <An> </An> <An> </An> school you had to learn cos if you didn't learn you didn't come out of the class <WS> they cut it outta you </WS> you stayed in the class if you didn't pass to go to the next one and they sent me to <An> </An> school and I did the th I passed my eleven plus and I went to <An> </An> <An> </An> high school er <An> </An> <An> </An> <An> </An> called it and I p I went to top one my teacher mm Mrs <An> </An> but you know me th I come I pass but you sometimes it's not good to shine I went to Oxford you know that man that used to do cracker barrel er ah I think it er cracker barrel I think it was a biscuit the professor I pass everything he said to me <An> </An> go and get dirt go and get a clipboard and put dirt un on your fingernail cos you know so much you have the boss' job never got hired but I have some lovely children oh it's good grandchildren great grandchildren I'm not saying I'm stupid but sometimes people don't want to hear your IQ they just want to know you're friendly you're homely and you don't s you don't take people for granted everybody's a gem everybody's important because up to the time you can do electron <WS> you can't be two places at once </WS> that is what I learned no man can be two places at <Gr> once everybody must be put </Gr> you know my son he I have a fifty year old I'm sixty six a fifty year old son born same <An> </An> hospital by <InAu> </InAu> he said to me one day mum you know every man is born equal <WS> guess what a sperm and a egg we don't need two semen no man </WS> but yeah what we called each other oh professor oh queen king no we're all equal but it's what we do to each other to get up the ladder yes you asked me question I'm in a one bedroom with two of my sons thirty four and thirty seven I haven't moved I don't have no money <Gr> every money I get </Gr> have you got savings no I win money <Gr> I have win premium bonds </Gr> but don't give me who gonna give <An> </An> money <WS> just a bit of blood </WS> go with the talking it'll good it'll burn down the house yes I'm not crying to you but every time I get up I'm so glad I am so glad and all my sons are alive yes that's <An> </An> </26AR16>

<INT> I think that's a really nice way to look at things </INT>

<26AR16> of course that's how we look at things you phone me not that you're short of knowing who <An> </An> is or where she comes from what she does how she manages living is just a we want to hear <An> </An> if I really tell you how I got here you will say you know some everybody cries even me phoning you is crying but we know if we get it right we c ourself we get it right with everybody I don't have no money in my bank account is one pence I'm waiting for some money to n my g s <An> </An> want to borrow some <An> </An> don't have this <An> </An> say ah y ah and you say oh you stupid thing you got mug is ah I aint going outside <WS> sweeping road and bang bang bang </WS> so I help them out they s e when you were talking before you rang my son so oh mum my friend says I need ten pound til Friday guess what I say no you probably say well your son you help no that person every time I I need something then oh God they don't phone for a week but they get their money and then when we get ours they're here I tried to like work it out why are they always here when we get and when they have they don't come I can't work it out </26AR16>

<INT> I see yeah </INT>

<26AR16> I can't work it out I can't work out everything you know because <Gr> I became very ill bad mentally and very bad my brain </Gr> <WS> just boop because Dettol kill </WS> <Sh> </Sh> I don't want to go to that because it's not what the language you you said I'm only a black er man them I went to finishing school and them they you're not like we're <Gr> you're not finishing to courtesy </Gr> because I'm a lot a little s tomboy when I was growing up there nobody there but mm erm th them p that pf there isn't no boys to play with cricket football there are no boys in <An> </An> where I brought up just that was girls ah boy I was like a tomboy when I had my first child everybody was surprised they was like where'd that come from <Lh> </Lh> I was so tomboy my leg shows it <Gr> I have so much marks </Gr> from climbing trees and running to <InAu> </InAu> <Lh> </Lh> but er that's just er <Gr> that's just me to explain because sometime I I'm glad </Gr> when somebody pf talk to me take the pressure off of my brain that as a child growing I had a good social worker English girl called <An> </An> when I tell her the pain I went through as a child in the <An> </An> and here she said yes I know <An> </An> some of the black children tell me and you know what happened not you er <TC> she just cut she couldn't face </TC> <WS> she couldn't tell talk to me no more </WS> she just left where she is I don't know there somebody say she went in some home or something big woman mixed race kids I got er b b er e some people say <Gr> how did you get away from the children dad </Gr> and it didn't look odd so compan funny fate I'm them girl in Eastenders Julie crab s skin and bone and starvation I dunno school with that them them people somehow they look and the girl face look and I look like that I don't make people dry me out yes <Gr> I've got kids make a mischief </Gr> but I'm <An> </An> I'm good good good sorry sir <Gr> it does me feel a release </Gr> when somebody know the pain we go through just to be big the list red rent man my list me I don't know where my child are sometimes sometimes it is it is sad I I think you in yourself could say a bit er story about yourself but where you are focusing there erm people like me we're sad talking I used to be happy I used to be happy until they come and tell

me me son dead <Gr> how can be he just a five year old </Gr>
it was a <InAu> </InAu> he was there in front of me then he
just disappeared where <Lh> </Lh> mm yeah I've had it I have I
have had it I hold on to the two I have here I really hold onto
them </26AR16>

<INT> it sounds like you're all really close that sounds really
nice </INT>

<26AR16> oh yeah yeah you know <Lh> </Lh> back home I was
molested by a big man left to die in the gutter and they know
<An> </An> know that's <Gr> why they brought me to me out
of there </Gr> big man five or six year old sometime when you
woulda told me I can't keep a secret I'd say who is that child
who is <An> </An> all of them tied to all of them got kids and
then to go down then <Gr> if he hasn't break up </Gr> or
tsunami hit it and so <Gr> who that happening that Mrs </Gr>
<An> </An> <Sh> </Sh> I am a bit angry and I know I shouldn't
take it out on somebody who phone me to just ask a question
but it all comes up from my stomach no injection they keep
giving me every two weeks saying I'm hearing voices and blah
blah blah <Gr> they knew why people are scared </Gr> you
jump on the bandwagon oh she hearing voices oh yeah and this
man called big man and all that load of rubbish </26AR16>

<INT> that sounds er I can't imagine what that must have been
like but that sounds like that sounds awful I'm really sorry to
hear that </INT>

<26AR16> well <An> </An> sorry <An> </An> </26AR16>

<FAM> yeah </FAM>

<26AR16> I thought you only made two ones </26AR16>

<FAM> sorry </FAM>

<26AR16> child <Cl> </Cl> you I thought you gave me two
ones </26AR16>

<FAM> what </FAM>

<26AR16> oh you <InAu> </InAu> sorry gave me some change
and only gimme one pound anyway sir go on how m how long
we got </26AR16>

<INT> as long er as long as you'd like to talk so er you know if
you'd mm like to talk for a little bit that's fine if you'd like to
talk for longer that's fine erm </INT>

<26AR16> I am laughing do you know <Lh> </Lh> that bit I got
off in your ear like a flea in your ear it was so in me that even
<InAu> </InAu> I explained it as myself I couldn't explain it as
myself I had to explain it from pain that somebody has had y it
it makes sense I I told you mm me but it w it was so painful
when you're growing up certain times so painful so painful
</26AR16>

<INT> and has that </INT>

<26AR16> and I didn't end up having kids I don't know I found it
I'm sure there's a lamb here I haven't a son he's fifty fifty-one
this year and you might like the story of the virgi i w the er w

Adam and Eve <Lh> </Lh> <Gr> and then you me a story </Gr>
about my son this that they was calling him a different name
but he's not stupid <InAu> </InAu> really he turned up <Lh>
</Lh> and he's not no fool c er p mm <Sh> </Sh> </26AR16>

<INT> I see do you has </INT>

<26AR16> say it you won't say it it don't be frightened when
he's worked enough he can't get hurt more and there and
there's no more to hurt he's chucked it all in y er hurt whatever
he is or we calling to him and be a man <InAu> </InAu> <Lh>
</Lh> </26AR16>

<INT> does language er does how er how do you use language
when you think of these things </INT>

<26AR16> er do you know I have my son said when I'm talking
it sounds childish and it don't sound proper so he said write it
down on a <WS> people piece </WS> of paper and then <WS>
when I'm reaning it </WS> and see what I've written but I've
written letters to look over but it looks like <Gr> I've wrote a
scratch up writing </Gr> ah and sometimes ah w when I was er
w growing up going to kindergarten with my teacher mm Miss
<An> </An> she mm t teaches charity that in r in <An> </An>
you have to pass your exam like your test before you go into
first standard and I came out of kindergarten I went into first
standard then second standard and like you know er mm back
home you have to be w er er a private school like grammar
school it it was pilgrim school that they called it at first then
they change Mrs <An> </An> <Gr> I think don't Mrs <An>
</An> is a different school </Gr> Mrs <An> </An> I think that
late twelve I was getting old I think they say erm <Gr> being
jealous send his daughter to this school </Gr> erm I don't call
them between er I don't know that word yeah but change on
the street is that way and at the corner I went home in 1993
the social service <Lh> </Lh> but you you did that send me to
<An> </An> this oh if you go to <An> </An> you you came back
don't know what was er everybody say oh you're sick you're
sick and then once psychiatrist top Jewish man he looked at me
saying you're not sick they have you living all over the place
when you where when you know where you're living you came
back to th after what that man say and you know where you're
living gave me a car <Lh> </Lh> er this one I bring that one I
bring Tom Dick are great <Lh> </Lh> I don't know I'm a I'm here
talking to you <Gr> but I didn't heard </Gr> about half of the
<InAu> </InAu> talking at the same time how old I am very old
I'm very g I'm very ol I don't like flirting when I'm sweet or
familiar what was she that looked like unmade bed old <InAu>
</InAu> <Lh> </Lh> but <Lh> </Lh> I know I think I look a bit er
stable it i i i it's not a laughing matter because it is a lot a lot
a pain I was with the fath the <An> </An> father <An> </An>
<An> </An> <An> </An> and he said oh I'm <An> </An> she's
<An> </An> a small island <Lh> </Lh> that's my sister blood
that she talking about </26AR16>

<INT> I see wh </INT>

<26AR16> <Lh> </Lh> I didn't think you were still there with
with </26AR16>

<INT> no no I'm still here </INT>

<26AR16> with me </26AR16>

<INT> I'm finding it really interesting I I just wondered erm what you think about things like poetry and song lyrics </INT>

<26AR16> you know what I do Shakespeare I'll I read <InAu> </InAu> because I remember one of the Shakespeare from <InAu> </InAu> center and erm t Florence Nightingale and erm what what's that one that er what's what's the one with the rowing boat what she did Grace Darling you know Grace Darling </26AR16>

<INT> I th </INT>

<26AR16> where she rescued her from er the la the the the the re what they called the rocks I've <InAu> </InAu> as my as my teacher once said to me one day oh well I'd love to read the books you read I do ra you ever know erm the books where one w one hundred at a blow that's a tailor with the jam bread and he took the piece of clocks and he count all the flies and he called it one hundred at the blow and then the the pixie and the shoemaker yous a don't read books like that Harry Potter no I don't know </26AR16>

<INT> and what do you what do you like about the books that you read </INT>

<26AR16> er they was very very educated very very educated <Gr> them them books very educated </Gr> trust me they worked very educated </26AR16>

<INT> and did you like that about them </INT>

<26AR16> yeah boy educated <InAu> </InAu> like you you'll have to be so curious when you tell certain people certain <InAu> </InAu> <Gr> these are old fashioned stuff </Gr> this is they are so old that you can just take your hand and wave them back or you die they they one man's book that frightened me as a child w was er you know that erm the winky wonky thing that <Cl> </Cl> what was it called on the with the w they have hairy hair and the trees are hairy what was it called again erm <Cl> </Cl> so the the little boy the little girl ah you know that when that book came out sorry that turn up your nose like that news man on Thames and er what's his name I talk with my nose when I read I hide <Gr> they mustn't talk me <InAu> </InAu> cos we destroy us so I I will tone down </Gr> </26AR16>

<INT> oh OK </INT>

<26AR16> do you like the COVID that be we could do you like the COVID are you there </26AR16>

<INT> yeah </INT>

<26AR16> you talk with this COVID and this corona I remember when I was younger erm and th this is I have it's on voicemail I remember when I was younger I lived at a place called <An> </An> the <InAu> </InAu> it's <An> </An> I remember when they called it now <An> </An> and the bottom <An> </An> there's two place called the <InAu> </InAu> I live with my papa but my mother abandoned me and went away so I lived with she was fifty when she had me <Gr> she c ah conceived me the <An> </An> when I born in December </Gr> and she left me and erm some people took me <TC> in th you know not </TC> like England you have they took me in one was papa one was

mama just papa and mama w I called them ah but that's the story about how that would be like talking up my nose where and then going beyond it so <TC> one day they my family </TC> she said why don't you write a book I said it's not a book writing the word is a transmitter and a receiver the sky like me and you talking here when you play your recording back to yourself it is nothing like what I say </26AR16>

<INT> do you mind telling me more about that that's really like I'd love to know more about wh </INT>

<26AR16> oh well you you know er you know your er record I did have a recorder I bought in erm electrical shop I think it's a Curry's is it Curry's </26AR16>

<INT> yeah the er like the </INT>

<26AR16> might be Curry's yeah I might not the old Curry them days is er ah how old are you <Lh> </Lh> and the old Curry's used to have erm is it Curry I must've Camdy I think it was Camdy because we bought a Trecovision or a one of my son is forty-nine we bought a Trecovision you know we had Donkey Kong and all them things with and you know <Lh> </Lh> it it was so cheap and nobody really had the eyes <Gr> the sight on the seeing the Trecovision </Gr> in <InAu> </InAu> and erm mm you know sometime it's not to to destroy or kill for some for some cos ah Jesus said ask and it shall be given until and he woulda said if you ask today don't give him ask tomorrow and we thought we gonna be ju but <InAu> </InAu> aint nobody out there fighting half of them is all starving and want to come here I just say come on come to wa Britain and you feed them and they s <Sh> </Sh> you know you get homesick I got homesick I came sixty-six a Jewish man lent me a <InAu> </InAu> with <An> </An> in <An> </An> and he handed me my <InAu> </InAu> I blew past I never seen it since I land here and everyone knows I couldn't go back home I couldn't go to <An> </An> that is what is happening to them and they know <InAu> </InAu> cos somebody is manipulating you <InAu> </InAu> you get up in the morning you go to the office you come home to a empty house and then your wife is there she's sitting down she not smoking or drinking but she aint cooked no food you been out all day she aint cooked no food to to to back of your head she tell you some stupid story that happened to somebody oh did you know <An> </An> wife and blah blah blah <Gr> no you needed proper plate of food </Gr> yes I used to think that me and my partner if I grew I would leave food in the oven cooking and then we'd save gas I think down low a cooker I miss and and I work low can and I will cook just leave it in the oven wash home we have a good meal if I'm in the house is like happy happy hap just made do with what there and then he drift off to somebody and used to tell him stupid long story about this by then he'd come back had germs he had what that prostate cancer <InAu> </InAu> I'm not saying I'm goody goody all the time cos not everyday God residing man you can't be <InAu> </InAu> when you said to the somebody oh get off my sand they came they kill you chucked it away especially if it's yours and y can't treat somebody like that every day you have to have a good day sometimes </26AR16>

<INT> yeah </INT>

<26AR16> <TC> do you I know </TC> my friend I have a friend I've never been married I'm <InAu> </InAu> I have a friend she been married twice she had two I woulda d at the second guy she said oh <An> </An> wants to marry me I be sitting there <Lh> </Lh> <TC> telling I'm he </TC> rings he would check on her at lunch time he wants to marry and she would go <Ch> </Ch> <Ch> </Ch> <Ch> </Ch> <Ch> </Ch> I say what she said oh and tell him I got a bit of a cold <TC> so I'm she likes </TC> cooking so when we come home I leave she jump in the bed ah I can't do them things so they say oh she's a softie <An> </An> is soft she cook clean iron and go to work she will c get the house the electric fuel direct I'm the king of this whole place why I don't know I think nobody taught me because I never had a close mother but I'd er don't know where she was I became that way what what you want for yourself you need to have somebody innit but I've seen my friends and then they get married three four times and and I remember someone saying <Lh> </Lh> s oh you look so skinny and tiny <Lh> </Lh> we don't want want to marry you you know what I would say to my children and my King Kong we not King Kong that big lassie he has er I don't look like that said oh oh no she she's so skinny mhm yeah so be here from King Kong my s er sorry <Lh> </Lh> </26AR16>

<INT> w why are you sorry no no it's it's er it's </INT>

<26AR16> <Lh> </Lh> </26AR16>

<INT> nice to talk </INT>

<26AR16> ma you know you're English man and I'm when I came I was a little girl I had a friend English friend called <An> </An> <An> </An> and erm <An> </An> used to <InAu> </InAu> <Lh> </Lh> I want to take you to my dad but erm it was erm we went to <An> </An> <An> </An> I went <InAu> </InAu> I don't know what happened to him he said I wanna take you to my dad but I have to tell him first I'm bringing you to meet him anyway after about a week <Gr> he said oh I shown my dad to you my dad said you're black </Gr> <Lh> </Lh> so we never got married and you know <InAu> </InAu> some you could tell how old I was when I had my fif my fif my fifty-one year old son didn't nobody ever give that well this and er <InAu> </InAu> destroyed my life I have kids back home in <An> </An> I was a little child yeah but if that er open all hours you know sometimes people look at you and they say I like you you're going about your business you don't <WS> borrry you don't flame </WS> <InAu> </InAu> we dig up a little bit maybe she owe ten pounds to somebody somewhere get on the laptop and we get her little toes and that's how it's going for me I get erm mm what's that thing P I P because <Gr> they say I'm good man </Gr> but me sir I work in this country I couldn't tell you never got to work for <An> </An> laundry <Gr> never got paid whilst I'm eating so much win </Gr> and I became sick and if you don't eat and rest properly you get mentally ill and sometime time people coming in there taking things I mean oh it with them growing up in England with a black person you don't have a real family I got my I had my grandmother <An> </An> road in <An> </An> my stepmother mm God rest her I I wish nothing but my head is just mixed up as <InAu> </InAu> <Lh> </Lh> I had a half sister I haven't got sisters back home but sorry in a in America one just died I think she's dead they send me to tell me she had a stroke she had bleeding on the

brain and I just cut off and I <InAu> </InAu> anyone didn't know why miss I I am talking to as miss she has never ever rang me and spoke to me yet they weren't poor I am poor but they're not and they never spoke to me I don't understand why so when they told me she was <WS> stroke </WS> I just cut off </26AR16>

<INT> I'm so sorry to </INT>

<26AR16> yeah yeah </26AR16>

<INT> to hear that </INT>

<26AR16> <InAu> </InAu> and it's not that I didn't feel for her you know when I first spoke to you <Gr> you was accusing your voice to talk to me </Gr> but because it's so near the <InAu> </InAu> <Gr> your parents your sister your brother to tell you a care </Gr> that I'm telling you that your v your voice change from from the f human your voice to your brain talking to me now it's the you know there's a thing with er when my kids are big we used to say <WS> skimpy </WS> and the brain with your body is skimpy and your brain you need both of each other to carry I'm erm <Lh> </Lh> my kids used to s which one we gonna do today what we gonna do today <WS> skimpy </WS> oh we gonna rule the world and then the next day say oh what we gonna do today brain oh we do the same thing we did yesterday <Lh> </Lh> </26AR16>

<INT> I used to love that show <Lh> </Lh> </INT>

<26AR16> yeah <WS> skimpy </WS> and the <Lh> </Lh> my kids are big now erm <An> </An> is thirty-five <An> </An> is thirty-seven they had their own flat but I know if you are young you had your own place everybody moved in there we b not mine in there for everybody wanted they're boys so yeah I have w er <An> </An> in America and I have erm <An> </An> is a housing officer and <An> </An> is a teach is a teacher he has two girls erm <An> </An> and <An> </An> but your mum is she's a <InAu> </InAu> with this fool <An> </An> you always worry about your <InAu> </InAu> that affec life <Ch> </Ch> <Ch> </Ch> </26AR16>

<INT> yeah er how do you mean </INT>

<26AR16> well do I <Lh> </Lh> <Ch> </Ch> <An> </An> hang on they have the open turn on the fan </26AR16>

<FAM> open up a window </FAM>

<26AR16> they're cooking just a small flat and they're frying <Lh> </Lh> I dunno I think they're cooking corned beef and rice </26AR16>

<INT> oh nice </INT>

<26AR16> <Gr> yeah I think about being gently </Gr> but like I'm a whinger <Lh> </Lh> did you <InAu> </InAu> anyways I know I do <InAu> </InAu> on there in a minute the phone will ring they will say oh you're selling out black people you're talking to this well at the end of the day they listen to me I have a friend that I borrow money from but I have to pay him back tonight because there it is I used to say to my <InAu> </InAu> come on one day when the white man they aint gonna do shit

for us because we always on about the devil devil devil and who I said <Gr> to my son who is behind the the bank who is behind soldier </Gr> and they say oh it's I said look I know the devil from in <An> </An> he s he aimed to pour shit on my head because two three o clock in the morning the bin man calling to go and empty the bowl they walking with a papa somebody try and do do on my head <Lh> </Lh> that's a different story tell you how old <An> </An> is and how wise she is yet they won't make me bring my kids up that way they say ah she teaching her kids rubbish no <Gr> I know from first hand </Gr> and you say how do you really look when you sleep I said I look <InAu> </InAu> I tell the truth <InAu> </InAu> we know what it is but you know some part a bit of fear <InAu> </InAu> don't hurt it's when they come big it's when they <WS> exalate </WS> and my eyes open when I had my son in England a boat I in a boat <An> </An> <An> </An> hospital when I was in there I see some things and know some things what do I say I know one day er where if I walk home to get from A to B by somebody because I was reading a leaflet a Jehovah Witness hand me a leaflet and you know we I go to every church I if <InAu> </InAu> right there I just go there and <Lh> </Lh> sit down and I was reading there and er it says d now don't think I'm on about this general business this bad good or indifferent I it says the devil said to God I don't know if it's true but it said in the book I don't deny you being God I'm not saying you're not God I'm saying you're <InAu> </InAu> damage the people so much that whatever you're gonna do to bring them back and make they don't look normal they say <Cl> </Cl> <Cl> </Cl> <Cl> </Cl> line up and I did read it by the time I read it I was back in <InAu> </InAu> road I think I told a lady called <An> </An> married to a guy called <InAu> </InAu> <An> </An> he's a preacher man now but if a she's dead <An> </An> died of some cancer Leukaemia or something but he's their pulpit preacher but you were say oh you and that I think that is why I said I'm so glad that I've probably reached my limit and can't go no further so that's it that's me there's a lot more but I wouldn't I wouldn't tell you because you're a human being and you don't want to say it's corny you want to like research it for yourself and I will I will try well yeah it's not easy going and being a woman especially if you have a lady to face but no no you know I wasn't even a <InAu> </InAu> <An> </An> a researcher from <An> </An> and her husband in the sports car and he good <InAu> </InAu> into that I remember you got fun with my friend <An> </An> I had er like a with w er we call them people that you look up to er her name was <An> </An> she took me to the <An> </An> <An> </An> and I became you know one of them ladies out with their baby you know ch you doing business I didn't even know she said yeah <An> </An> three pound I been running around with those English girls <InAu> </InAu> you know an adventure you do when you're young but when you get older you look back on them days and you think wow <Gr> them are foolish days </Gr> and you can't change nothing because people look at you as being that person but you see I had my boys they're very clever my grand my two two granddaughter one grandson and one great great granddaughter didn't do too bad for myself <InAu> </InAu> </26AR16>

<INT> it sounds like you have a lovely family around you </INT>

<26AR16> oh they're wonderful it's just ah a won I know I said one I worry about them I do I worry about them I worry about

mm one called <An> </An> and he's he giveaway he's a typ I don't know what er if stars are to go by but he give away his heart if I wasn't there well somebody said to them oh d oh what you gonna do when your mum died when your mum dies they just get on with their life people er a few people that I have close around me <Gr> I will said </Gr> I said to them <Gr> if I die will so be worried about them </Gr> they say you'd be surprised I get on <Lh> </Lh> they will they just do what they have to do I'm worried I don't worry how the world is going cos I don't wanna take God job away turn to the devil that he says oh <Gr> you have to pay me ever day </Gr> don't tell me if my I'll just repeat you the bank of <InAu> </InAu> there's one team there my son the tobacco that is what really they will say oh do you owe when he says do you owe money I will say to you that I was in my days growing up I never borrowed no money I never had no money and then one day I think <An> </An> <An> </An> which is <InAu> </InAu> when I was young I was working at <An> </An> or <An> </An> street and he sells bankrupt people and I didn't even know I had money <Lh> </Lh> to be to be call this working having bankrupt paper but they called me bankrupt and I had to go to so much and I'm not crying to you cos you probably could tell me a thing or two about what you're going through but you don't dwell on it and you not gonna hang yourself or cut yourself but it canes doesn't it it really does and we get through it if only we sit and talk we won't have to have mental illness that we can't erm like work out what happened there these are ghosting it is it a human and we'll we will find out we find out I tell you a joke I was watching this program when you I er some some safari Englishman let off a cracker in the middle of the dark in Africa and they had er what's that erm the night vision lighting and you should see the animals <Lh> </Lh> that made me laugh and so that's it that that's the end of us now innit </26AR16>

<INT> how do you mean oh you mean th </INT>

<26AR16> in the dead of dark night in the jungle they let off like a s a cracker and the and the mm dark it was too dark but they had the is it the night vision light to see and the animals and them was darting and <Lh> </Lh> was <Lh> </Lh> </26AR16>

<INT> <Lh> </Lh> oh I see </INT>

<26AR16> that made me laugh <Lh> </Lh> I said what naughty people could do that like a bit of fun </26AR16>

<INT> I see what it scared all the animals away </INT>

<26AR16> er he n no not away they let it off in the middle of the night or the jungle w it's dark with no moonlight and they fired a cracker and the t animals wh and the donkey and the t are just run er there were there's no lion I don't think they eat enough carrot to see in the dark but they were just going boom bumping into each other ah <Lh> </Lh> </26AR16>

<INT> oh I see <Lh> </Lh> so is there is there anything that we haven't talked about that you'd like to talk about </INT>

<26AR16> well ah <InAu> </InAu> now they say because when they say country man country man lend me your ear it's nice to talk because you can work it out when you sit down you're not telling a lie and it really does b wer say a lot about the person anyway your beep went off so I'm going to go now </26AR16>

<INT> oh OK erm th thank you so much for your time and for talking to me it's been so nice to talk to you </INT>

<26AR16> <DT> I didn't even <InAu> </InAu> I didn't even <InAu> </InAu> the question because it is not so much the question that you can't answer it's so much behind it </DT> my friend I said a friend of mine lent us some money because my son he got into trouble with his bus fare he didn't pay the right zone and you know can't pay won't pay wh <InAu> </InAu> they take it away they came here and fined my son one thousand two hundred and sixty some I didn't and I don't have that kind of money so I borrowed it so we have to pay it back and that's how life is but you know I aint complaining because at the end of the phone there's somebody who listens somebody who cares and not everybody there raping and cutting <InAu> </InAu> every day we look at the <InAu> </InAu> empty there busting each other's arse what's a <InAu> </InAu> probably eating each other then and somebody had my food in the cupboard anyway sir bye bye </26AR16>

<INT> so nice to talk to you thank you so much take care </INT>

<26AR16> bye bye </26AR16>

<INT> bye bye </INT>

<INT> there's only one interview question and it's everything else is just a chat around that really so erm and like we said before you know we t we talk for as long as you'd like to and as soon as you'd like to go you just say </INT>

<22AP15> OK yeah </22AP15>

<INT> I'd I'd like to go if that's alright and that's totally fine </INT>

<22AP15> yeah w so what university are you from </22AP15>

<INT> er Manchester Metropolitan University </INT>

<22AP15> mm <InAu> </InAu> yeah </22AP15>

<INT> MMU </INT>

<22AP15> yeah yeah er yeah OK OK th yeah that's fine yeah carry on mm </22AP15>

<INT> erm the question is do you feel like you do creative things with language </INT>

<22AP15> erm not really no no </22AP15>

<INT> OK i is there do you do you mind telling me more about why </INT>

<22AP15> erm I I find it quite hard communicating with people really </22AP15>

<INT> oh OK </INT>

<22AP15> y </22AP15>

<INT> like </INT>

<22AP15> erm </22AP15>

<INT> like how so </INT>

<22AP15> go on go on go on </22AP15>

<INT> oh no I was just I was just gonna ask like in in what ways </INT>

<22AP15> oh oh I got a mental illness that's why I'm a bit mentally ill I've got schizophrenia </22AP15>

<INT> and how does that d like in in what ways does that make communicating harder </INT>

<22AP15> I've I've got I erm I'd er I I I haven't had the experience to go out and do stuff like if you know what I mean <Gr> like chatting people to stuff </Gr> like that <TC> or quite I like </TC> to keep myself to myself really </22AP15>

<INT> I see yeah </INT>

<22AP15> yeah yeah erm </22AP15>

<INT> erm </INT>

<22AP15> how'd you put <WS> quate creativity </WS> in language how do m how'd you put that yourself </22AP15>

<INT> I guess I guess I think of creativity as like doing something erm new with something </INT>

<22AP15> <InAu> </InAu> </22AP15>

<INT> or like you know like building something or putting something together so I guess in language I'd interpret that as like using language to to make something unusual that's that's how I'd interpret the question </INT>

<22AP15> yeah yeah yeah </22AP15>

<INT> but that's </INT>

<22AP15> yeah </22AP15>

<INT> like one of the nice things about the study is that it's it's not about any one person's interpretation though so however you interpret that question is is what we're interested in but that's yeah that's how I'd interpret it I think </INT>

<22AP15> that's a bit <InAu> </InAu> as well yeah erm creativity I I find it <WS> ar </WS> <Gr> I find that hard hard question altogether really </Gr> <Lh> </Lh> it's </22AP15>

<INT> do you mind telling me a bit more about that </INT>

<22AP15> <Gr> what about my mental health illness </Gr> </22AP15>

<INT> well what w w erm </INT>

<22AP15> oh like sorry I <DT> I misunderstood what you said there </DT> yeah go on </22AP15>

<INT> oh just like w whatever you'd like to tell me about really in terms of it sounds like cos you said erm creativity in general </INT>

<22AP15> yeah </22AP15>

<INT> and in in the context of of experiencing schizophrenia that sounds like well that's that's a really interesting area that if you if you'd be happy to talk about that I'd really appreciate it but I don't want you to to f </INT>

<22AP15> erm yeah I've got an illness but yeah I'll talk about it I don't mind yeah I'll I've been ill since the age of about eighteen and I'm forty-five now but I'm getting better all the time hello </22AP15>

<INT> yeah yeah I'm I'm still here yeah I'm like I'm j sorry you can't see me nodding <Lh> </Lh> but I'm <Lh> </Lh> I'm nodding </INT>

<22AP15> yeah yeah yeah yeah yeah </22AP15>

<INT> but like that's really nice to hear that's really positive </INT>

<22AP15> erm yeah at the moment I've been really well at the moment <Gr> t tell r truth </Gr> I've er I get better er each year each year goes by I get a bit better yeah </22AP15>

<INT> and is that in the course of of getting better each year is it becoming is how you feel about creativity changing or </INT>

<22AP15> erm in some ways in some ways yeah yeah in some ways yeah I find it hard to talk about really it's a er one of them ones really </22AP15>

<INT> sure </INT>

<22AP15> but I don't mind talking about it briefly yeah </22AP15>

<INT> sure erm what kind of creative things do you like if you don't mind me asking like music art </INT>

<22AP15> I like <Gr> well tell you the truth </Gr> I was in art college when I was younger </22AP15>

<INT> really </INT>

<22AP15> got I like I like yeah I like art er er art drawing and that but I I like I like my music and that as well I like all the old rave music and that </22AP15>

<INT> oh nice OK </INT>

<22AP15> yeah yeah I went art college and I dropped out I was doing really well at the time and I become ill so I had to drop out I had already got a C grade and I was in for a B a B plus I dropped out six weeks erm before the end of the course and that yeah </22AP15>

<INT> oh I'm really sorry to hear that </INT>

<22AP15> I was quite a creative person when I was younger yeah yeah </22AP15>

<INT> and do you still do art </INT>

<22AP15> erm not often now and again I just not really no I wouldn't really do it now I was thinking of going back to art college but erm I decided not to bother in the end yeah </22AP15>

<INT> is it something you'd like to do </INT>

<22AP15> what at at the moment er well I I did have a job I had a job up to about f three four years ago I worked for the council seventeen years as a gardener </22AP15>

<INT> oh nice like </INT>

<22AP15> but er I used to do everything I was like grounds maintenance like fifteen pound an hour <Gr> but erm they saying now cos of my mental illness they say er </Gr> well cos of certain reasons I got sacked yeah </22AP15>

<INT> oh erm sorry to hear that </INT>

<22AP15> like I'm quite creative in the garden and that like doing all the planting out the flowers and stuff like that but it I got sacked <Lh> </Lh> yeah </22AP15>

<INT> being outside must have been nice as well </INT>

<22AP15> oh it's always nice being outside especially in the summer yeah so I've been out of work for about three and half years now yeah </22AP15>

<INT> do you s do you still get a chance to do any gardening or </INT>

<22AP15> erm <Gr> I got my dad's got allotment </Gr> I've just come back from there I so I go over there at times help out my dad </22AP15>

<INT> oh nice </INT>

<22AP15> it's like y it er what it's near it's nice to get out and that I been there earlier that's where I was earlier see cos of my mental illness I don't really go out or do much no more really you know I find it hard </22AP15>

<INT> is going out something you'd you'd like to do or is staying in staying in something that you is it like you don't go out because you choose to or or because </INT>

<22AP15> yeah er mainly yeah mainly a mainly cos I choose not to yeah I find it a bit difficult going out meeting people and that so I prefer like just stay in and watch TV or listening to the radio yeah I don't do much at all really yeah </22AP15>

<INT> cos you know I mean there's there's nothing wrong with with whatever </INT>

<22AP15> yeah that's it yeah that's it </22AP15>

<INT> whatever works for you know yeah like I think </INT>

<22AP15> either go in or out yeah </22AP15>

<INT> you know people should do what they feel comfortable doing </INT>

<22AP15> I would yeah I would like to go out at times but I feel like a bit uncomfortable but er s now the lockdown's over I th er w ending I feel a lot better so I probably will go out soon hopefully yeah </22AP15>

<INT> I well that sounds really nice and especially like hopefully round about in sort of as the weather starts to get nicer then the lockdown measures'll reduce and </INT>

<22AP15> er yeah yeah yeah </22AP15>

<INT> it'll be a really nice summer </INT>

<22AP15> I better go fishing yeah </22AP15>

<INT> oh sorry do you say you go y </INT>

<22AP15> I go fishing once the season starts once it's warmed up and that </22AP15>

<INT> oh I bet that's nice </INT>

<22AP15> it's nice just to get out and that for a few hours and that yeah I do like it I get out I've got my own flat you see so I get stuck in my mum lives mm my family lives down the road so I got my family to look after me and that but erm yeah I don't do anything creative no more er er y when I was younger I was really good at art very good at art but er I I stopped all that yeah which is a shame really yeah I should've stayed at art college shouldn't I really </22AP15>

<INT> well I mean like it's it's unf like it's unfortunate that you you became ill when you did but </INT>

<22AP15> yeah that's it yeah </22AP15>

<INT> you know y it's it's no one's fault becoming ill you know </INT>

<22AP15> <InAu> </InAu> I can still do yeah I still yeah I can still do it like if like adult education and that but I didn't get round to doing it again yeah I don't really do any anything creative really other than just like not a lot <TC> I'd like I find it </TC> hard to do anything really yeah </22AP15>

<INT> do you do you mind if I ask I'm a I'm </INT>

<22AP15> <InAu> </InAu> talk to you </22AP15>

<INT> keeping an eye on the time as well because I I I don't wanna keep you too long but like erm do you mind if I ask </INT>

<22AP15> go on </22AP15>

<INT> mm mm whether it's not doing the creative stuff so much is it like about interest or is it about things getting in the way or </INT>

<22AP15> I think it's just things getting in the way really </22AP15>

<INT> I see yeah </INT>

<22AP15> yeah yeah it's quite a an odd subject isn't it <WS> creative create </WS> er what you said yeah <Gr> <WS> create activity </WS> </Gr> and that yeah but er hopefully in the next couple of years <Gr> my life will turn around a bit better than what it's been yeah </Gr> yeah </22AP15>

<INT> I really yeah I r I'd I really hope so yeah </INT>

<22AP15> so er <DT> I'm sorry I haven't been very helpful <Lh> </Lh> with what you're saying </DT> </22AP15>

<INT> no no you've been very no no you've been really helpful </INT>

<22AP15> I've been alright </22AP15>

<INT> like I'd the the whole point of the study is to is to talk to people about er w like w what role creativity plays in in their lives at er at this point in time and you've totally answered the the question and helped me understand what what things are

like for you at the moment and w you know about what cr creativity what role creativity's played in your life and erm yeah I really appreciate your taking the time to to talk to me </INT>

<22AP15> oh brilliant yeah </22AP15>

<INT> and it yeah it really means a lot thank you </INT>

<22AP15> yeah it's b it's b it's been alright yeah it's been alright </22AP15>

<INT> and is th is there anything that we haven't talked about that you'd that you'd like to talk about </INT>

<22AP15> erm no not really everything's fine yeah everything's fine yeah </22AP15>

<INT> awesome OK well erm thank you so much for your time and I hope like I know sometimes erm sometimes these questions can be like you know be a bit uncomfortable and stuff and so er I'm sorry if they have been </INT>

<22AP15> <InAu> </InAu> really it's it's been alright talking to you </22AP15>

<INT> oh nice that's that's really good to hear thank you </INT>

<22AP15> yeah yeah </22AP15>

<INT> erm is it just before I go is it is it sunny there as well </INT>

<22AP15> yeah it's very nice it's sunny yeah it is very sunny <Lh> </Lh> </22AP15>

<INT> awesome well I hope erm hope you get a chance to to get outside in the sun or something or like but yeah </INT>

<22AP15> OK </22AP15>

<INT> thanks so much and have a really nice afternoon </INT>

<22AP15> OK thank you thank you er for phoning me like hopefully it's been alright </22AP15>

<INT> awesome </INT>

<22AP15> erm hopefully it'll go well with your research and that <Lh> </Lh> yeah </22AP15>

<INT> yeah no it's it's er like I really appreciate your time like everything everyone's saying to me is really helpful so thank you so much </INT>

<22AP15> OK OK I'll leave you for now then OK nice talking to you </22AP15>

<INT> you too thanks so much </INT>

<22AP15> alright then thank you bye bye </22AP15>

<INT> bye </INT>

<INT> do you feel like you use language creatively </INT>

<21UN11> mm er mm well I use language not not creatively you know what I mean </21UN11>

<INT> oh OK </INT>

<21UN11> and what is it erm my lang erm witty witty banter </21UN11>

<INT> witty banter </INT>

<21UN11> yeah that's what I usually come out with mate </21UN11>

<INT> I see like what what kind of things </INT>

<21UN11> yeah al always got er I dunno having a laugh a joke you know what I mean so always always coming out with stuff <InAu> </InAu> what what witty banter is you know what I mean </21UN11>

<INT> yeah did you say it's about having fun as well </INT>

<21UN11> yeah yeah </21UN11>

<INT> and what do you what do you like about that </INT>

<21UN11> well it makes people laugh it cheers me up you know what I mean </21UN11>

<INT> I see yeah and w what about banter like cos you mentioned creativity and banter like erm </INT>

<21UN11> language innit and witty banter is what language is type of talk </21UN11>

<INT> yeah yeah and what else do you like about language </INT>

<21UN11> ah like well erm relaxes you gets things off your mind have a <Gr> I usually having a laugh </Gr> <InAu> </InAu> know what I mean </21UN11>

<INT> yeah when you say relaxes you do you mind telling me more about that </INT>

<21UN11> yeah yeah </21UN11>

<INT> like </INT>

<21UN11> well when you when you come out with talk when you're talking you you come you come out with things that like what's on your mind and you you get <WS> thing your er things </WS> off your mind it relaxes your brain you know what I mean </21UN11>

<INT> yeah </INT>

<21UN11> <Gr> it's you they do say er y erm talk about </Gr> <InAu> </InAu> didn't they in other words er er unleash all my er I dunno all my emotions and that from talking you know what I mean it's <InAu> </InAu> talk about your problems it

er <InAu> </InAu> <WS> thing </WS> releases problems and having a laugh and joke you know what I mean </21UN11>

<INT> yeah er it the the benefits of talking th are they also the same when you do writing or is it more about talking </INT>

<21UN11> more about talking yeah I I <InAu> </InAu> enjoy talking <InAu> </InAu> I like reading books I'm interested in Dungeons and Dragons </21UN11>

<INT> interested in </INT>

<21UN11> Dungeons and Dragons </21UN11>

<INT> oh nice </INT>

<21UN11> it's a role playing game </21UN11>

<INT> yeah yeah </INT>

<21UN11> yeah I've got loads of mm d and dragons around here I bought eight books of it er hun about hundred and seventy two hundred pound of <InAu> </InAu> </21UN11>

<INT> when did you get into Dungeons and Dragons </INT>

<21UN11> er <TC> when er it yonks ago </TC> erm about ten years old no w mm twelve years old went to wow <InAu> </InAu> someone introduced me to Dungeons and Dragons yeah I played it during the school holiday and <Gr> I've started <InAu> </InAu> ever since </Gr> got interested <InAu> </InAu> </21UN11>

<INT> ah I see did you mention World of Warcraft as well </INT>

<21UN11> world of warcraft </21UN11>

<INT> yeah yeah cos did you say wow or or n </INT>

<21UN11> no er no erm I got interested in <InAu> </InAu> </21UN11>

<INT> oh right I see oh yeah yeah </INT>

<21UN11> you know what I mean </21UN11>

<INT> and </INT>

<21UN11> yeah I I I played w World of Warcraft as well with er erm I'm playing erm wargame at the moment called Conflict of Nations </21UN11>

<INT> I haven't heard of that one is it good </INT>

<21UN11> it's a brilliant war game it's got er I've played all round the <InAu> </InAu> all round the <InAu> </InAu> er you you got your own country got your own units you're supposed to be er expand take over the p the planet you know what I mean </21UN11>

<INT> oh OK </INT>

<21UN11> yeah are you want er yeah it's a war game it's Conflict of Nations it's called </21UN11>

<INT> is it like a strategy game or like first person </INT>

<21UN11> yeah it's a strat it's a strategy game yeah </21UN11>

<INT> oh nice </INT>

<21UN11> yeah I play role playing games like Eternal Fury and er mm Imperial Hero </InAu> </InAu> role playing games I play you know I mean </21UN11>

<INT> I see cos like a d role playing games p like especially Dungeons and Dragons like there's there's a lot of creativity involved in that I think d y </INT>

<21UN11> mm yeah it is a lot of creative mm erm I'm do my own scenarios read the books and you know <Gr> I met my own scenario </Gr> you know what I mean </21UN11>

<INT> and </INT>

<21UN11> I I'm watching yeah I like I wanna create my own erm oh </InAu> </InAu> you know what I mean </21UN11>

<INT> cr </INT>

<21UN11> like my own scenario so I can play next door with <An> </An> in the D M an b be in the game you know what I mean </21UN11>

<INT> I see yeah </INT>

<21UN11> I've got loads of books on it I'm my own </InAu> </InAu> and er </21UN11>

<INT> that's awesome </INT>

<21UN11> is it </21UN11>

<INT> does like so what role does creativity in language like play for you personally </INT>

<21UN11> what was that <Lh> </Lh> sorry mate </21UN11>

<INT> like what's erm what's important to you on a personal level about language and and creativity </INT>

<21UN11> oh erm I like I I love talking that's what language is all about obviously and creativity I like doing my own thing with you know what I mean it's creative er w <Gr> when you're making a mm big white piece of paper it's got in er mass of like er Dungeons and Dragons each and put monsters here monsters here er erm photograph of writing about the modules </Gr> playing on the map you know what I mean <Sn> </Sn> I'm trying to er talk about it but my m my mind's not s not relaxed enough so </21UN11>

<INT> I see yeah </INT>

<21UN11> </InAu> </InAu> <DT> do you know where I'm coming do you know where I'm coming from mate </DT> </21UN11>

<INT> I think so like do you mind telling me a bit more just so I can check if I if I understand </INT>

<21UN11> yeah er creating my own map on Dungeons and Dragons yeah and doing my own er small modules on the map you know what I mean t </InAu> </InAu> I I'm trying to explain that mm I I'm my mind's not relaxed enough to explain it to to you right now you know what I mean </21UN11>

<INT> I see yeah like erm but that sounds really really good like making your own scenario and </INT>

<21UN11> yeah erm I love I love to I wanna do that y you know what I mean so and like <Gr> correct my modules on computer for </InAu> </InAu> environment </Gr> and everything you know I mean </21UN11>

<INT> yeah </INT>

<21UN11> I'm very good at <WS> creative creativity </WS> I used to do that years ago from er my friends they used to call me creat er very creative er </21UN11>

<INT> and do you still like creative stuff </INT>

<21UN11> yeah and mm erm <Gr> once I'm going to a lot more relaxed </Gr> I start doing it </21UN11>

<INT> do you mind if I ask like </INT>

<21UN11> I was just start </InAu> </InAu> thoughts </InAu> </InAu> soon I'm gonna mm my mind's gonna be relaxed and I can start doing it you know what I mean </21UN11>

<INT> yeah what relaxes your mind </INT>

<21UN11> talking erm er </InAu> </InAu> <WS> occup er occupied observation </WS> <Gr> it's calms me right down </Gr> you know what I mean </InAu> </InAu> every single day my mind's trying to go fast every single day you know what I mean getting back to normal in in other words </21UN11>

<INT> right I see and do you like do you get a chance to d to do a lot of talking to people at like at the moment </INT>

<21UN11> yeah I I do if I erm if I need to I can you know what I mean </21UN11>

<INT> oh that's good </INT>

<21UN11> <Gr> you know nice talking nice talking to </Gr> </InAu> </InAu> not when I'm playing maybe but I'm </InAu> </InAu> like my talking to her </InAu> </InAu> let her go and that and you know what I mean </21UN11>

<INT> yeah </INT>

<21UN11> all this all these emotions rushing out my brain all the time faster faster eventually it's gonna come right down to a level that I'm back to normal you know what I mean </21UN11>

<INT> and does talking slow that down </INT>

<21UN11> no no talking speeds it up </21UN11>

<INT> right OK </INT>

<21UN11> when you talk it speeds up and gets rid of all the frustration from your mind everything you know what I mean when you talk </21UN11>

<INT> yeah </INT>

<21UN11> I'm talking now I'm talking to you now I'm actually r relaxing my mind as I'm talking to you at at the moment you know what I mean </21UN11>

<INT> that's good to hear that's like talk er yeah I I agree I think talking's really important </INT>

<21UN11> it is it just it just releases all the emotion and everything and calms down the brain and <InAu> </InAu> more relaxed do you know what I mean </21UN11>

<INT> yeah </INT>

<21UN11> lovely </21UN11>

<INT> so in terms of like creativity in in like a a broader sense like erm what do you like to do for for fun as w er like it er as well as like Dungeons and Dragons and stuff </INT>

<21UN11> w what so erm what do I like anything else you said </21UN11>

<INT> yeah like erm w what else do you like to do </INT>

<21UN11> er watch TV listen to the radio read books I like playing <InAu> </InAu> for an hour or two just erm I go to get my blood test and get something to eat from the takeaways and I <InAu> </InAu> more than that when I'm even more relaxed and that I go on bus journeys train journeys got <InAu> </InAu> park do it <InAu> </InAu> <Gr> and I get in buses like going museums cinema theatre the proms the works </Gr> you know what I mean </21UN11>

<INT> yeah </INT>

<21UN11> I'm not v actually coming back to er faster every single day getting a bit more motivated every single day now you know what I mean </21UN11>

<INT> yeah </INT>

<21UN11> I want to tidy up my flat I wanna erm oh tidy my flat I wanna er do do get things for my flat everything you know what I mean </21UN11>

<INT> yeah what do you like about the TV and the radio </INT>

<21UN11> oh I love watching TV I do like listening to the radio but I do love watching TV a bit erm watched train journey on yesterday's channel you know the one </21UN11>

<INT> I'm I only w f </INT>

<21UN11> it's great it's railway journeys I like watching that and erm what else impossible engineering and well <InAu> </InAu> I loved it <Lh> </Lh> erm what else yeah I like things like that you know what I mean </21UN11>

<INT> is that like what what do you like about the the journeys like the railway journeys </INT>

<21UN11> er Michael Portillo his name is he he have you heard of him </21UN11>

<INT> I think so yeah is it what like the way he hosts the program </INT>

<21UN11> yeah yeah he he goes to different places and mm goes to museums or different places where people used to be erm famous there you know what I mean </21UN11>

<INT> oh right like the history side of things </INT>

<21UN11> yeah the history side of things yeah </21UN11>

<INT> oh nice </INT>

<21UN11> yeah I like history like it you know what I mean it's nice I used erm used my <InAu> </InAu> do like watching TV and listen to the radio now and again </21UN11>

<INT> and what do you like about the radio </INT>

<21UN11> er I like music what do I listen <InAu> </InAu> what is it erm KISS FM I like listening to KISS FM the music do like music as well </21UN11>

<INT> what kind of music do you like </INT>

<21UN11> <InAu> </InAu> music you m you must know the song <InAu> </InAu> by <InAu> </InAu> </21UN11>

<INT> by who </INT>

<21UN11> Robin S show me love by Robin S </21UN11>

<INT> I don't think I know that one </INT>

<21UN11> er it came out in ninety three so er </21UN11>

<INT> what's it called I'll I'll write it down </INT>

<21UN11> show me love by Robin S </21UN11>

<INT> oh yeah yeah yeah yeah like a like a dance tune </INT>

<21UN11> yeah yeah yeah you I can type it into the computer now if you wanna listen to it you wanna listen to it </21UN11>

<INT> yeah yeah sure yeah I I think I know </INT>

<21UN11> do you know it </21UN11>

<INT> I think so yeah yeah like erm yeah </INT>

<21UN11> mm computers going on ah hold on I gotta put my password to get in to my computer <Sh> </Sh> <InAu> </InAu> going to take about a minute </21UN11>

<INT> yeah no worries yeah what do you like about the song </INT>

<21UN11> oh it's my favourite song it is back in ninety three </21UN11>

<INT> like for the nos nostalgia or </INT>

<21UN11> er er hold hold on yeah here we are there might be an advert before for about five seconds before it comes on erm number two innit </21UN11>

<INT> and with like song lyrics and stuff </INT>

<21UN11> yeah </21UN11>

<INT> do you when you when you find songs like </INT>

<21UN11> here we are </21UN11>

<INT> is it more about the tune or the lyrics or </INT>

<21UN11> here it is <Noi='Show Me Love' by Robin S> </Noi> know it </21UN11>

<INT> yeah </INT>

<21UN11> lovely song my favourite song of all time <Noi='Show Me Love' by Robin S> </Noi> are you getting that </21UN11>

<INT> yeah </INT>

<21UN11> <Noi='Show Me Love' by Robin S> </Noi> there you go OK now you know the song <Lh> </Lh> what else you wanna know mate </21UN11>

<INT> w whatever you wanna talk about and you know w we can we can talk for as long as you want to cos erm yeah I I just like chatting to people about about these things like music and and writing and speaking and stuff so yeah I I could ask </INT>

<21UN11> OK this do you do you study this at university </21UN11>

<INT> yeah so I'm like I'm asking people about how they feel about language and creativity and erm it's it's all part of a project trying to understand how people how they think about these things and how they define like language and creativity cos there's no there's no one definition it's erm so I'm just asking people what how they describe it you know </INT>

<21UN11> oh OK that's <InAu> </InAu> what university you go to </21UN11>

<INT> er Man </INT>

<21UN11> Manchester </21UN11>

<INT> yeah Manchester Metropolitan </INT>

<21UN11> oh my qu a few quite a few of my friends went to Manchester University </21UN11>

<INT> yeah Manchester Met and Manchester University are like er on the same road they're really close </INT>

<21UN11> oh OK yeah <Gr> I don't think you the same </Gr> <InAu> </InAu> </21UN11>

<INT> sorry </INT>

<21UN11> I don't think you're the same as my friends yeah </21UN11>

<INT> I'm er I'm thirty </INT>

<21UN11> no man you're not the same as my friends but er yeah got a few about three or four people I know from Manchester University so yeah OK </21UN11>

<INT> oh nice well erm is is there anything that we haven't talked about that you'd like to talk about </INT>

<21UN11> erm no not really </21UN11>

<INT> oh OK </INT>

<21UN11> I'm gonna get on I wanna get on with my computer game now anyways </21UN11>

<INT> yeah no worries </INT>

<21UN11> so er </21UN11>

<INT> listen thanks so much for talking to me it means so much I really appreciate it </INT>

<21UN11> oh OK that's alright mate </21UN11>

<INT> you've been really kind with your time thank you </INT>

<21UN11> OK that's alright </21UN11>

<INT> really nice to meet you and erm yeah have a great day and beyond </INT>

<21UN11> alright you OK I'm <InAu> </InAu> <DT> what I've done OK mate </DT> </21UN11>

<INT> yeah yeah </INT>

<21UN11> OK alright thank you </21UN11>

<INT> take care cheers <An> </An> </INT>

<21UN11> see you later </21UN11>

<INT> bye </INT>

<21UN11> alright man </21UN11>

<INT> brilliant so erm there's only one one interview question and the rest is just a conversation around that so the question is erm do you feel like you do creative things with language </INT>

<21AP15> do I do creative things with language y er erm mm mm what is that a trick question <Lh> </Lh> erm <Lh> </Lh> </21AP15>

<INT> no no </INT>

<21AP15> do I do creative things with lang I mean like i don't erm I mean language is like what the f the the sound that comes out of your mouth <Gr> do I creative things with it </Gr> like erm like making music is it er y erm mm what do you mean by that like could you elaborate on that </21AP15>

<INT> however you interpret it but if if you want </INT>

<21AP15> mm </21AP15>

<INT> me to make some suggestions or anything I can but it's it's more about how you er how you interpret that question </INT>

<21AP15> <Cl> </Cl> I don't think I do er <Sh> </Sh> creative things with language erm can you repeat the question </21AP15>

<INT> sure erm do you feel like you do creative things with language </INT>

<21AP15> mm <Lh> </Lh> no it's th this is a this is like a trick question language what does that language that <Gr> as we know it means like erm English language </Gr> like so you're using that language to express yourself </21AP15>

<INT> so if I if I'm erm ask it a different way </INT>

<21AP15> mm </21AP15>

<INT> like erm do you do you play with language like for your like like lyrics song lyrics or do you like do you like to do </INT>

<21AP15> mm <Sh> </Sh> no I mean I'm not I'm not I'm not a musician so erm I mean I'm sort of a shy person <InAu> </InAu> </21AP15>

<INT> sorry I didn't hear the last thing you said you're sort of </INT>

<21AP15> erm yeah er er like a sort of er I dunno what do I wan say erm <Gr> I was just thinking of what the question you said </Gr> so I was just trying to respond to it erm I don't r I'm not I'm a shy person so I wouldn't be using language to express myself whether it's through music erm I'm creative but erm <Gr> I'm more artist creative </Gr> so er using language to be creative I'm gonna say no </21AP15>

<INT> OK </INT>

<21AP15> directly so er I mean erm <Gr> I'm more of a experimental guy </Gr> er it's language er you're living in <An> </An> so I mean who do you express yourself to you've gotta

write a book to be creative someone's gotta purchase it or you know have forums where you can write stuff down and people will show interest in it erm I a actually I am <Lh> </Lh> I mean I like I like to make small written comments that rhyme yes I am actually I I just thought of it I am I actually I am am quite yeah I am very erm yeah <Gr> something I <InAu> </InAu> quite do so I am yeah </Gr> </21AP15>

<INT> d do you mind telling me a bit more about the comments </INT>

<21AP15> oh OK erm I mean I I I can't pull anything out immediately but erm I usually erm if say in social media stuff like that so erm I'm pulling that out of my brain so if I've done something or if I've put a picture up and you're representing it I like to use like <InAu> </InAu> possibly <Gr> or thing that rhyme </Gr> to express that as much as the language as much as the picture to sort of be like you said linguistic it's like <Gr> you know sort of communication to the picture as much as using language </Gr> so er er I dunno what that's called but erm my my experience of the <InAu> </InAu> erm <InAu> </InAu> rhyme songs that I've maybe heard that I could just like copy it down and just like comment about it like maybe quotes around it so that sort of thing so it's just like a title like cos that's how I use it so yeah I'm creative </21AP15>

<INT> I see and </INT>

<21AP15> er mhm </21AP15>

<INT> is it like and again none of these questions are like trick questions they're just like because </INT>

<21AP15> yeah </21AP15>

<INT> I'm interested erm is it is it cos it's fun to do or is it </INT>

<21AP15> <Sh> </Sh> mm no er it's not many people would understand it erm it's maybe for those people that do understand it most people haven't got the time to think about it so it's more for myself really and for the people that understand it it's like oh yeah I know that but er I'm not sure if they will know that I mean <WS> who reads a book who rings who reads a </WS> s paragraphs they don't so it's more of a short like a title if you er how else can I represent it so if I you have to be <WS> quick short </WS> and express it in as like as few words as possible so yeah maybe if it rhymes it sounds good it's good to the er you know ear sort of if you read it out loud but erm maybe to create er attract that attention that you're you know searching for really on social media so erm yeah er </21AP15>

<INT> and because you mention </INT>

<21AP15> what else </21AP15>

<INT> people some people will will get it and some people might not get it because they might not know the reference </INT>

<21AP15> mhm </21AP15>

<INT> is it is it quite a helpful way of then finding people who know the same references </INT>

<21AP15> well maybe then it's erm your <Gr> you want that you know incite people </Gr> you wanna be friends with like people that understand you so anyone that understands it is either the same erm age you know experience you know friends <Gr> yeah be we your friends </Gr> basically wouldn't it because it's people that you've exp you know you've been growing up together with so if you understand it they should understand it and whatever it's you know so it's er you're you know you're attacking you know that that same age group maybe or even older you know </21AP15>

<INT> I see </INT>

<21AP15> definitely older and s I dunno I dunno I've never really thought of it like that so er but mm thinking about it it's just me you know I mean er <Lh> </Lh> I <Gr> I dunno the er specifically it's just erm the way of not right </Gr> cos <Gr> it's kind of boring to read something for anyway </Gr> you've got so many you know so many things to look at and <InAu> </InAu> stood there reading something for ten seconds maybe it's too much maybe you need <Gr> something for two three seconds before er scroll up and down </Gr> so by the time you've scrolled up you've gotta read that quick enough to <WS> thingy </WS> and then <Gr> you may create them to be just mm look at it </Gr> and that might be the picture or it might be the picture first or the writing second so erm <WS> it's like you know you gotta snapshot of people's eyes </WS> to filter that information so that's how it is I think I dunno I mean I'm just zooming into it I'm thinking into it now analyse it as much as you're gonna probably do as well </21AP15>

<INT> that's good that's like </INT>

<21AP15> well yeah </21AP15>

<INT> that er that helps cos you know that that means that I don't have to er like wonder what these things mean for you </INT>

<21AP15> mhm </21AP15>

<INT> if you're telling me what these things mm mean for you do you know what I mean like that's that's er a a good thing to </INT>

<21AP15> yeah </21AP15>

<INT> to be analysing it in in the course of talking about it </INT>

<21AP15> exactly </21AP15>

<INT> like I have loads of questions about what you've said like </INT>

<21AP15> <Lh> </Lh> OK </21AP15>

<INT> whether is it would it be fair to say that there's a lot a lot that doing things like that with language on social media allows you to do at the same time like it allows you to say complicated

things quickly to people who are similar like have similar interests </INT>

<21AP15> mm erm sort of like <InAu> </InAu> you know <InAu> </InAu> we're <DT> we're going on to you talking </DT> so er can you repeat that question again and then erm you're like I've lost you </21AP15>

<INT> oh sorry erm y I was just wondering if erm it's it sounds to me like some of the stuff that you're doing with language creative stuff that you're doing with language erm has a lot of different uses like it might allow you to say a lot with a few words </INT>

<21AP15> mm </21AP15>

<INT> and stuff like that I I just wonder if I've if I've understood that right or if I'm </INT>

<21AP15> yeah erm <InAu> </InAu> I mean talking <InAu> </InAu> so yeah <InAu> </InAu> </21AP15>

<INT> oh OK and you mentioned that you do a lot of like visual art </INT>

<21AP15> er erm hi there </21AP15>

<INT> hi I'm sorry the signal the signal dropped so I lost the call </INT>

<21AP15> yeah yeah sorry about that I thought er I mean I'm using my er erm earphones <Lh> </Lh> my earphones so I wasn't sure if it was me but I don't know why that happened but yeah go ahead </21AP15>

<INT> I I can hear you really well now erm </INT>

<21AP15> mhm </21AP15>

<INT> er yeah erm cos of the signal I missed the last thing you said about erm or the the your response to the last question about whether this kind of creativity with with language or or doing things with language erm like has f has different uses and stuff but then I was also thinking about you said you like to do a lot of like visual art and I'd I'd love to know more about that if that's if that's OK </INT>

<21AP15> yeah er yeah I mean erm f I mean photographers I mean er I I've just met a photographer who's not too long ago and erm I I show interest in that because I do take pictures and er mis just aligning just like trying to get a good snapshot of it so erm it's more of a real life picture that I would do er not creative it's like real life I've experienced it and it's like wow like you know I've been able to capture that moment so it's erm probably er a real experience that I've had and er I just like taking pictures of it like a photographer would so erm I show interest in that I don't have er I don't have the equipment to take good pictures erm just like a normal phone a standard phone <Gr> but erm like angle you know </Gr> maybe not even exposure I'm not really bothered with that but and you can edit that afterwards so erm I just like taking pictures I like taking pictures it's a history as well for me so w when you get bored you just go back through and you know oh this is what I did last

year so is it meant to be you know oh same thing last year you know you're doing the same things or you're not doing the same things so er just like to take pictures and just look through it in my spare time it gives me you know <Gr> I've got a highly big memory on my phone so it's like an archive </Gr> it's like my erm history </21AP15>

<INT> that's that's really cool so I so like erm </INT>

<21AP15> mm </21AP15>

<INT> erm like like an archive of experiences like going back and </INT>

<21AP15> I mean I could yeah I mean I I've er I've shown interest in a lot of things and erm <TC> I tend to I mean </TC> saying social media I don't put everything up on social media I'm not one of these guys <Gr> I just like to put the best possibly </Gr> or what triggers you a moment for me so erm I I could probably mm I've put enough pictures of food to you know have an Instagram page of food for years you know could put it up every day so erm these these are but I I I don't share this I mean I don't I don't share my food every day you know you got people that just like put on makeup and s er show their faces or whatever it is er I'm not that sort of person so I'm kind of more creative I mean <Gr> if I've done food I've done one food </Gr> and I wouldn't see the reason to repeat that over and over again because it gets kind of boring so er going back to social yeah social media of like wording I y er I think it's important <Gr> to you know not be repetitive of the same thing </Gr> then it just shows your character erm so I'm a creative person possibly and because you know some of them look at that in years to come and you're scrolling through someone's time you know makeup without makeup or I don't know like you know daily stuff food you know this is daily stuff as well so it may not be makeup <Gr> it may just be like food with ketchup without ketchup erm type so on so erm </Gr> being creative's like that as well </21AP15>

<INT> yeah </INT>

<21AP15> <WS> it's explaining me I mean it's explaining me </WS> er this is it so I I suppose social media is one of these things that er is deeper now digital world we're in the digital world so erm although I like to be real so it's real pictures but er it's seen as a digital image by other people and er in a digital world <Lh> </Lh> mm yeah but yeah erm I I'm just yeah <Gr> I got nothing else to say with saying yeah </Gr> so <InAu> </InAu> go ahead any more questions </21AP15>

<INT> that just well no I d I really like w what you said there about you know the digital world and </INT>

<21AP15> yeah I mean sorry like it's not deep it's just like you know I don't think it's necessary right now but erm it's just how pe how it really is like I've mentioned real pictures and then we're going to digital it's like wandering someone wanders in their bedroom looking at the ceiling thinking oh this and this is the <WS> fat </WS> I mean erm software testing so er I have a sort of into into software so I understand the backend of like what creates er transfer of data through satellites etcetera even physical you know <InAu> </InAu> software as well so I have a good insight and I understand it so er it's a bit freaky

to some people maybe because I'm good at maths as well some people don't even know how to you know er er use maths er so I have good insight into life </21AP15>

<INT> yeah that that sounds </INT>

<21AP15> you know I mean because everything th everything merges together linguistics as well it's communication pictures you know this is er this is how people these are professionals in different areas that can now focus on that focus on linguistics and you know I dunno what to say here but erm it's just like one of these things that we're communicating now </21AP15>

<INT> it's it's all interesting stuff and like </INT>

<21AP15> it is yeah </21AP15>

<INT> it it just generates like even more questions I'd like and I erm one thing I w I was gonna ask erm about the the photography was erm like originality important to you </INT>

<21AP15> erm er originality erm now no <Lh> </Lh> but erm I mean if I well understand the question er what do you mean by that </21AP15>

<INT> well just in a in a general sense like is cos I remember you you said about how sort of repetition can be quite boring and seeing the same things on social media </INT>

<21AP15> mhm mhm </21AP15>

<INT> and people posting the same things </INT>

<21AP15> mhm </21AP15>

<INT> and so I was wondering if like it's quite nice to have just a bit of originality every now and then </INT>

<21AP15> mm yeah erm yeah being a bit unique I suppose erm I mean I I'm sure the pictures I've got everyone else has got but then I haven't got one of those pictures er <Gr> at the time space in time </Gr> do you know what I mean like in the future or now so it it how important is that as well I dunno er how erm for me yes I mean when I take a picture if I've got something unique er it represents me again so but erm yeah </21AP15>

<INT> when you say it represents you do you mind t telling me a bit more about that cos like that's </INT>

<21AP15> er I mean I I t er I mean I don't think it's that important I mean I'm I'm just sort of trying to get into my thoughts my things and I'm sort of drawing out of that now so I mean you <Gr> you said there was interesting things yes </Gr> but erm it it's how I feel right now it's like whether I wanna open out to those things erm I I felt them <Lh> </Lh> I felt some things that I said I felt them so but erm I don't wanna really talk about like </21AP15>

<INT> sure </INT>

<21AP15> like right now like you know yeah original of course mate when you say it that way </21AP15>

<INT> yeah sure </INT>

<21AP15> yeah original you know maybe that's how it is erm yeah I mean you need to be unique you need it to be you need to be you at the end of the day so that's er that's that's the thing I suppose </21AP15>

<INT> yeah </INT>

<21AP15> mm you know </21AP15>

<INT> like erm just so you know as well if like if there's anything that you don't wanna talk about you like totally don't have to talk about it's just like erm and we we talk for as long as you want to as well like I don't wanna erm </INT>

<21AP15> mhm </21AP15>

<INT> I don't want you to feel like you have to stay on the phone longer than you want to or anything erm </INT>

<21AP15> mhm no it's </21AP15>

<INT> but I'm I'm just enjoying chatting to people and erm and yeah so it's you know yeah I don't really really have any other questions other than things like what creativity means for you what what language does for you erm whether it's something that you like to use or erm or whether things like images and visuals are more important or like you say how they're all connected erm but yeah any like anything that we haven't talked about that you'd like to talk about </INT>

<21AP15> mm yeah erm I mean I mean erm being creative I think the the most creative the best creative thing is life to be honest I mean we can be individuals but the best thing that you know capturing a moment in life real you know erm nature possibly you know art you know <Gr> being a artist </Gr> is one like it's that pers that person individual how he mixes the colours or draws something but er the most creative thing is real life capturing that that's me I think erm as if my personality if you want to make a note of that <Gr> so I like to capture that real you know </Gr> it's not like made up art you know mixing black and blue and oops I put a bit too much white I don't focus on that too much you know so erm that's what pictures are to me so that's how I like to be creative </21AP15>

<INT> that's </INT>

<21AP15> so you can't go wrong you can't go wrong with real life that's life it's a moment it's no one can dispute it no one can grade it who cares about the grade that you get you know at the end of the day so er you know I did art at school or I passed with like good er good grades you know erm that was me drawing but the real art is life I suppose that's what we really wanna do that's to live happy lives </21AP15>

<INT> that's a really nice way of looking at the real world you know just like </INT>

<21AP15> yeah mhm </21AP15>

<INT> cos it </INT>

<21AP15> and it gives joy now because th you know lockdown go out you could go out to the park you can't go here there you

can't get distracted by what life erm gives you or individuals give you just go into the park and you see nature analyse that then like you know go back home lockdown and do what you gotta do ey if you're miserable then fix it you know you go back to the park go for a little walk have you fixed yourself yet <Lh> </Lh> <WS> well go back in and out in a line </WS> until you fix yourself be happy what else can you do what else can the government do I suppose erm I mean I'm not I'm not about j bout I'm not saying the government what the government does is a good thing but er I'm just saying like you know where we have to be our own doctors </21AP15>

<INT> it's yeah it's disconnected a lot of people hasn't it </INT>

<21AP15> yeah </21AP15>

<INT> lockdown </INT>

<21AP15> mhm no it it's become <Lh> </Lh> normal now hasn't it like the it <InAu> </InAu> I've read we're gonna through like the third possible lockdown I mean how did I get the information I think I read it somewhere and <Gr> I also haven't got time to read or watch this news now </Gr> because it's just the same over and over again I was injured and I had no other thing to do but you know just <InAu> </InAu> around me but now I'm more active with my legs I'm trying to I mean it does hurt but erm <Gr> I wanna spend less time on other people's informations </Gr> and like and be real again like I said like you know need to like live life in their real form so reading stuff third lockdown hey someone's got a plan for that now what have you done with your time that's more <InAu> </InAu> important because you s gonna be locked in your house again is that the case you know so erm work work work <Lh> </Lh> </21AP15>

<INT> yeah </INT>

<21AP15> earn that mo er earn the benjamins that's it </21AP15>

<INT> yeah </INT>

<21AP15> different times <Lh> </Lh> yeah I don't know like yeah it's hard out there right now there isn't any and the government's like put a halt on that as a <InAu> </InAu> so what we crave for is not there anymore what happened to it you know it's getting swallowed away by somebody I mean it's just not there I don't know live within your means and that's it </21AP15>

<INT> yeah </INT>

<21AP15> you know and that's that's the nation </21AP15>

<INT> so do you get a lot of time to like do photography at the moment </INT>

<21AP15> mm come on now yeah sorry </21AP15>

<INT> do you do you get a lot of time to do the photography at the moment </INT>

<21AP15> er I just missed that do I get the time to do that bit sorry </21AP15>

<INT> the the photography like </INT>

<21AP15> oh er y erm mm yeah sometimes I mean it it's gotta be in a particular location it's gotta be it's gotta be right there's no point taking a picture if it's not right so erm sometimes I can but I I'm doing less of it because I'm er <WS> I'm trading it for cash </WS> the perfect location is for me right now is er my creativity is er I'm doing a little project so that is it has be in a particular location and <WS> I've traded it for cash </WS> <Lh> </Lh> I've surrendered to the money </21AP15>

<INT> I see yeah w it it's tough isn't it with like we you know it'd be nice to have the time to do mm what we wanna yeah it's hard it's a hard balance like </INT>

<21AP15> mm yeah s I mean you probably you probably don't understand that because you don't know what I'm seeing what I'm feeling what I'm looking at but erm just to break it down to you what I mean by that is erm I'm doing something er a little project of mine and a er bit of creative work and er I've been taking pictures of that but then er <Gr> I'm not able to take pictures anymore from that <WS> positions position </WS> </Gr> or location because <Gr> there was a start and a end to it so that location I can't pictures with </Gr> so I'm not taking pictures anymore because erm I I'm not a <Gr> I'm not able to that to that position </Gr> I've rented out somewhere <Lh> </Lh> I've rented it out so I can't go to that location </21AP15>

<INT> I see what you mean yeah </INT>

<21AP15> so that's what I mean yeah I've rented out a room it's from a <Gr> it's a picture from a room window </Gr> I er and there's no point taking pictures there from another angle it doesn't mean anything to me so er so then it might mean might be something I share as well so I'm not sure <Gr> I have a archive like I said </Gr> it maybe I do or maybe I don't but my archive is my folder on my phone </21AP15>

<INT> does that mean you'll you'll finish the project later or </INT>

<21AP15> it just means no er er the pro it's ongoing but erm having a picture of erm that er I if y if you're talking about being creative like if you know taking pictures I'm not able to take pictures from that location it was it er it was a perfect location for a picture so like I said to you like you know </21AP15>

<INT> I see </INT>

<21AP15> you've gotta get the exposure the lighting there's no point taking a picture facing the sun </21AP15>

<INT> yeah </INT>

<21AP15> or with the camera facing the sun and er you know cos y know that wouldn't be a good picture so erm this is like one of those things I'm just trying to explain to you because you thought you understood me but er maybe you're talking about your own experience er yeah you understand do I need to understand you <Lh> </Lh> but erm er we're just

communicating here but erm it is just that erm sorry <Lh> </Lh> if I've upset you </21AP15>

<INT> no no not at all no it's it's good to be corrected cos there's no point like </INT>

<21AP15> yeah yeah yeah like like you are </21AP15>

<INT> there's no point me thinking one thing and and it's that's </INT>

<21AP15> yeah I mean I didn't want you to go off in a particular angle cos so erm cos you're trying to analyse me and er erm you know </21AP15>

<INT> oh sorry no no I'm just I just erm I'm just asking and if there's anything you don't wanna talk about you just say I don't wanna talk about that and </INT>

<21AP15> yeah I don't talk about you <Lh> </Lh> </21AP15>

<INT> you w sorry </INT>

<21AP15> I don't talk about you </21AP15>

<INT> OK </INT>

<21AP15> er it's a joke but OK </21AP15>

<INT> well if if you want I mean I I don't mind </INT>

<21AP15> er erm no no no it's al I've got things to do we've been on the phone more than twenty minutes s er actually sixteen minutes <InAu> </InAu> </21AP15>

<INT> OK </INT>

<21AP15> <InAu> </InAu> so yeah I dunno <An> </An> so erm do I hear back from you <Gr> are you gonna phone me more frequent </Gr> or er how is it are you analysing this er what's gonna happen </21AP15>

<INT> so erm after after this call I will type up our conversation into like erm like a transcript </INT>

<21AP15> mhm </21AP15>

<INT> and then I'll do a couple of different forms of analysis on it so one will be erm just looking at the content that we talked about and </INT>

<21AP15> mhm </21AP15>

<INT> erm what er things like what words come up in relation to creativity </INT>

<21AP15> alright </21AP15>

<INT> and like how our conversation was structured and that sort of thing erm </INT>

<21AP15> mhm </21AP15>

<INT> and if you want I can send you a copy of the results but
</INT>

<21AP15> oh right </21AP15>

<INT> in order to do that I need like an e-mail address or
something </INT>

<21AP15> mm yeah </21AP15>

<INT> and er yeah there's like a a mailing list for people who
who want updates on the study and I'm I'd really like to like
share updates if if you'd like to see them and stuff </INT>

<21AP15> yeah yeah yeah definitely I mean erm to be honest
er er <Gr> I sort of talking to you </Gr> I sort of like you know
pondered into my world and er into that sort of you know I
dunno that world and I felt something oh interesting you know
er we don't really do that and it it's kind of scary as well like oh I
felt that something erm it was a different it's a feeling I think so
I was like well you know I'm not sure how to erm express that
but erm <Gr> I felt that maybe if I read your stuff erm I wanna
see how it sort of looks </Gr> </21AP15>

<INT> sure </INT>

<21AP15> you know I w what you see from it but you know I I
felt something just like wondering into my world and into my
brain and <Gr> like this that and the other and expression
</Gr> and it it it it it it it captured something as a feeling
for me as well <Gr> as much as catching something feeling is a
is a point you know </Gr> so reading your stuff we'll see how it
<Gr> how that feeling relates to your language writing </Gr> so
erm but anyway but g w yeah I'll I'll give you my e-mail address
shall I text you on this line </21AP15>

<INT> yeah yeah </INT>

<21AP15> or </21AP15>

<INT> yeah that'd be that'd be ideal yeah and then erm it's all
anonymous and stuff so erm no one else'll see your e-mail
address but you'll just get an e-mail er </INT>

<21AP15> alright </21AP15>

<INT> like that's that's addressed to many people but no one
else can see anyone else's e-mail addresses </INT>

<21AP15> oh yeah </21AP15>

<INT> and it'll have updates about erm the study and stuff and
</INT>

<21AP15> mhm mhm </21AP15>

<INT> erm the m the main thing er is that I I r I hope that it was
an enjoyable chat like I'd I'm aware that </INT>

<21AP15> sure </21AP15>

<INT> some of the things that we that we talked about might
not have been things that you wanted to talk about so I just

wanna say I'm I'm sorry if if it wasn't enjoyable at at points
</INT>

<21AP15> mm </21AP15>

<INT> but I really I really hope points were enjoyable as well cos
I just like talking to people that's th </INT>

<21AP15> yeah yeah yeah er th er we all do I mean we all do
erm like definitely yeah I mean erm yeah send me this stuff and
you know if we do talk in the future then erm it'd be er nice you
know to see where it goes </21AP15>

<INT> yeah </INT>

<21AP15> because we don't know what we're doing with this
stuff like it aint like I don't know what I'm doing either <Lh>
</Lh> no one knows what they're doing </21AP15>

<INT> that's it you know like if er </INT>

<21AP15> <Lh> </Lh> yeah it's er a one of those things that
let's see what we're doing let's see what we can do let's like I
always think of it as a positive thing let's use this and do good
things with it </21AP15>

<INT> yeah yeah I agree erm thank you so much for your time
and for talking to me it means the world </INT>

<21AP15> yeah sure aw thanks erm yeah it was good talking to
you as well </21AP15>

<INT> and erm yeah I I hope you have like a really nice really
nice afternoon as well </INT>

<21AP15> yeah I do as well yeah yeah <Gr> I'm mean </Gr>
erm like itching to get out so er yeah I'm gonna make a coffee
and like head out so erm you have a good day as well <An>
</An> </21AP15>

<INT> yeah </INT>

<21AP15> and I'll send you my e-mail address and <InAu>
</InAu> talk in the future I don't see why not like you know
<Lh> </Lh> why not take care <An> </An> </21AP15>

<INT> yeah you too thanks so much </INT>

<21AP15> alright bye bye </21AP15>

<INT> and we'll I'll send you some updates take care </INT>

<21AP15> yeah sure thanks thanks a lot bye bye </21AP15>

<INT> bye </INT>

<INT> so there's erm it's an interview with only one question really and it's about language erm and it's do you feel like you do creative things with language </INT>

<21AN11> how do you mean language </21AN11>

<INT> erm speech writing whatever it means to you really </INT>

<21AN11> well the only problem I got is learning difficulties speech language and all that sometimes I get very erm emotional<Gr> because erm my problems </Gr> and then and <DT> as I said </DT> I've got learning difficulties erm er I have learning difficulties so like sometimes I get panicky </21AN11>

<INT> OK </INT>

<21AN11> you know and er it e effects my my feelings y I mean and my feelings what I'm feeling inside you know and like s an the erm feelings that I got is erm maybe <Ch> </Ch> I get upset sometimes over nothing y I mean where I think of something you know erm I get upset over nothing so that's af affecting me in my own way my illness y I mean erm but <Lh> </Lh> er an the thing is with with my problem is that <Ch> </Ch> that's the reason <Gr> why we need reduction in my medication </Gr> maybe it will help </21AN11>

<INT> I s </INT>

<21AN11> er I don't wanna have a relapse as the doctor says y I mean erm you know I know I have got problems y I mean I have a lot of problems you know <TC> I'm the thing is </TC> that I can't get on with my life and <Gr> without me not thinking </Gr> you know I mean I mean <Gr> if I could think for my own problems </Gr> then I'm sure things could work out for me you know to work to study my life an to study what's really going on the reality of my life y I mean people be saying to me I really I have a problem I have a problem big time you know mate as I said it may look good on the outside but on the inside it's telling a different story you know and people said to me what I go through basically is what I go through is my problem people say it's my own fault but I don't think it's my own fault <Gr> I don't think from the day one I was born </Gr> I didn't realise what was going on as a a young as a a young child like every young child erm is like every other child y no I mean you weren't brought up to hate people you what I mean </21AN11>

<INT> I see </INT>

<21AN11> and like erm when you get older like my age and then you know the differences between people the way people feel you understand the way people you view people feeling gross do y I mean so it's a gross feeling you like you like you know of envy and jealousy people are jealous of seeing each other and like <Gr> had me going through this years </Gr> like I is when I went to school I thought I was like any other teenager you know yeah as an eighteen nineteen year old I wanted to study I wanted to do things that were right you know I wanted to get on with my life you know <DT> I know I I'm going on a bit </DT> </21AN11>

<INT> no no it's it's </INT>

<21AN11> <Gr> but problem is </Gr> is like people say to me I'm a fifty-five y know what they say I should write a book of what I'm going through y I mean and I'm talking about spiritually y I mean you know spiritually erm spiritually someone as I said when I said to you just a min ago it's it's they say people say it's my fault y I mean erm yeah it could be my fault but I don't think it is my fau I think I'm not responsible for what I'm going through y I mean </21AN11>

<INT> I don't think so either </INT>

<21AN11> alright yeah exactly thank you I'm not responsible for wh I what I'm going through believe me people know people know y I mean they know body language y I mean they know an I have problems y I mean I do have problems and like basically I got to try and pick up the problem mm y know I've got to try and think or find a way of thinking to get myself out of these problems y I mean and this is why I get panicky you know you know I you know I I do have problems y I mean but I can't think to sort them out and every time you know when people say you need to solve your problems you have to think to solve your problems y I mean you know </21AN11>

<INT> yeah </INT>

<21AN11> it's hard the feeling is hard I have no feelings know I mean I have no feelings I have no feelings I feel numb and <Gr> that's what make life difficult for me </Gr> I have no feelings yeah but that's why I'm saying some people take advantage of my weakness you see because I've got no feelings they take advantage of my weakness y mm </21AN11>

<INT> in in what way </INT>

<21AN11> wha </21AN11>

<INT> in in what way do they mm take advantage </INT>

<21AN11> well they sa they they see something that's good inside me that's when you say like erm they don't like to see nothing they they've seen something that is something good inside me there's something good y I mean </21AN11>

<INT> yeah </INT>

<21AN11> and they don't like it y I mean I mean we all breathe we all breathe the same air y I mean but we have different thinking y I mean different thinking you know y and erm w erm </21AN11>

<INT> so am I right in thinking you feel like sometimes people take advantage of your good nature </INT>

<21AN11> yeah </21AN11>

<INT> yeah </INT>

<21AN11> because they see something good but they don't like it it it upsets them like they have a problem with me listening y I mean if I was a lis er f <TC> if I'm a </TC> very good listener y I mean I I I listen in reality I listen crystal clear it's mm I may not think the other way the way other people think but I think the way I think </21AN11>

<INT> yeah </INT>

<21AN11> y I mean I think for me I got my <DT> as I said </DT> that's why I say I got my own problems <Gr> I have to think for my problems </Gr> y I mean and like when they know that you think you know when you breathe the fresh air then they they ha they have a problem with me listening right I breathe the air they get upset why they get upset I don't know y know they look me in my face dunno cos they know something that I don't know y I mean I'm telling you it took it may be a pat a part of my mm mental illness but I'm not stupid cos I know what I'm talking about y I mean </21AN11>

<INT> yeah </INT>

<21AN11> y know and they look in my face and I think to myself wh why are they looking in my face what y I mean </21AN11>

<INT> and what </INT>

<21AN11> and like and when when I have to do li a bit of shopping I'm I'm not paranoid I'm I'm not paranoid I tell the truth when I do a bit of shopping they're focusing on on what's going in my bag not focus not they're not focusing on <Gr> their self </Gr> but they're focusing on what's going on in my bag y I mean now I'm a clever clever man a very clever clever man an like I don't really take crap from nobody y I mean </21AN11>

<INT> yeah </INT>

<21AN11> I'm a very very clever man and like if I could think for myself I could have nothing to do with the people who are very envious and they're jealous of what you've got y I mean because how can you be jealous of a person that you don't know how can you be jealous of a guy of something that he's got y I mean </21AN11>

<INT> yeah </INT>

<21AN11> do do you understand where I'm coming from mm I'm sure you must understand where I'm coming from </21AN11>

<INT> I feel like I do yeah </INT>

<21AN11> yeah y right so that's the reason why I'm saying I didn't think if I did think I would not have been a mentally ill person believe me because I thought that I could handle the situation as a youngster I'm upset I'm a very angry man I'm angry and as I said I'm not responsible for my anger y I mean <Noi=unknown noise> </Noi> I mean </21AN11>

<INT> yeah </INT>

<21AN11> I'm hurt I'm hurt y I mean and I got these people playing with my feelings all the time and I have to consid I have to say continuously I have to say you have to listen y I mean </21AN11>

<INT> yeah </INT>

<21AN11> you have to listen you must listen to people take advice from people and then if you listen you know where you stand with people there's a difference between two y I mean you know where you stand </21AN11>

<INT> yeah </INT>

<21AN11> you can't take advantage of your weakness y I mean </21AN11>

<INT> yeah </INT>

<21AN11> <Noi=voices in the background> </Noi> and that's what I mean you have to listen you know what you listen you know where you stand people can't take the mick they can't take the mick out of you I won't say the p-word y I mean y I mean </21AN11>

<INT> yeah </INT>

<21AN11> then they're saying wha when you think you're a dangerous man y I mean then they think well look this guy's not as stupid as he looks I was y I mean </21AN11>

<INT> yeah </INT>

<21AN11> yeah </21AN11>

<INT> do you feel like people don't listen when you talk to them </INT>

<21AN11> people don't s er it's not about about listening people don't care people got their own problems y I mean people got people think for themselves life goes on y I mean life goes on that's the reason why I want to get on with my life y I mean I ain't got a life to live I got no time for er playing mind games </21AN11>

<INT> yeah </INT>

<21AN11> I got no time for it y I mean because mind games right is a dangerous thing very very dangerous you know right </21AN11>

<INT> yeah </INT>

<21AN11> believe me I won't keep you long </21AN11>

<INT> wh I I'm enjoying talking to you but you know you know you tell me wh how long you wanna talk it's you know it's totally up to you </INT>

<21AN11> well er that's cool I'll talk but mind games right <WS> is the book er </WS> <DT> are all the questions finished </DT> or whatever </21AN11>

<INT> that that was the only question the the rest is just a chat about that that's it really like how </INT>

<21AN11> like I'm having a chat with you now yeah </21AN11>

<INT> yeah yeah </INT>

<21AN11> OK sir mind games right is a thing that is dangerous right and if you don't know what you're doing people will play mind games with you y I mean they would they would that's why if you listen right to yourself and you listen to other people <Gr> maybe take a little bit advice </Gr> then you know they have different er thoughts about you y I mean they would leave you alone </21AN11>

<INT> yeah </INT>

<21AN11> and that's the problem the reason why I was in in this predicament I did not listen and I thought that I could handle the situation myself but I wasn't thinking and I wasn't listening and I'm still going through the same shit <TC> this has been I been going through </TC> this shit since the eight nineteen eighties having problems domestic problems y I mean you know </21AN11>

<INT> yeah </INT>

<21AN11> arguments with family <WS> feel </WS> problems and I don't know what's going on I mean they say to me oh <An> </An> when are you getting married and then you think to yourself well what are they talking about when I'm getting married I don't know nothing about no marriage y I mean </21AN11>

<INT> yeah </INT>

<21AN11> and I think to myself well there's something that they know that I don't know </21AN11>

<INT> I see yeah </INT>

<21AN11> I tell you what yeah I'll tell you what I may be stupid but I'm not that stupid y I mean </21AN11>

<INT> I don't think you're stupid </INT>

<21AN11> I've said I've said some things that are very wrong but they were true very very wrong to the people in authority people are corrupt they are corrupt people are corrupt and that's why you got to think before you speak y I mean </21AN11>

<INT> yeah </INT>

<21AN11> y I mean you have to think before you speak y I mean and when you think before you think you got to a <WS> ans </WS> listen and <WS> ansk </WS> the right questions with people know what I mean </21AN11>

<INT> yeah </INT>

<21AN11> I'm not a happy man <TC> I may it might I might </TC> sound like I'm happy but I'm not happy and all I want to do is use my common sense to be happy for myself because I got my own problems and I'm still going through the same shit from <TC> my my this has been going </TC> on well I said those they said <WS> I said to the top str er top secur erm top security er doctor doctor </WS> what's the word doctor <An> </An> from <An> </An> hospital right all because when I was in prison think someone tried to to take advantage of me I

wouldn't have it that's why people take advantage of your weakness right </21AN11>

<INT> yeah </INT>

<21AN11> and they said to me because I'd done that they thought that <TC> I was I had </TC> a problem with mm someone y I mean when in prison sometimes they try and take advantage and when I spoke to the doctor right I said the wrong things that were true to him he thought well this guy's <Gr> suffering from a paranoid schizophrenia illness </Gr> y <Gr> I mean now situation basically where they say </Gr> that I'm about to get married now for this marriage to work right plan is now is that Mr <An> </An> right has to pick up a case in a public toilet and everything's gonna be alright problems will be solved I've got to run off with this girl and get married and the same girl that is making me suffer now and as I said to you I have no feelings I feel numb inside and it upsets me <Gr> that's why I'm an angry man </Gr> for what I'm going through and I have to pick up a case now I m I may sound crazy to you but I'm not </21AN11>

<INT> no it doesn't sound </INT>

<21AN11> wha </21AN11>

<INT> I just don't know I just dunno the background that's all </INT>

<21AN11> yeah the background of my problem is that I have to pick up a case <Gr> I don't know what's in the contents of the case </Gr> I don't know what's in with it I don't know I don't I have a I don't have a vision it could have a bomb in it y I mean it could have a bomb I pick up the case I could blow myself up I don't know but all I know is that I've picked up this case once before but it sounds crazy I know I must be I know that I've got paranoid schizophrenia I know but yet again it was true y I mean and that will <WS> case </WS> will solve my problems and I run off with this girl we get married I'm telling the truth but people don't believe me y I mean I'm very I'm very I'm upset I'm a very angry man I'm upset and I'm very disappointed in this person this f certain indi s v individual because she comes along to me and said to me oh well the reason why I have to do this y know what I and do that no she's not because she doesn't care </21AN11>

<INT> but it'd be nice </INT>

<21AN11> cos she was <InAu> </InAu> </21AN11>

<INT> it'd be nice to have </INT>

<21AN11> y I mean ah </21AN11>

<INT> but it would be nice to have some answers is that </INT>

<21AN11> some answers exactly </21AN11>

<INT> yeah </INT>

<21AN11> on what's really going on with my life what's going on I'm I wake up feeling the same way every day can't breathe I can't breathe and this person does not care I've just turned

fifty-five and I'm still going through the same situation every day I feel numb I can't think and when I think and I listen people have a problem they get upset when it's got nothing to do with them I'm a very angry man because of what I'm going through and nobody cares you're looking at me posh well how can you do that to a playing with someone's sanity take away someone's sanity and expect them to be all mm ah happy you mean </21AN11>

<INT> yeah </INT>

<21AN11> that's wrong man playing with my feelings playing playing playing I know that I feel numb but then she's starts everything playing with my feelings an my emotions cos she has a an influence she has control over what's going on it's not fair that's why I'm hurt sometimes I feel hurt but I feel numb but I'm hurt I'm hurt it's not fair on me man </21AN11>

<INT> no no </INT>

<21AN11> it's <TC> not look I </TC> wanna cry but it's not fair it's not fair on me it isn't er I have problems I have problems and no one cares that's why I got my own problems I have to try and think to use my head to survive in life and all I got left is <An> </An> and my music I've got nothing I work with people who understand mental illness I've got nothing nothing at all I have nothing I'm sorry it's not fair you don't do that to somebody it's it's not fair you don't do that to somebody and yet expect them to run off and get married and y I mean </21AN11>

<INT> yeah </INT>

<21AN11> <Gr> I know it's not your problems </Gr> what's your name </21AN11>

<INT> <An> </An> </INT>

<21AN11> <An> </An> I know it's not your problems <An> </An> I know but there's a lot of p mm there's people who are mentally ill who know what they are doing y I mean </21AN11>

<INT> yeah </INT>

<21AN11> I'm mentally ill but I don't know what I am doing that's what I'm trying to say I just want my sanity back I want <An> </An> back I want to li get on because I know I faced up to reality before and they giveth and they take it away again cos they see something good inside me y I mean and all people want to do is play mind games and I'm very aware of mind games because it's a dangerous thing even people in prison in the hospital environment they don't care they do not care they don't give a damn all they care about is the money y I mean and if you know what you're doing you know where you stand with these people they wouldn't bother you that's why you've got to listen to bless yourself and other people you have to listen but people have a problem look even my family don't give a the only person that gives a damn about me is probably my mother you know like she doesn't understand mental illness as well I been going through this since since the nineteen eighties I got problems I have problems and I want to think and listen to solve those problems I have to I have my reasons I have my reasons I keep saying I have my reason why I have to listen

because I've got problems and nobody cares nobody cares that's what I'm trying to oh that's what gets me angry y life has never stopped for me what is the difference between me and anybody else y I mean and these people seem to have a problem with me listening when I listen they don't like it they get upset when the wind blows in your nose your nostrils they don't like it they get upset s <Gr> they watch you in your face </Gr> that is mind games that's mind games </21AN11>

<INT> how do </INT>

<21AN11> as I said we all breathe the same air but we are all different y I mean </21AN11>

<INT> yeah when you when you t </INT>

<21AN11> I'm not fighty I'm not close I'm just expressing how I feel inside that's all I'm saying </21AN11>

<INT> yeah and I think it's easy to be misunderstood isn't it </INT>

<21AN11> it's easy to be misunderstood I just talked to someone to lo give me back what belongs to me and I could s talk about my problems and maybe I could like write a book on it </21AN11>

<INT> would you like to </INT>

<21AN11> ah </21AN11>

<INT> would would you like to write a book </INT>

<21AN11> I would yeah </21AN11>

<INT> I think you should </INT>

<21AN11> yeah I should write a book and this is something about spiritually I should write a book on what I've been through in my life I'm fifty <WS> fear </WS> five years of age and I'm still going y know because of one individual <Gr> one individual messing me </Gr> I don't know who it is I don't know who's messing me about I've I don't know who it is I don't know what if there's light at the end of the tunnel I don't know it's the same way I feel every day I I don't know who the e ah I don't know who's doing this I don't know if it's my family because of jealousy and env <Gr> just because you're jealous and envy I don't know </Gr> I don't know who it is I can't pinpoint it I can't find the answers and that's why I want someone to listen to me y I mean because people don't care it's not fair i y you don't do that to somebody and then respect the the then they want respect y I mean I'm upset I'm angry I'm I'm really angry because of what I'm going through </21AN11>

<INT> and that's OK </INT>

<21AN11> I'm a human being I am a human being </21AN11>

<INT> yeah </INT>

<21AN11> I'm crying but I don't have no feelings that's what I do </21AN11>

<INT> can I ask what you mean by that </INT>

<21AN11> ah </21AN11>

<INT> can I ask what you mean by that </INT>

<21AN11> mean what </21AN11>

<INT> when you say you have no feelings </INT>

<21AN11> I have no feelings like none I have no feelings I'm sure you woulda I'm sure you ah I don't know why you never answer that question why you asking that quest cos y know I'm I thought you woulda understood you see you didn't understand you're not listening to what I'm trying to say you asked me how I'm doing and see that's that's all I ever get with people I have no feelings sir I don't have no feelings <Gr> I have any feelings </Gr> I don't have no emotions <WS> they've taken it away from me </WS> I can't breathe y I mean I cannot breathe y know I can't breathe to solve my problems I can't I cannot breathe I want fresh air do you un <Gr> it make a lot of difference y I mean </Gr> </21AN11>

<INT> yeah </INT>

<21AN11> it will make a lot a lot of difference I will feel better because I've been through this situation before and it is a bloody good feeling it was a good feeling I felt proper and <Gr> I felt clean hands clean h ah clean heart clean hands </Gr> dunno </21AN11>

<INT> I see </INT>

<21AN11> it's not fair it is not fair <WS> and I may I may edit I may write a book </WS> if I get through this problem if I get through this problem that I'm going through but every day I wake up feeling the same way every day <Gr> because of one person basically don't give a damn all she concerns about is whatever's in the case </Gr> that's all she's concerned about she doesn't care about my damn situation she doesn't care y I mean all she wants me to do is pick up this case and play mind games with my head an expect me to run off and get married after what she's done to me ridiculous you don't behave like that man I'm crying but I don't have no feelings y I mean I'm crying from the top of my head y I mean that's why I don't I don't want nothing to do with people y I mean I don't want nothing to do with people cos I don't have the time for this crap I don't have the time for this rubbish y I mean if I if I was I'm a good-willed person I an if I wasn't alright s I would not have cooperated with you people y I mean just like anybody else I wouldn't have I would have compromised because I'm getting used and abused y I mean people take advantage y I mean and they exactly <Gr> the one they they that take advantage they exactly know what they're doing </Gr> when they're playing their mind games <Gr> they exactly know what they're doing </Gr> they know what they're doing they know what they're doing I don't know what I'm gonna do with my life my life is a shambles it's a shambles and I got to try and sort my shambles out I got my own problems I have my own problems and I aint got time for people who want to play mind games I just wanna get on with my life that's all I wanna do and all I got in my life is my music music is my J O B y I mean I could do other things I can learn other things but you have to use your brains and you must listen to speak to people to who advise you to use your brains to learn from that y I mean </21AN11>

<INT> yeah </INT>

<21AN11> I could be it if they want y know I could do it if they allow me to do it if they allow y they allow me to get on with my life I would do it with my life but because the people are so jealous and envious they y I mean <TC> every why is it </TC> every Monday morning that people have a problem a Monday morning Down's syndrome why is it I won't stay too long because I gotta try and make make breakfast for my mum yeah </21AN11>

<INT> sure OK </INT>

<21AN11> er why is it that every Monday morning right people have problems the start of their <Noi=unknown noise> </Noi> of the week oh they don't wanna go to work y I mean then they start taking their problems y know out on me when it comes to Tuesday <Gr> slightly a bit more better </Gr> end of the day right Wednesday oh <Gr> a bit more better </Gr> they're starting to ro sh n er interacting with people Thursday er better by the end of the week the Friday oh we're happy when they get paid oh they're happy oh let's smile in <An> </An>'s face erm you know er they wanna talk to you and they start to ask how you doing oh you they wanna talk to you how you doing all that when it comes to me let's talk to <An> </An> <An> </An>'s the fool er when they get paid they're alright they're happy you know let's hold hands we're lovers like we're happy together I know what I'm talking about I know what I'm talking about </21AN11>

<INT> yeah that's </INT>

<21AN11> <Gr> whenever you know they get paid at the week </Gr> they're happy ah oh let's ah let's speak to <An> </An> y I mean Friday night do something <Gr> they all happy </Gr> that's not fair that's not right </21AN11>

<INT> no that sounds really difficult </INT>

<21AN11> y know and it's f that's it that's not right and I can't get on with my life I can't get on with my life why can't I get on with why don't they get er allow me to get on with my life cos you know why they see something good inside me and they're jealous of that I've a lot of <Gr> people tell me to do me a lot a lot of things </Gr> you know and I didn't think that's why I'm trying to say <WS> they want to perfect me from thinking </WS> from doing what I have to do they don't like it it upsets them it's wrong and at the pitch and at the end of the day I don't care why should I care nobody else does y I mean why should I care nobody else does you think people gotta stop that er stop for me no they wouldn't and the reason why they do this is because they know that I'm a successful person I am well that's all I have to say </21AN11>

<INT> I </INT>

<21AN11> it's not fair not fair on me </21AN11>

<INT> I know we don't know each other but I care I feel like I care and </INT>

<21AN11> yeah </21AN11>

<INT> you know </INT>

<21AN11> well I hope so but I don't think so y know what do you know what when we finish this conversation we go our way you go your way I go my way conversation ends with yeah it doesn't sound right I I I don't think I don't think no one cares cos nobody cares I don't think so I even though when you're saying it you know you're just saying it </21AN11>

<INT> no I I </INT>

<21AN11> well you're gonna have to fucking <TC> tell me show me </TC> show your feelings that you care show your feelings don't say it show it </21AN11>

<INT> yeah I hear you I know what you mean yeah I </INT>

<21AN11> don't say it show it you have to be a realist a realist a realist <Gr> you have to be with a face up to reality </Gr> reality means feelings </21AN11>

<INT> yeah yeah I agree </INT>

<21AN11> show it don't talk about it show it </21AN11>

<INT> you're right </INT>

<21AN11> are you a family man </21AN11>

<INT> yeah yeah yeah </INT>

<21AN11> right you have a family to look after I don't have a family I don't have a fam I don't have kids I don't have a family I'm fifty-five years of age and I don't even have kids I don't have kids why <Gr> because my feelings is blocked to have kids </Gr> it's not fair </21AN11>

<INT> no it's not </INT>

<21AN11> it's not fair I I can't make love to a woman to make babies y I mean ah man I'm sorry </21AN11>

<INT> why are you sorry </INT>

<21AN11> ah </21AN11>

<INT> why are you sorry you don't need to be sorry </INT>

<21AN11> can't do that to people that's why I'm sorry you don't do that to people you have to li I'm sorry to say you to to know where you stand with people you have to listen and they can hear me as I'm talking to you now they can hear me well <Gr> I tell you something </Gr> God has a very funny sense of humour y I mean God has a funny sense of humour well look I have to go now yeah because my mum's waiting for me to y I mean </21AN11>

<INT> OK OK </INT>

<21AN11> but all I've got all I've got is myself I don't know I have to try and look after my mum cos she's elderly y I mean when someone dies life goes on y I mean no one cares I don't think nobody cares life goes on <Gr> life doesn't care look life do has no time for anybody </Gr> I tell you what people got

time for you know <Gr> what it is money </Gr> when it comes to money they have time and you know what I want I don't want money I don't want money I want peace of mind it's all I want whatever comes after that I'd be happy </21AN11>

<INT> yeah </INT>

<21AN11> but I'm not interested about other things <Gr> all I want peace of mind peace of mind I want my life </Gr> right to give me peace of mind that's all I want because I know I've got love in my heart and it's not a crime to love </21AN11>

<INT> no </INT>

<21AN11> y I mean </21AN11>

<INT> yeah </INT>

<21AN11> peace of mind that's all I want peace of mind </21AN11>

<INT> yeah I want that for you too </INT>

<21AN11> <Gr> yeah money's not a issue </Gr> because when you when you you're born with money you could have it when you die you can't take it with you we all have to die we all have to die we all have to die at the end of the day and that's what you gotta face up to well look I gotta go yeah </21AN11>

<INT> OK it was so nice to talk to you and so nice to meet you <An> </An> thank you so much </INT>

<21AN11> yeah well as I said if you care show that you care y I mean </21AN11>

<INT> I </INT>

<21AN11> because I'm not getting any signals you know why I'm not getting no signals from you </21AN11>

<INT> how how come </INT>

<21AN11> right because I don't feel nothing to get <WS> singles from you signals </WS> I'm I I I </21AN11>

<FAM> <Noi=female voice in background> </Noi> </FAM>

<21AN11> because I can't face up to reality the reason why I can't face up I have no feelings </21AN11>

<INT> I hear what you're saying yeah </INT>

<21AN11> and I'm a very very good listener a very good I am I've met some people that I should not have met in the first place when I was in <An> </An> hospital and <An> </An> hospital yeah I was an I mean I was stupid I was stupid because you know why I was stupid I didn't think I'm sure that if I had thought I woulda been a different person I woulda if I did lea use my head and listen <Gr> I would never been in this <WS> predicament </WS> </Gr> I would never been a mentally ill person believe me I would never have been a mentally ill person which I'm mentally ill I have a I admit it but I don't in some ways I doubt it if it's you know <Gr> why I doubting it </Gr> becau mm <Gr> people in authority haven't got a clue

what they doing </Gr> they say they could look after your interests right right they haven't got a clue how a person feels at the end of their <Gr> as long as they'll get their doctors nurses social securities </Gr> even including your job you get paid for doing a job mm <Gr> and when they get paid for together </Gr> this is what I'm trying they get happy and they're alright they don't care about the feelings of people I mm that's why I'm the guinea we I have we are the guinea pigs we have to take the medication if you <Gr> if I was to give you the medication right </Gr> you have a mother don't you </21AN11>

<INT> yeah </INT>

<21AN11> you have a mother which is right but if I was to give you the medication now right would you take it </21AN11>

<INT> so I I've t I've taken quetiapine in the past </INT>

<21AN11> what's quetiapine I haven't heard of that what illness is that </21AN11>

<INT> er that that's an antipsychotic </INT>

<21AN11> yeah antipsychotic but do you take psychiatric medication for paranoid schizophrenia that's what I'm talking about </21AN11>

<INT> no no </INT>

<21AN11> exactly I coulda refused to take it there's a lot of people that took medication have <WS> spitted </WS> out the that that <WS> spitted </WS> it out patients in <An> </An> hospital and <An> </An> because the the nursing staff do not care no they don't care as long as they get paid and they give the people lip they're not gonna take the medication it's unfair man it's unfair I <WS> corroperated </WS> but I was a fool I was a fool to cooperate <Gr> I should never cooperated </Gr> because you know if I did think I would not have <WS> corroperated </WS> y I mean you know y know </21AN11>

<INT> yeah </INT>

<21AN11> I've seen people right in <An> </An> hospital it's ridiculous normal people they can't get sex they turn gay y I mean they're gay I didn't turn gay because I wasn't desperate for it y I mean <Gr> normal people who like woman </Gr> it got so bad it got so bad that they turned gay see that's what things that's what things do to you you know I'm sorry and I am not picking up no case until I think about what I'm doing before I pick up that case you know I met the likes of <An> </An> I've met the likes of <An> </An> them people <Gr> there are far more worse than me people </Gr> say to me I should never have been in them hospitals <Gr> I should never been </Gr> I should never have been in that situation there yet again the reason why I was there I did not listen and I did not think to listen it's bec it's rubbish it's a load of crap it's crap well look I've gotta go now because my mum is gonna get very upset with me in a minute y I mean </21AN11>

<INT> OK erm but thank you for speaking to me and for giving me your time </INT>

<21AN11> I wanna talk to you if you have feelings show that you cos I'm not getting any signals from you y I mean you're not gonna solve my problems believe me you're not going to solve my problems you're not because if you do care show that you care because at the end of the when you walk away from this you've gotta get on with what you're doing the next time we're gonna meet is probably next year and the next time we pr er whenever if well probably next year I hope I get paid for it well I'm not interested about the money except it would help y I mean </21AN11>

<INT> yeah an I I know what you mean and you should you should get paid I'm sorry I'm sorry that this time it </INT>

<21AN11> you know yeah yeah well at this situation yeah I understand </21AN11>

<INT> but erm </INT>

<21AN11> but I am upset sir I'm a very upset man I'm angry because of what I'm f I have no feelings and erm that's why I'm not getting a signal from you because I have I I don't have any feelings I don't have no feelings I have no feelings it's wrong and as I said if I may sound crazy but I know what I'm talking about I mean <An> </An> with erm <An> </An> <Gr> was a er er a mentally er a paranoid schizophrenia he was well he was he was mentally ill </Gr> when even he was a on the outside then they diagnosed him again but those people are irrelevant I don't know them people there but I was born <An> </An> but I I've never y I mean <Sh> </Sh> I dunno can't breathe I cannot breathe I just want to breathe the fresh air and I will be alright I will be happy I aint got no time to waste with people and please don't get jealous of me because I've got love in my heart and I y I mean and all that an an I'm different <Gr> I'm different than everybody else </Gr> I'm different I'm me I have to be me I have to be me I can't be you if I think the way you think I'm not gonna solve my problems but if I think the way I think I could solve my situation we're coming at the end of the week now people get paid tomorrow they get Friday night they gonna think they're gonna be happy y know <Noi=female voice in background? </Noi> so I don't know I don't I don't know I don't know I don't know where I stand d you know know I mean and as I said I mean a you you're sure y oh I you're a y you you wanted me to answer questions and yeah but when we go away from the situation we get on with our lives we have to get on with it you have to get on with yours and I have to get on with mine y I mean so what can I do what can I say <Sh> </Sh> what can I say well what I'm saying is true y I mean I speak the truth and if you don't like me speaking truth then cut me off y I mean you know </21AN11>

<INT> no I like I like talking to you and I I'm really grateful that you're talking to me </INT>

<21AN11> yeah but do you understand my problems though what did I just say to you when we finish this conversation you gotta get on with your life and I have to get on with my life and I'm s I am still improving with them I need a social worker I been all through the therapy sessions <Gr> I've <WS> corroperated learn learning </WS> difficulty sessions </Gr> erm done with them talking about my problems they don't they <Gr> they don't care when the when the when a when the

problems er over </Gr> and they feel that they get they get paid to do a job as long as they get paid to do the job they're happy y I mean because at the end of the day you guys get paid to do a job you get paid to do a job which is not a crime it's not a crime you're right to get paid you know it you're right to do the job you're right to get paid for the job y I mean </21AN11>

<INT> yeah </INT>

<21AN11> y I mean I got problems sir I have a lot a lot of problems I'm just crying because it's unfair you don't you don't do that to people y I mean just because you say that you love a person and then you y you make the person suffer for no reason whatsoever you make him suffer and yet you're sitting there as a goody goody not coming up to me and tell me well what is the reason why I have to do do this to you I'm not a gangster I'm a musician y I mean you know I I make music y know y I mean I sample y I mean </21AN11>

<INT> oh nice </INT>

<21AN11> y know I sample music you know </21AN11>

<INT> ah that's awesome </INT>

<21AN11> percussion ah </21AN11>

<INT> that's awesome </INT>

<21AN11> you know it's very ah I'm very depressed y I mean and probably I could nominate <Gr> I could be nominated as a write do write a book I could nominated as a book of the year mm </Gr> </21AN11>

<INT> I think if you wanna write a book you you should </INT>

<21AN11> I should I know I should I think I should I'm thinking about it but I'm not in the right state of mind to think about it because I can't I'm not ah I'm not I'm not in a good state of mind I'm not because I don't know I've listened I've listened but then it was taken away again but to write a book you gotta got find a biographer and you got to know what you're doing y I mean you got to know what you're doing you have to know what you are doing and that's the problem with me I could <WS> speak </WS> what I like doesn't change a thing it does not change a thing about how I feel inside and no one cares nobody cares and I'm not stupid er I know that I'm not stupid I know that no one cares y I mean I'm not stupid but if an I know that for what I feel I feel numb right all I got is that's all I got a nose to smell I got ears to listen I got a a brain to use I got a mouth to speak y I mean and all I got is that look to get the truth to people to <WS> understand tell </WS> the truth because the truth hurts y I mean so I got problems I got problems you know and I kn y mean if I think those problems can be solved can be solved if I use my brains the way I want to use it not the way you want me to use it the way I use it then I will be happy I don't wanna think the way you think you can think as much as you lik I'm not stopping you from doing what you're doing right but please <WS> don't s stop the tracks </WS> and this is what this person is doing </21AN11>

<INT> yeah </INT>

<21AN11> yeah this is what she's doing this is what she's doing she's not happy is that like because she's envious she's jealous for a girl to do that to me right and to do that to me and expect me to put up with it because as I said what wh why can't she come in front of me and tell me well why why I have to do this I don't know if they feel embarrassed or something like that or they don't want to h know the truth I'm never gon look I aint picking up that case until the day I die I'm not gonna pick it up no I'm not I'd rather die than pick it up until I know what a I'm doing and I know I'm not wi in the contents in the case I know then I prefer to know what I'm doing then I will pick it up but I'm not gonna pick it up <Noi=unknown noise> </Noi> and as I said I'm not crazy y I mean I'm not crazy I may have gone to <An> </An> I may have gone to <An> </An> hospital but them people there I am not crazy cos them people there don't understand all they care about is <Gr> the diagnosis of somebody that says it to </Gr> and I said the right thing but it's still in the wrong way and then then you got a a man called doctor <An> </An> erm being suspended because of bad practice and that's the same man that diagnosed me to go to <An> </An> hospital he was from he was discharged from his job for erm for erm for bad practice ay then they put me on to another doctor <An> </An> in <An> </An> hospital who put me on depot injections then he ran off and he ran for <Gr> to have a love affair with his secretary get marriage </Gr> there what what's that y I mean that's personal problems innit </21AN11>

<INT> yeah </INT>

<21AN11> that's personal problems that's got nothing to do with the patient has it </21AN11>

<INT> no <Lh> </Lh> no </INT>

<21AN11> and you get away with it and you get away with it but we can't get away with it how does that work out look we are all human beings we all have thoughts </21AN11>

<INT> yeah </INT>

<21AN11> cos that got nothing to do with it doctor <An> </An> runs off with his ah er with his erm with his maiden gets married to his secretary <WS> and then he got dad doctor </WS> <An> </An> erm discharged from his job because of bad practice see we all have thoughts y I mean but they won't admit it <An> </An> in <An> </An> right you remember <An> </An> </21AN11>

<INT> yeah </INT>

<21AN11> you remember him what did he do molest kids </21AN11>

<INT> yeah <Sh> </Sh> </INT>

<21AN11> molest kids how is that how how can that be real and yet all the time you're working in <An> </An> hospital you been doing that and you have you have all that all that money in the BBC ay and then you go an molest kids er <Lh> </Lh> and then you got like nursing staff in <An> </An> hospital did he have a <An> </An> had a connection with erm <An> </An> hospital he he worked there he had keys and that man molests children you see </21AN11>

<INT> yeah I'm still trying to get my head around that </INT>

<21AN11> you know you can't get your head round it see </21AN11>

<INT> it sounds like you've been through a lot </INT>

<21AN11> this guy is a <Noi=female voice in background> </Noi> you can't get your head round it <Noi=female voice in background> </Noi> you still there </21AN11>

<INT> yeah yeah </INT>

<21AN11> you so yeah hold on a sec what you can't get your head round it you can't get your head round it you can't and these people are paedophiles y I mean yeah </21AN11>

<INT> yeah </INT>

<21AN11> <Noi=female voice in background> </Noi> and they get paid to you know what to to be a paedophile no that's wrong and you don't diagnose the man you don't send the man to prison y I mean so think of all who murdered luckily he had died at the end of the day y I mean </21AN11>

<INT> so unfair </INT>

<21AN11> he died and he got away with it y I mean and at all the time he was working in <An> </An> hospital and then they knew this but they didn't say anything y I mean all the time he was working in <An> </An> hospital and he got away with it well how does that work out see we're only human </21AN11>

<INT> yeah </INT>

<21AN11> yeah and I'm only human myself but all they wanna do is take the piss y I mean yeah and I have to pick up a case in the toilet <Gr> I'm OK that maybe count on street schooling but it's true </Gr> <An> </An>'s done what he's done <Gr> but it was true diagnosis on the doctor </Gr> the the doctors who gave the diagnosis done what they done but it was true innit look what happens what happened did he cos the whole world is corrupt the whole world is corrupt <Gr> taking br they takin took bribes when they in er from <An> </An> prison </Gr> you know prison officers took bribes see where's the justice in that </21AN11>

<INT> yeah there isn't any </INT>

<21AN11> there's no justice there isn't and er you said it right everything <WS> you can't get your hand your head around what </WS> <An> </An> had done y I mean and all of a sudden when he's dead they'll talk about it know what I mean </21AN11>

<INT> yeah </INT>

<21AN11> know what I mean an I'm sorry but the whole world is corrupt and it's me that's in the middle or w of this situation I I have to take the problem the burden of the world on my shoulders on m my shoulders I am to blame it's my fault that's what they're saying that's what they I'm trying to and I'm y er it's my fault because I was was born <Noi=female voice in

background> </Noi> I <TC> I'm not I I may be </TC> stupid I'm normally <TC> I'm not I may be </TC> s stupid but I'm not that stupid I may be stupid but I'm not that crazy yet cos I know I may not have no feelings but I know what's going on </21AN11>

<INT> I don't think you're stupid </INT>

<21AN11> yeah </21AN11>

<INT> I think you've been through a lot and are still going through a lot </INT>

<21AN11> I'm going through a lot I am <WS> and yet again I'm corroperating with the s confidence with the the er with the the the the the people </WS> and they made a fool out of me I was doing things like I was doing I was a dishwasher in <An> </An> hospital cleaning up people other people's mm food their plates y I mean I was doing it for extra money to get extra stuff y I mean participating in that y I mean </21AN11>

<INT> well sounds like a good thing to do like a </INT>

<21AN11> well what the cos it's what I'm saying but they were taking the piss y I mean other other patients wouldn't do it y I mean </21AN11>

<INT> sounds like something a good person does like you know you </INT>

<21AN11> yeah and that's it I'm a very good person but they had taken advantage of my weakness y I mean y I mean you know they take advantage and all I've got la all I've got is my music y I mean I'm just about to play some music now y I mean </21AN11>

<INT> oh nice </INT>

<21AN11> to to play it to I'm making breakfast I'm about to play my music now just to get me through me through the morning y I mean </21AN11>

<INT> yeah </INT>

<21AN11> you know I like music I wanna get into the music industry </21AN11>

<INT> do it totally do it </INT>

<21AN11> ah that's something that I wanna do </21AN11>

<INT> yeah yeah do it you should </INT>

<21AN11> if I er if the money comes along it comes along if it doesn't it doesn't but because I've got learning difficulties I can't focus and learn to do it's like I I've made tracks but it helps for a start in <An> </An> y I mean kn kn y er and like in <An> </An> they're really nice people they are because they understand how mentally ill people work mentally ill people work y I mean you know <Gr> a lot of mentally ill people can't get it when they mentally ill </Gr> you could be mentally ill but you know what you're doing </21AN11>

<INT> yeah </INT>

<21AN11> and the job is if you're mentally ill you got to know what you're doing y I mean but when you g you got to know what you're doing you got to know what you're doing </21AN11>

<INT> well it sounds like you do with the music </INT>

<21AN11> yeah I'm playing a track now called er Oran Juice Oran Juice Jones The Rain I dunno if you've heard of it </21AN11>

<INT> no I haven't but </INT>

<21AN11> do you know it's it's signed by <WS> Dem Jam records </WS> have you heard of Def Jam records </21AN11>

<INT> yeah I think so yeah </INT>

<21AN11> yeah what sort of music are you into sir </21AN11>

<INT> I like a bit of everything like I like what sounds good </INT>

<21AN11> ah </21AN11>

<INT> I like what sounds good to me you know </INT>

<21AN11> and what about the music of </21AN11>

<INT> what about what </INT>

<21AN11> what about the music of today you know like the the mm </21AN11>

<INT> yeah it's well it's alright I'd y like what like pop music or sort of like less </INT>

<21AN11> hip hop or pop hip hop and you know </21AN11>

<INT> yeah </INT>

<21AN11> house music and </21AN11>

<INT> yeah le less mainstream stuff a bit more sort of yeah </INT>

<21AN11> what about erm Stormzy you like Stormzy </21AN11>

<INT> yeah </INT>

<21AN11> mm what about that girl I I've got I've got her album actually er I can't remember where to look er that girl er nice girl she's she's she used to be she got into she got she got to number one but I can't remember I can't remember her name </21AN11>

<INT> I'm trying to think who it might be wait er </INT>

<21AN11> what about what about that girl who done that tour in <An> </An> before the the <An> </An> bombings she said it what's her name again </21AN11>

<INT> oh </INT>

<21AN11> she's a nice girl </21AN11>

<INT> yeah I know who you mean I just can't think of her name </INT>

<21AN11> yeah that's well that's sometimes that happens y I mean </21AN11>

<INT> yeah yeah no wait </INT>

<21AN11> it happens not ideal is it </21AN11>

<INT> who what's who </INT>

<21AN11> no I can't remember her name hold on a minute hold on erm <WS> Emily Gran Grando is it Emily Emily is it </WS> </21AN11>

<INT> Emily Emily what's her last name </INT>

<21AN11> <WS> Gran Grando </WS> or summat I can't remember her name </21AN11>

<INT> ah yeah yeah yeah </INT>

<21AN11> she she was she was in the concert erm in <An> </An> before the the <An> </An> the <An> </An> bombings and all that killings </21AN11>

<INT> oh yeah Ariana </INT>

<21AN11> <WS> Arian yeah Amarana </WS> yeah yeah her she's nice she's a nice girl </21AN11>

<INT> yeah yeah yeah she seems nice like when she's interviewed and stuff </INT>

<21AN11> right yeah yeah then you got <WS> Jennifer Lopaz </WS> y ah yeah Mary J Blige I I'm all old school in the eighties and all that y I mean </21AN11>

<INT> oh nice yeah </INT>

<21AN11> the eighties like Midnight Star Midnight Star and SOS band Earth, Wind and Fire </21AN11>

<INT> yeah </INT>

<21AN11> and y I mean y know I'm more old school I know a lot of music erm mine that is my knowledge but sometimes my brain seizes up sometimes and I can't really remember y I mean know I mean well it's nice talking to you man </21AN11>

<INT> you too like </INT>

<21AN11> yeah I don't know </21AN11>

<INT> and er yeah alright well look thanks so much for your time and it's so nice to meet you </INT>

<21AN11> yeah it's nice talking to you but I hope you I hope you understand where I'm coming from sir y I mean </21AN11>

<INT> I feel like I do yeah and I hope things I hope things get a bit better it sounds tough </INT>

<21AN11> well it's right now it <Sh> </Sh> I wanted to I was meant to go to <An> </An> yesterday but because er erm the sc the the co er they've posted a letter through <Gr> so it doesn't <WS> core out core covid </WS> nineteen test </Gr> because they they s they th they called me from erm <An> </An> and they said to me er because of erm <An> </An> er <An> </An> and <An> </An> have a high <WS> varioty </WS> of COVID vir nineteen they can't take they can't accept erm people into er <An> </An> </21AN11>

<INT> right </INT>

<21AN11> so they're gonna let me know by the end of at the twenty-ninth of this month whether er we're allowed to come from <An> </An> erm to er particip we er to see if I can get back into <An> </An> </21AN11>

<INT> yeah that sounds like a really good place </INT>

<21AN11> mm yeah I keep this yeah so you know as I said you know <WS> I'm crying from the top of my head but I'm not crying from my feelings </WS> y I mean you know </21AN11>

<INT> yeah </INT>

<21AN11> anyway it's nice talking to you I hope you don't think that I'm crazy but </21AN11>

<INT> no </INT>

<21AN11> I may be crazy but I'm talking the truth y I mean </21AN11>

<INT> no I don't think you're crazy I think I think everyone's a bit misunderstood </INT>

<21AN11> ay I have been misunderstood people haven't listened to me y I mean people have not listened to what I have to say an <Gr> <DT> as I said </DT> we are you all human </Gr> we're human beings y I mean </21AN11>

<INT> yeah </INT>

<21AN11> despite what colour we are all humans an the the only y I mean and colour can make a difference y I mean but people don't have time to have t for that for colour y I mean but I'm not happy with the way the erm the authorities have helped me and themselves y I mean you know it's it's it wasn't really the right the right way to go about it you know mm and yet we al <Gr> as I said we all mistakes </Gr> and we all have to pass away you know </21AN11>

<INT> yeah </INT>

<21AN11> <An> </An> passed away <An> </An> passed away <An> </An> passed away you know but I'm just saying that I don't know what's happened to those doctors those doctors could've passed away y I mean y know </21AN11>

<INT> yeah </INT>

<21AN11> it's just that you know you don't er you don't mix business with pleasure pleasure with business y I mean and </21AN11>

<INT> yeah </INT>

<21AN11> you don't you don't you don't <Gr> you don't <WS> press </WS> psychiatric illnesses a lot very <WS> power </WS> put paranoid schizo people paranoid schizophrenic people's feelings </Gr> you don't do that you know </21AN11>

<INT> no </INT>

<21AN11> because you can't ro y you know you can't say that you're a doctor one day <Gr> and then all as because you a lover </Gr> you have a love affair you run off with your doc your your secretary give to get married because you know they enjoy sex and er this is really y I mean </21AN11>

<INT> yeah </INT>

<21AN11> but then you can't er you can't erm get discharged or sacked because of bad practice because you know and that's what they're doing and then you got a man <DT> as I said </DT> you <Gr> got a man like <An> </An> now paedophile playing with kids an they all the time that I've actually met </Gr> <An> </An> I don't I didn't particularly really like him actually y I mean </21AN11>

<INT> yeah </INT>

<21AN11> you know and y know an there's another thing that I used to you know erm I met er what I'm not I'm not against well I don't really like the royal family erm but princess <An> </An> and I met <An> </An> he came to er the hospital in <An> </An> princess <An> </An> and like the patients were very upset because then you got celebrities coming in and just taking the piss out of the patients y I mean you know and then you have people like er <An> </An> lady <An> </An> I do like lady <An> </An> she's the one person that I like in the royal family yeah <TC> I did like the other royal family I did not like </TC> I didn't like what they had done to I lady <An> </An> cos they murdered her I think that they killed her but when they knew that erm lady <An> </An> was in <An> </An> hospital <TC> I h OK I won't stay too long </TC> patients were very very upset a patient well an individual or something he said that he wanted to go next door to my peop my ward and he he he er he didn't say nothing to me but he could see that he's reading a book you know why because he wanted ignoring y I mean he didn't wanna know </21AN11>

<INT> yeah yeah </INT>

<21AN11> lady <An> </An> and then you got the the nursing staff y I mean it's rubbish complete rubbish that's what it is it's rubbish you know and no one cares no one cares </21AN11>

<INT> I really hope you do write a book cos </INT>

<21AN11> yeah </21AN11>

<INT> I think </INT>

<21AN11> yeah I know </21AN11>

<INT> you have so much that needs to be heard </INT>

<21AN11> yeah yeah I will and then my music can help me as well </21AN11>

<INT> yeah </INT>

<21AN11> <Gr> my music ah erm across to talk about my problems </Gr> y I mean hold on I'm good </21AN11>

<INT> mm </INT>

<21AN11> I'm a political musician I'm against politics y I mean y I mean </21AN11>

<INT> yeah </INT>

<21AN11> <Gr> I'm a political music I'm against politics </Gr> but then the p the politicians don't care they don't know what they're doing y I mean and the problem is is that you know when I do get into music it's about the problems of the like you know back in Martin Luther King's day you know the the erm the <Gr> when black people going through the depression the rights to </Gr> we have Mart but people now be talking about Malcom X erm people that erm erm the Klu Klux Klan the way they treated black people y I mean you know an erm I'm trying to make er a group a group called gr er single artists and bands hip hop bands called the erm the terror er assassination squads an I know it sounds bad squads y I mean but under the name of these the assassination squads y I mean they had a few groups and a few single album er artists and you know there's a lot of hard work to be done y I mean there's a lot of work to be done you know but I'm not talking about people I'm just talking about the peop the people that are in power like the government that's who I'm against y I mean because they make the rules and regulations and they you know they they they they they have all these rules and they make all these <WS> allegations </WS> and they don't know what they're doing y I mean it's like co this COVID nineteen y I mean we have to stay apart and all that y know </21AN11>

<INT> yeah that's difficult </INT>

<21AN11> it's very difficult yeah and people taking it out on each other you know </21AN11>

<INT> yeah </INT>

<21AN11> they're taking it out on each other </21AN11>

<INT> you're right </INT>

<21AN11> and yet but about their own problems y I mean one of them groups I'm trying to make but I'm trying to have like erm I'm trying to make a group called the black panthers with like er trac er track b s erm public enemy then another group called public demand then I'm trying to a make a mo g w erm black revolutionaries and there's another group that I wanna make as well but there's a a lot a lot of hard work to do there's a lot of hard n not offending not offending anybody I don't wanna be against colour or anything like I'm just I guess

because what track b was talking about he was talking about the the the the policies of the the the government the way they y I mean mm people carry on y un the the public how people carry on y I mean you know </21AN11>

<INT> yeah </INT>

<21AN11> I don't know if you remember public enemy </21AN11>

<INT> yeah yeah </INT>

<21AN11> mm well look I've gotta go I have to go it's nice talking to you but that's </21AN11>

<INT> you too <An> </An> thank you so much </INT>

<21AN11> hello </21AN11>

<INT> hello sorry the line went for a for a sec but yeah it's so nice to talk to you <An> </An> thank you so much for your time </INT>

<21AN11> no no yeah it's not a problem any time I just y but I just want someone to listen to me y I mean as you said I'm not here for colour y I mean </21AN11>

<INT> yeah </INT>

<21AN11> and I'm just here like you know I'm just here to get a message across and I don't know where I'm gonna stand er I I dunno I dunno I dunno when I don't know when this is gonna finish y I mean I don't know when it's gonna finish I don't know how long it's gonna carry on for I don't know y I don't know </21AN11>

<INT> I don't know either but I hope I hope for good things for you soon <An> </An> </INT>

<21AN11> yeah and only I can change it you know y I mean and as it's erm I'm a political musician I don't the the the music that they're making today is er rub well I don't just thugs swearing and killing and all this shooting business I'm sure you've got the same problem in <An> </An> are you phoning from <An> </An> </21AN11>

<INT> erm no I'm in erm I'm down in the South West at the moment I'm down in <An> </An> at the moment but </INT>

<21AN11> ah what do you work down there </21AN11>

<INT> yeah I'm I'm down I'm down in <An> </An> for a bit and then yeah </INT>

<21AN11> you know I mean <An> </An> has their problems as well you know </21AN11>

<INT> yeah yeah </INT>

<21AN11> gangs yeah I know y I mean well look it's nice talking to you an I hope er I hope you understand how I'm feeling so </21AN11>

<INT> I'm </INT>

<21AN11> <DT> as you say </DT> I have to try and write a book </21AN11>

<INT> I yeah I I think like that would be amazing </INT>

<21AN11> yeah for what I've been through </21AN11>

<INT> yeah it's good to share stuff </INT>

<21AN11> you know what ah </21AN11>

<INT> it's to share stuff you know </INT>

<21AN11> yeah it is yeah there are a lot of people <WS> under that understand </WS> there are people that do understand but do they care y I mean that's your problem </21AN11>

<INT> sometimes they do but it feels like they don't you know </INT>

<21AN11> what I know but the thing is like this girl has got away with murder she's got away with murder y I mean and what I'd say to them er I I'm gonna be very very if I do get through this problem there's questions to be <WS> answered </WS> there's questions to be <WS> answered </WS> y I mean there's questions why what and how and what's the why is it <Gr> why you putting me so much problems </Gr> why why are you why are you putting me through this misery why are you putting me through this y know y know y know I wanna know I can learn mm I can learn I can learn if I'm allowed to learn if I'm like if you give me the encouragement to learn if you give me the opportunity <Gr> I'll grab it in the palm of my hands and take it </Gr> but people have a problem they have a problem look I I gotta go now because my mum's a my mum's a very angry woman she's she gets something <Gr> if she hasn't have something to eat she gets very funny y I mean </Gr> </21AN11>

<INT> no worries no worries <An> </An> thanks so much for your time so nice to meet you and erm </INT>

<21AN11> yeah lovely it's nice talking to you what's your name again </21AN11>

<INT> <An> </An> </INT>

<21AN11> <An> </An> <Gr> how we next when we meet the next time </Gr> when I get paid </21AN11>

<INT> yeah </INT>

<21AN11> y I mean when are the when is the next time you're working in erm <An> </An> </21AN11>

<INT> er I dunno I'll I'll have to talk to to <An> </An> an erm see what what the the plans are for kind of more studies later on in but yeah hopefully soon I can get some funding for this research and then I can start paying people cos people need to be paid </INT>

<21AN11> <DT> have I answered all your questions then have I </DT> </21AN11>

<INT> sorry </INT>

<21AN11> <DT> have I answered all your questions </DT> </21AN11>

<INT> yeah yeah like the you know it's all about having a chat </INT>

<21AN11> good then er I hope I don't get no bad feedback y I mean that er </21AN11>

<INT> no no </INT>

<21AN11> y I mean </21AN11>

<INT> no it's no it's nothing like that like it's just a conversation and everything </INT>

<21AN11> yeah yeah and it's good to talk to s people y I mean </21AN11>

<INT> that's it </INT>

<21AN11> an it's good but you know we all have our different problems with <An> </An> you know we all we have problems we have problems we all make mistakes <Gr> we all make fools </Gr> but I just don't think we should take advantage of that y I mean </21AN11>

<INT> yeah totally </INT>

<21AN11> <Gr> you hear better to talk about it </Gr> at the end of the day </21AN11>

<INT> yeah </INT>

<21AN11> I E the doctors I E <An> </An> you know all the people that have problems y I mean </21AN11>

<INT> yeah </INT>

<21AN11> that's just the the nursing staff nursing staff don't care in <An> </An> hospital prison officers they don't care if they kill you they will kill you and get away with it right <Gr> and they cowards </Gr> the problem is that <Ch> </Ch> they are cowards y I mean you know </21AN11>

<INT> that sounds </INT>

<21AN11> prison off ah </21AN11>

<INT> that sounds like a lot of stress </INT>

<21AN11> a lot of stress you don't know what stress <Gr> if you went behind bars the way they will treat you in prison even treat their own people bad in prison </Gr> I'll tell you that you'd you wouldn't like the when you when they restrain you they hurt you mm they could kill you and get away with it a lot a lot of people I don't know if you recently heard about the the pub bomb the <An> </An> bombings </21AN11>

<INT> oh yeah yeah </INT>

<21AN11> the two guys </21AN11>

<INT> yeah </INT>

<21AN11> they er they attacked a prison officer y I mean
</21AN11>

<INT> did they </INT>

<21AN11> yeah they attacked a prison officer it was in the
papers </21AN11>

<INT> I I didn't see it but </INT>

<21AN11> yeah it was a they they attacked a prison two of
them but attacked a there's a lot of people in there who are
gonna be in there for the rest of their life and they're never
getting out that's why no one cares they don't care y I mean so
that they got nothing to lose y I mean you understand where
I'm coming from </21AN11>

<INT> I think so yeah </INT>

<21AN11> they got noth y I mean so that's the way they carry
on y I mean it's a game y I mean it's a game you play mind
games with me I play mind games with you prison officer plays
mind games with me I play mind games with him <Gr> you
know prison officer keep to themselves the the erm prison
officers keep to themselves the prisoners the inmates keep to
themselves </Gr> y I mean </21AN11>

<INT> yeah </INT>

<21AN11> <Gr> cos when you behind notice </Gr> s you've got
to know what you're doing out here <WS> you have to be very
col careful </WS> what you talk about y I mean well look <An>
</An> I've gotta go yeah </21AN11>

<INT> no worries <An> </An> thanks so much for your time and
erm yeah I hope we catch up again in future if if that's
something you wanna do </INT>

<21AN11> nice talking to you yeah OK I'm just saying but the
next time please let's do it at the er <An> </An> cos I want a bit
of money right now I'm broke </21AN11>

<INT> yeah no worries </INT>

<21AN11> y know yeah </21AN11>

<INT> deal </INT>

<21AN11> an yeah I'm not interested in money it's just the way
it would help </21AN11>

<INT> it does help doesn't it yeah I I g yeah I hear you </INT>

<21AN11> erm it would help <Noi=female voice in background>
</Noi> maybe I could like do something erm constructive with
it y I mean </21AN11>

<INT> yeah yeah no I will do alright <An> </An> well until we
catch up again </INT>

<21AN11> erm you won't catch me man the problem with now
is seriously I'm trying to erm renew a passport an I've got to do
something er I gotta ring somebody erm next week about

something else er s now I don't know if you could maybe have a
word with the doctor </21AN11>

<INT> yeah yeah </INT>

<21AN11> <Gr> er about er maybe reduction of my medication
</Gr> </21AN11>

<INT> I'll pass it on totally yeah </INT>

<21AN11> pass it on if you could make him an maybe as ah
yeah as I said I haven't seen my doctor in years y I mean y know
and erm I I did have a chat with him you know I mean but
maybe maybe you could convince him y I mean to ha maybe
have a difference in my medication you know I <TC> I guess
here's the thing </TC> that I may have a relapse y I mean but to
to to avoid a relapse you have to think to avoid a a relapse y I
mean </21AN11>

<INT> ah y I hear what you're saying but I can I can totally pass
that on I'd I can't I can't make any promises but I can definitely
s I can t pass the information on </INT>

<21AN11> you know well yeah yeah I I understand you don't
get nowhere you don't get nowhere if you get somewhere you
get somewhere but that's the reason why I want to speak to
him myself in person </21AN11>

<INT> sure </INT>

<21AN11> OK </21AN11>

<INT> yeah no worries so you have you alright OK <An> </An>
take care </INT>

<21AN11> well I've gotta go <Gr> are you call me on a mobile
phone </Gr> or </21AN11>

<INT> yeah I'm calling on a mobile yeah </INT>

<21AN11> yeah are you sure it's mm it's been a <Gr> one
minute and forty-three seconds and six seconds </Gr> is that
alright with you </21AN11>

<INT> yeah yeah it's fine yeah </INT>

<21AN11> can you afford it </21AN11>

<INT> yeah no it's all good it's well I mean it's it's all on it's all
on my contract so </INT>

<21AN11> <Lh> </Lh> yeah yeah yeah I yeah that's what I'm on
as well an the problem is is that y know if I do as I say I've gotta
cut off now but </21AN11>

<INT> s </INT>

<21AN11> if I make my money from my music and my book it'll
help me financially you know sort problems out y I mean
</21AN11>

<INT> yeah </INT>

<21AN11> y I mean I I just wanna make money from my music as I say I'm a sampler I sample music you know h y hip hop you know dance hall y reggae dance hall you know house music garage you know all all that soul cos I'm into music I'm into higher house music and Kelv I like Kelvin Harris he's a very good artist y I mean y I mean you know </21AN11>

<INT> yeah no it sounds awesome an I l'm s you know </INT>

<21AN11> you know </21AN11>

<INT> I think the potential's there with the music and the book and everything n er it's you know </INT>

<21AN11> y <Lh> </Lh> it is difficult it will come but when I don't know but I dunno it's all down to this one individual this case that I have to pick up that's gonna solve my problem y I mean an wh if I do have to do what I'm g an look it's crazy but it's true I know that I'm paranoid sir but I'm not very happy about it and I would <WS> lot </WS> if I didn't think I would I'll give this girl a piece of my mind for what she's done to me y I mean y ah she's ruined my life right and she has not made it any better for me or much for herself y I mean she's ruined it that's the reason why I have my reasons I don't wanna think the way you think I wanna think the way I think cos if I think like you I'm not gonna get nowhere if I think for myself I'm gonna get somewhere well look <An> </An> I gotta go yeah I gotta go </21AN11>

<INT> no worries <An> </An> take care thanks so much </INT>

<21AN11> well the next time I'm up up with erm we'll do it in the <An> </An> we'll have a chat in the <An> </An> an y I mean </21AN11>

<INT> yeah that'd be awesome </INT>

<21AN11> yeah ah you enjoy your day and y I mean </21AN11>

<INT> you too </INT>

<21AN11> I wanna come to <An> </An> actually because I wanna see a <An> </An> United game </21AN11>

<INT> well that'll be awesome yeah </INT>

<21AN11> <Gr> y about to have a s look be up there </Gr> cos I remember the old s sol scar and erm Andy Cole Cantona Bruce Lee Bruce all them the defenders and all that and <An> </An> </21AN11>

<INT> yeah that sounds awesome w you you have a good day and erm </INT>

<21AN11> alright yeah it was nice talking to you I'm gonna I'm gonna play some music now to sort of like er now y know I mean </21AN11>

<INT> nice one yeah yeah I hope you have a great day and thanks so much and erm yeah yeah take care </INT>

<21AN11> you too speak to you soon it's nice talking to you <An> </An> but as I said that show your feelings y I mean show that you are you are you're a family man show that you have

feelings have a bit of have a bit of remorse for people like me </21AN11>

<INT> yeah I I yeah I hear I hear what you mean yeah </INT>

<21AN11> have a bit of remorse because this one girl is causing me problems and like I don't know wh why I dunno and I have to find the answers it's me that has to find the answers <Gr> that's the reason what I'm going through this </Gr> y I mean I have to find the answers and when I do catch up with this individual <Gr> I'll gon ask </Gr> why you did that wanted me to do this is there any reason why and I want answers I want questions and I want answers y I mean from this one individual an <An> </An> I may sound crazy but what I'm talking about is true I gotta go OK </21AN11>

<INT> no worries <An> </An> so nice to talk to you you take care yeah </INT>

<21AN11> and I r will I might be able to get to write that book soon hopefully </21AN11>

<INT> yeah </INT>

<21AN11> I don't know but the only thing is that I've got to find an author and I don't know what to call it mm </21AN11>

<INT> well just just write stuff down to like as a starting point just write stuff down you can always edit it later </INT>

<21AN11> that's the problem I have learning difficulties and that makes problems worse I've learned many things </21AN11>

<INT> could you like say it into like a dictaphone or something and like record record the speech </INT>

<21AN11> I can't believe <Gr> that's why I just say you got to know what you're doing </Gr> </21AN11>

<INT> oh OK </INT>

<21AN11> y I mean </21AN11>

<INT> but maybe <An> </An> give you a hand </INT>

<21AN11> possibly yeah possibly I'll ask them </21AN11>

<INT> yeah yeah alright <An> </An> s thanks so much and erm I hope to catch up again soon </INT>

<21AN11> alright <An> </An> so what's the next time I'm gonna talk to you or is it somebody different </21AN11>

<INT> erm hopefully it'll be me again I don't know when but erm probably next year something like that </INT>

<21AN11> yeah I I thought so </21AN11>

<INT> it just it just takes so long to set a study up it takes about a year to set each study up so </INT>

<21AN11> probably the virus bits as well innit </21AN11>

<INT> yeah but you get you get paid next time </INT>

<21AN11> yeah it would help well I says you know I'd do something constructive look <Gr> I gotta go because this woman is a bit very angry </Gr> </21AN11>

<INT> no worries no worries <An> </An> thanks so much you take care </INT>

<21AN11> <Gr> speaking to you soon </Gr> yeah </21AN11>

<INT> yeah take care bye </INT>

<21AN11> bye </21AN11>

<INT> brilliant right so erm how was the experiment? </INT>

<18UG15> erm I don't know it was erm annoying </18UG15>

<INT> oh OK </INT>

<18UG15> yeah </18UG15>

<INT> erm do you do you mind telling me sort of more how it was </INT>

<18UG15> erm yeah because I I couldn't I couldn't see a link at all in any of them not not once er erm like er a <TC> lot of it I cos I think </TC> some of them repeated </18UG15>

<INT> yeah so erm wh </INT>

<18UG15> but I I the mm when they were repeating <Gr> I couldn't remember what my response to them before </Gr> and I guess it was all guesswork all the way through I don't know whether that had changed </18UG15>

<INT> OK no no no like erm so erm it's a it's a really strange looking experiment </INT>

<18UG15> mm yeah </18UG15>

<INT> because you have these two words at the top and then you have the two choices underneath erm so what the experiment's asking you to do is mm like make make metaphors so the erm the s two words at the top are like erm like the description words and then your choices at the bottom were one of two types of object </INT>

<18UG15> mm </18UG15>

<INT> and then in choosing er a type of object wh i like we were interested in whether the t the type of description influences the choice of the type of object </INT>

<18UG15> oh yeah </18UG15>

<INT> erm and so they the same words kept popping up because of the way that we had to choose specific words so that we could kind of narrow things down but erm it's so that's kind of what what the experiment was doing but erm I I can understand how because the words kept repeating and stuff </INT>

<18UG15> yeah </18UG15>

<INT> how it can be quite erm what because we we talked during the practice items about like the kind of way to respond erm how did you feel when you were doing the experiment in cos you mentioned like responding on gut feeling </INT>

<18UG15> yeah erm like I guess I didn't really know what to what to think </18UG15>

<INT> did it feel like there there had to be or did it feel like you were being asked to do something where there was a right answer </INT>

<18UG15> yeah </18UG15>

<INT> OK but I mean the ah which is really interesting because we we tried to design it so that there wasn't I mean there isn't a right answer because w you know the the choice of object is totally up to you </INT>

<18UG15> oh right </18UG15>

<INT> but it's interesting that it still feels like </INT>

<18UG15> t yeah not that </18UG15>

<INT> erm </INT>

<18UG15> because erm er especially because when they were repeating I noticed some of them repeating erm but <TC> I couldn't it's not </TC> as though <WS> I could think remember why </WS> I chose that so I'll choose that again </18UG15>

<INT> right I see yeah yeah and would that would that have helped like erm </INT>

<18UG15> because it was so f fast and the q so the the questions were so different </18UG15>

<INT> yeah </INT>

<18UG15> it's not like I could remember in my mind so oh I've just seen this before I'll click the same one as I saw before </18UG15>

<INT> I see cos that's something that's coming up a lot when we ask people how did it feel they say erm well it felt like I had to like come up with a rule </INT>

<18UG15> yeah </18UG15>

<INT> for responding </INT>

<18UG15> that's what I felt yeah </18UG15>

<INT> I see right erm cos technically there's there's no need for a rule but it's really interesting that that's like that's like an accidental erm result of the experiment </INT>

<18UG15> yeah </18UG15>

<INT> is that it seems to create this feeling that there needs to be a rule erm the words that came up at the top of the screen </INT>

<18UG15> yeah </18UG15>

<INT> were there any words that stood out more than others or </INT>

<18UG15> yeah I think I was thinking that some people might not know all these words like the word aromatic </18UG15>

<INT> yeah </INT>

<18UG15> is quite a <WS> singular </WS> word I'm not sure <TC> I like what if </TC> you didn't know what the word meant then the experiment would be would be void wouldn't it but if

you don't know what you're ch what you're you know
</18UG15>

<INT> responding to yeah yeah </INT>

<18UG15> yeah exactly </18UG15>

<INT> yeah so like erm th this was something we we tried to
erm sort of tried to control for in </INT>

<18UG15> yeah </18UG15>

<INT> in the design but you're so right like there's </INT>

<18UG15> yeah </18UG15>

<INT> there's gonna be people who might not know </INT>

<18UG15> and I think because of y you're not allowed to ask
questions so I couldn't ask say couldn't say to you please could
you tell me what aromatic means </18UG15>

<INT> oh I see yeah </INT>

<18UG15> maybe that would be I don't know </18UG15>

<INT> yeah yeah </INT>

<18UG15> maybe </18UG15>

<INT> yeah totally yeah erm were there were there any other
words that cos that's why we ended up with words like
boomerang </INT>

<18UG15> yeah </18UG15>

<INT> erm which er can sometimes I mean g I mean all of the
words seem out of place when they're placed next to each
other </INT>

<18UG15> yeah they're strange words like boomerang you
know what I mean you don't use that in the day to day do you
</18UG15>

<INT> no no no </INT>

<18UG15> yeah </18UG15>

<INT> erm what did it feel like you were doing when you were
doing the experiment </INT>

<18UG15> erm I don't know erm just erm that there's ninety
questions and er er I guess gotta go go </18UG15>

<INT> just going through </INT>

<18UG15> yeah </18UG15>

<INT> yeah erm so then like </INT>

<18UG15> because it because because <TC> I didn't really
couldn't see </TC> a connection as to I tried to move on quick
but s to see if I could find a connection in other questions so I

thought oh I don't know that one maybe I'll know the next one
</18UG15>

<INT> I see yeah </INT>

<18UG15> and that sort of gives like going through the the
questions </18UG15>

<INT> yeah is there like anything about the experiment that we
haven't talked about that you'd like to talk about </INT>

<18UG15> erm </18UG15>

<INT> cos any any question anything you wanna know about
the experiment like you're you're very welcome to to ask and
erm </INT>

<18UG15> <Gr> yeah erm want to know about </Gr> how it
links with schizophrenia </18UG15>

<INT> ah so we erm we're doing this experiment which is
looking at erm sensory so the descriptors on the top are </INT>

<18UG15> yeah </18UG15>

<INT> like sense words like smell and taste words sight and
sound words </INT>

<18UG15> yeah </18UG15>

<INT> and then the objects erm that you can choose from are
either concrete or abstract </INT>

<18UG15> right </18UG15>

<INT> and so one of the things we're interested in is whether
certain senses er lead people to form associations with certain
types of object and whether that differs </INT>

<18UG15> ah I don't know </18UG15>

<INT> erm ah in across groups </INT>

<18UG15> but you can't mess it up I feel like I might have
messed your experiment up </18UG15>

<INT> no no you no you really can't it's </INT>

<18UG15> <Noi=clicks fingers> </Noi> OK </18UG15>

<INT> it's you just you just respond how how you wanna
respond to the experiment cos that's like one of the things we
didn't wanna do was was make an experiment where there was
a a right answer erm that would be scored numerically or
something like the like the erm the matching stuff </INT>

<18UG15> yeah </18UG15>

<INT> the this is totally choice and we're we're just interested
in whether there are any differences in choices erm like some
of the things you pointed out about like erm the rarity of some
words </INT>

<18UG15> yeah </18UG15>

<INT> and like the you're you're you're pointing out things that other people have pointed out as well and it's it's really like it's really helpful for the redesign of future experiments like this </INT>

<18UG15> yeah </18UG15>

<INT> to know like erm what did it feel like going through were there certain questions where you you felt something different or </INT>

<18UG15> erm I guess it's s m er I could think I I guess I responded better to the concrete nouns </18UG15>

<INT> oh OK </INT>

<18UG15> like boomerang or you know er yeah and then the sort of ones like aromatic it's not as concrete it's it's not as easy I guess </18UG15>

<INT> I see </INT>

<18UG15> because like boomerang you see a boomerang and that's it but with the word aromatic I couldn't really visualise it </18UG15>

<INT> oh OK so like do you mind telling me a bit more about the v visualisation </INT>

<18UG15> yeah so erm so when I saw the word boomerang it instantly in my head I saw like a wooden like the actual pic like you know er but aromatic is more abstract I can't really not very tangible </18UG15>

<INT> I see </INT>

<18UG15> it's it's like out there </18UG15>

<INT> did you picture a specific boomerang as well </INT>

<18UG15> yeah I saw a boomerang in my head in my mind I could it I could when I read the word I could see the word boomerang I could see the p picture of a boomerang as though I'd just seen </18UG15>

<INT> OK </INT>

<18UG15> in everyday language </18UG15>

<INT> and does that happen with a lot of words that you hear or read or </INT>

<18UG15> erm yeah I guess erm like erm it it takes my mind less time to think of like a concrete noun than than some like abstract word </18UG15>

<INT> I see and then m moving to like creativity and language more generally </INT>

<18UG15> y yeah </18UG15>

<INT> like w what kind of what kind of role does mm first of all like language erm play for you day to day and then like day to day and then like creative language as well </INT>

<18UG15> I don't know what you mean sorry </18UG15>

<INT> erm well language however you define it so </INT>

<18UG15> erm </18UG15>

<INT> speech writing erm </INT>

<18UG15> erm I guess it comes from my mind so so if I'm talking about something then I sort of have it in my mind before I say it </18UG15>

<INT> oh OK </INT>

<18UG15> like if we're talking about like I don't know animals you know I'd picture I'd I know what an animal is but if you talked to me and said the word like I'm having difficulty or something <Gr> it's not as like can't really associate </Gr> anything with it in </18UG15>

<INT> like erm like represent like how how easy to represent these these words are like </INT>

<18UG15> yeah </18UG15>

<INT> it's one of the reasons actually that when erm people design experiments for taste words </INT>

<18UG15> yeah </18UG15>

<INT> like they tend they it's hard to find taste words that have representations like in in picture experiments </INT>

<18UG15> yeah </18UG15>

<INT> like it's easier to erm have a picture equivalent for tall cos you can have like a tower next to a coin or something but trying to find a picture that that represents like salty or </INT>

<18UG15> yeah yeah it it's more difficult yeah </18UG15>

<INT> erm sour it's way yeah </INT>

<18UG15> how would you do it without writing the word salty you'd have to like </18UG15>

<INT> it's really hard but ah </INT>

<18UG15> very creative and very ingeni inventive wouldn't you </18UG15>

<INT> yeah yeah like I I dunno how you'd have to like you say like kind of </INT>

<18UG15> you'd have to sort of like like cheat like by giving too much information or you'd have to like literally draw a salt mill </18UG15>

<INT> yeah </INT>

<18UG15> yeah </18UG15>

<INT> that's amazing c do you mind telling me just a little bit more about that what you mean by the word cheat cos I think that's a really interest like in relation to creativity as well </INT>

<18UG15> yeah </18UG15>

<INT> like </INT>

<18UG15> erm I guess erm cheat would mean like skip or skipping over something erm like j just <DT> like I said before </DT> erm when when you were if you're talking to somebody and you're teas you have to sort of ah like for me I have to sort of have it in my mind before I say it </18UG15>

<INT> OK </INT>

<18UG15> like you need to know what you're talking about <TC> you can't like some people can talk </TC> like say er you talk without thinking but you have to have some sort of notion of what you're going to say before you say it I guess if you're cheating then like erm like I said with the drawing a picture of the salt mill it's harder to like conceptualise it like not salt but like the word salty </18UG15>

<INT> yeah yeah </INT>

<18UG15> that kind of </18UG15>

<INT> yeah yeah </INT>

<18UG15> yeah so what like with mm for me then it's concrete nouns are easier to to work out and get get across and other er like </18UG15>

<INT> when in like everyday communication when someone uses more abstract language </INT>

<18UG15> yeah </18UG15>

<INT> what's that like for you </INT>

<18UG15> erm it's more difficult than having like something concrete and visual it's not to say I can't use adjectives I'm not trying to say </18UG15>

<INT> no no no and erm </INT>

<18UG15> or other words but I th I guess it's just something that could it's <Gr> more of a instant thing </Gr> </18UG15>

<INT> right I see so it's like </INT>

<18UG15> yeah </18UG15>

<INT> if it's like about how how much time </INT>

<18UG15> exactly yeah not that I realise it when I'm t talking but analysing it yeah I guess I would </18UG15>

<INT> I see yeah thank you so much for talking to me about this is there like is there anything that we haven't talked about that you'd like to talk about </INT>

<18UG15> erm no I don't think so </18UG15>

<INT> OK well erm I'll I'll just stop the recording and then I'll erm </INT>

<INT> interview question erm and it's and the rest is just like a chat around that for as long as you you wanna chat about it so it's erm do you feel like you use language creatively </INT>

<18UG14> well I'm dyslexic so in text and stuff like that it's gotta be simple but <TC> I don't kn I suppose </TC> sort of what you'd call it <TC> is it do you have </TC> questions or is it creatively </18UG14>

<INT> yeah like however you interpret the question as well </INT>

<18UG14> yeah go on yeah whether it's true or not <Gr> use to always copy off the person next to me </Gr> couldn't be writing a story or anything like that I suppose I used to just be repeating me words <Gr> what I used to write and think of something else </Gr> I don't think I do no </18UG14>

<INT> and is like what's that like for you like is is </INT>

<18UG14> I get by but <TC> it's gets </TC> quite challenging sometimes when people ask me to read stuff and stuff like that I'd like to get more creative really I suppose I try I have I have tried but I don't think it comes out on paper what I'm feeling I <Gr> if you was to speak about it I suppose I can be creative then </Gr> but to get it down on paper and speak creatively writing it I suppose I couldn't do it but if you've spoke to me about it I probably could get creative doing sommat </18UG14>

<INT> I see yeah is it like erm is it just language where you feel like it's it's not so creative or is it like other stuff as well like art or </INT>

<18UG14> I'm <WS> toably </WS> useless at art it's like five year old drawing a picture and erm b in language er I just keep it simple </18UG14>

<INT> is that </INT>

<18UG14> I don't even know if I like bust my nose or I w nine or ten <Gr> I was having little bit of problems </Gr> before that but after that it was totally nursery stuff you know what I mean </18UG14>

<INT> is it like erm well I mean what when you say like erm you you get by and like do you mean in like day to day communication like </INT>

<18UG14> yeah yeah yeah yeah </18UG14>

<INT> just stressful and like it's just the erm like for you </INT>

<18UG14> communicate alright and stuff like that <Gr> but when other I think </Gr> if it if it something's put to me and it's quite long I'll start doodling and doing something else and er I'll avoid it </18UG14>

<INT> oh OK does do people communicate or do people say shorter like or or do people take a more straightforward approach to communication if you do </INT>

<18UG14> er you know if it's in a group then you know I mean and you have to do sommat I suppose I'll copy off what the

person next to me said but change ev a lot of it to suit me y </18UG14>

<INT> oh I see </INT>

<18UG14> if you get what I mean that's me own personal thing I'm not <WS> informed </WS> any w el what anybody else does it w m or I get anyway you know I used to be upset a lot when I was a kid cos I couldn't do me work and it it puts me on the spot a bit but er yeah that was it let go of her hair upset when I can't do things and stuff like that <WS> poom </WS> when it comes out I don't know but I get by </18UG14>

<INT> cos cos talking to you now it doesn't seem like it like it doesn't seem like you're </INT>

<18UG14> fairly normal behaviour and stuff like that </18UG14>

<INT> oh I see no the question </INT>

<18UG14> I can speak I can speak I can speak to you alright but it when it comes out in writing it's fucking horrible for me it doesn't compute up here I don't know why </18UG14>

<INT> oh </INT>

<18UG14> I think it I think it's messing around too much cos I was I was a kid when er when we first started reading well I can remember it now I was a kid me first word y ah ee ee we given a book to read I'd a I'd read the opposite word but I meant the word in the book I kept on doing that and she thought I was totally w were useless and I was just having her on then I think it just stuck with me that I was totally useless and I couldn't do it can't like think cos I wrecked my reading after it as well cos my friend as well kept on doing that there was one day I come to my reading and I just I couldn't follow any of it </18UG14>

<INT> and erm was that when you were reading the erm book doing the opposite meaning </INT>

<18UG14> of the meaning for the words in the book like </18UG14>

<INT> yeah </INT>

<18UG14> if you'd it was because and s <Gr> it's shouldn't or sommat </Gr> I was like coming through the words one by one I was trying to be cocky basically </18UG14>

<INT> ah </INT>

<18UG14> but er it backfired on me I think er we y it started like people thought I was having a nervous meltdown or something like that and I wasn't I was just <WS> gagging </WS> along </18UG14>

<INT> so have I understood that like you it was like erm that sounds like a creative thing to do language </INT>

<18UG14> that's what I I found it quite funny but obviously it wasn't quite funny to be quite honest totally hon er but it w I was feeling stupid cos I remember like remember doing that

when I was a kid <DT> if that's got anything to do with your question </DT> </18UG14>

<INT> yeah yeah well I mean it's it that sounds like erm a way of playing with language you know like using the book and then doing the opposite meaning is like that's that's the kind of thing that erm that the study's interested in like how how people explore language and use it and it's less about there being a right way to use language it's more about erm what is it like when you were doing that what did it f feel like </INT>

<18UG14> er I dunno I was giggling and er having a laugh having a laugh at me my own expense but it's backfired on me now oh ho ho huh </18UG14>

<INT> is that something that like is that like a game with language you could still play now or wouldn't want to play now or </INT>

<18UG14> er I dunno like I'm not very good at reading or spelling and stuff like that but I <TC> I'd I've </TC> heard cockney rhyming slang in me head they'll say things like we're going to trout you coming out or saying stuff like that <DT> if that's got anything to do with it </DT> but </18UG14>

<INT> yeah </INT>

<18UG14> most er they'll try and get me to do cockney rhyming slang but I don't think people take no notice I think they think you're stupid for trying to be funny </18UG14>

<INT> right I see what you mean but that's part of the the process of coming up with something funny though isn't it like </INT>

<18UG14> I know yeah but in here yeah in here </18UG14>

<INT> saying something when you </INT>

<18UG14> they just pass it off they pass you off as being strange </18UG14>

<INT> and with the rhyming slang like is it cos it's fun to say or like it's </INT>

<18UG14> I dunno why I find it funny I just </18UG14>

<INT> is it the sound </INT>

<18UG14> feel that these they repeat what you say and well what's that supposed to mean and then you give them the meaning of it and they go ah </18UG14>

<INT> <Lh> </Lh> </INT>

<18UG14> <Lh> </Lh> I don't think they quite follow me me slang </18UG14>

<INT> when when you use the slang do y do you do the same as the traditional rhyming slang or do you change it slightly </INT>

<18UG14> I probably change <Gr> it's like slang for suit yourself </Gr> </18UG14>

<INT> I see </INT>

<18UG14> to what like sounds like well I make up words basically </18UG14>

<INT> oh OK </INT>

<18UG14> make up words but rhyming my words has no effect er it it for me cockney rhyming slang it's like mine was what it was </18UG14>

<INT> and what for f for fun just to like </INT>

<18UG14> for every now and again just if it's quiet you know we're all bored we're not doing anything I'll start doing me thing it's a way of f to annoy people basically </18UG14>

<INT> oh that </INT>

<18UG14> <Lh> </Lh> </18UG14>

<INT> that sounds like something that's just fun to me like just like making up new words and stuff like </INT>

<18UG14> yeah yeah </18UG14>

<INT> erm when you hear songs like or song lyrics or </INT>

<18UG14> I can't take em and I can't follow la the words but pick up on small b t like erm chorus but when it comes with the actual song what was on each of us I can't follow it at all or the catchy ones they give me the couple of words is they'll say the couple of words and stuff like that but when it comes in for a meaning or something what have you wouldn't I can't m even remember it </18UG14>

<INT> oh I see so like cos we c can talk about anything in this in this like erm I like I don't wanna ask you about stuff that you that you like about language if if you might not wanna talk about language which would be fine do you know what I mean I'm just saying like do do say if if like </INT>

<18UG14> oh yeah no you you been alright for a while </18UG14>

<INT> oh cool erm </INT>

<18UG14> it's just gonna be with all my stuff innit bit random </18UG14>

<INT> yeah it's and like it it's a study that it's quite an unusual study cos erm </INT>

<18UG14> well w <DT> as you say you asked me a question what do you mean what's your meaning of language </DT> eh I don't know I suppose that's the meaning's either of language or or another point I'm trying to tell you about </18UG14>

<INT> w you when you hear erm and that does that really does answer the question that really helps cos it's like erm so then like yeah h how do you define language generally </INT>

<18UG14> er I get a bit stuck for words meeting people being around people <Gr> what and not </Gr> so well and what have

you you get you know on eggshells around you you really can't you don't know what to say that's what I was a say as er sort of say anything sometimes but other times in a way it's so hard to learn I have a half way if you know what I mean to no I'm not saying we're close I think they're trying to get rid of me basically because I'm on my way out now out of hospital er yeah so they're quite funny I'm quite funny I go up to them but I don't think they really get my kind of language if you get what I mean my you know w I mean my <TC> they can't but it just </TC> isn't caught what you chatting about like you know the shit that I chat </18UG14>

<INT> is that oh </INT>

<18UG14> that's what I would say I mean and then some of them </18UG14>

<INT> what bits don't they understand like </INT>

<18UG14> er I dunno I'll erm some of it's got to do with money and stuff like that because I know there are a couple lads here they're only on 135 pound a fortnight and I'm on like 300 odd so I buy em drinks and that from the shop and I go you know a quid for that a quid for that they're all getting really span out and I'm only joking I don't want it back but I they'll then they say I won't come out with you again you start charging me stuff like that </18UG14>

<INT> that's really like </INT>

<18UG14> I'm not trying to buy people's friendship by buying them a drink <TC> but the literally you can </TC> wake up in the morning we've got nothing else to do apart from go to the shop and get a dr an energy drink </18UG14>

<INT> yeah </INT>

<18UG14> but when I've when I've got their it's more out of mine they do they do give it back in their own way you know what I mean might get a little bit more off me but they make their w they make their effort when they get their own money and stuff like that I have to go and buy clothes and what have you I'll lend them money and they get always give me it back </18UG14>

<INT> is like that the the times when people don't understand you that that like it sounds like most of the time though like it is it just when you're joking or like </INT>

<18UG14> just when I'm joke a lot of times we're all joking yeah I don't think I've had to use conversation really there's nothing serious about being here it's just like we're all held here you say I get <An> </An> the cheese and stuff like that but you know w I mean so there's a community crowd some of us are unwell some of us they always said to me that I've heard voices but I I deny it told it was fact er I've never heard that I've never heard voices in me life I have thoughts you know like anybody else but it's not a crime to have a thought some of them might be strange but they're not a voice and <Gr> they's always t took no notice </Gr> take take no notice of what I'm doing but I suppose everybody has peculiar thoughts every now and again I can only put that down sometimes to an individual or somebody that doesn't like me strange thoughts </18UG14>

<INT> how d d do you mind if I ask well er how h how you mean like </INT>

<18UG14> er I know one lad who went and got out of hospital the first time he has ADHD and he's th a bit wild as in he's always making fun of me and stuff like that and I'll d er and er not being moving for a bit I'll have a strange thought but it'll only be <Gr> so it he making fun of me </Gr> or saying that's what I was going to do or something that he was having a laugh with his with the rest of his mates about if that answers your question </18UG14>

<INT> yeah yeah yeah I understand it sounds it sounds like when we talk about being creative with language we're talking about humour </INT>

<18UG14> yeah yeah </18UG14>

<INT> and like having a unique sense of humour by the sounds of it </INT>

<18UG14> yeah yeah yeah </18UG14>

<INT> there's nothing wrong with that </INT>

<18UG14> well alright fair enough as long as you find it quite normal </18UG14>

<INT> yeah yeah like cos I'm I'm just wondering like is what that's like for you cos like when you make a joke is it more for like cos it makes you laugh or is it you like them to laugh too but they don't </INT>

<18UG14> I don't know I think it's just sh sh just er <DT> what were you talking about what what did you say </DT> er not humour but I just peck just pecking at somebody's head </18UG14>

<INT> <Lh> </Lh> </INT>

<18UG14> and that's all a peck they peck at my head so I peck him back it's my chance </18UG14>

<INT> ah I see </INT>

<18UG14> get me revenge what comes around goes around innit </18UG14>

<INT> cos you know there's there's like some jokes </INT>

<18UG14> oh yeah I know </18UG14>

<INT> that that we make for like cos they make us laugh and there </INT>

<18UG14> yeah I know what you mean yeah </18UG14>

<INT> are some jokes that we make cos it makes other people laugh and then there's some jokes that where we it's sort of like somewhere in the middle like </INT>

<18UG14> not very funny you're right </18UG14>

<INT> yeah but like erm yeah no that's like that is there other stuff about language that </INT>

<18UG14> er well I do a lot of fishing and stuff like that </18UG14>

<INT> ah I see </INT>

<18UG14> <Gr> I suppose it's quite a long with </Gr> then there's the small <WS> term </WS> talk about like you might get a run that's to catch a fish you gotta and there's like you call rod reels set up stuff like that </18UG14>

<INT> yeah </INT>

<18UG14> p your bivvy your chair like there's loads of different other things like th they even naming the fish the fish have names and there's there's loads of different companies with different products and stuff like that and I don't think you really hear about that you kn and I don't mean you yourself as a person but a lot of us the small term for some of the products and brands what they're all were and some of the names of your equipment if you're a tackle tart and stuff like that </18UG14>

<INT> yeah and w </INT>

<18UG14> a tackle tart a tackle tart's when you want to buy the most <WS> expensivest </WS> gear there is </18UG14>

<INT> I see </INT>

<18UG14> and you got to own the most expensive brands and you're not allowed to go out up on that I've got a little bit of tackle tart but I'm not a full tackle tart I've got a bit it's expensive I've haven't got a lot of money well I had the money kind of I had the money for alright stuff but it's all old now three or four year f five years old six years old so look through er arena </18UG14>

<INT> does the fishing stuff change quickly like fishing </INT>

<18UG14> it can do yeah and and er some of the shops what you get it from they'll come and go a lot of it's er a lot of the old businesses have gone kind of </18UG14>

<INT> ah yeah </INT>

<18UG14> you know what I mean they're all gone tits up and somebody else will open them and they'll have little bits but not what I wanna look f ing old ones or the old school stuff's probably more better than <TC> the bought what the </TC> new stuff they've got out now but I suppose you gotta trawl online for it haven't you you know what I mean and some of the st some of it you know I mean <TC> some of it some of my </TC> fishing stuff that I've got s little bits of it <Gr> that'll get to supposed to sell it and snap it on </Gr> I've got little bits but I don't know if you don't really see much of the old stuff have we I it goes too quick but it's not a language where you'd use in everyday life you know w I mean some of the er terms you give off for fishing you know what I mean so I thought if people say is it on the dark side but it's dark on the night you fish with the night you spend the s w y you spend hours there like y I m and

and I've fished I've fished for a week once not getting in a shower not getting clothes not eating much not got any tea probably didn't catch anything there <Lh> </Lh> this is when I was a lot younger </18UG14>

<INT> wow you did a whole week out in </INT>

<18UG14> yeah out fishing yeah </18UG14>

<INT> wow </INT>

<18UG14> I think somebody was with me for er first few days but they buggered off but I stayed </18UG14>

<INT> wow </INT>

<18UG14> I'll just go and get the phone </18UG14>

<INT> oh yeah sure </INT>

<18UG14> oh I made arrangements but never mind cancel it all </18UG14>

<INT> oh no that's OK it's do you do you need to take the call or </INT>

<18UG14> no I've took the call then </18UG14>

<INT> oh cool but yeah like you were saying about fishing like the the erm like fishing slang </INT>

<18UG14> a lot of slang anyway </18UG14>

<INT> yeah </INT>

<18UG14> yeah </18UG14>

<INT> cos that's like a nice way to relate to other people who who like fishing as well like using the kinda shared language of </INT>

<18UG14> I think mo most people in here they just think you go for a float you catch fish with all the small ones and I go for like big ones big carpies and they they always say I catch more fish than they do but there's stuff like that when you have a little catch up on the thing </18UG14>

<INT> I see </INT>

<18UG14> probably haven't thought about it how do you mean they wouldn't some of them can't well it some people they can't really cast out and stuff like that I think they need s to teach em a bit better bet a better teacher than me anyway but I just show them the basics of what to do if they get er the hang of it or not I don't know like a lot of em might catch a fish over their odds er last Saturday we went and it were the biggest one <WS> all </WS> caught all day <Lh> </Lh> </18UG14>

<INT> what when you were showing someone else how to </INT>

<18UG14> how to wind em in yeah </18UG14>

<INT> ah </INT>

<18UG14> I weren't too bothered cos it was <Gr> it about thirty forty pound </Gr> but for his first fish </18UG14>

<INT> wow </INT>

<18UG14> and I've y know I was only catching nine ten pounders he was he was chuffed to bits with it you know what I mean </18UG14>

<INT> well that's yeah </INT>

<18UG14> he was happy </18UG14>

<INT> that's </INT>

<18UG14> he was happy he was saying like like what is it let me reel reel one in I want to reel one in y you're supposed to say can I wind it in and he's going can I wheel it in can I wheel it in </18UG14>

<INT> well that's a sign that you taught him well </INT>

<18UG14> yeah </18UG14>

<INT> you know </INT>

<18UG14> he wants to start fishing but er I don't think he's gonna learn nout and that er to tie rings up and what have you I think er that'll be er and to show how he doesn't know how to cast out and stuff like that so </18UG14>

<INT> yeah </INT>

<18UG14> I think that'll be er plus where to fish when you get there </18UG14>

<INT> yeah </INT>

<18UG14> I've found out two spots one by the island and one by where the shallows meet the deeper bit </18UG14>

<INT> ah </INT>

<18UG14> fish t half way towards the shallows from the deeper bit you catch it's like you catch a lot of fish there and there's an island they have quite a few little islands as well </18UG14>

<INT> wow yeah t to teach someone how to how do that and for them to catch </INT>

<18UG14> catch as well yeah </18UG14>

<INT> yeah that's awesome </INT>

<18UG14> I asked the ward manager if we could go fishing all night but because of some of the sections that people are on you know 41s I'm just I'm just on a straight simple section and er too much paperwork for em to do plus they got to apply to the Home Office and what have you it's too much hassle for them to do it so he said no </18UG14>

<INT> but you know </INT>

<18UG14> I know y for me own pl for the next pl er I'm going a place called <An> </An> <An> </An> in <An> </An> they've s just shown me around a couple of er lakes in there where I can go fishing and that so they look alright yeah yeah </18UG14>

<INT> sounds amazing </INT>

<18UG14> go there for a few hours and well I think one spot's not night fishing and the other one's night fishing but it's all weed like plants that grow in the water weed </18UG14>

<INT> yeah </INT>

<18UG14> not weed weed not weed full weed like weed beds in the summer when you fish in it if you catch a fish it'll probably go in the weed bed anyway so I don't think it w er I don't think it erm could when the cold winter comes along it'll kill it anyways so </18UG14>

<INT> yeah </INT>

<18UG14> plus you get some bigger decent ones in the lie low like a horseshoe you know create bumps </18UG14>

<INT> oh right </INT>

<18UG14> horseshoe word <Lh> </Lh> </18UG14>

<DOC> <Noi=female voice in corridor> </Noi> </DOC>

<INT> that's like </INT>

<18UG14> another sign of <WS> create </WS> <Lh> </Lh> </18UG14>

<INT> yeah </INT>

<18UG14> <Lh> </Lh> I find that's where some of the stupidity comes from not er like using everyday language you know what I mean so many terms for stuff like going through fishing which I grew up with a lot of older people what went fishing and you didn't go down to the bottom on the first fishing first fishing set and what have you I started <TC> fishing properly you catch </TC> they catch two fish and what m what they say is oh nice catch nice bit of fish so erm got me a fan basically but I have me own techniques and rigs and what have you </18UG14>

<INT> yeah and t I hear you say this idea w it's stupidity I don't think it's stupidity I think it's just using </INT>

<18UG14> well I think mo mo I think most people that go fishing and go carp fishing they stay overnight they use it as somewhere to take <WS> out </WS> drugs or to drink </18UG14>

<DOC> <Noi=female voice in corridor> </Noi> </DOC>

<INT> oh </INT>

<18UG14> you know where and that I think you know they got caught em <Gr> up in the more of one more pint </Gr> they've started to drink then it turns into this all night bar where and then they're pissed going round all the time and then I I I suppose I'm against both now and <Gr> I'm against the take

drugs </Gr> whilst I'm fishing and I'm against the drinking while I'm fishing oh but you see what the water's got more for the habitat and the wildlife and the surroundings and what leads where like a <InAu> </InAu> <InAu> </InAu> <InAu> </InAu> as well </18UG14>

<INT> yeah </INT>

<18UG14> should have had to do with conservation or something like that <Lh> </Lh> </18UG14>

<INT> yeah </INT>

<18UG14> I dunno really </18UG14>

<INT> that's a no that's an ideal </INT>

<18UG14> mm </18UG14>

<INT> so do you like sort of like the outdoors and stuff </INT>

<18UG14> yeah yeah yeah yeah there's always fishing you know they bang the boat on us I'm by the water's edge seeing you know when either sun it's rain or it's blowing a gale that's what it's do y know I mean you're out in all elements </18UG14>

<INT> yeah </INT>

<18UG14> er yeah nicer if it's there's somebody there you can sit down and you can share getting fried and it's not as nice in the winter always peeing down blowing a gale </18UG14>

<INT> yeah yeah but like </INT>

<18UG14> well I go carp fishing in the summer and pike fishing in the winter pike erm they got loads of teeth they f they tr jump out the water i think they can do round round here they grow up to like thirty forty pound and to catch a thirty five pound fish you know what I mean bit of an achievement really getting it in </18UG14>

<INT> yeah </INT>

<18UG14> I went up to twenty odd pound but that's more that's really an achievement for where I was </18UG14>

<INT> and when er cos I've never been fishing so I've no idea what it what it feels like but like when you're was it was it erm winding it in the </INT>

<18UG14> erm </18UG14>

<INT> or reeling it in </INT>

<18UG14> well er what it is you'll strike you pick the rod up y know it on you got a bait running on the back of your reel you know bobbing I just use pegs and my peg goes up cos it's a light indicator or you have a bobbing something you clip on your line </18UG14>

<INT> oh OK </INT>

<18UG14> when that goes up and you get it good take slack and it goes out you gotta fish you <TC> gotta wind you strike </TC> then it might take the line it might shoot off home or it might come straight at you basically you you've got to give it line or then winding the slack line if you get what I mean it might come at you you w you wind you wind it to get it into your net in the end t you it w either come at you or go away and it's gotta thrash around and it'll thrash around in front of you </18UG14>

<INT> I see </INT>

<18UG14> and it might take a lot of the line but you treat it back on the rail they're it you know it it but they get tired after a bit and er when they're tired they stick their head up then they'll just wallow over your net </18UG14>

<INT> wow </INT>

<18UG14> <Gr> could take five then minutes </Gr> could take twenty or thirty minutes depending on the size of the fish </18UG14>

<INT> twenty minutes with a twenty pound fish </INT>

<18UG14> well the er twenty minutes for a thirty or forty pound fish </18UG14>

<INT> wow </INT>

<18UG14> but it depends if you're on light gear or on heavy gear because you know on heavy you got more chance of holding your cow up on lighter gear it's more using the line I think it goes on for longer <Lh> </Lh> </18UG14>

<INT> that must take some </INT>

<18UG14> yeah y er your arms get quite well hard you get toned in the arms </18UG14>

<INT> yeah </INT>

<18UG14> I suppose you could take girl go on take go on a fishing er holiday or something like that </18UG14>

<INT> er fishing sounds </INT>

<18UG14> it's not too bad especially if you go if you get somebody that knows what they're doing and they're camping out you get some camping out but make sure it's a nice day </18UG14>

<INT> yeah </INT>

<18UG14> cos if it pee it down it gets all muddy and er it's not too great carrying all your stuff home or to the car or what have you things soaking in the car you've gotta come all over </18UG14>

<INT> it sounds like even when the weather's not that good still fun though </INT>

<18UG14> yeah yeah yeah yeah </18UG14>

<INT> bit nicer when it's sunny </INT>

<18UG14> well oh yeah </18UG14>

<INT> I've just seen the the time by the way d do say if if like
cos </INT>

<18UG14> I am kind of like er pushed for time at the moment
yeah </18UG14>

<INT> yeah yeah yeah so I'm s I'm er I'll stop the the recording
thanks so much for chatting to me for </INT>

<18UG14> alright then </18UG14>

<INT> so there </INT>

<18UG11> I'm intrigued to know what you want to know
</18UG11>

<INT> well there's so there's only one erm one interview
question and the rest is just a chat about about it really so it's
erm the question is do you feel like you do creative things with
language </INT>

<18UG11> with language </18UG11>

<INT> erm and that mean erm language in an any sense </INT>

<18UG11> any an this goes be c not really </18UG11>

<INT> ah do you mind er if I ask erm why that is </INT>

<18UG11> what kind of thing do you mean with language
</18UG11>

<INT> like erm it could be anything from like writing short
stories </INT>

<18UG11> well I have got an interest in writing stories and
script writing </18UG11>

<INT> ah </INT>

<18UG11> and I intend to do that when I get me desktop
computer brought in </18UG11>

<INT> amazing have you been script writing </INT>

<18UG11> yeah I've done it before I'm at a really hard bit
before I came into hospital I didn't complete it so I need to
complete it get it out there <Gr> so really coming in hospital it
doesn't make me not do anything I want to do </Gr>
</18UG11>

<INT> yeah </INT>

<18UG11> you know I'm not restricted in doing anything
</18UG11>

<INT> that's really nice to hear </INT>

<18UG11> yeah </18UG11>

<INT> did you did you start writing </INT>

<18UG11> well I've done it for well I've been in hospital three
years and prison like six months so it's about four years ago er
that I started writing to keep me busy was one aspect I mean
</18UG11>

<INT> when you when you started writing was there something
that erm that you liked about script writing more than other
kinds of writing </INT>

<18UG11> well what I like to do is erm out of <TC> books good
books </TC> I've read try and make them into erm plays and
what s the er plays of some sort </18UG11>

<INT> oh I see </INT>

<18UG11> cos really I'm not doing the m the majority of the
work cos the book gives me the idea you see and I just wrote
me me play to it to go with it </18UG11>

<INT> that's still a lot of work though like adapting </INT>

<18UG11> well it's it's tricky at parts but it's er I just have a skill
for it really so this hopsital won't put the dampers on it when I
get me computer in and I've been creative doing me art me
artwork here I've got some artwork in me room and I won a
<An> </An> <An> </An> award for me artwork in </18UG11>

<INT> wow </INT>

<18UG11> drawing a vase with flowers in it won a <An> </An>
award </18UG11>

<INT> wow </INT>

<18UG11> last year so I don't know how many entrants there
are to that but think it includes prisons and that doesn't it and
er </18UG11>

<INT> wow </INT>

<18UG11> all them institutions </18UG11>

<INT> that's that's amazing have you been doing artwork for
long as well </INT>

<18UG11> erm since I've been here with erm f the three years
since I've been here well now <TC> it's <WS> slow </WS> it's
stopped </TC> cos they don't provide the the art facility <Gr>
that they on this ward </Gr> </18UG11>

<INT> oh I see </INT>

<18UG11> so I can't do any art now really I could push that
table over here and do some art yeah but they <Gr> don't have
any much in crayons and pencils and paints </Gr> </18UG11>

<INT> I see </INT>

<18UG11> if I really asked them to they probably would buy me
some but I'm not that keen really now </18UG11>

<INT> is it more about the writing at the moment </INT>

<18UG11> yeah I like to do the writing now to keep busy yeah
so I'm hoping to go to me father's house where it is in fourteen
days and get it from him I'll have to book a visit to visit him
</18UG11>

<INT> nice </INT>

<18UG11> but I wouldn't say many people on here are creative
they just spend their days just lounging about and watching TV
</18UG11>

<INT> why why do you think that that is </INT>

<18UG11> why I would think it is it's just because this ward is actually not the same as <TC> any war other wards </TC> it doesn't provide the artwork or er art cla art lessons it doesn't provide art lessons erm <Gr> for that the other wards </Gr> they go to a special building which they can do artwork if they want but we can't go there we're not assigned to go there so <Gr> many people on here just erm lounging about really </Gr> we can go <TC> to inter what we </TC> can use the internet at <An> </An> it's called erm so we can use the internet on Wednesday afternoons but apart from that that's it for this ward </18UG11>

<INT> wow is is that because there there isn't like erm an OT for this ward or </INT>

<18UG11> they make their own er they make their own food on here as well and </18UG11>

<INT> ah </INT>

<18UG11> and the erm staff make it five o'clock so you don't <TC> get tram food certain this ward's </TC> different from the rest erm I'd say it's th it's not a creative ward really you don't have erm access to the art room and but other er wards do er suppose not many would want to script write like me but er so there's not really much for patients on this ward </18UG11>

<INT> I see when you write scripts do you like what's what your process like like do you see the the film as you're writing </INT>

<18UG11> well I go through the book again and write what I think it <WS> interpreteates </WS> and erm my characters are starting to talk to each other and er I just keep going on like that until I finish it </18UG11>

<INT> and do you follow the like the plot closely or do you like make sl like changes to the plot or erm </INT>

<18UG11> I follow the plot closely yeah and er try and write about <WS> in </WS> try and <WS> interpreteate </WS> it for different people </18UG11>

<INT> oh I see yeah </INT>

<18UG11> in the book </18UG11>

<INT> oh like different character descriptives </INT>

<18UG11> <Gr> and how talking to each other </Gr> </18UG11>

<INT> wow </INT>

<18UG11> it's quite enjoyable really erm er s it's took a long for me it's on me hard drive the the work I do I've done one I've written one already </18UG11>

<INT> what was the it if you don't mind my asking what was the book the first one </INT>

<18UG11> the winter comet I somehow once I've done em I just erm don't erm </18UG11>

<INT> <Noi=activates personal alarm> </Noi> oop </INT>

<18UG11> oh have they give you that </18UG11>

<INT> <Noi=disables personal alarm> </Noi> </INT>

<18UG11> to come in with </18UG11>

<INT> yeah it just went off </INT>

<18UG11> they'll be alright they're always going off but they don't act on it </18UG11>

<INT> I must've leant on it sorry sorry </INT>

<18UG11> so it's called the winter comet and I've done that and er quite proud of me work that's that's using the book and er writing characters for each and that </18UG11>

<INT> w </INT>

<18UG11> I did that er before I came here yeah I did yeah so and this new one erm can't remember what it was called <Lh> </Lh> it's ah cos I I somehow don't don't keep em <WS> voiced </WS> in me brain now cos erm cos of where I am I feel erm it was a lost cause really I've not got anywhere w e yet but maybe I'm not putting it out there to t right people yeah </18UG11>

<INT> have you have you sent the first one out </INT>

<18UG11> no I haven't <Gr> I sent it to if they wanted to do something with it </Gr> and they all in <An> </An> sent it to em cos they had er s er what was it called had a special erm commemoration didn't they in the arts </18UG11>

<INT> oh </INT>

<18UG11> yeah erm said t s t er couldn't really get a a city gets it every four years don't they </18UG11>

<INT> oh I don't I don't know this </INT>

<18UG11> yeah it's called erm the <An> </An> city of arts or something like that </18UG11>

<INT> oh is it like like a </INT>

<18UG11> ar </18UG11>

<INT> like an art </INT>

<18UG11> it's were in <An> </An> and our next one's <An> </An> I think where they just do arts and theatre plays and all sorts of things it's again c to com commemorate the arts </18UG11>

<INT> well that sounds like a like a great place to s to stay in do you </INT>

<18UG11> yeah it's a different place every four years I think it is <An> </An>'s had it er erm </18UG11>

<INT> do you write more for film than the </INT>

<18UG11> no </18UG11>

<INT> stage </INT>

<18UG11> not for film stage </18UG11>

<INT> ah nice </INT>

<18UG11> one one thing I ought to do is erm there's a theatre in me old town to me it's it's theatre and I might show them it I might put the show in in book form and hand them out to them </18UG11>

<INT> yeah that's a really good idea </INT>

<18UG11> yeah I've got a cheap publisher who does it for me I've also wrote one one book about computer studies </18UG11>

<INT> like erm </INT>

<18UG11> well I'm good <Gr> a database databases </Gr> so I wrote one erm exploring Excel database package called Excel </18UG11>

<INT> oh like a like a reference book </INT>

<18UG11> yeah </18UG11>

<INT> wow </INT>

<18UG11> yeah it were doing well then when I I stopped it to write another book but the title was erm too long for it so I didn't get to sell any copies so I should've really have kept the first one which were making were selling a few copies so trying to do more was was er well <WS> thin complicated matters </WS> didn't I by adding more more to it like how to do an int how to do a website and how to write code for the websites and that </18UG11>

<INT> that sounds really good though </INT>

<18UG11> yeah it is good but it's but the <WS> algorithm </WS> is all wrong it's like how to learn Excel and how to learn websites and all sorts of things it was too long the title so <Gr> you're not getting the many people </Gr> buying it cos of different ti different things in t title </18UG11>

<INT> so is it like you got both could you s could you like split into two volumes like the Excel and then the web </INT>

<18UG11> I could yeah that's what I should've done yeah I should've done that yeah </18UG11>

<INT> but it sounds like having both in one book is still really handy </INT>

<18UG11> it's still very good but ul but erm the title lets it down cos it's not specific I should've broke it into <WS> parcher </WS> volumes </18UG11>

<INT> so is that one you've you've published like it's it's out I </INT>

<18UG11> another one but it doesn't do well that </18UG11>

<INT> that it takes a lot of skill to write in different areas though to do </INT>

<18UG11> yeah </18UG11>

<INT> like reference and then to do like </INT>

<18UG11> but I just wanted to </18UG11>

<INT> screen </INT>

<18UG11> it took me about three years </18UG11>

<INT> wow </INT>

<18UG11> to get it right yeah </18UG11>

<INT> and when you write like or f er for you what what was it like m going from like writing a reference book to then writing like a play script </INT>

<18UG11> it just felt like cos the book <TC> was called it could make </TC> it could erm if I could write it in a script in c script form it'd be like y yeah it'd be very good cos the book's interesting so they're not well known books these no I don't buy well known books I g I go for t cheap ones so I thought they've been very good were worthy of a script writing for it </18UG11>

<INT> that's such a good idea as well like going for books that aren't well known because </INT>

<18UG11> yeah </18UG11>

<INT> that's one of the best ways to get those books in like to to sort of show people those books </INT>

<18UG11> yeah </18UG11>

<INT> you know </INT>

<18UG11> well <DT> as I said </DT> they've they've not been pub published or shown to anyone just yet erm thinking what the best fil er option is I think it's go to the local theatre with them and erm either either publish the book so that they can read it easily or just in just print it off in on normal A4 paper and show em </18UG11>

<INT> I think there's something called the playwright's guild </INT>

<18UG11> yeah </18UG11>

<INT> where you can like you can like publish your scripts and then like like theatres and actors can then like I think they like pay a license or a royalty to like perform </INT>

<18UG11> oh right not heard of that one playwright's guild is it </18UG11>

<INT> yeah it's like a </INT>

<18UG11> I'll w </18UG11>

<INT> a place like published plays and w </INT>

<18UG11> I'll look that up I'll write it yeah I'll look that up on the internet sessions </18UG11>

<DOC> <Noi=female voice in corridor> </Noi> </DOC>

<INT> cos er I think then it goes into like er like a bit I think I think it's like a database actually and then like theatres can like choose oh we wanna perform this play and then makes sh sure that the writer gets a royalty for </INT>

<18UG11> yeah </18UG11>

<INT> the performance and stuff </INT>

<18UG11> oh right </18UG11>

<INT> but </INT>

<18UG11> I'm not really interested in making money out of it I just want it to erm just go in the right hands who could do sommat wi it </18UG11>

<INT> that's that's a really nice thing to do </INT>

<18UG11> <DT> are we going off the tracks here </DT> </18UG11>

<INT> no no not at all </INT>

<18UG11> <DT> is this what we're supposed to be talking about </DT> </18UG11>

<INT> we we talk about anything to do with creativity </INT>

<18UG11> oh right </18UG11>

<INT> anything to do with writing anything to do with language that you wanna talk about erm but do do say if I'm going off from from what you'd like to talk about </INT>

<18UG11> yeah could talk about that erm </18UG11>

<INT> what a erm what about music and </INT>

<18UG11> I'm not creative in music no can't play an instrument just like listening to music now and again yeah you been doing some building </18UG11>

<INT> you've been doing building </INT>

<18UG11> no wi your your boots on </18UG11>

<INT> oh yeah well just like putting some gravel down on a path </INT>

<18UG11> oh right very good boots </18UG11>

<INT> I got these a while back and like years ago with and they they've lasted </INT>

<18UG11> right </18UG11>

<INT> when you what er what does writing how does writing make you feel </INT>

<18UG11> I enjoy it my English has improved enor enormously since I left school I got two Cs in English literature language GCSE but erm I think I can better that now er how do I feel about writing well it keeps me busy and erm I enjoy it <Gr> just them things really </Gr> </18UG11>

<INT> well that's good it doesn't like it doesn't need to be any any more than that it's like </INT>

<18UG11> mm </18UG11>

<INT> one one of the things that erm we're researching is like how people erm think about language and like erm and all the different ways language can be used and erm </INT>

<18UG11> yeah </18UG11>

<INT> erm </INT>

<18UG11> well here we talk to each other and erm but not many are er as creative as me as w I wouldn't say I don't see it anyway erm but they're all their mental state's gone now with medication I don't see anyone mentally ill on here once they get them good good medication like olanzapine and clozaril clozapine which is a good drug but I can't take it cos it affects me heart </18UG11>

<INT> oh I see </INT>

<18UG11> and in America as well it's a good drug for like drugs you have </18UG11>

<INT> can </INT>

<18UG11> olanzapine's good as well I'm on olanzapine </18UG11>

<INT> and like erm in terms of like the benefits of olanzapine and then like doing writing is it one of those medications that's </INT>

<18UG11> I've not tried it yet but I can't see it affecting me </18UG11>

<INT> that's really good </INT>

<18UG11> can't see it affecting me see when I get me computer back I'll be able to continue that which I ought to do it'll break me day up very well then two hours a day on that two hours watching TV and all sorts </18UG11>

<INT> that's a that's a really nice amount of time for writing as well two hours a day you'll get a lot done </INT>

<18UG11> yeah I can yeah </18UG11>

<INT> and hopefully some art as well </INT>

<18UG11> hopefully yeah it's a bit erm stagnant at the moment doing art but the only way is to bring that tel er table over here and do some art work got some coloured pencils and pencils

but what I've what <TC> I find struggle with </TC> is finding the theme in me artwork running out of themes </18UG11>

<INT> how do you normally find the theme </INT>

<18UG11> by looking in books and er I've done a Sarat painting in me room </18UG11>

<INT> wow </INT>

<18UG11> of some er bathers in the sea very <WS> unknown known </WS> erm artwork from a professional artist called Sarat have you heard of him </18UG11>

<INT> I think so but I I'm not I don't </INT>

<18UG11> yeah </18UG11>

<INT> know art very well but that's that sounds I think I I've seen the painting that you're talking about </INT>

<18UG11> yeah wi wi with people in river and sat on sat on er marine there and there's a erm a skyline and and that if you if you type Sarat in most famous artworks you should erm find it </18UG11>

<INT> I will yeah yeah I look forward to seeing them is is one of them the the is it like a red and white striped bathing suit or am I thinking of something else </INT>

<18UG11> sommat else I think </18UG11>

<INT> ah but yeah I'll I'll look it up that sounds what was it like doing that like painting that painting </INT>

<18UG11> well it was easy really I just looked in a book and erm copied the painting to erm a big erm cardboard frame you have a big cardboard frame and I just drew it and painted it afterwards </18UG11>

<INT> see I think a lot of people would find that really difficult </INT>

<18UG11> well it was just copying really and painting it afterwards </18UG11>

<INT> there's a lot of skill in that though doing it by eye like </INT>

<18UG11> w w well I didn't find it difficult I just enlarged it a bit but </18UG11>

<INT> wow </INT>

<18UG11> so I won a prize for f er for artwork I didn't think much of it but er when I look at it now when I look at it again I think oh yeah it's s n not so bad that so erm I won a award </18UG11>

<INT> that's so </INT>

<18UG11> <An> </An> award for art first time entrant </18UG11>

<INT> wow was that the first competition you entered </INT>

<18UG11> yeah there's one this year I've I've I've entered <Gr> a type of frogs </Gr> in this year erm but now the process is slowing down because there's not this is not a f facility to erm do art in this on this ward so I don't know what to do </18UG11>

<INT> when do you hear back about the er the frogs </INT>

<18UG11> <Lh> </Lh> I don't think I'll win with that one nah I j if I win sommat they'll just send it through post to me </18UG11>

<INT> oh I see </INT>

<18UG11> yeah just send the certificates through the post so yeah it's a very complex erm study you're doing isn't it </18UG11>

<INT> well like I erm like it's it's such an interesting experience cos I get to hear like different people's perspectives on like creativity language and it's fascinating like yeah is there do say by the way cos like w er I'm I'm very happy chatting for as long as you'd like to chat but also at the same time you know do say if </INT>

<18UG11> alright yeah </18UG11>

<INT> you wanna do stuff or anything do you know </INT>

<18UG11> <DT> well have I answered your questions </DT> </18UG11>

<INT> yeah like er it like erm </INT>

<18UG11> well </18UG11>

<INT> is there is there anything that you'd like to talk about that we that we haven't talked about </INT>

<18UG11> I don't think <DT> we've talked about it haven't we </DT> </18UG11>

<INT> yeah ah that's brilliant well thank you so much I'll stop the recording and then I'll I'll just let you know about like the next bits erm </INT>

<18UG11> oh right </18UG11>

<INT> so there's um there's only one question and the rest is just like a chat around it really </INT>

<18UG10> yeah I know </18UG10>

<INT> erm do you feel like you use language creatively </INT>

<18UG10> do I what sorry </18UG10>

<INT> do you feel like you use language creatively </INT>

<18UG10> in what way how do you mean </18UG10>

<INT> like erm well w y when you hear the question what do you think like what do you how do you interpret erm </INT>

<18UG10> creative language </18UG10>

<INT> yeah </INT>

<18UG10> what else d you wanna do </18UG10>

<INT> do you feel like you use language in that way or </INT>

<18UG10> no </18UG10>

<INT> oh OK </INT>

<18UG10> no </18UG10>

<INT> is there erm like how do you use language </INT>

<18UG10> just the general communication </18UG10>

<INT> and how does how does it feel to like just use language for like non-creative erm </INT>

<18UG10> I never I never thought of it normal I suppose innit you know </18UG10>

<INT> yeah like I mean there's there's like er yeah this the study's interested in how people use language whether they use it creatively or not so erm for you what's the what what role does language play for you like day to day </INT>

<18UG10> erm I dunno </18UG10>

<INT> is it erm kind of about function or </INT>

<18UG10> er yeah I suppose so yeah </18UG10>

<INT> and then </INT>

<18UG10> I've </18UG10>

<INT> like moving away from language like erm to like stuff that you like to do for for like down time do you like sport or music or art </INT>

<18UG10> er I watch sport I watch films play pool go for a walk </18UG10>

<INT> nice erm have you played pool long </INT>

<18UG10> sorry </18UG10>

<INT> have you played pool long </INT>

<18UG10> long </18UG10>

<INT> yeah yeah </INT>

<18UG10> er try and play every day try to </18UG10>

<DOC>: oh sorry to interrupt everything alright </DOC>

<18UG10> er yeah it's fine </18UG10>

<DOC> great </DOC>

<INT> erm when did you start </INT>

<18UG10> playing pool </18UG10>

<INT> yeah </INT>

<18UG10> er I can't but I used to go when we used to go drinking when I was younger pubs and that </18UG10>

<INT> was it like a like a social thing like </INT>

<18UG10> yeah yeah </18UG10>

<INT> and when people play pool socially do they is it like one of those games where people talk a lot while they're playing or is it more of a quiet cos er I don't play pool so I don't know if </INT>

<18UG10> ss depends on the depends on the individual </18UG10>

<INT> yeah is there anything like erm about the study that you wanna chat about or anything that we haven't talked about </INT>

<18UG10> er don't think don't know </18UG10>

<INT> cos it's like erm so one of the things that er we're doing with these interviews is looking at like erm how like how m everyone who takes part uses language at different levels so for communication for er what topics like we talk about so and you know we can talk about anything or if erm if at any point you you've had enough of talking you that's totally fine as well it's </INT>

<18UG10> er <DT> can't think of anything sorry about this </DT> </18UG10>

<INT> no no that's OK but are you happy to keep talking or </INT>

<18UG10> yeah it's fine </18UG10>

<INT> yeah erm what's it like here cos I've never I've been here before today like </INT>

<18UG10> it's OK it's alright </18UG10>

<INT> it looks like a nice place </INT>

<18UG10> yeah it's a good ward </18UG10>

<INT> what time did you say you have to </INT>

<18UG10> what time are we on now cos I'm sure I've got an appointment at ten </18UG10>

<INT> oh w it's ten now that's the </INT>

<18UG10> yeah she should be here any minute then yeah I know </18UG10>

<INT> oh OK no worries erm yeah is there any th anything else about the study that you wanna chat about or </INT>

<18UG10> not from here d you know </18UG10>

<INT> no it's all good it's all good thank you so m do you er do you mind if I stop recording then and </INT>

<18UG10> of co go for it yeah </18UG10>

<INT> yeah </INT>

<INT> so there's um there's only one question and the rest is just like a chat around it really </INT>

<18UG10> yeah I know </18UG10>

<INT> erm do you feel like you use language creatively </INT>

<18UG10> do I what sorry </18UG10>

<INT> do you feel like you use language creatively </INT>

<18UG10> in what way how do you mean </18UG10>

<INT> like erm well w y when you hear the question what do you think like what do you how do you interpret erm </INT>

<18UG10> creative language </18UG10>

<INT> yeah </INT>

<18UG10> what else d you wanna do </18UG10>

<INT> do you feel like you use language in that way or </INT>

<18UG10> no </18UG10>

<INT> oh OK </INT>

<18UG10> no </18UG10>

<INT> is there erm like how do you use language </INT>

<18UG10> just the general communication </18UG10>

<INT> and how does how does it feel to like just use language for like non-creative erm </INT>

<18UG10> I never I never thought of it normal I suppose innit you know </18UG10>

<INT> yeah like I mean there's there's like er yeah this the study's interested in how people use language whether they use it creatively or not so erm for you what's the what what role does language play for you like day to day </INT>

<18UG10> erm I dunno </18UG10>

<INT> is it erm kind of about function or </INT>

<18UG10> er yeah I suppose so yeah </18UG10>

<INT> and then </INT>

<18UG10> I've </18UG10>

<INT> like moving away from language like erm to like stuff that you like to do for for like down time do you like sport or music or art </INT>

<18UG10> er I watch sport I watch films play pool go for a walk </18UG10>

<INT> nice erm have you played pool long </INT>

<18UG10> sorry </18UG10>

<INT> have you played pool long </INT>

<18UG10> long </18UG10>

<INT> yeah yeah </INT>

<18UG10> er try and play every day try to </18UG10>

<DOC>: oh sorry to interrupt everything alright </DOC>

<18UG10> er yeah it's fine </18UG10>

<DOC> great </DOC>

<INT> erm when did you start </INT>

<18UG10> playing pool </18UG10>

<INT> yeah </INT>

<18UG10> er I can't but I used to go when we used to go drinking when I was younger pubs and that </18UG10>

<INT> was it like a like a social thing like </INT>

<18UG10> yeah yeah </18UG10>

<INT> and when people play pool socially do they is it like one of those games where people talk a lot while they're playing or is it more of a quiet cos er I don't play pool so I don't know if </INT>

<18UG10> ss depends on the depends on the individual </18UG10>

<INT> yeah is there anything like erm about the study that you wanna chat about or anything that we haven't talked about </INT>

<18UG10> er don't think don't know </18UG10>

<INT> cos it's like erm so one of the things that er we're doing with these interviews is looking at like erm how like how m everyone who takes part uses language at different levels so for communication for er what topics like we talk about so and you know we can talk about anything or if erm if at any point you you've had enough of talking you that's totally fine as well it's </INT>

<18UG10> er <DT> can't think of anything sorry about this </DT> </18UG10>

<INT> no no that's OK but are you happy to keep talking or </INT>

<18UG10> yeah it's fine </18UG10>

<INT> yeah erm what's it like here cos I've never I've been here before today like </INT>

<18UG10> it's OK it's alright </18UG10>

<INT> it looks like a nice place </INT>

<18UG10> yeah it's a good ward </18UG10>

<INT> what time did you say you have to </INT>

<18UG10> what time are we on now cos I'm sure I've got an appointment at ten </18UG10>

<INT> oh w it's ten now that's the </INT>

<18UG10> yeah she should be here any minute then yeah I know </18UG10>

<INT> oh OK no worries erm yeah is there any th anything else about the study that you wanna chat about or </INT>

<18UG10> not from here d you know </18UG10>

<INT> no it's all good it's all good thank you so m do you er do you mind if I stop recording then and </INT>

<18UG10> of co go for it yeah </18UG10>

<INT> yeah </INT>

<INT> erm there's only one interview question and it's erm do you feel like you use language creatively </INT>

<12AY15> er sometimes I would think more <WS> colourfully </WS> than creatively <Lh> </Lh> so maybe that is the same thing I don't know so </12AY15>

<INT> I really like that expression do you mind telling me more about what you mean </INT>

<12AY15> well OK so I h heard voices for many many years and I find to deal with them mm cos I live on my own but nobody can hear hear me erm and I I swear at them <WS> vociferously </WS> <Gr> but I do find that if we use the same swear words </Gr> all the time it doesn't help so I have to be creative in finding new swear words to react to them <Lh> </Lh> so so I think that's what I mean by <WS> colourfully </WS> rather than creative you know for example turning the air blue for so that's like a colour </12AY15>

<INT> I see </INT>

<12AY15> does that make sense </12AY15>

<INT> yeah like it er like erm er er mm like in the metaphoric sense like </INT>

<12AY15> yeah yeah </12AY15>

<INT> I see and is that er an area that you'd be happy to talk about or would you like to have talk about cos I don't wanna ask you about things that might be uncomfortable to talk about </INT>

<12AY15> no <Gr> I feel for it </Gr> I mean to be to be fair I've been involved in so many research projects over the years and with running a hearing voices group that nothing phases me anymore so please do ask questions </12AY15>

<INT> oh OK erm thank you so erm I'm really interested in in the well in all of what you said but specifically the erm the need to come up with different swear words and and how that helps like that's that that's really interesting and it's not something I've heard before so do you </INT>

<12AY15> I just find it cathartic <Gr> I think is the <TC> word of </Gr> it gives </TC> me while I'm ex panding a little bit of energy in responding to them I mean sometimes r responding to them in any way it doesn't help get rid of them and so it doesn't always work so <InAu> </InAu> I think where creativity comes in because you have to think of new ways to get rid of them erm you know or to put them on hold I mean I mean one of the things that we just I dunno if this is creative but erm our members of the group say if we're out in in public and the voices are disturbing us <TC> to you don't </TC> have to say it out loud but say it in your head say come back later at 6PM and I'll give you ten minutes so it it's just erm a kind of a a different way of approaching them <DT> I don't know if that could be cu called creative or not what do you think </DT> </12AY15>

<INT> I think mm yeah that definitely is like I think well there are so many different types of creativity erm and I think that's more than one of them happening at once that's like creativity

around dealing like problem solving creativity around communication erm </INT>

<12AY15> exactly </12AY15>

<INT> and do lots of people find that that helps </INT>

<12AY15> anecdotally I mean yes it I know a lot of people it helps it's not a <Sh> </Sh> a be all and end all for everyone it's just one of many strategies that you know we use and work for some people and it may not work for others </12AY15>

<INT> yeah yeah definitely and when it comes to like language in er like song lyrics and erm books and films and stuff are there particular ways of speaking or ways of using language that stand out as interesting to you or erm or that you like to incorporate into your own use of language </INT>

<12AY15> erm <DT> I'm not sure whether I completely understand that question </DT> I mean I I read a lot and I do find certain films and books helpful with voices for example you know erm to take one film in particular A Beautiful Mind which is er a lovely film about er a true story and quite erm uplifting about someone who you know was clearly very very distressed with voices but he was an in a s extraordinary mathematician </12AY15>

<INT> John Nash </INT>

<12AY15> Yes John Nash yeah </12AY15>

<INT> yeah it's er it's an amazing film A Beautiful Mind </INT>

<12AY15> er that's just one of many I may <DT> I may have gone off tangent </DT> er t <WS> up tangent </WS> I'm sorry <DT> maybe I didn't really understand the question </DT> </12AY15>

<INT> No no no it's it's erm that I was I was wondering if there there are things that you see and hear in terms of language like erm whether it's I me it can be anywhere as well like things written erm on well written or spoken anywhere really that erm that are interesting more more so than others or erm like for example I find erm what you said about using language colourfully I find that really stood out to me as like a really inventive thing </INT>

<12AY15> mhm </12AY15>

<INT> with language like erm doing something with language that allows me to understand what you're saying at a deeper level than if you'd said erm a phrase that's used more often or something you know erm and so I wonder if there are things that that when people say certain things you think oh that's that's really erm interesting or </INT>

<12AY15> yeah <Ch> </Ch> I think erm yes cos I hear I hear a lot of different stories from our members about you know their their their past and erm it is sometimes it's very difficult for them to open up I think we've all got our own way of communicating our stories <TC> so and none </TC> of our stories are a s you know we haven't got one thing in common but then they're completely different and it's a way of kind of

accepting everybody's story and the way they tell it erm I
<InAu> </InAu> <DT> I said I don't think that's answering your
question sorry </DT> </12AY15>

<INT> I think it does yeah I think it's it is really important to erm
yeah to to acknowledge all all the individual differences in how
we communicate erm </INT>

<12AY15> yeah </12AY15>

<INT> and erm d </INT>

<12AY15> I'm sorry but during this call I keep <WS> incoming
</WS> <InAu> </InAu> something on the mobile which is
distracting me somewhat <Lh> </Lh> </12AY15>

<INT> you you keep hearing sorry </INT>

<12AY15> people that er I've had a friend who's been phoning
me during this conversation leaving me bloody 1 2 1 messages
so <Lh> </Lh> it's I'm getting a bit distracted <TC> by obviously
you're </TC> not getting it your end but my end it says
incoming call and </12AY15>

<INT> oh I see erm do you do you want to mm </INT>

<12AY15> no no she's gone off it's gone off now so I'm just
saying sorry I was distracted a bit </12AY15>

<INT> oh no that's OK erm i in the groups that you that you
facilitate </INT>

<12AY15> mhm </12AY15>

<INT> does creativity come up a lot </INT>

<12AY15> what verbally or other forms of creativity </12AY15>

<INT> like as a as a topic that people talk about </INT>

<12AY15> erm yes in terms of erm creative outlets that we do
like cooking or baking or artists erm <Cl> </Cl> drawing or
colouring or whatever creative artistic creative er ways but
<TC> there's to do with </TC> language though is it just erm
other forms of creativity </12AY15>

<INT> and do you mind if we talk about them cos that's th er
that's erm mm yeah I'd I'd love to know more about how erm
those creative activities that aren't so related to language erm
</INT>

<12AY15> well <InAu> </InAu> well one thing that does help
we we in our actual group session erm about half the group
likes to do some colouring during the group and it helps them
not only relax and feel more comfortable but actually it also
helps them to open up and erm a lot of our members are very
talented in many different ways and they bring their talents to
the group so <Gr> one of our members makes absolutely
delicious cakes she brings in to the group </Gr> and again er
that helps us to open up and have a social aspect of the group
so it's not so formal so I would say our group was very informal
erm and creativity erm the other th thing about thing about
creativity one of our members erm is ac apart from designing
and creating a wonderful website for us years ago erm d <Gr>

during the pandemic is produced a newsletter </Gr> quarterly
and he <TC> is a and </TC> some of our members erm take
photos of what they've been doing to be included in the
newsletter so </12AY15>

<INT> that sounds amazing </INT>

<12AY15> erm </12AY15>

<INT> that sounds really nice </INT>

<12AY15> sorry </12AY15>

<INT> that sounds amazing that sounds like a really nice thing
to do as a group and for the group </INT>

<12AY15> mm it it works <Lh> </Lh> </12AY15>

<INT> yeah cos that's a theme that's that's coming out of a lot
of my conversations with people is that having a creative outlet
is is really important </INT>

<12AY15> mhm mm </12AY15>

<INT> and do you </INT>

<12AY15> I mean one thing that helps me personally is I knit
and that's you know it totally helps me to relax in the evenings
to knit in front of the television it's it's erm cos especially as I
find that for a lot of voice hearers erm concentration can be
quite a difficult thing so whether that's concentrating on
television or on reading on whatever erm and that's where
creativity comes in again if you could have a different outlet
kind of concentrate on erm when concentration is an issue erm
sometimes it's easier to have a little project that you're good at
erm </12AY15>

<INT> yeah </INT>

<12AY15> so yeah erm er going back to language er I I think we
have different ways of using language especially going back to
our group again we're a very very diverse group from many
different backgrounds and erm and that comes across in their
ways of <Gr> expressing themselves so kind of a way you have
to </Gr> tune in to their particular way of talking erm
</12AY15>

<INT> and w what what are those ways of talking like </INT>

<12AY15> erm ooh perhaps sometimes a bit disjointed just kind
of picking the bones out of what they're saying you have to
listen quite carefully </12AY15>

<INT> I see yeah </INT>

<12AY15> yeah </12AY15>

<INT> and does that for you as a listener how erm how do you
find that </INT>

<12AY15> difficult to be honest erm but yeah again you <TC>
have to s fortunately I don't </TC> run the group on my own I
have a cofacilitator who has worked in mental health for over
twenty-five years and she's a much better listener than I am

<Lh> </Lh> to be honest no she's great she she gets you know she gets our members to open up and you know she's able to pick up on all their points and <InAu> </InAu> that back at them it's really erm great </12AY15>

<INT> it sounds like you're a good listener by the sounds of things to be able to mm to mm mm you know tell me about them </INT>

<12AY15> thank you so </12AY15>

<INT> do you find that you have to do a lot of switching cos you mentioned that a lot of people talk in different ways and so do you have to switch the way you listen </INT>

<12AY15> yes I think you do yes yeah I think I think there's also I mean it took me a long time to learn is not to pretend to understand them but to say if you don't understand I'm not sure what do you mean <Ch> </Ch> I c you know personally I find that difficult <Ch> </Ch> erm does that make sense it's like I think a lot of people <TC> wanna I I'm a people pleaser </TC> I I don't like sort of saying to someone I don't understand what they're talking about but then isn't that better to be honest than rather than to nod your head and agree with something you don't know what they're talking about </12AY15>

<INT> yeah that's er d mm <Sh> </Sh> that's a very difficult one I think because I I totally agree I think it's it's ab er yeah it's better to be honest when you don't understand but I have had experiences where I don't understand and I wonder if I say I don't understand whether that might upset the person and s </INT>

<12AY15> exactly exactly you've put your finger on it that's exactly what I how I found that's the reason why I sometimes pretend to understand but I feel like a fraud in doing so </12AY15>

<INT> I see but I suppose see see my interpretation of that would be erm I wouldn't see it as fraud if you're still trying to understand </INT>

<12AY15> right </12AY15>

<INT> you know what I mean </INT>

<12AY15> yes yeah </12AY15>

<INT> erm but yeah it's it's a really tough situation </INT>

<12AY15> mm </12AY15>

<INT> and does th that come up in communication in the group often or </INT>

<12AY15> yeah I think so yeah I think more so with new members </12AY15>

<INT> and then over time as you get to know them does that </INT>

<12AY15> yeah </12AY15>

<INT> get easier </INT>

<12AY15> yep yeah </12AY15>

<INT> well it sounds like an am like an amazing group that w that I'm sure everyone there finds really helpful </INT>

<12AY15> I mean to to be honest I love all of our group members they're wonderful human beings and we get on so well together we're very lucky </12AY15>

<INT> that sounds really lovely how long have you have you been doing the group </INT>

<12AY15> erm sixteen years </12AY15>

<INT> wow wow </INT>

<12AY15> yes a long time </12AY15>

<INT> and I'd love to know about how how you started it </INT>

<12AY15> oh gosh <Sh> </Sh> erm well many years ago erm <Gr> I was a patient in a old Victorian asylum </Gr> called <An> </An> hospital and I met erm there was a lady <InAu> </InAu> a friend a fellow patient erm and erm when the hospital closed its doors and they did all this care in the community we decided as we were both voice hearers there wouldn't it be good to <TC> have a set up a </TC> peer support group OK to backtrack a bit I have been involved in the survivor psychiatric survivor movement so that was with <An> </An> and <An> </An> which was sort of the late eighties and nineties this particular friend of mine <An> </An> and I decided to go it was er er we went to specialised hearing voices facilitation training in <An> </An> erm and two of the trainers were the very famous <An> </An> who were the founders of the hearing voices movement and then erm we set up a a group and it was very small to begin with and erm in what was then a club h a club house and so that closed down and we had the new venue and then we just grew and grew in size over the years and erm er I should've said erm our new cofacilitator has been with us over three years now and she's fantastic cos my original cofacilitator moved to <An> </An> so to be with her family so that's that's how we've set it set up the group </12AY15>

<INT> wow that's amazing </INT>

<12AY15> so </12AY15>

<INT> and so d er do you does it run how often does it run </INT>

<12AY15> well during the pandemic we haven't been running it at all except for over the telephone we can't even do Zoom cos most of our members don't have the erm erm the tech to do it erm </12AY15>

<INT> oh I see yeah </INT>

<12AY15> so but yes when we're back up and running we'll go back to running once a week two hours er <Ch> </Ch> there's a big social aspect to the group as well I mean er we go on a lot of outings together I mean erm ei either locally or boat trips or seaside trips Christmas meal all sorts bowling you name it

we've done it <Lh> </Lh> so erm our members love that because they're quite socially isolated a lot of them </12AY15>

<INT> yeah that's that sounds like just an amazing atmosphere to be in and </INT>

<12AY15> thanks <An> </An> </12AY15>

<INT> it's er such a good thing to do and it's really inspiring as well because erm it well it shows how much how much erm well it p er how much good can be done can be done mm in in a group setting and around group activities and stuff like and it it's like a I think it shows er or makes an example of er the sorts of things that could be integrated into services a bit more as well you know </INT>

<12AY15> w so did you know anything about the hearing voices network b while doing this research or is this all new to you </12AY15>

<INT> I I know about it like I've heard ab about the so I I know the the name nearing hearing voices network and erm I know less about the hearing voices movement and erm I know about sort of peer support groups and stuff like that but specifically about what what groups do erm I know less about sort of what happens on er or in groups and it sounds like the combination of doing activities together having a place to exchange experiences and ideas and all of that erm all of those things coming together I just think that's </INT>

<12AY15> <DT> I don't know how this helps you with your <Lh> </Lh> research though </DT> <An> </An> </12AY15>

<INT> well it it it so the the erm the type of analysis I'm doing is about conversation </INT>

<12AY15> right </12AY15>

<INT> so I'm analysing the conversations that I have with people and erm and the s the the kind of the way we talk about things and erm and so I've I've talked to people about all kinds of topics the weather we we start we always start with creativity but erm if we move onto other topics then erm </INT>

<12AY15> <DT> well have I said anything that's helpful to you or has it all been a load of waffle </DT> </12AY15>

<INT> no not at all no everything's helpful erm yeah yeah do do y do you feel like you haven't been helpful cos y you have you've been really helpful </INT>

<12AY15> thank you good <InAu> </InAu> <DT> I don't want to sort of turn it into a rant <Lh> </Lh> or something that's not appropriate </DT> </12AY15>

<INT> no no </INT>

<12AY15> anyway yeah </12AY15>

<INT> erm and I you know I apologise if I've if I've moved things in that direction either I just erm </INT>

<12AY15> no no erm thank you anyway <An> </An> I'm gonna have to go because er it's driving me mad someone keeps trying to get hold of me on the phone but er </12AY15>

<INT> sure OK </INT>

<12AY15> if we could </12AY15>

<INT> yeah yeah </INT>

<12AY15> wind this down </12AY15>

<INT> yeah well th thank you so much for erm for your time I really appreciate it thank you </INT>

<12AY15> you're welcome and good luck with your research </12AY15>

<INT> thank you very much </INT>

<12AY15> I'd be lovely it'd be lovely if you could let me know how you get on </12AY15>

<INT> yeah yeah if you erm </INT>

<12AY15> shall I give you my e-mail address </12AY15>

<INT> yeah yeah I can er c s er there's a mailing list of erm yeah I can add your e-mail to the mailing list and then you'll get updates on how the study's going </INT>

<12AY15> that'd be that'd be great OK so do you know my e-mail address or shall I give it to you </12AY15>

<INT> er no I don't have it erm I'll just grab a pen OK </INT>

<12AY15> it's <An> </An> </12AY15>

<INT> yep </INT>

<12AY15> <An> </An> </12AY15>

<INT> yep </INT>

<12AY15> at <An> </An> dot com </12AY15>

<INT> brilliant thank you what I'll do is I'll I'll add your e-mail address to the mailing list now </INT>

<12AY15> great </12AY15>

<INT> it's everyone's erm anonymous to each other so it's all blind copied and erm yeah I'll send the publication of the results but I'll also send updates on sort of less formal updates like sort of you know where the project is and that sort of thing </INT>

<12AY15> excellent that'd be great <An> </An> thank you </12AY15>

<INT> thank you </INT>

<12AY15> like I said good luck </12AY15>

<INT> thank you so much </INT>

<12AY15> <Lh> </Lh> alright bye <An> </An> take care
</12AY15>

<INT> take care bye </INT>

<12AY15> bye </12AY15>

<INT> so erm brilliant right so there's there's only one erm interview question and then the rest is just a conversation a about that question really erm so the question is do you feel like you do creative things with language </INT>

<10EB15> right erm er I'm er do I <Lh> </Lh> do creative things with language no I don't I I don't think er that er I would say I I'm creative with language n no </10EB15>

<INT> OK erm do you mind telling me a bit more about about that and why you why you feel that </INT>

<10EB15> erm I mean er when I when I was er quite unwell I was er thinking about language er in a very different way erm the way I was thinking wasn't always coherent erm er and it was unusual er but I don't know if I er <Gr> I would classifies it </Gr> as being creative </10EB15>

<INT> I see yeah and er w thinking to sort of everyday language use erm do you well I suppose w what role does language play for you </INT>

<10EB15> currently </10EB15>

<INT> yeah </INT>

<10EB15> erm I mean the ideas that I was thinking about when I was ill sometimes I do think about it still at the moment erm although I don't take it er er it to be reality all the time er as I those ideas <WS> stay </WS> ah play at the back of my mind and erm I was reading about er relation fr frame theory I don't know if you've heard of that but erm that was interesting because they erm that they they look at the links between words and erm the meanings in relational frame theory which was very interesting cos erm when I was ill I was looking y a at erm sort of links between words and erm I although it wasn't always co coherent it was erm sort of er it relational frame theory <Gr> we kind of reminded me </Gr> of er erm the way I was thinking er when I was ill </10EB15>

<INT> w would it er oh are you comfortable talking about that time do you do you mind cos I I'm I'm thinking about asking if if you wouldn't mind </INT>

<10EB15> I'm OK I'm OK talking about that </10EB15>

<INT> oh OK yeah I just wanted to check because erm yeah I'd it it would be really great to hear more about the the links that you were making if you're if you're happy to talk about them </INT>

<10EB15> erm well er I think I was just trying to underst I didn't I was just trying to understand things I didn't really have a an understanding of erm how how you know the basic concepts in life like you know er I just couldn't understand how maybe relationships work erm the meaning of religion I was thinking about all these themes and erm at I think at the time er I just thought let me look at the English language and just try and break it down and see if I can find anything in it that erm er you know is that that can confirm er my beliefs in my religion and how I live my life and I was just erm you know not as an expert but just er I trying to break down the words and the lang English language and see er just out of interest cos <Lh> </Lh> I

was ill and not much er I wasn't doing much else erm and I was looking at sort of erm sort of er links between words er and erm I think er one of my psychiatrists pointed out that it was more w what does that phrase what er mean to me er rather than what it would mean to everybody else so these are just erm these very erm sort of personal er interpretations that I was making about er language in general so I was looking at sentences and maybe rhyming er in the sentences and just just wondering how many different meanings there are and whether erm they an you could er actually say that they well actually from all those different meanings that you get from the rhyming there's actually er actually only one answer but ah I think actually it's just one answer for you for that person for myself subjectively </10EB15>

<INT> I see yeah and was it mainly rhyming then or was it oth other things about words as well </INT>

<10EB15> erm well I was looking at the words and the rhyming and er eh tr er trying to understand sentences and what they meant to me from from the different er sort of erm different words in in a sentence but I was looking at numbers too and wondering how that fitted in as well erm ah ah so yes so so the language and er numbers as well </10EB15>

<INT> and would it would it be fair to say then that erm was it almost like looking at language from different ways was part of a like a sense making process </INT>

<10EB15> yes I was trying to make sense of everything ah at that time I was very confused and to be honest I I would say that erm I wasn't very mature at the time ah I've <Sh> </Sh> I mean I've got more life experience now erm and I think ah yes I like I said I was just trying to make sense of my religion my relationships my place in the world just by trying to look at the language </10EB15>

<INT> I see and looking looking back on the th the ways you were looking at language then and then thinking about how you look at language now what w what things have changed </INT>

<10EB15> erm I think I'm not so er totally er I I was very very emotional at the time and very rigid in my thinking instead of thinking of er th w what I the way I was thinking of as erm you know exploratory just er way of thinking I was taking it too personally erm I was er linking it to my religion too much er I think now er sometimes if I rhyme something I'll just think oh that's interesting er but I don't sort of take it as er being <Gr> you know hundred percent correct way of looking at the world </Gr> </10EB15>

<INT> I see yeah an </INT>

<10EB15> so I'm not as rigid as I u used to be er when I when I was quite ill and thinking like that </10EB15>

<INT> because you said when when you rhyme things erm </INT>

<10EB15> yeah </10EB15>

<INT> does does that mean that sometimes like do you do you sometimes rhy erm like say things that rhyme without meaning to </INT>

<10EB15> no I don't say things er er like that anymore I just think things like that sometimes er but I put it into perspective erm now cos because erm I think yes I I I just find it something that's interesting er if I think of it er something that rhymes and I just think about and think oh that's interesting but erm I don't really take that any further or er think that it's reality or anything </10EB15>

<INT> I see yeah so erm er with with rhymes is is sound an important aspect of like or is it more erm </INT>

<10EB15> I don't think it is the sound so much I think I visualise the words more and erm it it's just the visual erm eh when er when there are when I think about something that rhymes it's more visual than erm auditory </10EB15>

<INT> I see </INT>

<10EB15> yeah </10EB15>

<INT> like </INT>

<10EB15> so I'll I'll see the sentence and I'll put in the er the rhyming words erm so it's yes more visual </10EB15>

<INT> do you do you mind if I ask f for an example no it like I know it's very difficult to think of examples especially w when someone asks but erm do do any examples come to mind </INT>

<10EB15> erm a couple do but they're a bit personal I'm just trying to think if there's anything that I isn't personal erm </10EB15>

<INT> sure sure </INT>

<10EB15> er erm yeah it it it's difficult erm on off the top of my head erm </10EB15>

<INT> no no that's fine erm </INT>

<10EB15> yeah </10EB15>

<INT> so because they're erm if or or if if they're a about sort of if er do they tend to be personal </INT>

<10EB15> erm the the <Lh> </Lh> the two that come to the to er my mind at the moment are a little bit personal but er not always sometimes it's just about generic things erm yeah </10EB15>

<INT> and do they erm do you do they do they do you think about them at specific times or is it more random or </INT>

<10EB15> I don't really think about them anymore erm er it's just something from the past that I er do remember cos it had a lot of meaning for me at the time </10EB15>

<INT> oh I see yeah yeah so </INT>

<10EB15> yeah yeah </10EB15>

<INT> oh OK and erm which which sounds quite quite erm well I I don't know I mean I er it sounds </INT>

<10EB15> at the time er like I say I think at the time there was not much else that I was doing and I wasn't active so I think most of the activity was taking place within my mind now I'm I've got a lot to do erm an and er <Lh> </Lh> living more in the real world really doing things er b a lot more rather than just sitting there and just thinking and thinking </10EB15>

<INT> yeah </INT>

<10EB15> yeah </10EB15>

<INT> and in a broader sense a a about creativity and and that sort of thing because there's no there's no right answer like I'd I speak to </INT>

<10EB15> yes </10EB15>

<INT> to lots of different people and some people say erm yeah I think I do do creative things with language and some people say no not so much and th neither of those responses are are correct or or or incorrect erm </INT>

<10EB15> mm yeah </10EB15>

<INT> but in both cases it's really interesting to hear erm how people feel about creativity as well so </INT>

<10EB15> yeah </10EB15>

<INT> erm when you see creative language like in er adverts or you know w like puns on th sort of things like erm or quite quite visual language erm or stuff that's that's very poetic that erm that pops up in literature and an that sort of thing books an a poems an when you see that kind of language w what do you think of <Sh> </Sh> wh what do you make of it really </INT>

<10EB15> <Lh> </Lh> I I find it er quite daunting to approach poetry er for example erm I'm not particularly good at interpreting p er p er poetry but er erm er yes er er I I think I think that's something that erm I w I find difficult to interpet if I read a complex poem I wouldn't really get a hundred percent out of it erm er I don't think yeah it er it's it's it's not my s er well n er it's not a strength erm </10EB15>

<INT> I see yeah </INT>

<10EB15> I do gee erm some poetry er I haven't really been exposed myself to much poetry I think I read er an a poem by T S Elliot Eliot was a strong and striking to me so there are a few poems that I've come across erm er but erm yes I I think er I find it difficult to read poetry and understand it compared to prose and plain language </10EB15>

<INT> and is that related to cos one cos one of the things about poetry is that it's it uses language in such a way that s v so many different meanings are possible </INT>

<10EB15> yeah </10EB15>

<INT> erm is that part of it that there are so many meanings
</INT>

<10EB15> yes I think erm most poems are very intricate very
complex er I think they are and very difficult to understand er
for er from my perspective </10EB15>

<INT> and in in terms of communicating with other people so
just just everyday conversation erm </INT>

<10EB15> yeah </10EB15>

<INT> do you find when other people are creative erm or w er
w how how is that for you when other people erm do creative
things with language like humour and and stuff is what's what's
that like </INT>

<10EB15> erm er erm so my sister is an English teacher <Lh>
</Lh> so er erm </10EB15>

<INT> ah I see </INT>

<10EB15> er she's more into sort of er using language like that
so erm sometimes to communicate er and er I I you know er I I I
I <Lh> </Lh> I think I keep up OK with er my siblings when it
comes to when they're making jokes about er anything that
might involve language it's not been a problem or a difficulty er
keeping up erm I'm I mean I really just interact with my family
my siblings and erm two or three friends erm and I've not had
any problems with er erm with regard to er <Gr> they way use
language </Gr> creatively and I do myself it's not been a big
problem at all </10EB15>

<INT> is it is it more than that erm so it's it's less about creative
language being a difficulty is it more about interest then it's
just less less interesting </INT>

<10EB15> <Sh> </Sh> erm er I don't know I admire creative
writing complex writing er poetry and erm but I yeah I think it
fits to be honest it's difficult I think a you're right it's probably
not that at top of my list of interests </10EB15>

<INT> I see yeah yeah </INT>

<10EB15> yeah </10EB15>

<INT> and er d if d er y if you don't mind do you mind if I ask
erm ab about your interests and hobbies and things </INT>

<10EB15> erm yes I erm I've always been fascinated by
psychiatry as even as a y y er er when I was young and
unfortunately I fell ill and I couldn't pursue a medical career but
erm thankfully I've er completed my master's in psychiatry from
<An> </An> university as well and erm er yes I got a distinction
and it was it was great I really enjoyed doing the course so I s
spend a lot of my time reading erm sort of er <Noi=ambiguous
noise> </Noi> a around psychiatry and erm I erm er er y yes so
erm yes and I er I I've gone back to I I like listening to the radio
a lot so I listen to a lot of different programs er sort of current
affairs programs s er at erm er I haven't sort of er er you know r
radio programs on all sorts of stuff subjects that I quite like
listening to a variety of their subjects their erm topics on
history or art er er literature as well as er psychology and

medicine and psychiatry so a lot of broad er I have er I have
very broad interests but erm yes so erm </10EB15>

<INT> that's w mm </INT>

<10EB15> most of my so yes most of my time is spent erm sort
of er er I suppose just reading a lot </10EB15>

<INT> that's that's wonderful about about the master's and the
distinction by the way that's like that's really nice to hear and
</INT>

<10EB15> yeah </10EB15>

<INT> erm do you has that played a played a role for erm just
generally for you like like that course and reading around
psychiatry and I I imagine that's been really helpful but has
it </INT>

<10EB15> erm I think er well I er looking back erm when I h was
young I didn't really think about life er I just studied a lot and I
did very well then I fell ill at erm and all I did was think about
things just er in my head and then I came out of that period and
I started er sort of focusing on real life and how everybody else
er functions really and started working my way up and did the
master's and er now I suppose ah it I have a more balanced er
more realistic er view of life and erm don't really think too
much about er er how I was when I was ill </10EB15>

<INT> I see yeah and with listening to the radio is erm and the
and the topics that you that you like erm which sound like more
like the kinda non-fiction erm er much more about information
and </INT>

<10EB15> yeah </10EB15>

<INT> erm er do you is the radio erm do you choose the radio
because you prefer it to say TV or </INT>

<10EB15> erm <Lh> </Lh> t er ah <Sh> </Sh> I can't aff er I I'm
too I'm erm I can't I don't want to really pay for a TV license at
the moment so I'm listening to the radio because I don't need a
TV license for those programs <Lh> </Lh> </10EB15>

<INT> ah I see yeah I don't have a TV license either </INT>

<10EB15> yeah </10EB15>

<INT> I don't I don't really wanna erm pay for the TV license
myself we we don't have one here it's erm and the I dunno if
you find this as well but I find the radio erm n sometimes not
having the visuals makes the the information erm I find myself
focusing more on the information when when it's just the
sound erm I dunno if if you find the same or if it's different for
you </INT>

<10EB15> erm er at the moment erm I I er w er I fit in the radio
er programmes while I'm exercising so erm I I find sometimes I
miss bits of it er it's a little bit difficult to focus on er just the
words erm er but erm er the good thing is I can sort of er
rewind er if I r really er miss a big chunk yeah </10EB15>

<INT> I see yeah erm yeah erm by the way I'm I'm finding this really interesting but if at any point you feel like you'd you'd like to to end the call but you feel like you have to stay you you can always tell me like I'd I'd like to go now and that's that's totally fine erm but it's it's it's r yeah it's really interesting hearing so many different perspectives about language and creativity and erm yeah do do you find in terms of communication that erm creativity or creative language do you f do you find it helps communication or or erm or not so much </INT>

<10EB15> erm I think er being creative with language can be fun sometimes when we're <WS> talking </WS> with w making jokes and er with my siblings erm er yeah my sister often puts in a sort of creative joke here and there that's fun I think er I think creativity with language can be erm yeah er interesting and fun sometimes </10EB15>

<INT> and do an you you find it fun </INT>

<10EB15> erm yes I often erm I think er so that I I think just erm thinking i creatively or laterally is er you know quite er it can er just thinking laterally can give you a new perspective on things sometimes </10EB15>

<INT> yeah yeah erm do do you mind if I ask more about that like in in in what kinds of erm or or what you mean by that </INT>

<10EB15> erm difficult to s er say off the top of my head erm <Sh> </Sh> erm </10EB15>

<INT> it's it's quite an it's quite a erm a vague question really I suppose what I mean is erm i in terms of where creativity could be useful like are there specific situations where creative language might be more useful or or more fun or tha than other situations </INT>

<10EB15> erm I think ah I wouldn't mm er I w I wouldn't use sort of for myself I wouldn't be really using creative language too much er in my studies erm but erm with family and friends and during recreation I think it er it's it's it's good er a g good thing to erm use </10EB15>

<INT> I see so is it have have I understood that it's erm it's maybe mm more appropriate in certain situations than others </INT>

<10EB15> er yes yes I think so </10EB15>

<INT> I see I see and is there is there anything about creative language that we haven't talked about that you'd you like to talk about </INT>

<10EB15> erm er no I can't think of anything off the top of my head that erm that I would particularly want to highlight </10EB15>

<INT> oh OK yeah no th that's that's fine and erm it more generally is th is there anything that you erm that you'd like to ask about the project or or anything erm </INT>

<10EB15> erm er erm I I'm just just wondering erm sort of er the erm the size of the project h er h how how many participants are participating in the project </10EB15>

<INT> it's er so we have because we have two parts so we have the erm there's like a creative language experiment part </INT>

<10EB15> yeah </10EB15>

<INT> and then there's an interview part erm and so overall erm for the experiment there will be at least thirty people erm </INT>

<10EB15> yeah </10EB15>

<INT> but probably more erm and then everybody who does the experiment will be invited to do an interview as well </INT>

<10EB15> yes </10EB15>

<INT> erm but we're also interviewing people who especially right now because it's hard to work face to face erm who are interested in the interview but aren't erm available for the experiment and so erm I think overall we'll we'll probably be looking at between sixty and ninety people </INT>

<10EB15> and would that be sp spread out throughout the UK or </10EB15>

<INT> yeah yeah so we we're working with an NHS Trust erm in the North of England and we're working with erm one in the South of England as well and so erm we're recruiting from from both ends really of of the UK and erm hoping to try and speak to as many people from different areas as possible </INT>

<10EB15> yes erm er just er one thing probably on a tangent that I wouldn't cover erm erm I think when I'm sort of writing something up I've learnt that I have to be really really careful because sometimes erm er I er I I I have to work quite hard I don't know if other people have problems but erm when I'm writing er maybe something er up on a er a topic li er psy er sort of a psychiatric topic erm I have to I've learnt to be really careful cos sometimes my ideas can be be a little bit <WS> logical </WS> illogical erm so I have to work really hard at going looking through it and making sure that it does make sense I don't think th that's something that comes naturally to me I don't know other er if other people have problems with that as well but I work quite hard to er to make my written assignments er t er t erm make er logical er ger sort of erm er are written in a logical sequence </10EB15>

<INT> oh I see yeah like erm </INT>

<10EB15> yeah </10EB15>

<INT> I think I think that's something that cos one of the things about writing is erm it's v and and editing I think as well is that it's v it's very hard to to decide how <Sh> </Sh> in what order to present the idea you know </INT>

<10EB15> yeah </10EB15>

<INT> cos sometimes </INT>

<10EB15> yeah </10EB15>

<INT> presenting the idea in a in like a beginning middle and end sequence </INT>

<10EB15> yeah </10EB15>

<INT> is quite helpful but then sometimes presenting an idea in a end beginning middle is also quite helpful erm by saying like you know so one way could be to say er because of this and this you know this is what needs to happen erm </INT>

<10EB15> yeah </10EB15>

<INT> then another way of saying it is this is what needs to happen because this and this </INT>

<10EB15> yeah </10EB15>

<INT> and I think that's a about erm style you know your style choices in some ways </INT>

<10EB15> yeah yeah well I I just learn like I have to put a lot of attention into that to make sure it's correct and erm I <Sh> </Sh> I don't know how I <Lh> </Lh> managed to get a distinction for my master's but erm er I was looking through some t er material on the difference between descriptive writing and ana analytical writing and evaluative writing and erm er it's it's quite new to me the descriptions er the the material that I was reading about this er these three ways of writing and erm <Gr> I think things are <WS> biting </WS> getting a bit clearer but erm y y yes it's i er I I luckily have a natural erm style of writing that covers or a sort of description analysis an evaluation in I supp I naturally developed some skill in that but to look through and I er really really assess the that piece of work and say which bits are descriptive er and analytical or evaluative I'd I'm struggling at the moment it's something that I'm working on at the moment so that I can sort of er read something and er sort of erm assess it really critically </10EB15>

<INT> I see yeah I I think that's something that's very hard to do generally like </INT>

<10EB15> yeah </10EB15>

<INT> because evaluative writing can be descriptive and analytical erm </INT>

<10EB15> yeah </10EB15>

<INT> and the same with the others I think </INT>

<10EB15> yeah </10EB15>

<INT> it's I think it's one of those things that can that er w we tend to overthink like </INT>

<10EB15> yeah </10EB15>

<INT> er is it is it evaluative because it has some descriptive bits and erm and yeah I I think sometimes it's helpful to just think well what's it doing the most </INT>

<10EB15> yeah </10EB15>

<INT> you know like er is this section it's mostly describing there is some evaluation it is analytical </INT>

<10EB15> yeah </10EB15>

<INT> but it's it's main purpose is I dunno that's that's how I think of of it and that's just one way of thinking of it </INT>

<10EB15> yeah </10EB15>

<INT> like </INT>

<10EB15> I think erm yes so that's er sort of that's analysing written w er sort of er criticising critically er if erm looking at a written piece of work but erm I I just er went through er ah a module that was describing s how to erm sort of critically evaluate an image so erm they presented a portrait o of erm a lady who erm assassinated someone er in the French Revolution and it was a picture of er the lady and erm she was having her hair cut before her execution and she was having her in it was a p image and erm er the the the task was to analyse er t the image and erm sort of write up a sh a short little a short essay on erm er erm the on the one's perceptions of the portait and that isn't er that is sort of erm sort of er I would say er one of the best examples of something that I would find very difficult to look at an image a picture and then describe it analyse it and evaluate what's going on just by looking at a picture an image erm so the er module er the the erm sort of the er the ah ah er the sort of er the best the the example the description of that the way it should be written was very it was very interesting but it was very very difficult and so I was look I was looking at that er assignment and thinking I would <Lh> </Lh> never be able to do write something like that just to look at a portrait and then describe it and link ideas together about it and then sort of erm link it to erm who painted it and the period in which it was painted and so forth yes I think that's that's probably the sort of thing that I would really really struggle with </10EB15>

<INT> I see and and do you mind if I ask w what the points of difficulty there would be like I I I follow what you've said about erm linking the ideas and and the history and things but erm do you mind if I ask from from a almost like like a technical writing perspective like what aspects of the writing erm in that task you'd find </INT>

<10EB15> difficult just I th the ideas they were writing up about it's something that I would really not think of so er I don't think I er an of and erm erm I think it's the linking together of all the themes er that arise from that er portrait I would find it difficult to link it all together erm er in a way that really flows and I think I'd be er I'd find it a little bit difficult to make it erm er I I I struggle with the logical aspects of putting it together as well erm I I I I er I looked at the model answer and er erm and compared it to my ideas and my ideas were very limited I only came up with a few of the er things that they were t erm they erm included in the model answer ah but erm yes I think to get anywhere near the model answer I'd have to spend a long long <Lh> </Lh> long time thinking about it and trying to write it up so it wouldn't be something that would come naturally for me </10EB15>

<INT> I see do do you mind if I ask about the model answer and your answers like what was different between them </INT>

<10EB15> <Sh> </Sh> <Lh> </Lh> I'm afraid I didn't spend a er a lot of time sort of er working on my answer erm I think I missed a lot of the details so few things er that came up I mean er er I knew it was erm the it was about erm the lady er erm from the portrait they came up with ideas like this lady's quite wealthy because of er such and such her expensive dress and so dress and so forth erm she's having her hair cut which is er possibly signifying er some sort of humiliation for women to have their hair cut off erm there's someone painting her picture erm I did notice the painting palette er but I didn't notice a picture frame erm then they talked about erm er the ink the quill pen on one side and a sort of a knife on the other side and the implications of that and I wouldn't have picked that up er I didn't pick up the quill or the the knife and the implications of the fact that erm the knife possibly relates to the fact that she's <WS> assan </WS> assassinated someone so these things I wouldn't normally think like that erm so yeah that er </10EB15>

<INT> I see is and I wonder about whether there's something in there about erm in in terms of how the person who wrote the model answer might have been doing things so something different whether the person who wrote the model answer might have been almost giving themselves license to talk about things that that they didn't actually have evidence for in the picture do you know what I mean </INT>

<10EB15> y yes </10EB15>

<INT> like allowing themselves to kind of fabricate details </INT>

<10EB15> yes </10EB15>

<INT> erm </INT>

<10EB15> interestingly erm just er a line that the way erm the the way they were er th sort of erm thinking was erm <WS> their </WS> that actual thinking in the model answer was er interesting er er y erm it's erm but er the thing it it reminded me of er how I was thinking when I was ill except that they were er verifying it with facts and historical details whereas when I was er ill I was thinking about things but there was nothing to support any of my thoughts or ideas </10EB15>

<INT> I s I see right and do you mind telling me a bit more about that cos I think I think that's something that erm it would be really good to unpack in a bit more detail if that's OK </INT>

<10EB15> <Sh> </Sh> erm yes so I mean I might have thought of a word and rhymed it and come up with a concept erm but er er and it it would've been interesting but er the way they were looking at the portrait er they had er historical details about the portrait er y know and erm they knew the facts that related to the portrait so the the ideas that they were coming up with er they could substantiate so erm you know er for example the er the palette knife er the the the knife erm so it er it does sound a bit strange er that they're linking it to er the fact that she's killed someone but erm because of the situation as it was it's something that they have supported so they've

linked together er linked together an actual fact with an idea that they've come up with er erm so th so th so they for example er will erm they were talking about er erm the fact that she's in a white dress an expensive white dress and the white dress er implicates er purity and erm er it er and erm er th it's it is quite true that er in our society erm sort of er wo white a woman in a white dress er can be linked to someone who is you know quite pure </10EB15>

<INT> I s I see so have have I understood right that the difference has something to do with so that er that the idea that the people writing the model answer erm the ideas that they were having would then kind of link s to a erm a feature of of the the painting and that the ideas that y that you've had in the past were linked t s weren't linked to features in say the environment but the mechanism was similar is that right </INT>

<10EB15> that's right I think the erm mechanism er the way I was I was thinking and er the way they were thinking about the portrait mechanisms were similar but erm mine was a little bit more erratic and there was <TC> nothing support nothing in reality </TC> that was actually w er supporting it erm so th they although they're making assumptions and they're making creating er creative assumptions er they at the same time have erm sort of a er erm er ah links to er reality that support their erm their s er propositions </10EB15>

<INT> I s I see I see and yeah that's that's r really interesting because it it's interesting erm it's interesting to hear that the mechanisms s you know er are similar in some way or or feel similar in some way or </INT>

<10EB15> yeah </10EB15>

<INT> or erm share aspects maybe and and is that erm yeah is is that er well in in terms of images generally and and visuals gen generally erm do you have a p or how do you feel about erm paintings songs erm sort of creative uses of of n of non language things </INT>

<10EB15> erm I mean I I enjoy er well y at the moment with COVID I can't but I did enjoy going to l er erm sort of er erm art galleries and and looking at the paintings it's nice erm n you know th er it's very nice visually to look at er some of these really good erm paintings erm but erm I think it's more relaxation for me something that I I erm just relaxes me so erm music I'm not really into erm sort of er music with lyrics er er erm er music's not I enjoyed it when I was younger but music's not something that's important to me er these days erm erm er ah I think erm sort of a not I think cos because I spend so much of my time reading non language things like erm sort of er paintings watching films or erm er er drama series er that's it's er very much relaxation er so I'll er I always erm sort of chill er in the evenings er watching something and I find that very relaxing yeah </10EB15>

<INT> that's that's really nice to hear thank you so much for giving so much of your time to talking to me I I you know I can't thank you enough I really appreciate it </INT>

<10EB15> that's OK I'm I'm hope I'm <Sh> </Sh> <DT> I hope that er what I've said will be helpful to you for your project </DT> </10EB15>

<INT> yeah it e everything everyone says is is erm is amazingly helpful because it's you know the project's interested in in how people think about these things and and what's important to people about these things and so you know erm everything that everyone says is is brilliant because it's what's important to them and erm yeah I real I really appreciate your time thank you so much and be </INT>

<10EB15> OK </10EB15>

<INT> before I go is there anything that we haven't talked about that you'd like to talk about or </INT>

<10EB15> yes I I would really appreciate getting a copy of er the erm study re er results that you s will be distributing to the participants er ah </10EB15>

<INT> yeah of course </INT>

<10EB15> what would be the best way to get that and when do you think it would be available </10EB15>

<INT> erm so in terms of when it'll be available I erm I think it's going to be well we're still we're we're gonna continue recruiting until the end of 2022 erm but we might collect enough data before then so it the results might be ready in the middle of next year or they might not be ready until erm the end of or the middle or the end of twenty 2022 but ah in terms of the best way to get them erm I I can send them to <Sh> </Sh> to <An> </An> and erm <An> </An> to to distribute them because I erm part of the erm the arrangement we have is that we handle the minimum amount of personal information possible so erm I only have your erm your your phone number so I er I couldn't e-mail them to you or post them to you but I could ask <An> </An> to to erm or s or someone else at at <An> </An> to post them or I mean the the main thing is how you'd like to to receive them </INT>

<10EB15> erm er w will it be possible for you to e-mail them to me </10EB15>

<INT> yeah yeah I can I'm if you're happy for me to have your e-mail address then I can totally yeah I can totally do that that's that's absolutely fine </INT>

<10EB15> oh thank you erm tha have you got some paper </10EB15>

<INT> yeah yeah erm so erm oh I'll just grab a pen so what we might find is that we we might be able to to share some results erm before some of the others you know cos we might collect enough interview data before we collect enough experimental data for example so we might be able to share some results earlier or it might be that they're all ready about the same time erm but yeah I've I've got a pen so erm </INT>

<10EB15> OK it's er all lower case <An> </An> so that's <An> </An> all one word at <An> </An> </10EB15>

<INT> so erm <An> </An> </INT>

<10EB15> yes that's right <An> </An> </10EB15>

<INT> brilliant awesome yeah if y if erm if you're happy for me to erm have that on file I'll just add it to a list of e-mail addresses er the e-mail addresses of everyone who's asked to have the results by e-mail and then it'll all go into like an anonymised e-mail so it'll all be blind copied </INT>

<10EB15> yeah OK </10EB15>

<INT> and er and you'll get an e-mail with with the results I can't wait to share them because it's erm </INT>

<10EB15> ah OK </10EB15>

<INT> yeah it's been so nice talking to people about n particularly about you know creativity and language but also everything else I've talked to people about as well it's be it's it's erm and yeah I'm looking forward to talking about and and sharing how we how we looked at the data and and that sort of thing so yeah I'd be very happy to share it </INT>

<10EB15> OK thank you OK I look forward to r reading that </10EB15>

<INT> yeah yeah I look I look forward to sharing and erm yeah thank you so much for for your time today I really appreciate it it was a pleasure to meet you and erm and yeah yeah ha have a lovely week and and and beyond it's really nice to meet you </INT>

<10EB15> you too OK OK bye bye </10EB15>

<INT> take care bye bye </INT>

<10EB15> oh bye bye </10EB15>

<INT> actual study erm is it's just having a conversation about erm wh er there's one question in the interview and then the rest is just a a chat about erm just expanding on on your answer to that that one question so the question is do you feel like you do creative things with language </INT>

<10EB14> can you repeat that </10EB14>

<INT> erm do you feel like you do creative things with language </INT>

<10EB14> yes I do to some extent I I speak every day to fellow residents in the hostel and I talk creatively from time to time and I also write literature which isn't spoken but it is the written word and I'm creative in that <TC> sense too an I'm saying </TC> that my main form of creative speech is with residents in the hostel where I talk <WS> originally </WS> from time to time </10EB14>

<INT> did you say talk originally </INT>

<10EB14> yes I talk with residents in the hostel and I speak <WS> originally </WS> </10EB14>

<INT> can you tell me more about that </INT>

<10EB14> er I can't think of any examples at the moment but erm I said I can't think of any examples at the moment </10EB14>

<INT> that's OK erm but is doing doing something original with language important </INT>

<10EB14> is it important </10EB14>

<INT> yeah li erm in the sense that is that one of the reasons that you do it because it's original </INT>

<10EB14> er I don't think so actually I talk to people anyway whether I'm original or not </10EB14>

<INT> I see </INT>

<10EB14> but if I'm original it can be a boon it can make me feel happy I have a sense of humour a wit </10EB14>

<INT> I see so that's that's really interesting so it it have I understood right that it can sometimes happen by accident </INT>

<10EB14> yes it's <WS> chancelly </WS> yes unintended </10EB14>

<INT> I see I see erm and what's that like f </INT>

<10EB14> it's quite pleasing it gives me a <WS> fillip </WS> gives me a p boon it is pleasurable I like to talk to people anyway but if I'm creative as well with language that's a boon </10EB14>

<INT> I see that's really nice to hear that's really nice to hear </INT>

<10EB14> good </10EB14>

<INT> an an b l e I suppose in d e in a day to day sense like I I know erm you said you you can't think of any examples an and that's absolutely fine erm but I'm really interested in in what that process feels like that involuntary process and everything else you've said as well it's er it's like do you mind telling me a bit more about the involuntary side of things first </INT>

<10EB14> erm well as I I said it's unintended if I make the an original speech or if I use my sense of humour that is unintended but I can't think of any examples which would be helpful I er it would be good to think of an example then I I would demonstrate what I'm saying but I can't think of anything at the moment </10EB14>

<INT> do you do you make puns </INT>

<10EB14> yes I can make a pun yes something like the pointless point </10EB14>

<INT> I <Lh> </Lh> I see yeah yeah </INT>

<10EB14> yes </10EB14>

<INT> erm yeah and and wh er what about metaphors </INT>

<10EB14> sorry </10EB14>

<INT> and what about like er like metaphors </INT>

<10EB14> metaphors I don't know </10EB14>

<INT> erm when when you talk about one thing as though it's something else </INT>

<10EB14> yes I don't know I can't think of anything there </10EB14>

<INT> oh OK erm and when does it is it like a pleasant surprise then if it happens involun involuntarily and it's </INT>

<10EB14> yes it can be a pleasant surprise to have a turn of phrase or a point of wit it can be suprising and pleasing creativity is quite pleasing </10EB14>

<INT> yeah and what kind of what kinda literature do you do you like to write </INT>

<10EB14> er I write short stories </10EB14>

<INT> oh wow </INT>

<10EB14> about people going on holiday families going on holiday that sort of thing </10EB14>

<INT> that's brilliant an erm do you have favourite authors and </INT>

<10EB14> yes one of my favourite authors is W Somerset Maugham I love his novel The Moon and Sixpence which is about the great artist Paul Gauguin </10EB14>

<INT> oh OK I I haven't read that but I I will I want to that sounds good </INT>

<10EB14> very good novel that by Maugham very fine novel yes </10EB14>

<INT> what do you like about the novel li ah like specifically the language </INT>

<10EB14> well it's about the stock broker Paul Gauguin who gave up being a stock broker in <TC> Paris in at the age </TC> of forty and went to live in Haiti where he painted beautiful women and had lots of sex so he broke free from the rat race and went to live in Haiti </10EB14>

<INT> I see </INT>

<10EB14> yeah </10EB14>

<INT> and is it are there things about the way that that particular author writes that that you enjoy more than other writers or </INT>

<10EB14> well it's one of my favourite novels I also like D H Lawrence </10EB14>

<INT> ah and wh erm what is it about Lawrence's p writing that that you like </INT>

<10EB14> well you know erm D H Lawrence writes mainly about sexual problems which is interesting </10EB14>

<INT> yeah yeah an do you mind telling me a bit more about erm how how humour and creativity erm or l y you know why humour is important to you in relation to creativity </INT>

<10EB14> erm well humour is important as a way of sh expressing pleasure it's nice to make a joke out of things or say something original which is witty an that can be a boon and very pleasurable </10EB14>

<INT> yeah and and is so so the originality is is er a big part of it as well </INT>

<10EB14> yes yes it's important to be original </10EB14>

<INT> do you mind telling me more about that like why it's important </INT>

<10EB14> I think it's important to create and if you speak creatively it gives you a vehicle for sharing things with other people that can be pleasurable to you and pleasurable to them it can make you laugh </10EB14>

<INT> I see </INT>

<10EB14> if you if you crack a joke or make a witticism it can make you laugh which is a pleasure </10EB14>

<INT> yeah is th is it about connecting with other people in some sense then </INT>

<10EB14> ah the y yes I might even make fun of some people in a good natured way erm s I come up with phrases like wit and Wendy which is the wrong way round of saying wet and windy so if I say wit and Wendy I make a joke out of wet and windy </10EB14>

<INT> I see I see and er d y do you do that often reverse the the words </INT>

<10EB14> quite often I use a word er a phrase like that or a spoonerism </10EB14>

<INT> amazing s erm spoonerism that's from is that from Charles Dickens Mrs Sp Mrs Spooner was it who used to </INT>

<10EB14> well there was a don at Oxford called Professor Spooner who invented the spoonerism and er h he came up with phrases like erotic blacks which is a spoonerism for erratic blocks </10EB14>

<INT> I see I see oh OK so do do you en enjoy spoonerisms in relation to humour </INT>

<10EB14> yes it can be very witty a spoonerism it you <Gr> tend to get things muddled in sound of the words </Gr> so you turn things upside down or opposite but it's it's quite con satisfying to make er f spoonerism cos it <WS> cliques </WS> your argument and gives you a point of wit at the same time </10EB14>

<INT> I see yeah and is is the sound erm do you is it the sound aspect that's quite important then as well how words sound </INT>

<10EB14> yes the sound is important yes cos it's sort of musical a f spoonerism it's the wrong way round which is musically you can work out what it means by er th swapping the words round makes spellings different it erm the main pleasure of a spoonerism is the wit of the inversion or the opposition <Gr> it is a pleasure to speak as er a spoonerism </Gr> </10EB14>

<INT> and do the sp do the spoonerisms that you speak are they erm are they sometimes involuntary sometimes voluntary </INT>

<10EB14> it varies sometimes they're unintended sometimes they're voluntary </10EB14>

<INT> I see </INT>

<10EB14> it varies a lot </10EB14>

<INT> and are there situations where it's more likely to be voluntary and more likely to be involuntary or is it quite random </INT>

<10EB14> sort of random I think </10EB14>

<INT> I see and is that the case with with other things like is that that might pop up in say literature erm do they happen in in your speech as well </INT>

<10EB14> er </10EB14>

<INT> or is it mainly spoonerisms </INT>

<10EB14> well the spoonerisms are quite common there are other forms of wit like erm a play on words like a pun <DT> as you mentioned before </DT> </10EB14>

<INT> and is it so y am I am I right in thinking that erm there's a mixture of voluntary and involuntary ways of speaking that involve playing with language playing with sound </INT>

<10EB14> yes that would be correct yes that's right yes </10EB14>

<INT> and do you do or h which I sup I suppose I'm wondering if one came first like did you n have you always played with language voluntarily and then it started happening involuntarily later or er ah have like were they both there or was one there first </INT>

<10EB14> well I can't remember exactly at what age I started to speak wittily but erm wit is important to me </10EB14>

<INT> yeah an w erm do you mind telling me a bit more about that like why why it's important to you </INT>

<10EB14> er well it's important to erm make good fun of things or people as a way of getting on with them if you make fun of somebody you can get on with them better than if you don't make fun of them so it's important in that sense and erm wit can make you laugh that's the pleasure of a wit it makes you laugh </10EB14>

<INT> so would it be fair to say that erm some of these things are ways to connect and communicate with other people in a way that's also pleasurable for everybody involved </INT>

<10EB14> that's right yes </10EB14>

<INT> I see yeah an you mentioned the music of language erm </INT>

<10EB14> yes yes </10EB14>

<INT> how does wh how do you experience that like erm I I realise that's quite a vague question but I I don't want to influence what you say but I I'm really interested in in what you're saying so I erm is it how words well I suppose actua actually the thing I'm trying to ask is when you come up with a witticism erm do you do you take inspiration from the sounds of the particular words that you choose </INT>

<10EB14> yes the sound of language is important to me words have their own meaning and spellings and sometimes you can have two words that have different spellings but the same sound like pleasure and pleasure P L E I S U R E it's not quite the correct spelling of the word but you can spell it as P L E A S U R E and P L E I S U R E and if you let the music resonate in the sound of the words it can be humourous and you can get m bril more meanings than one from the sound of each word </10EB14>

<INT> I see I see and and does that does that i influence the words that you choose when you're speaking to other people </INT>

<10EB14> it can do yes it can affect my judgement in the matter when I'm talking to people and I want to be witty I can think of two words that have similar meanings but different

spellings but the same sound like pleasure and pleasure <DT> as I mentioned </DT> </10EB14>

<INT> and erm do you find that er well er h how do other people respond to to your wit do they like do some people not quite get it th it takes takes them a little while to </INT>

<10EB14> yes they don't always understand my jokes but erm they laugh when they understand which is er the main <Lh> </Lh> object of the exercise </10EB14>

<INT> yeah yeah but </INT>

<10EB14> yeah </10EB14>

<INT> it takes them a little while because they have to erm they almost have to sort of compare the words and see erm </INT>

<10EB14> yes they have to fathom my meaning from the sound of the word or the words and if they understand me they laugh which is a pleasure to me again </10EB14>

<INT> and is the process of erm other people fathoming your meaning part of what's pleasurable </INT>

<10EB14> yes it is pleasurable to make people understand and communicate and make contact with people and share an idea on a common basis that we both understand that is a pleasure </10EB14>

<INT> yeah yeah and do you feel understood by other people </INT>

<10EB14> yes like I understand when when somebody understands me it registers in my erm voice and my eyes and we share and communicate together and that's important </10EB14>

<INT> yeah so the sense I get is that humour is a is a great way to communicate complex ideas in a way that's that's mutually enjoyable </INT>

<10EB14> that's right it's a good way of putting that yes that's very good yes well done yes </10EB14>

<INT> oh thank you d do you </INT>

<10EB14> <Lh> </Lh> </10EB14>

<INT> d do you do it to communicate complex ideas </INT>

<10EB14> well not necessarily I don't like to be complicated but erm every now and then I make a joke which is difficult to understand I might make a joke like erm what do you call a man with a stick in his leg and the answer is Rodney </10EB14>

<INT> <Lh> </Lh> </INT>

<10EB14> <Lh> </Lh> </10EB14>

<INT> <Lh> </Lh> yeah </INT>

<10EB14> that's the sort of joke I like you know it it's not completely creative on my part but it is a witticism on my part </10EB14>

<INT> I see ah see </INT>

<10EB14> I like jokes like that where you you expect a double entendre </10EB14>

<INT> yeah that's that's really that's really interesting that it's it seems to be about word play and communication and about connection and is is humour a good vehicle for communicating with people who may not experience the same things that you do is it ah er a good bridge </INT>

<10EB14> n erm I'm not sure erm sometimes if I crack a joke and they don't understand I leave it there and don't press them on the point you know </10EB14>

<INT> yeah </INT>

<10EB14> you know if if they understand it is a pleasure to share and it can be a vehicle for pleasure and sharing </10EB14>

<INT> I see yeah that's that's s so it's it's so interesting to hear about not only what you like about creative language and and playing with language erm but also how it erm how it's related to connecting with other people </INT>

<10EB14> yes that's right yes </10EB14>

<INT> do you erm when you write erm creatively is there a difference between how you write creatively and how you speak creatively </INT>

<10EB14> yes writing tends to be more sustained and more complicated and more logical than my everyday speech I don't speak at great length but I do write at length which is one of the pleasures of writing I get this sustained run of words in language and expression it's <DT> as I say </DT> I tend to write at much greater length with much greater complexity than I do speak in everyday life </10EB14>

<INT> I see and or in in your experience why why d do you think those things are different </INT>

<10EB14> sorry </10EB14>

<INT> and in in your experience erm why do you think those things are different </INT>

<10EB14> well if you write you have time to think to yourself more and you can break up the writing and the flow into nuggets or bits of expression or bits of creativity th that you can take your time to think about if you're talking to people and you take your time to think about it you have to have a pause or a lull or a s period of silence it tends not to work very well for conversation </10EB14>

<INT> yeah </INT>

<10EB14> so the beauty of writing is you can write at length and take your time about it </10EB14>

<INT> I see yeah and something you said that in the in your reply before the last reply erm that I was er that prompted me to to think of another question was when you erm when you write is there that involuntary aspect in the writing as well </INT>

<10EB14> yes it can be more involuntary to write than to speak if you say you have more opportunity to dig in to your pockets and your depths and come up with ideas and er that is more possible in writing than in everyday speech I think writing is more creative than speech </10EB14>

<INT> oh OK and do you mind do you mind if I ask about that a bit more about that cos th </INT>

<10EB14> yes go ahead yes </10EB14>

<INT> erm that do you d well so erm why do you think writing is more creative than speech </INT>

<10EB14> well all I would say about it is that erm writing is more involved and more erm powerful than spoken the spoken word </10EB14>

<INT> I see </INT>

<10EB14> er but if y if you are a lecturer or a speaker and you prepare long speeches to share and lecture and demonstrate then that's a bit like writing at length in your own domain as a writer but in everyday speech you don't have all that much opportunity to plan a long speech it can be quite difficult to speak at length but it's much easier to write at length </10EB14>

<INT> yeah yeah yeah and it erm are there differences in the involuntary things that happen betw for you when you're speaking and when you're writing </INT>

<10EB14> er I'd say there's more involuntary interest in writing than in speech but speech can be very witty which is one of the pleasures of speaking </10EB14>

<INT> I see and what do you what do you like about creative language like just in general </INT>

<10EB14> <Noi=multiple voices in the background> </Noi> well then my main interest in creative language is an exploration of ideas or the imagination or fantasy which communicates a deep interest in the material that you're writing about and by writing you share this opportunity of thinking and writing with other people who read your literature when you publish your books and er although I'm unpublished I do get pleasure from writing on the basis that I can share at depth what I'm thinking and feeling and what I'm writing about as I say if you write you have more opportunity to share in depth than if you speak </10EB14>

<INT> I see I see and what kind of ideas and and thoughts do you like to use writing to explore in depth </INT>

<10EB14> I like to explore relationships I like to explore sexual relationships I like to explore erm travelling I like to explore going to places visiting places going on holiday going to famous

buildings and sightseeing say my main pleasure is in studying relationships which you can't do so easily in everyday speech </10EB14>

<INT> yeah I yeah I know what you mean it's what is it about er is it the the interpersonal aspect of relationships </INT>

<10EB14> erm well I'd say it's about erm the feelings that you have for someone else or the feelings you have as a partnership partly sexual feelings partly love partly ideas partly affection t say <TC> the pleasu one of </TC> my main pleasures of writing is to study a relationship between two people </10EB14>

<INT> and have have you always been interested in the the relationships an and the sh sharing of ideas in relationships and </INT>

<10EB14> yes I'd say that's been a lifelong interest not just as a writer but as a speaker in everyday speech I like to get on with people and share people <WS> thair </WS> share things with people and er develop relationships with people which is important to me </10EB14>

<INT> yeah yeah yeah I I feel the same I I agree and I I understand erm how writing can be a way to explore that </INT>

<10EB14> that's right yes writing can help you to speak in everyday terms too sort of as a point of research that trades off in speaking and conversation the more you write about relationships making relationships in everyday life and sharing and communicating with other people </10EB14>

<INT> that's </INT>

<10EB14> so writing's important in that sense as a basis for research a bit like a quarry out of which you hew interesting rocks and stones </10EB14>

<INT> I see I see like that the process of exploration helps you to w well would it be fair to say because you said you know er a few interesting rocks and stones out out of the quarry that that a lot of that exploration is is looking for specific things </INT>

<10EB14> well as I say if y if you write and think about relationships that trades off with relating to other people in everyday life the more you write about relationships the more you think about relationships the more you get on and <Lh> </Lh> communicate with people and try to make relationships and writing can help you to do that </10EB14>

<INT> I see yeah I see and have have you written for a long time then </INT>

<10EB14> yes for many years I've been writing for thirty forty years </10EB14>

<INT> wow I see and what sparked your your interest in writing </INT>

<10EB14> partly reading other books like erm Somerset Maugham or D H Lawrence inspired me to write my own books </10EB14>

<INT> and it er have you written you've you've written a lot </INT>

<10EB14> er I've written quite a lot of erm short stories and a couple of books and a few short novels so I've written quite a lot but er </10EB14>

<INT> wow </INT>

<10EB14> it varies as an aggregate of words from one year to another some years I'm very active some years I'm very <WS> fertile </WS> some years I'm not so active it varies considerably it's not a fixed sort of aggregate or a fixed thing it varies </10EB14>

<INT> yeah it's a very erm creativity sort of does its own thing sometimes doesn't it </INT>

<10EB14> that's right yes it er it has it's ow w er has a will of its own and you can follow it and develop it in your own mind with your imagination and <Gr> if you can enter into a flight of fancy or a flight of the imagination which is fun to explore </Gr> </10EB14>

<INT> yeah that reminds me of a line from Blake erm he who seeks to follow joy as it flies basks in eternity's sunrise </INT>

<10EB14> yes very good yes </10EB14>

<INT> like following the following the creativity without trying to catch it just following it you know </INT>

<10EB14> yes yes </10EB14>

<INT> and that's that's so that's amazing thank you so much for talking to me about this I erm I n I need to head off in about ten minutes and I'd erm and I'm really grateful that you've you've given so much time to this conversation as well it means a lot erm </INT>

<10EB14> OK well it's been nice talking to you doctor <An> </An> </10EB14>

<INT> you you too you too <An> </An> thank you so much and is there anything that we </INT>

<10EB14> OK </10EB14>

<INT> haven't talked about that you'd like to talk about </INT>

<10EB14> well no I don't think so I think <DT> we've been quite comprehensive </DT> </10EB14>

<INT> yeah I think yeah I'm I'm sorry to ask you so many follow-up questions it's just so <Lh> </Lh> interesting that I just wanna know more erm </INT>

<10EB14> that's good yes </10EB14>

<INT> and an er it's been an absolute pleasure to meet you thank you so much </INT>

<10EB14> OK lovely thank you very much </10EB14>

<INT> an have a have a lovely afternoon and the rest of the week and and beyond </INT>

<10EB14> and you </10EB14>

<INT> thanks so much </INT>

<10EB14> and you lovely thank you </10EB14>

<INT> take care <An> </An> thank you </INT>

<10EB14> bye now </10EB14>

<INT> bye </INT>

<INT> there we go that's the erm the consent bit and then the so the interview there's only one question and the rest is just a </INT>

<O3AR15> OK </O3AR15>

<INT> a chat about it erm </INT>

<O3AR15> yeah </O3AR15>

<INT> so the question is do you feel like you use language creatively </INT>

<O3AR15> erm I suppose <Lh> </Lh> it depends what you mean erm I tend not to have a creative output for my language so I can't really do writing or art anything like that erm but if I use it creatively in my day to day life I'd probably say no cos er most of my er interactions are quite normal and just kind of basic so there's <Gr> not really opportunity to er language in a different way </Gr> or there's no benefit to to doing that so therefore I don't really think that I do not in the day t a day to day basis really </O3AR15>

<INT> I see and what does the the idea of creative language mean to you like how how would you define that </INT>

<O3AR15> how would I define it I'd suppose using language in a way that is expressive or er is expressing something erm in a kind of <Lh> </Lh> I don't wanna use the word creative again in a wor in a way that's kind of erm unusual and that perhaps indulges in kind of representing forms rather than in a f kind of functional way </O3AR15>

<INT> I see so </INT>

<O3AR15> I suppose </O3AR15>

<INT> does the language that you use perform a lot of the functions that you that you need it to do and is that why you don't tend to use language creatively </INT>

<O3AR15> it's difficult there's no opportunity I kind of erm just kind of have kind of functional interactions so it's the inter interactions that I had get involved in in my day to day life aren't really <Lh> </Lh> creative because I'm in quite a constrained environment m er a f a kind of sheltered housing project er t supported housing project sorry and in my kind of day to day care from my weekly d well twice <Gr> a weekly from the getting the depot </Gr> never is it really kind of creative erm <Ch> </Ch> so I don't really have the opportunity to in to indulge my kind of more creative side I would sup I would say </O3AR15>

<INT> oh I see so like would you like to do more creative stuff with language </INT>

<O3AR15> I don't know it re <Lh> </Lh> to be honest with you I kind of think that I'd like to feel more that I I can express myself more freely and that what I do is more interesting to other people but cos it's not and cos it's kind of functional then I don't have <TC> the opportunities I suppose the answer is yes </TC> I would like to er kind of feel that there was a reason for me to be creative or kind of expressive </O3AR15>

<INT> so it sounds like and correct me if I'm wrong but it </INT>

<O3AR15> no </O3AR15>

<INT> like it sounds like there's a big kind of communicative aspect like about what being creative with language is about what you talk about and what's going on at in your life at the time is that right </INT>

<O3AR15> language language to me at the moment is just kind of functional driven by function and not really experience erm you know having the room having room for expression or I don't feel that people really wanna hear me so I suppose <Gr> what I think of creative </Gr> is not indulgent but it er <Sh> </Sh> kind of er <Gr> talk create using language </Gr> in a kind of more more <Gr> I'd a way </Gr> that I'd identify more with <Lh> </Lh> so I'd suppose that I don't really have erm the I don't have the outlets available to me to really be able to use language in the way that I want to I suppose </O3AR15>

<INT> and do you mind telling me more about the way that you want to </INT>

<O3AR15> I suppose what I'd like to do is feel that my intellect is stimulated by the the need to talk and that there's something about being heard by other people that kind of makes that important or makes that work and erm I suppose when other people don't want to listen to you then well I have no reason to indulge that then it just becomes quite functional and simple erm but I don't feel like I'm in a terrible bind because of it it's just how life is so kind of just get on with the day <Lh> </Lh> try and try and get by and that's kind of living one day at a time and just being normal in that sense so yeah it's it's kind of up in the air it's kind of I mean I don't really I think about it very much but yeah b I don't know how how to say it really <Lh> </Lh> I mean the use of language in my day to day life is just normal and I don't know how <Gr> I want it to use my creative abilities </Gr> I don't really have er a way of being out of the cycles that I'm in and so I I kind of just let it go by just another kind of thing that doesn't happen or thing that doesn't work in my life </O3AR15>

<INT> when you say up in the air erm </INT>

<O3AR15> mhm </O3AR15>

<INT> I'd say that's a creative thing like cos it's like a </INT>

<O3AR15> mhm </O3AR15>

<INT> like a like an expression like a erm do you know what I mean like erm </INT>

<O3AR15> yeah </O3AR15>

<INT> like a figure of speech you know </INT>

<O3AR15> yeah yeah yeah well I mean I don't really have many people ask me questions <Lh> </Lh> like erm people <TC> aren't always there's no real </TC> kind of drive to hear me from people around me so I kind of just get on with the the day and I'm quite isolated I suppose in that sense but I don't really

have er have that kind of communication with people the quality of communication </O3AR15>

<INT> I see </INT>

<O3AR15> and er yeah so that it's driven a lot by kind of the social environment that I'm in and in and by what's demanded of me and I suppose that there's really there's no demand on me to kind of really fulfil any kind of function apart from just kind of basic communication <Gr> not really kind of expression </Gr> or erm kind of artistry in language it's a much more kind of <Gr> designed to explaining kind of the day to day </Gr> er running of my life in a s in a small way but language is th er the use of language in my day to day life is very very normal very poor poor poor in the sense of cr of creativity </O3AR15>

<INT> I see and like </INT>

<O3AR15> mm </O3AR15>

<INT> in terms of w mm things you like like hobbies and and er stuff </INT>

<O3AR15> mm </O3AR15>

<INT> erm like I understand w what you say about like erm particularly like communication opportunities not being as like available erm </INT>

<O3AR15> yeah </O3AR15>

<INT> but what what do you like to do whether it's creative or or not but like what do you like to do erm in your spare time and stuff </INT>

<O3AR15> erm I watch a lot of TV <Lh> </Lh> at the moment erm I read the newspaper erm I go for walks and erm yeah not much really it's quite a a normal er kind of basic existence cos I'm kind of recovering from illness so a lot I lost a lot of the things or outlets that I used to enjoy meeting with friends talking with friends playing pool or <Lh> </Lh> snooker or something or <Gr> going out for drink </Gr> even I kind of lost all that in the course of my illness and so <Sn> </Sn> a lot of my life is kind of just TV and newspaper <Lh> </Lh> and erm yeah not really much else at the moment trying to stay off drugs which is important to me and that's about it really <Lh> </Lh> </O3AR15>

<INT> that's like it's a well that sounds like a a lot to erm to handle in the middle of lockdown </INT>

<O3AR15> yeah I mean I suppose lockdown is kind of the same as it was before <Lh> </Lh> to me I feel like I'm on a bit like on a bit of lockdown anyway because I don't really have that social aspect that I know it's the kind of difficult thing to go without and I'm kind of getting used to it but I'm not sure if it's me or my illness that makes me kind of want to isolate myself or that I can divide the two but I kind of feel the need to n to be alone and not to communicate with people and I find that stressful so yeah it's it's always been a bit of a problem for me er I've always had that kind of personality <Gr> that kind of wants to withdraw and find communication difficult </Gr> and erm find it difficult to kind of meet with people so yeah it lockdown for

me is it's almost <Sn> </Sn> I do miss sort er seeing my mom because I saw her I see her regularly but other than that it's kind of y I'm kind of used to being alone and used to erm not sharing things with people and kind of just getting on with the basics of the day and kind of getting through that way and yeah I mean it's OK it's OK to to feel that way it's just difficult to deal with not having that kind of social aspect of my life and n <Gr> not being able to not want it </Gr> I still want it and but I just have an aversion <Lh> </Lh> to it at the same time it's like being allergic to something good or something it's er it's not ideal but yeah </O3AR15>

<INT> I see like </INT>

<O3AR15> mm </O3AR15>

<INT> is it nice in smaller amounts then like the social stuff </INT>

<O3AR15> erm ah I don't know it's it's not really I don't know I'm not sure er it's very difficult to put a blanket over anything and say you know like that's how it is because </O3AR15>

<INT> mm </INT>

<O3AR15> everything can be different but erm I like the idea of it and it doesn't go well or badly cos it happens so you know sometimes things will go well and sometimes they won't but erm it depends it really depends on the nature of the interaction and who who it's with and whether things turn out to be or feel right at the time or or not so it it's difficult I mean erm I still need that interaction with people and yeah dealing with it in small er in small amounts should be easier <Lh> </Lh> shouldn't it but and I'm not really I'm just not really geared up for it it's not really something that I was born with so it's always difficult to interact with people and even in small amounts it's s it's hard to really find the place in that for me that really works so yeah it's it's like I said it's like being allergic it's just not something that comes naturally it's just something I've boarded out like I can't draw from very well I'm not a very good artist it's but it's just something that I've boarded out y er it's I dunno I think that's part of like my illness you know </O3AR15>

<INT> I see yeah like I'm I'm mindful of what you're saying that I don't keep you on the phone too long if it if like this conversation's like </INT>

<O3AR15> no it's fine it's </O3AR15>

<INT> like </INT>

<O3AR15> it's ah it's just er I I struggle through and it it's not erm you know I won't I won't go to bed t tonight <Lh> </Lh> worrying about what what I've said or what we've been doing so it should be fine it's just as long as there's good boundaries <Ch> </Ch> and erm yeah I'm not forced into it too much then it's fine but this is just you know I can I can say no and it's just over the phone for one day it's thought through like half an hour so that's fine </O3AR15>

<INT> so is it a bit different then if it's y like more like I don't know say it's like er b someone's birthday party or something

and you feel like you have to go and there's lots of people there is that </INT>

<03AR15> yeah </03AR15>

<INT> sort of the situation where it's like ah mm b not too sure about that </INT>

<03AR15> yeah that the <Gr> the bigger the worst </Gr> <Lh> </Lh> definitely the more the more people the more stress erm the harder it is and yeah I mean I've been kind of withdrawing from those kind of things for most of my life so I'm I'm trying my best to kind of work with that in my life and trying to hopefully deal with something that will help me erm cope better with anxiety but that's difficult that's not really something that is that easy I mean I you see it all the time in erm in the world but anxiety is really hard to shake it's really hard to get over and really hard to </03AR15>

<INT> mm </INT>

<03AR15> get past and I'm trying my best to kind of deal with it but yeah but this feels alright this feels kind of controlled and so it's not so difficult and we er we have a subject to talk about whereas going to a birthday party would be there'd be no kind of rules and that could lead to danger and I find people difficult and if they're drinking as well then they can be er even more difficult so <Sn> </Sn> yeah one on one interaction is probably is what's gone best for me in my life like just having one person to talk to I can cope with that and we can I can make a conversation but I can't deal with kind of an open ended erm interaction with lots of people that would be very difficult <Lh> </Lh> so yeah that er b and there's lots of occasions like birthdays and Christmas that I've missed out on because of that but yeah </03AR15>

<INT> I was just gonna ask if one to one was easier cos I was thinking like having a subject and then it's like you get to you get to take turns a bit more one to one as well </INT>

<03AR15> mhm </03AR15>

<INT> like when there's </INT>

<03AR15> yeah </03AR15>

<INT> a big group it's harder to know whose turn it is you know </INT>

<03AR15> that's true yeah </03AR15>

<INT> and yeah like </INT>

<03AR15> it's more balanced isn't it one on one it's kind of y er it's like tennis or ah like f <Sh> </Sh> it it there's a kind of elegance to it whereas with a big group of people there's more kind of performance involved which is harder but then I'm not that able to perform on on order very well so </03AR15>

<INT> I know what you mean I'd yeah that </INT>

<03AR15> <Lh> </Lh> </03AR15>

<INT> like that's a really good way of putting it </INT>

<03AR15> cool </03AR15>

<INT> erm yeah like do you mind if I ask before erm like whether there's a difference in like how you th not necessarily how you use language but how you feel about language I guess </INT>

<03AR15> mhm </03AR15>

<INT> before you started to get ill and then after like it's like er any question I ask that you don't wanna you just say erm </INT>

<03AR15> yeah I know the problem is that I don't really feel that I've <Lh> </Lh> erm become ill recently or there's been a particular time that I've got ill I mean I suppose with the schizophrenia with the more kind of florid parts then language is a lot freer and I feel like I have er like more of a rhythm and I feel like I can talk a bit I talk but maybe that I don't really say so much <InAu> </InAu> conversational but yeah I I can I feel more poetic and <Lh> </Lh> er more creative and <Gr> now I'm on the depot then I feel </Gr> a lot more er like <WS> stolid </WS> and er it my mouth doesn't work as well and my muscles don't react in the same way and so it there's a kind of romance to feeling florid for want of a better term and erm yeah so er y yeah for me it's the er when I'm ill or what's what's seen as ill then I can be a lot happier <Lh> </Lh> erm but I'm not necessarily so functional and I don't get tied down so much but or tied up so much linguistically but yeah it is one of those because obviously hearing voices and stuff isn't so pleasant and all that part of it can contribute to the other side of it but erm yeah it's it's difficult but yeah ah I when when you asked the question it I always think I always think that <TC> when I'm ill I'm really kind of </TC> I'd enjoy my language a I a lot more I enjoy using language more and I enjoy the idea of kind of creating language and using language to be poetic <Noi=male voice from another room> </Noi> I'm on the phone <An> </An> sorry </03AR15>

<INT> do you </INT>

<03AR15> erm yeah and </03AR15>

<INT> oh no sorry </INT>

<03AR15> yeah </03AR15>

<INT> you carry on </INT>

<03AR15> sorry </03AR15>

<INT> oh I said erm sorry carry on cos I I was about to cut in on you and I didn't wanna I didn't wanna cut you off </INT>

<03AR15> no I think I'd fin I think I'd finished </03AR15>

<INT> I was just gonna ask do y like are you happy to talk about er w how your language is in that florid place </INT>

<03AR15> yeah totally yeah I'm open to discussion </03AR15>

<INT> cos that sounds erm it </INT>

<03AR15> w ah <Sn> </Sn> </03AR15>

<INT> it's yeah it's it's just I'd it'd be really interesting to hear more of your thoughts about w what kind of form your language takes at that point </INT>

<03AR15> er it I kind of erm I make make up poetry and erm or I was kind of I'm I'm kind of open to er b being I've read I'm reasonably well read and well aware of kind of poetry and erm or prose and er th theatre and all that kind of thing and I come up with lots of ideas and I kind of do mimicry of kind of forms that I'm familiar with and kind of erm just create poems and and linguistically <TC> I'm I was kind of </TC> interested in erm in making things up <Lh> </Lh> and in the quality that would bring to my life and yeah now that that's now that I'm not kind of ill <Lh> </Lh> now that's gone really that's disappeared and it's something that I miss and it's something that I find difficult <TC> that I have to be kind of I feel a bit like I'm </TC> tied up to be well and to to be unwell is more <Lh> </Lh> romantic and more at ea more easy on me but it's very difficult because people don't really want to indulge that part of you or see that it comes with difficult phases difficult things as well but erm strictly to myself I find it easier being a bit iller because the medication is quite <Sn> </Sn> prohibitive er functionally it's kind of w er b stops you f really being expressive and stops you <Cl> </Cl> really being yourself so yeah I miss I miss kind of being creative definitely </03AR15>

<INT> and when you said like erm like that you sort of like create poems and and stuff </INT>

<03AR15> yeah </03AR15>

<INT> in what kind of situations would you do that </INT>

<03AR15> really </03AR15>

<INT> and I guess for what reasons as well </INT>

<03AR15> really in any situation but I feel like erm there was something to some extent that I was having a dialogue with the voices that I was hearing <Sn> </Sn> and I was kind of making up forms to deal with that form that I was feeling and also I was just kind of feeling that I had that in me I had like a little kind of <Sn> </Sn> feeling inside of me or a voice inside of me that I'd felt that I had access to at the time and so it would be all the time it would be at any kind of time or but mostly not to go up to people and <Lh> </Lh> tell them about it I'd stick to myself and <Sn> </Sn> be in my own room and do it in my own room and an er enjoy that and yeah I mean I was quite linguistically free at the time and yeah I was really enjoying that but it I suppose there wasn't really a a place to keep it <Gr> there's wasn't really </Gr> a place that it would would stick it was just kind of er a kind of er magic that wasn't r there wasn't really a place for and although I enjoyed it there wasn't really a formal kind of future to it so it kind of died I <Lh> </Lh> suppose looking at that but yeah it was it kind of <WS> regret </WS> I'm kind of regretful that it it's something that I've lost it's something that I mourn quite a lot </03AR15>

<INT> I see yeah like that </INT>

<03AR15> mhm </03AR15>

<INT> erm do you think it's something that's like potentially compatible with treatment that like with erm like maybe more engagement with with creative activities and more of an opportunity that it it c it's like erm something that you'll be able to re explore in a way that's compatible with with the depot </INT>

<03AR15> honestly er no <Lh> </Lh> the medication that they put you on for for the illness that I had is <Sn> </Sn> just <FL> anathema to that kind of feeling </FL> it it's that feeling of kind of lightness and kind of ease and I don't have that any more because <Gr> with the depot with my muscles become tight </Gr> and my ability to move my mouth even becomes a er it a lot more becomes a lot more difficult and my brain kind of slows down again and it it becomes a lot quieter and it the attempt to to even kind of access that again kind of is really depressing because it doesn't work there's nothing there it's like I wouldn't say it's like someth like something's blacked out a bit of the window and you can't you can't see that way anymore it's just not open anymore and I kind of miss that sh ability to look at the world that way and yeah er oh and it's annoying you know but yeah I don't I just it's not that I don't agree with the medication because I know that a lot of people think that I need it but I just think that the medication isn't ideal the side effects from it are quite severe and although it's kind of helped me kind of calm down a lot I I feel that it's turned something off or blacked something out really mm if I'm honest with you then I don't think it's really compatible with medication and <TC> that's one of are the struggles </TC> I think with what what the the disease that I have is that I can't really change that I can't really influence that because I've kind of lost all my <Lh> </Lh> credibility through kind of the more er more difficult aspects of being schizophrenic which is kind of hearing voices and erm physically kind of feeling erm kind of er more bubbly kind of feeling rather than by p er b the kind of heaviness that you get from the medication you get a more kind of buzzy feeling which kind of it is not easy to deal with like seven days a week so yeah difficult </03AR15>

<INT> yeah it's it's really tough with the medication because it's it's </INT>

<03AR15> yeah </03AR15>

<INT> one of those things that erm we just seem to find ourselves at a point in history where it w it works but like you say with </INT>

<03AR15> yeah </03AR15>

<INT> the side effects it's at the it's at that point where it's it could still be improved like </INT>

<03AR15> yeah </03AR15>

<INT> erm and hopefully like you know in the near future er w we can get it to the point where it works and there aren't erm as many side effects </INT>

<03AR15> yeah </03AR15>

<INT> you know that's the ideal erm </INT>

<03AR15> that would be nice </03AR15>

<INT> yeah </INT>

<03AR15> mm </03AR15>

<INT> erm that's yeah that's I mean it's it's really it's a fascinating area to talk to people about erm </INT>

<03AR15> cool </03AR15>

<INT> and is there like is there anything that we haven't talked about that you'd like to talk about </INT>

<03AR15> erm not really I think that's the main kind of feeling <Gr> that I'm up with creativity cos </Gr> when you ask that question it does chime quite a lot with kind of how I feel like the inability to kind of feel free or to express myself fully is a big part of it's part of my experience you know er and was a big part the ability to kind of be free and talk a lot and feel expressive was a big part of my previous experience before I was on medication the kind of the d I dunno if dichotomy <Lh> </Lh> is the right word the kind of difference of the two aspects and er what that means erm <Sh> </Sh> and how that kind of influences influenced everything else is quite intricate and quite it's nice it's quite interesting so yeah I it means a lot to me but I don't know erm I don't know what to say about it hopefully as the medication decreases and as time goes on then hopefully I'll get better and things things will feel better and certainly er the medication I'm on now is not cos I took Risperdal at first I had Risperdal prescribed at first and that was a lot worse and I'm on erm I'm on a different one now <Lh> </Lh> I can't remember the name and er that one that one's kind of having less side effects for me but ah all of them <Gr> are kind of reduce </Gr> what I think is called creativity so yeah it it rings a lot of bells definitely </03AR15>

<INT> I see yeah </INT>

<03AR15> mm </03AR15>

<INT> cos I'm erm yeah I'm so w what what happens to these interviews is I type them up </INT>

<03AR15> cool </03AR15>

<INT> and then they'll go into like erm like a a big database that w is searchable by researchers so it's like we're </INT>

<03AR15> cool </03AR15>

<INT> erm building like a an archive of erm interviews on on creativity with people who have a diagnosis of schizophrenia erm </INT>

<03AR15> yeah </03AR15>

<INT> and so with that in mind is there anything that you want on that record cos er your your record's gonna be anonymous but is there anything you'd like </INT>

<03AR15> yeah </03AR15>

<INT> to add to that record </INT>

<03AR15> not really I think we've got the main overview of of where I am really I mean that <DT> we've kind of covered the what I think happened and what I think's really going on with that question could it be me and the rest will be kind of just repeating myself or kind of I don't have a lot more to say about it other than that </DT> I suppose you could ask questions that'd trigger off a different direction but yeah that's the main part really </03AR15>

<INT> yeah no that's that's cool I I can't thank you enough for your for your time and w mm and </INT>

<03AR15> brilliant </03AR15>

<INT> for for sharing that with me that means a lot </INT>

<03AR15> thank you </03AR15>

<INT> I'll stop the recording and then I'll just erm like </INT>

<INT> which is it's just a conversation about creativity in language and <Sh> </Sh> and what that means to you so do you feel like you use language creatively </INT>

<03EB14> I do erm <Sh> </Sh> I I write song lyrics erm <Sh> </Sh> poetry some time er it but mostly er song lyrics erm so like every other ev every other line rhymes that kind of thing and I do like erm w one chorus and two or three verses and erm yesterday I often you know erm I wrote a poem called er tranquility and erm but but mostly I write song lyrics erm I I write scripts as well w er er I've tried erm science fiction that kind of thing er RPGs that kind of thing like erm space science fiction based but mostly if er w it with writing it is erm song writing and lyrics so erm and I I program as well erm in m m mostly in HTML5 so it's like HTML CSS and Javascript and erm sometimes in Python but with using language it's mostly erm songwriting that I do </03EB14>

<INT> that's awesome like how long have you how long have you been w doing all of those things like </INT>

<03EB14> r right well what it's erm o on my computer mm mostly I <TC> I like I'm I do websites </TC> as well but it goes on and on and on but erm I've been writing songs for maybe ten years now something like that and I I used to write poetry but w I in I wasn't really like into it it's always been like songwriting that I've done so it's like erm <TC> like it every other line rhymes </TC> as as a song does <WS> that kinda ring </WS> so erm I haven't published my work or anything but I have it all saved on my computer erm so it erm I wrote a poem yesterday <TC> with like first time in quite a long time </TC> but it it it's mostly songwriting erm that I do so erm erm p I'd say apart from that it's like when I er when I blog on my on the website <TC> I build erm I blog as well </TC> but that's just like general prose like just general language stuff it's not poetic or anything but erm yeah I was inspired yesterday <Lh> </Lh> to write a poem so but that's like the first in quite a while so it's mostly it has been songwriting and erm so er er what it's mostly it is like programming and some graphic design erm like I create er PNGs files and JPEG files erm and I put code over the top of that for people to m like to make it interactive on the website and mm or whatever it is </03EB14>

<INT> wow </INT>

<03EB14> so but that it it that is about it really that is about it so I write a poem <InAu> </InAu> it's the first time in a long long time but it is mostly songwriting that I get creative with so </03EB14>

<INT> what's the the thing you like about the songwriting more than the poetry </INT>

<03EB14> right erm I do think <TC> that's my what's so good with erm I used to struggle for ideas </TC> with poetry whereas like songwriting it's like erm so like like every other line rhymes so it's like kinda structured what I do is erm I I use Wordpad on Windows and I n I need a word processor to do this I can't er I I'm not I I wrote a song quite a few months ago but I haven't my my computer was down erm <TC> I wrote a bl I can write with pencil and paper </TC> erm I tweak and tweak and tweak I hone it and hone it erm sometimes I just write it I er and like the <Gr> first's line gotta be taken out </Gr> and completely

redone about ten mintues later or something so I need a word processor but erm and what I do is I I'm like <TC> it's the kind of thing my brain I I write each line </TC> and they have to be er the same width across so I get a piece of paper like a straight line like an A4 piece of paper on the mm w on the mm computer monitor so that erm they all line up erm vertically s like erm each each line vertically is like is the same width horizontally erm so it's kinda like er constraints that seems to be the way I'd get it out myself it's like its like that erm so with with poetry I I used to I used to <TC> write some poems that erm it really is more song writing </TC> and I'm <Gr> I'm <InAu> </InAu> write </Gr> a song I will I should really start sending my work and everything but erm I I dunno really like the the main thing for me is is programming I think and s graphic design but I absolutely love writing songs and poetry as well so erm apart from that I do like erm photography erm but th they're just like snaps like architecture erm er so like the the gherkin building that kind of thing erm in <An> </An> <An> </An> <An> </An> in in the city of London that kind of thing </03EB14>

<INT> yeah </INT>

<03EB14> like good architecture that I like and er the <An> </An> building that kind of thing erm so but mostly it it is it is now mostly programming that I do for like to be creative with and it's all er digital on on the computer erm so I I s I have like er USB pen drives in my computer and I save my data to that so er erm I don't I don't like using my laptop to go online with because of hacking reasons erm </03EB14>

<INT> yeah </INT>

<03EB14> erm I just use like an antivirus software but erm it were it would crash all the time for some reason I d er people hacking me or whatever I don't know but erm but m mostly it is programming but I like writing songs as well song lyrics and I've been listening to music for years and years and years erm all day every day for years so that's about it really that is about it </03EB14>

<INT> no it's that's </INT>

<03EB14> erm I so I like photography as well just taking like snapshots that kind of thing of anything erm in in London here here in <An> </An> like the local park there's like a moat there's erm like the er reflections are really good really nice reflections especially in the autumn with the leaves that kind of thing erm so that's about it really er <Lh> </Lh> so </03EB14>

<INT> that's so that's so interesting like so cos cos you're it sounds like you're involved in loads of different areas of the creative industries like erm do you like cos you said that you like put the code on top of the images and stuff </INT>

<03EB14> yeah erm I I sorry </03EB14>

<INT> oh no no no it's all good </INT>

<03EB14> erm I I use erm what I do is erm I will I will build like a a single PNG like what what w one moment one d is one way of doing it is to create many individual PNG files like logo and whatever digital art on it erm er MP4 <InAu> </InAu> on it

whatever that's what I do so erm and erm so I I you you can do it like either like each PNG individually or a I prefer to create one overall PNG wi mm with like then it's divided into maybe ten different areas so erm to I I to do that with HTML and Javascript you have to erm use like a coordinate system when the user clicks on the i on the i on the on the PNG the larger PNG if it's like a mobile website it could be like like the header erm so you'd have like the the logo on there and then like all the various channels or areas that are available to the person browsing the website on their mobile phone so I like to create this one single PNG but erm you can do I you can use put erm hotspots on it which is again is like a map kind of a coordinate system so you when the person browsing it clicks somewhere on the on the PNG it's divided into several hotspots that takes them to like <TC> whatever it you have to take them to to another web page </TC> HREF erm like like an a <InAu> </InAu> in HTML and that will take them to like another webpage so you you you can either do it I I I prefer to do it one single PNG or maybe ten or twelve PNGs whatever divide all put together so and so on erm Javascript makes websites interactive for the person browsing them erm so it's a erm without without j it's like the programming language of the internet erm without Javascript th it's just or it or it or even you can do like single PNG files erm so the it what wh when it's er and they're they're called frameworks and it's like JQuery which is a Javascript framework erm there's ReactJS and ViewJS as well which are much newer and more popular now but I I prefer to use JQuery and so you get like the top left hand corner of the image er it's a coordinate system placed on the webpage and then you like if if the user clicks the mouse within a certain coordinate square or rectangle then that triggers that fires erm whatever it's g it has to trigger or fire whether it goes whether that goes to another webpage or it could make could hide or show that that element or anything like that so that is like kind of overlaid on top of the p on top of the graphic design so you got the webpage you got the graphic design and then you got the coding on top of that and erm so you have to deal with all that but erm what I do is I I copy and paste most things cos I got terrible brain brain fade so I b <Gr> I build like maybe like a toolkit could call it </Gr> erm with like various methods and whatever and JQuery code so I I have because of brain fade I have to have er copy and paste it but it's not really a hinderance at all to me erm like do I prefer to do it that way so you're reusing code so you can copy code from one file one Javascript file into another and then just change it al al erm alter it tweak it erm by either the position of where you're reading the user's click on the on the screen when I when I even erm I do like my own click for a mouse or a trackpad and I do erm touching for like mobile or touchscreen devices erm which is like erm like a er a smartphone like a iOS smartphone or an android smartphone er Apple or Google that kind of thing so so you're doing like so you got like the the webpage and you got the the visual art graphic design you got the coding on top of that and erm that's the way it works so th th that's what I do but erm in recent years I'm mm mm most of what I've done is programming now erm a away from poetry but I still write songs quite often so erm and erm I I have <Gr> I've got like hundred songs I've written </Gr> and all saved on my computer so erm <Gr> I used still write </Gr> in like wide sc wide er long sen sentences erm horizontally and I've chopped that down to like er what I call narrow format it's more pointed for people erm er makes it more <WS> zippy </WS> I think erm so that's

what er I used to write I used mm maybe mm half way across the word the word processor screen now maybe only about a third across as I say I I get I have to get like a sheet of paper as a straight line and everything has to line up erm that's what I'm kind of stuck with but that's that the way it gets it out of me so erm th th that is about it but r say like it it is mostly programming that I do so erm </03EB14>

<INT> and is there is there a lot of the text lining up in the programming languages as well </INT>

<03EB14> erm you you what what I I er erm you can set like margins you can set like a right margin erm what is mm w within the within the er the mm er the wording you can put like break lines like BR for break erm or you can set like a right margin and erm without putting in line breaks and the s the software whatever it is does it for you so that it it erm right justifies erm so it comes down the <WS> sike </WS> on like on like a line lower so like that so that that is erm I I use er in within JQuery I use right margin now I used to use line breaks erm so there'd be like you know like er w HTML tags erm you get like a small <InAu> </InAu> and then a bigger <InAu> </InAu> and you put the maybe it's a DIV a divider in between those or like BR for line break <DT> like I'm talking about </DT> erm and I I worked out that it's better to do it without line breaks you just put in a right margin so you type from left left across to right as you would normally and erm but it at when it gets to the right margin it starts a new line for you without you having to do it so a a a a all you do there is you just you maybe type an entire paragraph and it cos you set a right Martin right margin it does it all for you whereas the other way of doing it is individual line breaks er BR tags </03EB14>

<INT> I see and er d er like does having that erm that constraint that you mentioned is that important to the process of being creative then </INT>

<03EB14> right erm erm </03EB14>

<INT> for you I mean not not like </INT>

<03EB14> it it it erm it works for me definitely erm it it definitely works erm right so it <InAu> </InAu> like it erm on like a practical level erm if you're doing like line breaks you gotta keep checking the code cos erm I hand code I don't don't use a design view I use h erm I hand code with er Netbeans which is like the main software that I use erm at s it's freely available on the internet you can download it for free and use it erm so it's it's only a code view it's not design view erm say like in Dreamweaver you have you have design view and code view and erm with Netbeans you only get code view erm there's a there's more software called er CoffeeCup which again is design view as well but I I just have code view so if you're doing line breaks without the right margin point you gotta keep checking it so w erm how it displays within the browser because it it er the entire thing is about the browser erm that that is the client it's called client side rather than server side it's called client side and I am client side if you do server side that's more for like people's accounts and like usernames passwords that kind of thing erm that and that <InAu> </InAu> backend I do client side which is front end so on a practical level the if you're putting the right margin you can type as much as you want and erm on

on the on the on the screen itself not not on on the webpage on the screen itself on the monitor erm it does like you can set it to like er er word wrap so it it gets to the right side of the monitor the line there it it'll word wrap for you so erm so I say on a practical level if it's just like er you can write an entire paragraph without having to put any line breaks in you set a right margin and that'll do the line breaks for you so it does make it it is a big it's usually important yes and that's that's the that's like the <InAu> </InAu> on on the webpage and what I see on the monitor that's connected to the laptop I use so that that works with both for the web webpage and for when I'm sat in front of the the computer write writing all this stuff erm so yeah it definitely makes a difference but erm er in terms of like compared to like the the poetry with the song writing I don't know <TC> cos I don't it just gets it out of me </TC> with the song writing erm the pages I put a straight line down the right hand side and everything has to line up so erm so I u I used I used to make make the the verses the same width as the chorus then I went to narrow format like all narrow format and erm it's definitely more zippy I dunno more erm pointed I think for people gets the gets the point across a bit better I think rather than er rambling on for maybe another four or five words or something per line erm so I s I suppose I s <TC> it's <Gr> I did used to </Gr> </TC> or all the same erm words quite often but erm I like to like be like quite creative in within the creativity as well erm when you read er something that's like mm makes a bit more <WS> ambient </WS> I suppose for people to read erm so erm so I it <InAu> </InAu> erm in er with JQuery Javascript I I learned that s i you I have to erm put in a right margin and it does all the line formatting justifying for you so erm you've just gotta make sure you don't overspill it might be on top of like a plain piece of colour or something or another PNG or something so you could like on the right it could go to maybe ten lines or something and that could be like too much wording too too many words too much content for the the er the <InAu> </InAu> that it's created inside erm </03EB14>

<INT> I see yeah </INT>

<03EB14> but so but but that's but the the main thing is definitely writing poetry and writing songs it er it it r it r it has to be o r erm aligned v v v vertically for me <Lh> </Lh> so that that that definitely does it so </03EB14>

<INT> and when you write mm poetry and song lyrics are there s like sp specific techniques that you like to use or erm more than others or </INT>

<03EB14> erm so I dunno what's going on with my brain but erm erm well on a pragmatic level practical level it's definitely <InAu> </InAu> everything has to line up erm er erm I sometimes I I I might use like a couple words from somebody else's song like a popular song or something erm </03EB14>

<INT> oh that's cool </INT>

<03EB14> erm so like you know it's not like erm plagiarism but erm erm might it might be like a phrase or something from a song that might use a couple words from that to put it in to make things more dynamic maybe I dunno but so erm that's it er er you know I definitely s s <InAu> </InAu> seem to <InAu>

</InAu> like that when I'm in confined there's like structure and confinement that kind of thing I dunno if that's around me or in in me I don't know but erm so th the main thing I really do now now now is programming and erm erm erm I I'm with with HTML erm you divide it you divide you got like the HTML within that you got the header area and the body area erm so I read that you know from people just starting out with programming HTML building websites it is the programming it's a markup language not a programming language but it's still the most important thing on the internet is HTML it that creates and structures everything </03EB14>

<INT> yeah </INT>

<03EB14> erm so er what I read was that p people at the beginning they put in loads of DIVs dividers erm <TC> and it was I read this on somebody's blog </TC> or something that it is known as erm DIV soup so </03EB14>

<INT> oh OK </INT>

<03EB14> so I decided <Lh> </Lh> to not put in that many DIVs but it turns out you have to put in a lot of DIVs you really have to divide the page up you got like a wrapper erm which wraps the entire content of the of the body area y g you got the header and the body and you have to work with the body erm so so I read erm and erm so now I gather up loads of DIVs it is it's like structure and form erm and it's when you when you're looking at it it's easy to understand what's going on with the code <Gr> cos er terrible brain fade </Gr> erm so you got like erm DIVs and <Gr> within them with inside that </Gr> you have P tags for like paragraph that's like text and words you got IMG for images that could be anything a photo a JPEG a PNG a GF whatever people have erm so I I d I really love HTML and it's divided up into bitesize chunks on the page on the computer that I I look at erm so erm yep so that that could be more of the same thing I don't know what's going on in my brain but erm it's def w when there's like it's organised and erm succinct maybe I dunno erm but definitely g that definitely helps me being creative with it I suppose alright </03EB14>

<INT> that's </INT>

<03EB14> can I just cos <Gr> it's bit erm </Gr> for a couple of minutes my computer's just er gone into screensaver I'll be back in a minute </03EB14>

<INT> yeah yeah sure </INT>

<03EB14> yep so erm that that definitely sparks some kind of creativity in me I think but and it's on a practical level it's it's mm erm easier to understand and it's divided up quite nicely erm erm there's like some someone said if it's like scope for like variables if you're in the progamming in the Javascript you have like erm scope S C O P E and erm I I used to like sometimes put like the variables midway down the <WS> code </WS> down the page but it turns out they all have to go at the top if you put them at the top you get full scope down throughout like erm talking like functions sort of like on a on a Javascript page in inside a function you p you p you have to put all the variables at the top erm there's there's something called linting lint which they got the word from hint they got er and they changed it to lint and you just erm on the page that you're on there erm

when you're coding you can lint and it marks up in red erm the error that you've made so I used to put the variables at the like the main necessary variables like as as I was using them going down the page as I code top to bottom top down to bottom so erm turns out that it all has to go at the top and I much prefer that as well so but erm I mean there are thing the main thing is definitely in er with writing songs and it <Lh> </Lh> everything has to be right aligned on the right side it erm vertically aligned each line going across each sentence going across so erm erm and that is like I've I've done that for many many years now and that's the only way I can do it really if erm if I don't do it that way then then I don't know it's er it's the unknown I think erm so I think I prefer to use the known <Lh> </Lh> rather than the unknown </03EB14>

<INT> I see </INT>

<03EB14> in terms of like structure and th the form that kind of thing er and th w er this is w obviously on a computer display on a monitor erm that I use so erm erm after that like ah like erm Andrew Motion the erm ah former er poet laureate that kind of thing er </03EB14>

<INT> yeah </INT>

<03EB14> couple an a line or so from one of one of his poems that kind of thing erm is in me as well erm but it's mostly more music than anything else </03EB14>

<INT> do you think or why why do you think the structure's im important is it

<03EB14> well erm so I dun I dunno what's going on <Lh> </Lh> in in my brain I don't know but erm erm er so it r erm like I I <TC> I like where I come from </TC> like is that is that erm I was abused as a child this kind of thing erm erm so I mean er th that's what I used to hear in my voice in in my head sorry like voices in my head so this kind of thing erm so but I was told I wasn't erm but what came er I as when this first happened again er when schizophrenia first happened the mental condition that I have happened psychosis erm that is what I had that I'd been badly abused as a child and was like tied up that kind of thing so erm </03EB14>

<INT> oh I'm so sorry to hear that </INT>

<03EB14> but I get told that I wasn't so erm so this is what this is like the the schizophrenia the psychosis that I have that I've been diagno diagnosed with so erm so I dunno I know I dunno what is going on in my head I don't know but that definitely gets it out of me and I love writing songs and writing poetry and being poetic as well erm but like all the years it's been music erm rather than poetry it's al it's always been music popular music erm so contemporary hit music er adult <InAu> </InAu> rock music that kind of thing erm so erm I was like s about eighteen years ago now I was diagnosed with schizophrenia erm so that's what I've been living with ev like ever since and erm w I I thought it I thought it might be like erm autism that kind of thing but I was told no it's definitely schizophrenia erm so with people that have schizophrenia <TC> I dun we people </TC> that may maybe have erm aspergers they're more creative and I took park in took part in a walking group erm like a once a week walking group this is erm about 2014 I think and

erm I one on the one of the blokes there on on on er within the group was like creative as well he was doing websites as well and I said to him you know is it something to do with schizophrenia that makes people more creative or not erm I don't know erm so but I've been told that I was not abused erm but it that's y w when when it first started for me this is the first thing that came back to me basically I been badly abused as a as a very young kid you know as a baby so erm </03EB14>

<INT> and the and the creativity is like erm cos you s you said that kinda gets gets things out is it like erm </INT>

<03EB14> erm I dunno if it's like frustration or I dunno erm s erm erm like one of the w one of the hardest things that I I've always struggled with is that trying to say my own name to people erm that could be like going for like going for like er like my blood tests just stuttering erm for c c c cl clozaril erm er so that's had a like profound effect on me as well is like stuttering about to say my name er f erm it is absolutely terrible at times erm so that that's al when <InAu> </InAu> I can do that kind of thing so I'm I'm stuck here in indoors on my own all I have now is is my computer erm to express myself and whatever erm like the perfect thing for it is the internet is a website erm in this day and age erm so er so I dunno er b erm m b er m <TC> don't like I er operate better </TC> when I'm confined there are limitations erm that kind of thing maybe so </03EB14>

<INT> yeah s </INT>

<03EB14> erm yeah </03EB14>

<INT> does that is that to do with focus </INT>

<03EB14> is that what </03EB14>

<INT> to do with </INT>

<03EB14> sorry </03EB14>

<INT> is that to do with like focus or like </INT>

<03EB14> erm </03EB14>

<INT> having almost like having boundaries to work within like makes it easier to be creative in that space or </INT>

<03EB14> I erm could be may erm that erm erm if I if I hadn't hadn't had all this erm like say like bad stuff in I I say like my brain used to freak er my brain used to freak out one on one with people especially I I it would be great maybe working in a job centre interviewing people all day but erm I can't really do that kind of work erm erm like interpersonal relations are an absolute nightmare for me erm getting on w people when <InAu> </InAu> is absolutely terrible erm I'm much better left alone I think to my own devices and erm so that's er this stuff is is in me for a reason <Gr> when I first had the er schizophrenia I see </Gr> i mm er I'm what as my brain was saying that had been done to me it must w h how would it be my brain if it hadn't been done to me erm so erm I say well no it's not real so erm so th erm b mixing with people's absolutely terrible most of the time so b mm when I did the walking group erm like the bloke that was into computers as well I mean we h we hit it off straight away erm everything's like it's been like about six week

once a week for about six weeks and it always like we went to erm the erm er er th th d th the d d the done the <WS> dondon </WS> the th d the London Olympic Site and erm all the way we were talking about computers and this kind of thing erm so I got on really well with him but erm that's like all tech stuff like techie stuff erm internet and apple iOS and everything so erm I I was like it I'm terrible with that kind of thing with like mixing with people and until you give me something to erm chew on like that you know something and like with him it was like computers so imme it immediately becomes OK erm but without that I can like people around me like w er I went to my father's erm birthday thing <Gr> a couple of year ago </Gr> and er you know basically spoke to two people all night twice er everyone's like around me is chit chat you know chatting away to each other having fun and <Lh> </Lh> erm erm and I I'm sat there you know all that's going through my head er erm erm so mixing with people is absolutely terrible and and conversation is until I get to know somebody a bit and erm there's like some kind of topic to go on erm that p I'm mm it's probably not just me but erm that's what I've had so so it would've been great to have been like erm when I was younger to have been like you know more confident that kind of thing erm so erm it is an absolute nightmare for me erm to get along with people and to mix with people that kind of thing and until I get to know people and at the same time I've got like erm almost like poetry going off as well at times song lyrics and programming and everything so which most people are not really into I suppose erm so that makes things difficult as well I guess so </03EB14>

<INT> I see yeah like th almost like it kind of you you're drawn to doing stuff that's like erm like you said that you know you can sort of chew on and then so d you er do is that cos I I think that's something that a lot of people find find difficult is that the world is kind of geared toward being erm a bit more extroverted but there are plenty of people who are int who are more introverted and erm and there's nothing wrong with that at all but th society tends to sort of for some reason or another seems a bit more geared toward you know big socials and stuff that mm is it just isn't everyone's cup of tea </INT>

<03EB14> yeah right yeah well erm so like erm I'm I'm really happy to be myself I'm really I'm really really happy to be me so erm I've never been like one of the boys that kind of thing erm so erm like erm I come from like a working class background erm in <An> </An> yeah so erm so it mm erm not generalising or anything or stereotyping but it does I've it all has been a bit different so erm erm er like I I <InAu> </InAu> being creative that's the main thing it's being creative if I'm not being creative I'm prowling round the room looking for things to do </03EB14>

<INT> I see </INT>

<03EB14> erm so being creative definitely definitely helps me completely I think erm what so what I really wanna do is learn and teach and that means a website erm to teach people how to code themselves and erm get more out of life I suppose erm so er </03EB14>

<INT> you s definitely should that's </INT>

<03EB14> I I definitely wanna share this with people definitely and and saying the id the ideal thing is a website I think so </03EB14>

<INT> yeah so y so you're you're build y you're building your own like you're coding your own website from scratch </INT>

<03EB14> yeah I'm hand hand coding completely from scratch I I say I I use Netbeans erm which is really good software so er it's or er IDE er integrated development environment erm so erm it's it's absolutely free and it's really really good software and that's that's my main thing now apart from that it's like a word processor something like Wordpad that's built into Windows erm I use that to write to write songs with and poetry with erm so erm that that's definite I'd tried pencil and paper and you gotta keep rubbing stuff out ob obviously erm putting lines through stuff and making <WS> amends </WS> so with Wordpad it just use like the er delete button the backspace button whatever and it's job done so </03EB14>

<INT> yeah and the b the ability to move stuff around as well you know t like take a line and move it somewhere else </INT>

<03EB14> yeah </03EB14>

<INT> is so much easier on on a word processor like </INT>

<03EB14> yeah </03EB14>

<INT> yeah you should definitely like do the teaching thing like </INT>

<03EB14> yeah </03EB14>

<INT> cos there so many people wanna learn to code as well so many and like it it looks difficult like I I dunno how to code and I look at code and I think that looks that looks difficult but that I also get a sense that coding is actually a creative process like as creative as lyrics poetry it's all it's all it's all creativity with language really </INT>

<03EB14> well erm erm it erm I suppose it's erm it's like erm like to like with the with the with the code I use like the same er techniques over and over again so so I I do like I might might my main thing is like like I said to you before is like copy and paste kind of look on things erm so with the <InAu> </InAu> so you copy and paste an entire chunk of code onto into a different file or a different function within the file erm and just make minor alterations to it erm I w I'm trying to build games as well and when when they build you know these video games the player can maybe take twenty minutes to go through a a whole <Gr> a whole section of the game that might take them six months to build it </Gr> </03EB14>

<INT> yeah </INT>

<03EB14> erm so with with what I do that's like you know like proper video games erm th you know cost millions of pounds to develop erm I I try to take like the opposite erm approach to that whereby I maybe create a a whole section of code in maybe two days or something and it'll be give the player like four months of of gameplay </03EB14>

<INT> th s er like </INT>

<03EB14> it's only about a ten megabyte install so it's much smaller but erm th er it is like <InAu> </InAu> and er tidy as well to tidy up the code but I need an a IDE I'm er I I have dabbled with erm Notepad++ erm <Gr> they got folder as a workspace </Gr> erm FAW erm that they introduced into it that's that's very very good erm and obviously you can set er <Gr> probably only set any language you want </Gr> Javascript or Java erm HTML CSS erm so erm I I I definitely need an need an an IDE and but Netbeans is very very good and it's obviously again it's free completely free it's just like it's like a simple download erm and it installs in a minute if that so erm and you put in plugins as well so like tidy tidies up the code and er <InAu> </InAu> I was talking about before about linting erm it </03EB14>

<INT> oh I see </INT>

<03EB14> points out the errors in your code that h that's very very helpful as well so but erm I mean for me it erm it is it is definitely er Netbeans is is my favourite so so it it's about like er three hundred and fifty megabyte download versus ten megabytes for Notepad++ so and it takes up a lot more system resources as well like er Netbeans so n er n er Notepad++ on the other hand is only like ten megabytes or something erm er Notepad++ takes like a huge amount of like system resources I've <InAu> </InAu> got erm like well on the laptop I have it's like eight gigabyte erm of ram in it erm which I recommend if you're using like it's it's a colossal piece of software and it takes up like a huge amount of space in in system resources so erm I I do like Notepad++ though but I definitely need an er an IDE so </03EB14>

<INT> yeah like I I don't know anything about erm programming but I I just love that Notepad++ when I when I search for something it gives me all of the instances of that thing whereas Notepad just gives me the first then the second then the third so like it's just like erm its search feature er I like is er but that's mm it sounds so it's it sounds like a really like ideal creative activity that we don't often think of as creative you know coding like and for you what does it like </INT>

<03EB14> yeah yeah yeah yeah well er just <InAu> </InAu> through in my head here my main thing is like the the er cello the instrument the cello and concrete erm <Lh> </Lh> erm <TC> which I don't it was like </TC> a cellist many many years ago and he was on BBC television I think on a Saturday night and it's like the cello coupled with concrete in London it could be the Barbican or something but that kind of thing erm but erm so er </03EB14>

<INT> like that's that's w </INT>

<03EB14> I mean that that's when it comes to something is like it is I can't play the cello at all er I can't play any instruments but erm erm I absolutely love concrete like the <An> </An> gallery and the Barbican erm the Southbank erm so er two of the things that are in me I think is cello the cello and th er and concrete at the the this is I I this is what I have in my head this is what I h this is what I have so it's the way it goes so </03EB14>

<INT> and can you tell me more about that cos that's s s n like that's a really beautiful image the pairing of cello of concrete but like is it the sound of the cello the look of the cello the look of the concrete the feel of the concrete like is it how do they go together for you </INT>

<03EB14> right right it's er the erm violin family erm of instruments it's like four there's like no hole in the on your neck or like they sit it sit down with it and play it with concrete sorry erm I I like glass as well and maybe metal but th def er def my favourite <TC> I won't say that I used to say to myself </TC> like that erm like with like photography that I do erm absolutely <TC> none of it is closed for I don't pay for like models </TC> or anything like that usually hack it out with with the camera to the Barbican again or anywhere <An> </An> maybe erm these kind of places but erm like the Barbican is profoundly concrete erm maybe like pebbledashed a bit but it's it is concrete and like the tiled floor on like the podium level erm but I say I said something about thank you to the architect and the builders the plumbers the labourers that worked on it those who erm I I love clouds as well and in in photos erm so I was saying before like erm <An> </An> like the gherkin this kind of thing and the Lloyds building I used to I love the Lloyds building in <An> </An> street in London erm with concrete I mean it's like oh er it's obviously it's like a rough material there's like a a Japanese architect <InAu> </InAu> and he works in concrete used to work in concrete erm but the church is the light that he erm was the architect on that kind of thing erm a j they dr they drew like old erm holes in the concrete as well dunno why they er that's how they bolt it together or what I don't know but erm erm like th my favourite piece of concrete's probably the <An> </An> gallery in the <An> </An> it's conceptual I suppose erm erm like erm I I love like er <An> </An> work erm the bricks that kind of thing cos it caused an absolute uproar back in the seventies erm but erm <InAu> </InAu> I think erm that kind of thing erm erm I like erm i i erm installation artwork people's installation artwork <An> </An> erm architect erm she built like er a er an inside out house she built where with like all like the fireplace <WS> where </WS> on the outside rather than on the inside erm she built like a a big kind of whatever they're called erm oh I forget the word but erm mm <InAu> </InAu> fill it with concrete or whatever erm the mould erm so th t erm <InAu> </InAu> sat there playing the cello like is very very creative I think and er er erm obviously it's audio but it's probably visual as well I dunno erm but th the that's er that's probably what it all probably comes down to is like that cello and concrete erm for me so erm </03EB14>

<INT> and does that represent like music and architecture like as interests and and stuff </INT>

<03EB14> erm I I I dabble a bit but only like macro erm kind of architecture like macro ideas not not micro erm so it erm </03EB14>

<INT> I see I see </INT>

<03EB14> so erm I I I I think erm I I I love erm photography I think that's what it is is is photography rather than like erm any aspiration to be an an architect but it definitely it is erm I love taking photographs as well so erm so erm I just use like a three

time optical zoom camera and now have a big bridge camera
it's like forty times zoom </03EB14>

<INT> wow </INT>

<03EB14> erm af after lockdown goes I I wanna go out again
with the camera I'm absolutely chomping at the bit to get out
with the camera I might I might buy a new camera as well erm
an a Nikon Coolpix camera I wanna buy so when Argos reopens
erm maybe buy one buy a new camera but erm so it's like
concrete and like m m quite like modern architecture like the
<An> </An> building erm erm so I feel like an absolute idiot
with this but this is what I have so erm it's what I walk around
with so erm erm like I I love taking photos but I'm not not erm
not technically more composition erm so I don't like like as far
as like aperture goes and F stops and all this kind of thing I
don't really do I just erm use like the zoom and if it's just a
photo now I take a photo I'm happy with that the composition
I'll take the photo of it and I love getting the photos back home
like they're on like a HD SD card obviously inside the camera
and erm erm it's like with er digital photography it's <Gr> it's
like you need it now in years ago you </Gr> you had to put it
into a pharmacy into a chemist obviously your photos
developed but now it's just something you like I go out in the
back garden and two minutes later like the photo I've taken in
the back garden is on my computer monitor erm it's like
</03EB14>

<INT> yeah </INT>

<03EB14> erm completely immediate nowadays so I I <InAu>
</InAu> that as well and I use like Paintshop Pro to erm filter
the photographs into black and white or whatever erm you use
like <InAu> </InAu> there's like you <InAu> </InAu> and burn
so you can emphasise mid mid tones or erm shadows that kind
of thing so I use I use I use er burn burn shadows for most of
my photos and it brings out they come out really really well
erm there's like er software called Lightroom by Adobe which I
don't have but that's that's pretty good software as well erm
but I use er Paintshop Pro myself so erm that does graphic
design as well you can you can build buttons and whatever
within it as well so it's there like for photographers and graphic
designers as well so but erm I absolutely love photography I
really do so <TC> and so it just get yourself a camera </TC> and
an oyster card and get yourself out aro out and about around
London and take loads of photos I might take a h a hundred or
a hundred and fifty photos or something in a few hours <TC> I
used to do might be out with the camera </TC> </03EB14>

<INT> wow </INT>

<03EB14> erm I've done a couple erm photography courses as
well erm erm adult learning courses so I got like the erm cert
erm two cert certificates for that and that is like mostly
composition as well I think it's like just like basics really but erm
composition some some technical as well but mostly
composition so but that all comes together so the thing that
<InAu> </InAu> me is like erm like an end product there's a
there has to be an end product like code or graphic design er
or a photograph or whatever erm that's like the main thing as long
as there's some kind of end result for it so but that that's
<InAu> </InAu> <Lh> </Lh> so erm I've since being diagnosed

with schizophrenia with psychosis erm erm so I been out like
dozens of times with the camera around <InAu> </InAu>
London <An> </An> London like <An> </An> <An> </An> as
well I like so erm I'd say like the <An> </An> the Barbican the
City of London <An> </An> <An> </An> I like erm so y er and I
get quite lucky with the clouds obviously when I'm out with the
camera it's not raining that day like I don't wanna go out with
the camera so <Gr> and I get so it's not raining </Gr> so I get
like invariably I get clouds I used to get clouds which I really
really like erm so erm what's driving it I don't know but that
that is is what I have so it is what I do so </03EB14>

<INT> and and when you take a photo like is there a process
that you use or when you is it I suppose my question is how do
you decide what you like and what you don't like like in terms
of the image that you capture like is it like a </INT>

<03EB14> right right what I go for is like erm total composition
erm I I call it so I it it everything within the photo is like <InAu>
</InAu> in the photo without having to crop it later or anything
like that that so no no cropping and they say it's absolutely
essential but erm so what I go for is like total composition
<WS> that </WS> I call it so erm the the two things I have is like
the megapixels on the camera which could be like twenty
megapixels and erm so like the the optical zoom it used to be
only three times the optical zoom I went to like eighteen times I
think and now I have like forty times with the Bush camera that
I have at the moment erm so er erm it er er I I go for like er
total composition so it it er erm I I like putting people in <InAu>
</InAu> as well but that's that's something else erm <Lh> </Lh>
I've been called up once or twice by people by like erm I think w
er <An> </An> high street out erm and like the camera I took
photo of a man working outside a shop and he's like putting
stuff in in and out the shop being like er erm er like a d d d d d
d d d d d delivery erm erm and like the flash went off and so
he he saw that I was taking a photo of him I was like thirty
yards away something like that and erm so he pulled me up
about it but he was er w he w quite nice about it so but erm I
like putting people in people in images as well erm erm but
what I go for is total composition so erm just that everything in
the photo is what I want and erm invariably you get like a
blemish or something you get like something it could be
anything like a a plastic bag on the ground or something that
you don't want in the photo so in Paintshop Pro there's like a
removal tool like a au au au automatic removal tool so you you
just click on on the area that you want to remove and it
removes it erm and re recreates around it erm like the the
same content from around it so it blends in so it might b it
could be like anything I mean <Gr> like coke can </Gr> or
something I dunno any could be anything <Gr> a plastic bag
that they they don't want it </Gr> but erm apart from that I go
for like total composition so erm s like and like in in Paintshop
Pro the photos scrub they scrub up really really well like you
know like people out there they they might like have a four or
four thousand pound camera or something which I don't have I
have like a hundred and eighty quid camera erm they might
have like a four thousand pound Nikon or something erm like a
DSLR which I don't have so I'm really happy with Paintshop Pro
it scrubs the photos up very very well with like <InAu> </InAu>
and burn erm erm vibrancy you can add you can add er
vibrancy to a photo er one of the things that are levelled
against digital photography is that they're not very vibrant

compared to film people still like using film erm so erm Paintshop Pro's very very good but erm definitely total composition and the m I love putting people in photos so erm invariably like my my people pictures are I like blurred where I just <InAu> </InAu> with the camera quickly with the camera so they can't see that kind of thing <Lh> </Lh> that you're taking a photo of them er which means it means they're kind of blurred so erm so there's there's that that's like if you're er <InAu> </InAu> I mean people photography but erm definitely total composition erm like erm everything's in the photo is what I want to be in the photo and er crop it or anything resize it or crop it or anything so erm that seems to do it really so erm hold on I'll I'll just be about a couple a couple of seconds so erm yep erm erm I like taking photos of street signs as well er road signs street signs erm w whatever like the the roads around here <An> </An> I like I like the back streets of <An> </An> there's like erm for me there's like two there's like er <An> </An> central station which does what it says I think it is the central station and erm there's like erm like the the <InAu> </InAu> side of things is really quite quiet s like I erm leafy back streets almost and then there's like the s the the high street and the area going towards <An> </An> erm which is much more colourful much more loud erm I think erm rather than just like <InAu> </InAu> back streets there's like people actually out and about shopping and everything so erm so erm I I def I definitely like back streets of London w er and back streets of <An> </An> as well erm but definitely er total composition definitely er like with photography and things like you know architecture and clouds in the image all of it so and people as well erm I used to like erm the thing I used to <InAu> </InAu> was like street scenes street scenes erm be like er w erm many many years ago was like erm er urban seventy five website erm a bloke in <An> </An> was done it and like he's like f photography is very very er inspirational very good erm photography of i the <An> </An> area and I mean the <An> </An> area as well erm erm he's I mean he he puts the photos up of <An> </An> street station in <An> </An> <An> </An> street station I think and then there was like erm like billboards and like torn posters on billboards this kind of thing all in black and white I think erm so that's what it's <InAu> </InAu> like street scenes but erm and you know so I think concrete and cello <Lh> </Lh> is it I think so </03EB14>

<INT> that's y that's a really cool way of mm of defining it I think or like well maybe defining it's not the right word but like y you know of expressing erm </INT>

<03EB14> yeah </03EB14>

<INT> like how how those interests come together and do you f like do any of the things that you do say in photography do you do similar things in say poetry or do you have like different processes for different mediums </INT>

<03EB14> erm I think with with photography what what's out there is out there but erm I I always get told it's not what you take it's how you take it the the photograph erm erm whereas write writing a song maybe on a computer is like erm so like sometimes <InAu> </InAu> I might borrow a lyric or two erm but apart from that it's mm like ground up erm it's just like a a blank screen within a word processor erm rather than

something like the <An> </An> building that is that exists already and it's really there erm so </03EB14>

<INT> I see yeah </INT>

<03EB14> erm erm I don't w erm maybe there's like content within content I dunno erm but again with the <An> </An> building I I <InAu> </InAu> up the <An> </An> in <An> </An> street erm it's like the outside in inside outside building or all like the erm the carcass and everything is on the outside rather than on the inside so erm maybe that is it I don't know erm <Lh> </Lh> so erm erm maybe that that does it for me it gets me it erm like it er I'm not <WS> sorry </WS> who the architect was but I absolutely love his work and erm that could be it I think it er it erm <Lh> </Lh> what's inside me is actually on the outside rather than on the inside could be erm so erm well I say with like with with the word processor erm this say er mm can you you borrow a lot like a few a couple words or something from another song and erm I erm with a song with songwriting like all is possible erm whereas with w erm so er with like the the er the photography courses that I er I I attended a few years ago erm but the teacher took me aside said she's quite happy with my work erm and she asked me like and like when I first joined the course and you're asked if you had any erm mental health problems and I said I put yeah I I have schizophrenia and er she took me aside one week and er said she like really likes my work how does my work come about is it because of schizophrenia the mental health problems I have so I wasn't er <Gr> I'm not sure erm that's say to me it it always felt </Gr> like it was like erm erm autism like asperger's but I r it really is schizophrenia it's schizophrenia that's the diagnosis spo erm she was like really happy with my work erm so that if it's yeah if that like things like like the <An> </An> building that I absolutely love it so erm I erm so I dunno yeah erm </03EB14>

<INT> do you still do you still go to </INT>

<03EB14> I was er I was there one day and erm I I think some some people react badly to being there with a camera some some people do react badly <Lh> </Lh> to it I don't they don't erm why are you taking photos and this kind of thing erm like I went to <An> </An> one day erm <An> </An> and like a man stopped me at er working on a stall there he stopped asked asked me why I was taking photos so <InAu> </InAu> <An> </An> in <An> </An> so that's why I'm here taking photos erm so I don't know maybe it's erm this is what I have so erm so erm on its w er on the inside s why so maybe I put it on the outside like the <An> </An> building erm so w er erm my my main thing is def is definitely at erm with photography is erm im erm i i i mean im imediacy so erm from like taking the photo two minutes later it's on on the laptop which is absolutely brilliant for me erm there's no like er er er there's no other erm overheads or costs or anything erm </03EB14>

<INT> yeah </INT>

<03EB14> like I went to erm like a film photog a film photography course as well which I which I stopped going to <InAu> </InAu> erm I <InAu> </InAu> enlarger and you got like emulsion and erm obviously you got like er dark room er that kind of thing I had n no idea what they were doing at first erm so I didn't feel part of that so erm I I dropped the course after a

couple weeks erm say for me it is definitely erm digital photography and like immediacy but I think erm when I'm out there with the camera and I get some strange looks at time at times and that kind of thing and <Lh> </Lh> they wanna know why I'm taking photos but this is what I have so erm maybe what's out there can express what's inside me so getting it out getting it out of me so when I take photos like maybe that gets it out of me every time erm ticks all the boxes that kind of thing w v er <InAu> </InAu> the problems that I have so but erm but the main thing with it is definitely composition i with photography <Gr> rather than technical side </Gr> erm so on the erm photography course I went to <InAu> </InAu> course I went to I was trying to think they were very very technical with it whereas me it's just like pointing the camera and is that a photo yes it is OK I'll take the photo of it I'm happy with what's in the frame so I'll take the photo of it like straight away erm and that that that that definitely works so erm so erm like the the photography I do l n n n n n n n n n n n n none of it's <WS> prite </WS> posed for so erm I have to make the best of it myself so that means like people architecture buildings concrete everything so erm erm it is what I have so erm but I think <InAu> </InAu> is getting it out of me erm I <Gr> but the schizophrenia the psychosis will go or not I don't know </Gr> I presume it won't but being creative I think i is i is definitely is definitely is being creative so erm I'm not being creative I'm prowling the bedroom prowling the room like er things to do that kind of thing so erm so all all I have really is is my computer that's what it boils down to is my is my laptop computer it's all I have so it </03EB14>

<INT> and </INT>

<03EB14> so that that is it really but erm you know with with photography it's it's erm it's like I can't draw I can do graphic design this kind of thing I can do vectors erm vector artwork I use inkscape erm but I can't draw as such so with a camera I can compose do composition </03EB14>

<INT> I see </INT>

<03EB14> so erm like people's front gardens I've got so I er <Gr> so I had to got </Gr> I have like a certain routine in <An> </An> takes me along one of the the main backstreets into <An> </An> park <An> </An> park <An> </An> park around the moat there's like the <An> </An> art gallery there in er that park here in <An> </An> </03EB14>

<INT> oh </INT>

<03EB14> and there's like the <An> </An> garden s really like beautiful shops and flowers in it and that kind of thing erm so that's pretty good as well in the local area that we have and <An> </An> forest is the London first London borough of culture last year I think erm so w we're quite lucky with that erm so er yeah brilliant it is it is it's definitely er creativity erm er erm <TC> it aint for I don't </TC> I get the the feeling it's only me that is like this I don't know so what other people have like I went went to like a a hearing voices group and erm I was it was I thought it was just me me and <InAu> </InAu> hearing voices and everything it turns out you know my my my condition wasn't quite as bad as other people's in some ways erm so that er mm they they'd give like an account of the past week

<Gr> it was like we going once a week on a Friday </Gr> and they w they were like each <InAu> </InAu> and you know there'd they'd all be hearing voices and erm I thought it was just me er er that kind of thing to that extent er so I think like with creativity th erm it's what I have really so erm s like keeps me occupied it keeps me sane I suppose erm th erm like I I don't I w care I don't know what other people have in their lives I don't know but erm mostly work I suppose ob obviously so but outside of work I don't know what other people have football erm which I do as well I do as well I do football as well erm but erm it is definitely creativity erm so so that s that s that s an an absolute eye opener when I went to the hearing voices group erm th that was in <An> </An> as well and erm I people in quite a bad way so erm I I I love <An> </An> as well the the local area here so we got like the park you got the high street the market in the high street erm good transport connections erm like the <An> </An> gallery and <An> </An> park itself back streets I like er it is erm quite working class I suppose so erm that's why erm erm so that that keeps me happy I suppose as well but erm it is definitely creativity so that's like at the moment that is programming mos mostly so erm </03EB14>

<INT> that's </INT>

<03EB14> so so <InAu> </InAu> I I could have like work family this kind of thing job all of it so when this is what I get I get like from I dunno if it is schizophrenia I'm not sure but if it is it is this is what I get so erm so it may it it it can't be bad makes amends for the schizophrenia I suppose if it <Lh> </Lh> if it <Sh> </Sh> if it is the schizophrenia so </03EB14>

<INT> so were you did were you less interested in creative stuff beforehand like before you had a diagnosis </INT>

<03EB14> erm I used I used to do some work but erm erm like with coding it w it it's all come together in in erm I started learning Java in like about ten years ago and er I moved in HTML5 HTML just a couple of years ago I brought a book from er W H Smith er th er I put like everything together so like it like focused everything so it structured it everything again so like the HTML CSS and the Javascript the programming like like erm united everything together erm and erm so a but I most I I first started using er Paintshop Pro like about eighteen years ago now and erm <InAu> </InAu> with photographs that kind of thing I used to like dabble with it with some web design but with like the programming on the programming erm I realised that like everything is like event driven that means like the person that on on the computer or on or the tablet that they have whatever so that means like a mouse they they they've got a mouse they can click they got a keyboard they can type and what's programmed into the software as well erm so that's like event driven so if they click a button then that sets that fires another method or a function whatever it is </03EB14>

<INT> I see </INT>

<03EB14> so erm so in a way that's er <Gr> programming makes thing interactive </Gr> rather than just erm design view erm cos there's like code view right erm Javascript makes it the language of the web the main language of the web and it makes everything interactive for people erm so in th er erm I I I used to I I used to do some work but erm I mean erm like

computers got quite a bit quite a bit cheaper and quite a bit better erm like CPUs and GPUs I mean the amount of system memory and internet speeds as well erm I used to use like a dial up modem that was like erm really really slow really very slow nowadays you have broadband huge download speeds everybody mm most people enjoy so erm I used to do some work but not like not like it is now but it all started I mean one Sunday evening I downloaded the JDK which is like the Java Development Kit and then Netbeans on on top of that that erm it melds into the to the JDK you you connect it with the JDK you set up like er managed platforms and erm you you y you pick what what you might have several JDKs installed or maybe just one and you decide which one you wanna use and they work together so that's like about ten years ago now so I've come on leaps and bounds since then but OOP and functions as well erm so erm I I used to I used to do some work but not not like now like erm it's all day every day now at at the computer so erm I d so I don't connect to the internet with using wifi erm for like hacking reasons if I get hacked or something I don't like it so I use like the tablet for the internet internet usage but erm I used to do some work er some photography I used to do back then back then I u I used it's more like film photography like thirty-five millimetre film photography erm with a scanner

<INT> oh wow </INT>

<03EB14> erm like like erm like a f a like a photograph scanner so I would scan the i scan the photo into on in in onto the hard drive and use er Paintshop Pro to erm filter them and resize them whatever so but erm I'm definitely more productive today definitely erm so erm </03EB14>

<INT> that's awesome like and it like is I've forgotten to what I was gonna ask but it was it was related to erm are you oh yeah yeah as you've done more creative stuff erm have you found that helpful like in the process of picking up more creative activities going to classes and stuff has that does that h like w well what's changed I suppose is the is the question like yeah </INT>

<03EB14> right right w what it is erm like erm it builds erm like knowledge builds I think so erm and erm knowledge <WS> needs to </WS> leads to knowledge I think like like anything like money leads to money and I think knowledge leads to knowledge </03EB14>

<INT> yeah </INT>

<03EB14> and it builds so if if you've got like a ground in maybe maybe one one erm like in Paintshop Pro or whatever or Photoshop whatever then I think you can if you haven't used the other one then you can pick it up quite quickly I think erm so I I I say like erm that knowledge builds and the rich get richer and the poor get poorer is the thing so erm so erm w erm there I think definitely that erm it builds so ex experience and knowledge of like software like erm things like it's to learn your packages they used to say so it could be like Photoshop or or anything Netbeans Paintshop Pro whatever that people use erm is to learn your packages like this is like about twenty years ago and erm it was like a a program on TV on BBC2 again I think erm it's like th the outset of the internet erm s </InAu>

</InAu> things like dial up modems and compared to what we have now smartphones and everything that we have now it back it was quite primitive obviously so but erm they they film like one one episode about this man who w erm is there's like a like a music website back then erm dot music I can't remember erm and erm he was like a George Michael fan and he built er like a fan a fan website for George Michael and he said like you gotta learn the packages he applied to work at this music company but they they they turned him down he wasn't quite good enough for it but he in in that program they said he said like erm he said like you gotta learn your packages which is you have to do IE Photoshop or whatever it is erm Illustrator Adobe Illustrator like vectors erm so erm I i erm so if if you if you know how to program in one language erm it's OOP for instance object orientated programming erm you pick up the reigns quite quickly with another programming language erm so you know like ten years ago I started from w from w almost nothing I used to program in basic erm procedural basic rather than in Java so I had no idea at all I was googling it left right and centre erm there's like er for instance er rendering hints which y you know you can like er it applies like erm <InAu> </InAu> into text maybe and so I I used to erm the techniques I used to use with erm basic I was applying to like OOP so I w I was googling it and I realised that then there's like two different kind of things erm so erm but erm it definitely like if you like it's it's like y erm I I say <InAu> </InAu> if you learn how learn how to drive a car for instance you could be like a Sunday driver or you could be like in Formula One or something it depends what you do with it like so you you you learn how to program but it's what you do with it </03EB14>

<INT> yeah </INT>

<03EB14> erm so you could be like Sterling Moss or you could be like being on a Sunday or something Sunday driving it depends what you do with it so erm so there's that and then I think that knowledge builds definitely and anything leads to anything erm </03EB14>

<INT> yeah </INT>

<03EB14> and that's that's like that's like creative ideas or anything erm leads to anything so erm erm so that that has definitely happened I say erm I brought a book on HTML a couple of years ago and erm that's where it really really kicked off I think is with that book I paid like twelve pound for it or something in W H Smith erm that brought it all together like focused it all together into like one entity that I could use I E coding like learning how to use HTML CSS and Javascript and erm s like the software I use is like free it's like Netbeans and Inkscape erm I use I used to use Webplus when it s when s used to cost about eighty pound or something but erm it doesn't do like erm RWD responsive web design which is all the go nowadays cos it <Gr> everybody got a </Gr> different sized smartphone or tablet or whatever </03EB14>

<INT> oh I see </INT>

<03EB14> so you have to do RWD erm there's something called media query erm which gets the size of the er display that the person's using and so you put your code inside of media query which adapts it to that display size erm so that's that's that's

something I use all the time as well in that's in er cascading style sheets that like CSS erm erm that's all media query that's erm there's like something else called CSS grid which I've used a bit but I don't really like it so erm I I'm back with CSS and media query erm which is really really really helpful erm it's like <Gr> the person you gotta screen </Gr> s er display th d er size on their d on their device on their phone or tablet erm it gets that and it er and you adjust the code to fit the er display size that's like that that's erm RWD responsive web design it's e called fluid as well there's like fluid erm disp erm er type of programming erm in HTML there's like fluid layout and erm I I use RWD I use I use media query but erm definitely erm I think like erm knowledge leads to knowledge and erm knowledge builds as well erm I think like everything builds so I I d come from almost nothing so I'm I'm completely self-taught basically apart from like some of the er photo courses erm photography courses and erm basically self-taught I mean like a lot of googling I d er I done er <Gr> so that <DT> was saying before </DT> </Gr> about the copy and paste I I do that all the time I copy and paste and make alterations <Gr> whatever it is needed </Gr> erm er but yeah erm it definitely builds and I think it's fun as well for me anyway there's one person <Lh> </Lh> out there with a camera or something w whatever it is erm erm I I I love it anyway so erm I like being me so erm like interests that I have so erm </03EB14>

<INT> that's the right way to look at it definitely like do what to do what makes you happy that's </INT>

<03EB14> yeah </03EB14>

<INT> that's how it should be definitely and er being self-taught with programming and s and stuff is like I I totally hear what you're saying that it gets easier over time but it's it's from from </INT>

<03EB14> I I <Sh> </Sh> I think like erm w what it is erm i it erm you do the same thing over and over again but with some erm like erm differences but but I think basically it is the same thing over and over again erm so if you you get like one chunk of code to work without any errors or something it w it works then why not use it over and over again </03EB14>

<INT> yeah </INT>

<03EB14> erm that's that's that's what I do so erm rather than sitting like sitting down at a computer and writing like hand writing ten thousand lines of code or something erm </03EB14>

<INT> mm </INT>

<03EB14> maybe write just like two hundred lines of code and copy and paste it and that that so with with with some brain fade that's the way that's what works for me so </03EB14>

<INT> do you mind if I ask what cos I've only because I've not heard the term brain fade before like w do you mind letting me know sort of what that means </INT>

<03EB14> yep yep right well there's erm on on for instance on the computer erm I could pick like the save all button on Netbeans if you done like er erm some alterations to the code I

click it and then three seconds later I'm not sure if I've clicked it or not erm erm </03EB14>

<INT> oh I see oh OK </INT>

<03EB14> right erm <Lh> </Lh> or if I go down the stairs erm I'm upstairs at the moment if I go down the stairs erm I get to the kitchen and I'm not sure how I walked down the stairs erm that that kind of thing so y erm </03EB14>

<INT> I see I see oh OK and like does the does the creativity help with that as well </INT>

<03EB14> erm erm it it erm in terms of of the the er techniques I have to use I copy and paste definitely erm so erm I say w like erm I I could work from the on the file for a couple of days basically a week later it's all gone except for like the fundamentals obviously I know how the fundamentals work but the specifics are all gone so I come back to the code erm I try to use like with variable naming erm variable n names that I would remember erm so it's like random object one or something rather than calling it whatever erm so there's like there's like naming conventions and purposes that definitely helps but erm erm so I know like if it's like a four loop for instance or while loop anything like that then obviously I know that erm erm I know what a four loop is and or what a while loop is but the s specifics are in s the the code inside of the four loop or the while loop <TC> they couple of days </TC> it could be gone like erm what variables I've used erm images I've used whatever it is so erm w but when I say brain fade <Lh> </Lh> it is that is that's what I that's what I mean </03EB14>

<INT> I see </INT>

<03EB14> but I don't think I hope touch wood it's not Alzheimer's or anything but I've had this many many years and that that's what I have so </03EB14>

<INT> so you make mm th </INT>

<03EB14> erm but it's not it it it's not a huge problem but erm it's something so </03EB14>

<INT> see that makes everything that you do which is already really impressive knowing knowing what what that means now that just makes everything you do so much more impressive like cos coding's hard like I like I've had a little bit of a go at trying to learn it and I I'm nowhere near like it just it looks ah ah I get what you're saying though that like once you know one language it gets easier but erm to teach yourself how to code erm whilst experiencing brain fade that's like that's super impressive you should be so proud of that cos it's you know </INT>

<03EB14> well erm so like erm without copy and paste I'd be absolutely stuck so erm so that it that's the way I get it done is is definitely copy and paste so </03EB14>

<INT> cos to me that sounds like you've found like a r a really efficient way of working that works for you you know like and </INT>

<03EB14> yep er it w it like it erm w what it is mostly erm in programming on a website now is like JQuery which is a framework they're called frameworks and erm so the syntax is the same so erm they're on online there's there's like a website called stack overflow and erm there's others as well but there's stack overflow and you name a question it's been asked and it's been answered so that that's like a big repository online </03EB14>

<INT> I see </INT>

<03EB14> stack overflow dot com erm if if you if you name a question if you mention a question and it's been asked it's been answered and that's another huge boon for me it it erm so what I do is erm I use like a er Nintendo DS 2DS if it if it's like for Python I start the the search query with Python or if it's for Javascript I start with Javascript and erm then I'll then put in <WS> when </WS> you're trying to search for and you name it it's been asked so </03EB14>

<INT> I see </INT>

<03EB14> that's that's hugely helpful as well I I done a lot of googling with it erm o over the years so erm that's like erm like the main the main website out there is stack overflow which is like an like an error in Java I think stack overflow error so they named it from that and erm s if you are learning coding I'd def h h h hugely recommend their website cos you know you can ask any like er a thousands of questions and they've all been asked all been answered </03EB14>

<INT> that's so helpful thank you </INT>

<03EB14> and they <WS> code </WS> some of the questions like erm they they get like sufficient number of answers and they close the question so you can't post any more responses to it erm </03EB14>

<INT> ah so so you know the answer s so you know the answers are like quality answers if it if it's closed </INT>

<03EB14> well well it could be it could be like something like that that you're like specifically trying to work out how to do so you type it in I say like erm when I first started it was like erm rendering hints in Java so it was probably like Java rendering hints so y erm I used er I used like a Nintendo 2DS and it's really quick erm you don't have to start the computer up you start it up it's starts up in about ten seconds and you're you're er immediately online with it and erm so y you ah if it's something that you're stuck on you you ask it it's been on it's been asked and answered it's like a huge repository they got like thou tens of thousands of questions I suppose s er it's not it's like erm all kinds of programming languages erm so er if you're on that that's erm that's what I would do if I was you if you're trying to learn coding is to is to <Gr> google it I afraid if you're self teaching </Gr> it's alright it's what I've done so erm </03EB14>

<INT> that's that's awesome thank you so much stack stack overflow dot com </INT>

<03EB14> yeah dot com s stack overflow d dot com so that is th er I er I <InAu> </InAu> it's like huge they got like me mill like m m m m m m millions of people I use it er so it's like a huge

repository for you so there are there's like code ranch but erm I think stack overflow is like the most important and it's the best one there is so and they they like y y any any programming languages like Python anything they they do so and it's always been asked you if you type in sometimes you got er erm takes ten minutes something you gotta search like several posts to get the information that you want that people have posted </03EB14>

<INT> I see yeah </INT>

<03EB14> but invariably you get what you want so it's definitely stack overflow dot come I def definitely recommend it so if you do <InAu> </InAu> HTML or Javascript just search Javascript and whatever you want to know functions OOP or anything anything you want and you get the results back and then erm almost always like s er there's like a stack overflow in there there's erm something called W3 schools which is o o for Javascript as well they're like they're like a main resource as well erm but it if you <InAu> </InAu> I don't know what kind of programming you're doing but erm if it's for HTML for what's on the internet then it's like <TC> a framework that a framework's </TC> really helpful as well like JQuery is like the is like the old one it's been around for many many years but there's n nowadays there's like er ReactJS and ViewJS which erm like the er professionals use to like program like er web apps using Javascript </03EB14>

<INT> oh I see </INT>

<03EB14> what's that </03EB14>

<INT> that's that's so cool thank you so much for mm for letting me know about those cos erm yeah it's just all new territory and like erm also I've I've noticed the time as well like I c I could quite happily chat for ages but I'd do say if you need to go and do stuff and you know like erm it's it's totally up to you how how long we we chat for erm </INT>

<03EB14> erm yeah well erm w what's what is the time now </03EB14>

<INT> it's about ten to four </INT>

<03EB14> erm quarter to quarter to four ten to four yeah erm like is is it any more any anything else you want to </03EB14>

<INT> erm it's I'd it's just been really interesting and like yeah no it's been so helpful thanks so much cos like erm yeah it's like I can't thank you enough for giving so much of your time it's really generous and it means a lot and erm and if and if you are up for er doing the other bit in person when things are a bit less er locked down and stuff erm </INT>

<03EB14> yeah </03EB14>

<INT> then we can definitely arrange to do it at the at the <An> </An> definitely </INT>

<03EB14> OK right OK </03EB14>

<INT> so shall I shall I send er or well it's totally up to you if you wanna tell erm cos it it's sort of mm the way to organise it is

probably through <An> </An> so cos he'll let me know when what dates I'm able to go to the centre and stuff so if you want I can mention it in an e-mail to him that you're interested in doing the experiment bit or I can wait until you see him next and if you'd rather tell him it's totally up to you </INT>

<03EB14> well erm like e e I saw him just before Christmas and I think he's leaving his post erm sometime this year </03EB14>

<INT> ah right </INT>

<03EB14> erm he said like August this year I think he's leaving so </03EB14>

<INT> oh OK </INT>

<03EB14> I'm I'm not sure where he's going to but he said did say I probably wouldn't see him again like w er I I see the erm doctor once a year just about </03EB14>

<INT> right OK </INT>

<03EB14> part of my treatment so he he did say he might be leaving in August but I'm not sure </03EB14>

<INT> oh OK in that case I'll find out erm how what the arrangements are for for working out a good time to do the experiment bit and then erm if you're happy for me to get back in touch with you on this number or something I'll I'll come back with an update </INT>

<03EB14> OK right </03EB14>

<INT> is that is that OK or </INT>

<03EB14> erm yeah that's OK yeah er b what so when it's in person it's like o on a computer and it's just answering questions </03EB14>

<INT> yeah it's like erm so there the experiment bit is erm it's a language er experiment that will it will show erm like erm a couple of words at the top of the screen and then there'll be some options and it's just choosing the one that you like more there's no right or wrong answer it's not a it's not a test of ability it's like a creativity task and it's erm it's about w whether you like the word on the left or the word on the right er and there are about eighty words I think so it takes about ten minutes </INT>

<03EB14> OK right </03EB14>

<INT> and erm but like you know y if if when I call you to say oh you know there are some potential days we could do it if in the meantime you've decided actually I'd rather not that's absolutely fine like it's there's no pressure erm you know I'm I'm so grateful for your time and it means so so much thank you cos if people don't give their time then there's no study so it's it's super kind of you and I really appreciate it </INT>

<03EB14> yeah it's OK it's OK </03EB14>

<INT> erm so yeah th th thank you so much I'll erm I'll head off now but it's it's been so nice to meet you and talk to you I can't thank you enough and er and I I may see you again for the

experiment but I'll I'll come back with an update and yeah but </INT>

<03EB14> right </03EB14>

<INT> no it's been awesome </INT>

<03EB14> OK then </03EB14>

<INT> thanks so much </INT>

<03EB14> right cheers </03EB14>

<INT> cheers <An> </An> bye </INT>

<03EB14> OK speak to you later </03EB14>

<INT> yeah bye </INT>

Comparison transcripts

<INT> OK so erm the the one question for the interview is how was the experiment </INT>

<28CT11> erm yeah it was kind of weird <Lh> </Lh> erm it was absolutely fine and there was no it was just a bit weird I don't really know how else to explain it </28CT11>

<INT> no no no that's OK </INT>

<28CT11> like I kept </28CT11>

<INT> I mean that's really interesting </INT>

<28CT11> I kept thinking all throughout like have I missed something was there a connection there that I was supposed to be sort of picking up or something like that and then I was kind of like but I mean the words are kind of repeated but in very random orders and then we're getting the same words and different choices and things like th and it was just yeah </28CT11>

<INT> that's really interesting was it ah th er that that weirdness erm what did it feel like </INT>

<28CT11> erm I think for me it was more <Sh> </Sh> I clearly wasn't as concerned as I possibly should have been because I could have asked the question have I actually missed an instruction somewhere erm but I was ninety-nine percent certain I didn't miss any instructions so I was kinda like OK I'm just gonna go with it erm but it was <TC> just more I think </TC> it was it was actually quite uncomfortable for me because I like knowing what I'm supposed to be doing </28CT11>

<INT> I see I see </INT>

<28CT11> I mean I'm I'm very much you've probably got it from the initial assessment I'm very much I like to it's not so much I like to get things right I mean that's true but I like to when I'm doing something I kind of give it my all even if I'm not amazing at it erm and I'd I mean with the questions at the start it was like name some animals I know animals so and it's it's that pressure you're put on the spot but you know that you can answer something whereas this was very much it was very abstract it was very kind of I don't know what I'm supposed to be doing really </28CT11>

<INT> yeah I I was about to say before we started the interview I th erm but I wasn't sure if it was something that you wanted to hear but erm I was gonna say erm while you were doing the experiment I scored the assessment and you got full marks for everything like you're in the top erm you put the scores together and erm then you get categories like levels 1 to 9 </INT>

<28CT11> OK </28CT11>

<INT> and you're in you're in nine for all three tasks so you got the highest erm category scores for the assessment so erm if if that is helpful to know or nice to know </INT>

<28CT11> <Lh> </Lh> I mean it's yeah no it's good to know because as I say I I'd I do I do like to get things right so yeah when I when I try something and I think I think I've done I mean I've done things like quizzes and stuff like that and you all have your specialist subjects but when it's something like this and it's quite random I mean I don't get asked words beginning with M and put on the spot every day kind of thing so it is quite random but I kind of feel like yeah OK yay I er I'd I'd sort of achieved something there and then it was just that complete flip of I don't know what I'm doing here <Lh> </Lh> </28CT11>

<INT> I see yeah so the the stuff at the beginning erm is er they're three tasks subtasks from something called the CLQT the cognitive linguistic quick test </INT>

<28CT11> OK </28CT11>

<INT> erm and they measure things like language memory executive functions attention erm and so it's just a cognitive erm er it gives us some scores to then make sure when we do the group comparisons we're ruling out the the effect of say if we ran an analysis with someone's data in the experiment and we and we had some really significant differences but we realised that it was because one person in one group was getting nines and one person in the other group was getting threes </INT>

<28CT11> yeah </28CT11>

<INT> that that would erm probably be the reason why the results were different and not what we're looking for in terms of the the purpose of the experiment erm there is one but there's no right answer so erm it's a it's erm it's like there's an expression erm that proofreading is editing in a broom cupboard so it's like a very restricted type of editing and this task is like creativity in a broom cupboard you the choices are between erm doing one like making one creative choice or another but the constraints on that choice are very very strict so you only have certain words to do it with erm it's like being given four blocks of Lego really and being told to make something </INT>

<28CT11> yeah </28CT11>

<INT> there's a there are only a certain number of things you can make erm but we're still interested in what people make with those four blocks erm but there's no right answer so was when you s cos thinking about the weirdness I'm thinking was it was that weirdness there for all of the items or some or </INT>

<28CT11> erm some more than others because I think with with some of them I was sort of drawn to one option more than the other </28CT11>

<INT> oh OK </INT>

<28CT11> erm ah I don't know maybe it was a kind of word association thing or something like that that there was something sort of erm in the back of my head I was sort of drawn to one more than the other but then w I mean er the w the word boomerang appeared quite a lot and I was kinda like but I mean there's there's really not much of a connection here that I can go with either of them so a lot of the time I was

making so I think I started off trying to make the choice of what I not so much what I thought was right but more what I felt was right and then it as it sort of went on and I was getting the word like boomerang or sharpener coming up which to me had really no connection I was more often choosing the other one because that had no connection so I think I changed my approach to it </28CT11>

<INT> I see </INT>

<28CT11> not not necessarily for everything but certainly when when certain ones came up I was kind of like no I've got no connection with that at all so I'm gonna go with the other one rather than picking the one that I did have a connection with so it was a a bit of an <WS> approach change </WS> </28CT11>

<INT> yeah and did that happen quite early on in the items or later </INT>

<28CT11> er I'd say I mean I can't be exact but I'd say it was probably about halfway through </28CT11>

<INT> oh OK </INT>

<28CT11> I mean <Sh> </Sh> I was trying not to I was trying not to sort of second guess myself in in the sense that I wasn't sort of guessing right in the first place but I was trying n I was trying to go with my instinct first of all and then it just it kind of got to the point that I mean as I say I was sort of thinking have I missed something is there something else here and then I thought well because I was thinking ab w d I think I felt more comfortable when I switched to the other approach of let's go with the one that it's not that sorry let's not go with the one that I don't connect with rather than let's go with one that I connect with more and I felt a little bit more comfortable and er f I'd say yeah probably about halfway through ish </28CT11>

<INT> I see that's that's really interesting because erm in in both cases regardless of the erm the word you choose you're being asked throughout the the experiment to make metaphors but the word you choose is erm determines whether that metaphor has er erm a literal or an or an abstract in well whether it's about a literal or an abstract object so </INT>

<28CT11> OK </28CT11>

<INT> erm and that's one of the things that the experiment's really interested in is like do people choose to make their metaphors out of concrete things or or abstract things like ideas opinions attitudes or erm objects like tangible objects and are there any differences in groups erm for those choices so that's what the experiment's measuring </INT>

<28CT11> yeah </28CT11>

<INT> but we obviously w er you know I n I obviously wait until the end to tell people this because if I tell them before then that will affect their selections </INT>

<28CT11> yeah </28CT11>

<INT> but erm but it's yeah it's it's like a metaphor creation task and I wonder if that f feeling of weirdness was related to well

what would you what would you say would you say it was more about the choices or more about the words that came up on the top </INT>

<28CT11> I think it was that's a good question actually it was more about the wor er it's it was more about the choices </28CT11>

<INT> I see </INT>

<28CT11> it was more about the choices yeah </28CT11>

<INT> oh OK and the words at the top I mean was that was that less uncomfortable in terms of like the feeling you got from those words </INT>

<28CT11> yeah I mean though I found those words I mean it was a bit weird because there were times er with er it was it was less often but there were times with the words sometimes that I was kind of looking at going I g I've got nothing here I've just got nothing together with that and it was that kind of so th it it there were almost sort of four different things there were things where the words at the top went together and I could quite easily pick one of the two options <Gr> then you've got the words at the top went together but neither of the options sort of appealed to me </Gr> then you had the words at the top not really slotting together and neither of the options appealing to me and the words at the top not really slotting together and it wasn't that ah one was better than er it was it was basically that one was worse than the oth one of the options was worse than the other so I went for the better option if that makes sense </28CT11>

<INT> I see yeah yeah </INT>

<28CT11> but that wasn't really occurring to me at the time it's sort of occurring to me now looking back on it </28CT11>

<INT> yeah and what you say there with the four options sounds a lot like the four sublists within the th th the item list so w so there are four different </INT>

<28CT11> yeah </28CT11>

<INT> types of item erm erm adjectives that do go together better than others adjectives that kind of clash erm and nouns that go with the adjectives and nouns that don't go with the adjectives so the fact that that's come out of your experience is really interesting because that's that's part of the experimental design to make sure that you know we don't have a list that's influencing people to make a certain choice because of the way the list is but it's really interesting that as you're going through you're t you're getting that sense that that the items are categorized that's really interesting </INT>

<28CT11> it yeah it I mean I think at first when you're seeing the words repeated but not necessarily exactly the same and everything like that there's that possibility in your head of going on well this is just really random words coming up and everything like that and you know obviously it's it's it's got a basis in the research and everything so it's not gonna be completely random there's gonna be er a process to it but again <Gr> I don't think I I sort of dissected it while I was doing

it was more now I'm sort of looking back</Gr> and going that's probably why I picked that rather than and I'd think as well for me I've never classed myself as a creative person I'm very much er a <TC> tangible certainly in </TC> terms of ideas and and the abstract and stuff like that so that'd be quite interesting as to what side I came down on that </28CT11>

<INT> yeah that's well yeah that's really interesting and erm yeah well w what I can do is erm I can if people erm would like I can send them erm like the f the the results like </INT>

<28CT11> oh that'd be great </28CT11>

<INT> of of the overall experiment </INT>

<28CT11> yeah </28CT11>

<INT> but erm it's also possible if you're interested I can do you like a graph of like w which side you came down on personally like your results but that would erm if you'd like to see that but that would involve hanging onto your email address to send it to you if that's OK </INT>

<28CT11> that's absolutely fine yeah </28CT11>

<INT> erm but yeah I'll send you a graph of erm of like which you made more of which choices literal or </INT>

<28CT11> yeah </28CT11>

<INT> abstract erm </INT>

<28CT11> I'd be quite interested in that actually </28CT11>

<INT> and and the results as well erm </INT>

<28CT11> yeah </28CT11>

<INT> but yeah no that's is there anything that erm you'd like to talk about with regards to the experiment that we haven't talked about </INT>

<28CT11> erm I don't think so I mean it was good to it was yeah it was good to sort of get that understanding I think I think if I'd just kind of gone away after it I'd have been going what on Earth was that </28CT11>

<INT> yeah </INT>

<28CT11> it was it and that weirdness now the weirdness doesn't really seem as weird anymore it was more I think recognize now that I've recognized what I did and why I did what I did in a way making those choices it's it's I a lot less weird </28CT11>

<INT> that's good that's good </INT>

<28CT11> yeah </28CT11>

<INT> because walking away from participation in something like this without getting any any erm information about what you did I don't think that's a very nice experience like and I'd erm and that's one of the reasons that I really like involving in this conversation a bit of an explanation about what what the

experiments actually doing erm because then er y like you say y you have a bit more to sort of take away and go oh right </INT>

<28CT11> yeah </28CT11>

<INT> so that's why I was that's why </INT>

<28CT11> yeah </28CT11>

<INT> that felt the way that felt erm and erm but I hope it wasn't too uncomfortable </INT>

<28CT11> I do like stuff like this because I I find I do find that I learn a little bit more about myself each time I do something like this </28CT11>

<INT> I see yeah </INT>

<28CT11> which is quite good </28CT11>

<INT> yeah </INT>

<28CT11> I'm not <Sh> </Sh> I say I'm not a reflective person I actually did a study a couple of months back where all I was doing was every day for two weeks was a five minute video diary and it was they they gave you kind of prompt questions but you could kind of talk about whatever you liked I've never kept a diary in my life </28CT11>

<INT> I see </INT>

<28CT11> but doing this and you could do it at any time during the day erm I think it was between eleven o'clock in the morning and eleven o'clock at night you could do it at any time and it was just the s the amount that I've learned about myself just from doing that for two weeks </28CT11>

<INT> yeah </INT>

<28CT11> it's brilliant </28CT11>

<INT> yeah especially </INT>

<28CT11> so yeah I love stuff like this </28CT11>

<INT> ah I'm pleased was it was it f sort of fun to take part in </INT>

<28CT11> yeah </28CT11>

<INT> even though at times it was uncomfortable with the experiment </INT>

<28CT11> yeah no absolutely and I think that's part of it for me is if you only stick with the stuff that you're comfortable with and stuff that you know you're not really gonna you you might sort of build on your skills in those areas but you're not gonna sort of expand what you do know </28CT11>

<INT> yeah </INT>

<28CT11> which isn't for everyone but it is for me that's the kind of thing that I quite like to do I'm not saying I wanna go out

and I dunno learn how to crochet or something but little things like this I think can help just develop develop you </28CT11>

<INT> oh yeah </INT>

<28CT11> and if I mean for me one of the big things I've always wanted to work on is my understanding of myself in terms of reflection cos it's not something I'm mm good at </28CT11>

<INT> well I'd I don't get that sense from you cos you ah I cos you d cos this whole this whole discussion you've it seems to me like you've been reflecting erm </INT>

<28CT11> I think I think it's not something I'm good at on my own maybe </28CT11>

<INT> oh OK </INT>

<28CT11> I think if you put me if if you put me in a position like this where I'm directly asked that question in even even sort of in the in the context of how did you find that erm or in in the video diary example whereas if I was just to try and do something like that for myself I'd either get bored of it or it would take a long time for me to kind of get into that habit of sitting there and going actually how was my day </28CT11>

<INT> yeah </INT>

<28CT11> so I think I do find that I I get more of a sense of purpose out of it when I am doing it for something or for someone else kind of thing whereas just for myself maybe I'm not as good so it's good to know that I can do it and clearly I can do it it's just now finding the <WS> impetus </WS> and the reason and the purpose for doing it </28CT11>

<INT> yeah but it's I mean it sounds like yeah I I totally agree that yeah you absolutely can I think sometimes it's about time as well isn't it like </INT>

<28CT11> yes </28CT11>

<INT> like you say that er erm when when you're asked and and when there's time kind of set aside for it erm that creates the space for it and sometimes if you're really busy then </INT>

<28CT11> yeah I think that's exactly it I think it's like anything if you really want to do something you're going to make the time for it and I think for me I I find that I will make time for things that involve other people more than I'd make time for something just for myself I mean we all we all have our own time we all have our me time and everything like that erm but I think setting aside even if it was just setting aside five minutes in a day to do a video diary I could do that for a research project but to get that into my head to just do it for myself would take a lot more effort I think </28CT11>

<INT> I see </INT>

<28CT11> erm but I don't know that's ah d and again that's that's just a reflection on myself that I know I'd like to work on erm because it's exactly as you say I think there there's that

never ending you've got everything going on you've got work going on you've gotta go and do the shopping you gotta do the housework you gotta make the dinner whatever you've gotta do throughout your normal day and trying to put something into that routine where it's not going to be a tr I think that's the key thing as well you don't want it to be seen as a chore </28CT11>

<INT> mm yeah </INT>

<28CT11> you don't wanna be sitting there going oh well I have to do this today </28CT11>

<INT> yeah they do say that </INT>

<28CT11> so </28CT11>

<INT> that the second you make something a an obligation it becomes so much harder to do it </INT>

<28CT11> yep </28CT11>

<INT> erm </INT>

<28CT11> yeah </28CT11>

<INT> but that's </INT>

<28CT11> but no this was really fun </28CT11>

<INT> oh good oh I'm really pleased </INT>

<28CT11> this was really fun </28CT11>

<INT> erm thank you so much are you er like shall I stop the recording for the interview and then I'll just let you know what happens next with the erm th there's one last bit of paperwork but we don't have to fill it in it's just a </INT>

<28CT11> OK </28CT11>

<INT> a sheet that I send you so er I'll stop the recording now </INT>

<INT> so erm there's only one question er for this interview and that was how was the experiment </INT>

<26CT11> it was really interesting it was fun <Lh> </Lh> erm I th t I I think <TC> I obviously this </TC> would be the case with everyone participating but while you're doing it you're very aware of wondering why you're doing it sort of thing so particularly with the word task as as my job is kind of words I am you know I'm I'm inclined to over think that <Lh> </Lh> that sort of thing and yeah <Lh> </Lh> </26CT11>

<INT> because you yeah cos you you mentioned part of speech and then I thought OK you work with language so that I mean that's which is erm by no means er erm er it it doesn't affect the the results but it it provides interesting context when we talk about it in the interview so erm w how did you find well do you mind telling me a little bit more about that because that's really interesting that that sounds </INT>

<26CT11> that that I found I found it perhaps more d er difficult than I <Lh> </Lh> than I should have done because I don't like putting words together that don't fit together naturally grammatically <Lh> </Lh> so I don't like having to make a a choice between a a salty edge and a salty opinion <Lh> </Lh> I you know I I erm so I I perhaps it my r er responses perhaps weren't as instinctive as they might have been because I had I was working on a process of least bad <Lh> </Lh> </26CT11>

<INT> I see </INT>

<26CT11> a l <Gr> a least bad association than er good </Gr> and for some reason I took against boomerang and I was aware that I was <WS> took </WS> taken against boomerang I was again overthinking that I was giving boomerang a w er g a fair chance <Lh> </Lh> </26CT11>

<INT> that's that's really interesting because the the actual erm task it has erm it has no real erm sort of correct or or incorrect </INT>

<26CT11> yeah </26CT11>

<INT> answer it's but but yet one of the things that comes through the interviews is people saying that things certain items just feel wrong certain items just feel erm less preferable than others erm and that's that's really interesting to talk about because there isn't er w it I wonder why that that is erm were there certain items that really stood out for you </INT>

<26CT11> well I I think because the practice ones boomerang didn't come up in the practice one so when I'd been d er overthinking the practice ones <Gr> and had been more nebulous <WS> concept </WS> concepts like edge </Gr> and opinion I had worked my way round to thinking how the adjectives c could apply to them s so when I got into the test and boomerang came along I n d yeah I I was worrying about whether I was being valid because they weren't instinctive responses sort of thing that I worked my way round to a sharpener potentially being a person or a drink or something and therefore more things could apply to it whereas the boomerangs just a boomerang so nebulous adjectives can't apply to it whereas opinion and considerations it it got easier because ad s soon <Gr> as soon as I had thought my way to

there could be a smoothed consideration then whenever I saw a smoothed in consideration </Gr> I had er I had already said yep those two are allowed together sort of thing <Lh> </Lh> </26CT11>

<INT> I see so am I am I right in thinking that as you moved through the experiment you developed a erm a rule set for the items </INT>

<26CT11> definitely yes </26CT11>

<INT> I see that's really interesting </INT>

<26CT11> <Lh> </Lh> is that not a g and then I was worrying that that was a bad thing for your experiment <Lh> </Lh> </26CT11>

<INT> no no not at all because the so the w what the experiment really does is w er is erm we've taken a few things that we know about cognition in language that ap that seem to apply to adjectives and we've erm arranged them with erm certain types of noun erm in order to create erm a t a choice situation where after you've seen 2 adjectives erm that come from different sensory modalities erm as a pairing do you opt for a concrete or an abstract noun and </INT>

<26CT11> oh </26CT11>

<INT> what we're seeing is that there is a preference emerging in what what people are talking about in the interviews it's touching on what you're talking about it's like I I erm it doesn't necessarily mean that there's a pattern that's erm universal or or or erm that everybody is using the same pattern </INT>

<26CT11> yeah </26CT11>

<INT> but but these items tend to be giving people the sense that they need to be looking for and establishing a pattern which </INT>

<26CT11> right yeah </26CT11>

<INT> which is erm a like a a very welcome finding but not necessary one that we we were predicting </INT>

<26CT11> right yeah </26CT11>

<INT> erm which is really interesting so I mean when when you were moving through I'm really interested in this idea of d sort of developing the ruleset d how did that come about for you </INT>

<26CT11> well I think it came round in the practising that I was that I er unfortunately I think I think there were only abstract nouns in the practising so I had s having spoken to you I had to think out a way whereby I could happily with in <Lh> </Lh> within myself fit the adjective t with the with the noun I mean not not necessarily as a <WS> spart </WS> part of speech but I but through a rapid process of going well you could say someone had a salty opinion if it was a little bit o out of the ordinary and they're so I don't I don't suppose I was thinking of salty in a sensory sense but more in the sense of it you know a salty story or something like like that </26CT11>

<INT> yeah </INT>

<26CT11> er erm so having having I think just that that having agreed with myself <Gr> that a per certain adjective </Gr> could be used in a certain way and could be applied to that noun thereafter it was easier to do it and and almost two adjectives with t I feel that two adjectives one can be a bit superfluous like it could be a bit of sort of literary a literary flourish <Lh> </Lh> almost so that if you were saying that someone had a salty opinion you could also say it was a smelly it you know having having agreed with myself that it could be salty then it could probably also be smelly as well <Lh> </Lh> </26CT11>

<INT> yeah </INT>

<26CT11> whereas with the with the boomerang which has as far as I know just got one meaning <Gr> there were a very few adjectives </Gr> that it it I was aware that I just couldn't apply any nebulous adjectives to it <Gr> I mean it could just about have been being salty </Gr> but then I had to go through a whole process of thinking <Gr> well then it would have had to dropped in the sea first </Gr> in order to be salty and I b I felt bad cos I did miss the opportunity for a sm salty smelly boomerang which was its one opportunity <Lh> </Lh> and then d I I'd already clicked on the other one cos I'd er I'd seen t opinion <Lh> </Lh> </26CT11>

<INT> and that's erm I think that's one of the things that's so interesting about how people interact with the experiment is that erm well what what's coming through the interviews is th is that there is a in the early questions there is a kind of how am I going to sense make </INT>

<26CT11> mm mm </26CT11>

<INT> throughout this and then erm after a few items p people determine a way to do that and that's erm did you did you find different erm words from say because we have we have some in there that are taste and smell words and some in there that are like sight and sound and erm </INT>

<26CT11> ah I didn't even realise that actually that didn't even register with me as we were going along </26CT11>

<INT> oh OK were there things about the were some items more memorable than others or did you find erm aspects of the experiment </INT>

<26CT11> actually I tell a lie the the only time I was aware of it being sensory was when it was edge because I had thought to myself somehow I associated given the adjectives I associated that with a drink and saying you could say that it had a bit of a salty edge to it or it had a bit of a something edge to it and that actual now I think about it that was very sensory that would that would be how I would establish whether I felt they could go with the word edge or not by well er no no er now I'm thinking about it more smoothed with sensory too yes I was definitely applying I was more ready to apply salty sour and smoothed to edge and sharpener than I was any of the other adjectives and I think that was because I had conceived them perhaps as slightly more sensory nouns </26CT11>

<INT> I see I see that's yeah that's that's very interesting because there are erm so the erm the noun choices as well as being literal and abstract the literal nouns are also semantically bound to the adjectives so erm by which I mean we only put literal nouns in erm the set that were also classified by a semantic tagger as erm being related to the sensory concepts in the adjectives </INT>

<26CT11> oh right </26CT11>

<INT> so on the on the literal item front th those items are actually erm tied semantically to to the adjectives whereas the abstract aren't and it's it's really interesting that er for those senses erm it sounds like the tie was important like the semantic tie in in your decision making process </INT>

<26CT11> mm mm </26CT11>

<INT> erm which is a very linguistic thing to do like if you work with language that's a very </INT>

<26CT11> yeah yeah </26CT11>

<INT> and </INT>

<26CT11> but ah er is is edge enough enough of a non abstract noun to be the other to be to be the other non abstract noun because or or w is edge specifically decided on because it is halfway between abstract and not cos I mean like a boomerang's absolutely a boomerang whereas s if someone's got an edge to them or something like that you know it's not that's where t I would've thought that was as as abstract as an opinion </26CT11>

<INT> yeah so this is where erm the experiment has a a set of it could it could be to do with the effects of the experiment erm because you're working with metaphor primes in in the adjective position erm so if if we look at the two adjectives at the top of the screen and the the two noun choices underneath ah th the adjectives are really performing the function of a a paired adjective prime so it's implying that they will modify er </INT>

<26CT11> yeah </26CT11>

<INT> the same noun like as a er a constr er </INT>

<26CT11> mm </26CT11>

<INT> a paired adjective construction modifying just one of the two nouns erm and so by being asked to do that with sensory adjectives that also muddle senses erm there is probably an artefact in the experiment where the line between literal and abstract sort of disappears because in both cases the choices are being asked to form a metaphor

<26CT11> mm </26CT11>

<INT> so even though the noun is is erm can be said to be literal as soon as it's mm a choice and it's paired with those adjectives it becomes erm the target domain of of the metaphor that you create when you click </INT>

<26CT11> ah </26CT11>

<INT> and then the adjectives become the source domain so you're mapping the paired adjectives as a source domain as a synaesthesia source domain onto erm one of the two er targets and there is er there's definitely an argument to be to be made that as soon as a literal noun or a concrete you know noun becomes the target in a s synaesthesia metaphor then it becomes abstract </INT>

<26CT11> <Lh> </Lh> wow </26CT11>

<INT> so it's it's like it it's erm it's hard to know where the where the line is do you know what I mean but it's erm </INT>

<26CT11> ah yes yeah yeah </26CT11>

<INT> but and this is one of the things that that's going into the discussion about the experiment itself and language experiments generally is how do you actually make these decisions I mean we used erm a erm a semantic tagger that's used in corpus linguistics to try and take the human element out of the decision making process </INT>

<26CT11> yeah </26CT11>

<INT> and say well this is what you know er the semantic classifier calls a concrete noun and this is what it calls an abstract noun </INT>

<26CT11> yeah </26CT11>

<INT> erm but language is s is a it's a hard thing to do experiments on </INT>

<26CT11> yeah <Lh> </Lh> </26CT11>

<INT> because you know they th because they change and things </INT>

<26CT11> yeah no it's really interesting w will you w <Gr> when when will you have written and everything up </Gr> is this a very long term project or r r will it is </26CT11>

<INT> it's ah er it's probably going to be a while before the whole the whole thesis is done but I'm hoping </INT>

<26CT11> yeah </26CT11>

<INT> to er write up and and share the results of the experiment erm quite soon so I I'm very happy to share them if </INT>

<26CT11> oh that that would be lovely yeah that would be really interesting thank you </26CT11>

<INT> yeah yeah happy to yeah I'll make a note if that's alright </INT>

<26CT11> yeah </26CT11>

<INT> that will involve erm holding onto your email address for a little bit if that's OK </INT>

<26CT11> that's fine <Lh> </Lh> </26CT11>

<INT> erm so results is there anything that we haven't talked about about the experiment that you'd like to talk about </INT>

<26CT11> no I don't think so well I mean if you're able to say I'm interested to know why why what the th different tasks meant mm but it </26CT11>

<INT> sure yeah </INT>

<26CT11> I mean or what no I not what they meant what what they're what they're used what you're looking at </26CT11>

<INT> sure so erm the the at its core that the task is erm a test of there's there's erm there's an expression that I heard someone say once that erm proofreading is editing in a broom cupboard </INT>

<26CT11> <Lh> </Lh> </26CT11>

<INT> and er this task is creativity in a broom cupboard in the same way so the the task is really measuring erm a very specific type of c creative judgement what kind of metaphor you create erm with very strict linguistic parameters so you only have certain types of adjectives you only have certain types of nouns erm they appear in certain orders for certain people in the experiment different orders for different people erm so erm it's it's really a creativity sort of measure but there are no right answers it's more about seeing if there are differences between groups of people </INT>

<26CT11> mm </26CT11>

<INT> erm in the judgments that they make because one of the things that seems to be coming out of the erm discussions with people afterwards in some groups is that people in certain groups seem to be everybody seems to be coming up with their own rulesets for how to navigate the task erm but they they have the the rulesets are starting to look specific to groups </INT>

<26CT11> mm </26CT11>

<INT> which is what we were looking to see if that was the case erm but w the exact nature of those what different groups do is something that's still we're still looking at in the data but it's erm and the the cognitive assessment is just for matching so that's not anything that we're actually analysing we're just making sure that if we're comparing the experimental data from someone in the schizophrenia group that we're matching erm someone in the schizophrenia group who performed similarly on the assessments </INT>

<26CT11> oh oh right that's interesting yeah </26CT11>

<INT> just so that we can rule out the the role of sort of linguistic ability erm </INT>

<26CT11> yeah yeah yeah </26CT11>

<INT> and yeah and and the interview is erm looking at erm not only the content of what we're talking about but also the the grammatical structure of natural speech </INT>

<26CT11> mm </26CT11>

<INT> and comparing differences across groups there so that there are three very different er elements being being looked at and it will all come together as a </INT>

<26CT11> yeah </26CT11>

<INT> erm but yeah yeah </INT>

<26CT11> fascinating great well thank you that was fun <Lh>
</Lh> </26CT11>

<INT> oh thank you erm I'll stop the recording now and then if erm I'll just let you know what happens next with the the debrief sheet and things like that </INT>

<INT> just started the recording and there's only er em one formal question for the interview which was how was the experiment </INT>

<23OV14> <Lh> </Lh> erm it was it was quite interesting erm yeah er like like the last the last one was really interesting cos it was I don't know if there was sort of some a association with how we like can mm have different meanings for a word which can either be sort of <Gr> conceptual and study abstract </Gr> or sort of kind of a descriptive manner erm and even though some of the words I was like I d d I don't really know where they fit but somehow I could sort of relate it to maybe an attitude or opinion more so than you know it a word that you'd use to describe something concrete I suppose but I was sort of mm <Gr> leaning more to using them to describe something </Gr> quite abstract erm it was quite interesting and I think yeah in terms of sort of like er creative writing I could see how that would sort of create a lot of diversity within <Lh> </Lh> you know how they can use words and stuff I suppose sort of add richness to a text which might not seem logically sort of doesn't make sense logically but you can yeah it sort of fits somehow </23OV14>

<INT> wow well you've er you've tapped into a lot of what's going on in the experiment which is good erm and it's really nice to hear as well did you feel like w and also would it would it help to n erm to have a brief description of what the experiment what its mechanism is and what it's sort of really measuring erm </INT>

<23OV14> yeah I'd be really interested </23OV14>

<INT> so the erm the words at the top are erm er two er er paired adjectives and because they come from different senses there erm they th create a sort of s a synaesthetic effect so they muddle up the senses and erm like you pointed out erm your choices are between concrete and abstract things and the experiment's really interested in whether when you muddle up specific senses does that direct whether you prefer er to mm bind them with concrete or or abstract things erm so in the in the very first in your very first response to the experiment you were like yeah it felt like and then proceeded to describe exactly what it's doing which is really really interesting erm when you were moving through did you feel like you were doing something creative </INT>

<23OV14> yeah I think in the back of my head I was like <Sh> </Sh> like I might have associated like smelly with like a consideration and I mean I I was trying to sort of go through it as well so I didn't sort of dwell too much on it but I was kind of like oh in what sort of context would someone be <Lh> </Lh> inconsiderate but in a smelly and erm </23OV14>

<INT> <Lh> </Lh> yeah </INT>

<23OV14> in a smelly and rough way <Lh> </Lh> like </23OV14>

<INT> yeah </INT>

<23OV14> like like it's sort of yeah but like as an attitude as well you can sort of visualize it as an as an attitude like when you say someone's like smelly or rough they're just sort of not

easy to get along with and quite erm I dunno there's a lot of friction in the dynamics or something like that </23OV14>

<INT> yeah </INT>

<23OV14> and it was also interesting erm I I don't know if it's true but I thought sort of some of them erm some of the pairings came up again I don't know if it was all exactly the same but some similar ones came up and I think I think at first it w it was very confusing like you said because it's the adjectives well they don't really fit either the concrete or the abstract thing sort of exactly so I think at first it was sort of like some kind of blind association but at the more I did it the more I was like oh yeah maybe someone could be smelly and rough in their attitude or something like that so it I think I did get more and more as I went along </23OV14>

<INT> oh I see like so almost like the erm the process of going through it made the the choices more comfortable </INT>

<23OV14> yeah I think erm cos I think everything yeah I think I I was just like I was sort of very concrete in the way I was looking at the words at first but the more they came up like the further along in erm I just my just found myself sort of just being like oh yeah just it you know it doesn't have to be exactly as you know it just sort of go with what seems to flow and then like towards the end it was when I started to make those associations of someone being you know smelly and rough er or aromatic in their attitude h er type of thing like that that came along sort of further down the line I think </23OV14>

<INT> wow and </INT>

<23OV14> yeah </23OV14>

<INT> was er did you feel like er well w erm of the four things that were on the screen at any one time erm so the two items at the top and the choices below erm did any of them seem did you feel like any of them were were influencing your decisions more than the others or was it all the same </INT>

<23OV14> how do you mean like </23OV14>

<INT> did you f </INT>

<23OV14> if that word came up then I'd more associate it with mm </23OV14>

<INT> like if erm when you so with each individual item erm did you feel like all four things on the screen had an equal effect on your decision or more so the things at the top or more so the things at the bottom or </INT>

<23OV14> erm I guess the the things at the top just cos they were sort of adjectives erm I think eventually like the opinion and the attitude and the consideration they sort of merged into sort of just the abstract part of it erm so unless there was an adjective that I could sort of p really associate with the you know the edge or the boomerang which there wasn't much I think erm I did sort of veer towards the er erm the abstract forms I think <DT> I don't know if that makes any sense </DT> <Lh> </Lh> </23OV14>

<INT> yeah yeah and </INT>

<23OV14> yeah </23OV14>

<INT> erm why do you think that was f for you I mean </INT>

<23OV14> erm I I think maybe because I think I was trying to create that like m that more towards the end I w I think maybe I was trying to focus more on the feeling that the adjectives sort of gave towards the either the abstract thing or the concrete thing erm and yeah like it doesn't matter whether it was an attitude or an opinion like if it's sort of if the adjectives kind of helped maybe less consciously like helped me sort of visualize maybe a person or situation the feel of it I think maybe I did incline to do that whereas with the concrete thing I just I think I just looked at the adjectives very briefly and just I was just like OK there's nothing that's hugely descriptive in terms of you know like if it was like fragrant and aromatic or something like that it was just it was really hard to make that something concrete for me erm and so yeah and that would sort of give me like a feeling of sort of like a very nice conversation or a nice relationship and then y er im immediately that would become a <Gr> more of a abstract thing for me </Gr> I think </23OV14>

<INT> I see </INT>

<23OV14> I think I'd yeah maybe I just kind of erm yeah if I couldn't immediately fit into something that was concrete I'd just yeah no matter kind of what mm w p what the two items at the bottom were it was just whether it was s if it wasn't something concrete then <Gr> I'd just consider it to be something abstract as the second part </Gr> </23OV14>

<INT> that's mm f that's really interesting so have I understood right that erm as you moved through it became more of a erm more like saying OK these these adjectives erm I'm going to choose say consideration or attitude not because so much because of what consideration and attitude bring but because it er these adjectives speak more to an abstract concept </INT>

<23OV14> yeah yeah yeah </23OV14>

<INT> that's really interesting </INT>

<23OV14> yeah and I think as well there was there was a lot more like I guess just because it's abstract in nature means that you could sort of associate it with with lots of different things like you can sort of twist meanings or things to make them sort of fit within the abstract so aromatic doesn't really mean anything when you use it an as an opinion but then you could sort of associate it with someone having very I don't know nice like opinions or considerations and stuff whereas it's quite hard to fit into a boomerang <Lh> </Lh> </23OV14>

<INT> yeah yeah erm </INT>

<23OV14> <Lh> </Lh> </23OV14>

<INT> yeah that's really interesting and a lot of people have said boomerang is a is is er a particularly affecting item in the set like lot lots of people have said like I just couldn't get on with boomerang couldn't do anything with boomerang which is really interesting </INT>

<23OV14> yeah </23OV14>

<INT> because it's it's erm all three of the concrete items were were chosen through the same process but it's really interesting that there's there's a unique effect happening around boomerang that erm we'll have to look at the data to try and understand but that's ah another interesting thing </INT>

<23OV14> no I do I do agree with that comment actually it it was I th I think I probably chose boomerang out of all the items I probably chose boomerang like associated anything with boomerang a lot less than yeah </23OV14>

<INT> I wonder why that is </INT>

<23OV14> I think maybe if it was if there was like a sm if there was something similar to s <InAu> </InAu> adjective I might have paired it but yeah I couldn't imagine I can mm imagine like a smooth or rough edge like it like I think for those items it was it was a bit more visual erm as opposed to sort of creative <WS> abstracting </WS> and <InAu> </InAu> in any way that sort of didn't fit I suppose I think in terms of like <Lh> </Lh> I don't know if I was <Gr> if it was a child cartoon or something </Gr> I might be able to have like a perfumed boomerang or something like that but it wasn't there was it was less realistic to me than imagining someone having like an aromatic per s like opinion about something </23OV14>

<INT> yeah that's no that's really interesting and erm because when you erm make a choice in the experiment the two adjectives at the top erm er which function as a sort of erm a a prime in the experiment so they s they sort of like steer you in the direction of thinking about these these different senses but then when you make your choice the complete construction becomes a metaphor either one way or the other erm and did you feel like you were creating metaphors or creating like a er er like erm like a poetic unit or something like a like that </INT>

<23OV14> yeah yeah like yeah I think so especially with the erm I think especially with the sort of more abstract like the opinion erm <DT> like I said </DT> in in the back of my head I could sort of like er I was very briefly sort of imagining a conversation which was sort of rough and smelly <Gr> or like fragrant and aromatic type of </Gr> well like a person who was very considerate in a fragrant <Lh> </Lh> kind of way erm and like yeah so I could sort of see that in the back of my head and like I think I don't know if I was trying to justify something that wasn't that I wasn't used to like an association that I wasn't used to but I could sort of build something and I could feel you know there might be a way that you know a conversation could be described as such even though it's not what you might usually see so I guess in that sense it is sort of creative in that way </23OV14>

<INT> brilliant thank you so much is there anything about anything we've we've done today that we haven't talked about that you would like to talk about </INT>

<23OV14> erm I'm interested in how the first two exercises linked <Lh> </Lh> </23OV14>

<INT> oh sure so erm </INT>

<23OV14> yeah </23OV14>

<INT> the erm so they they're all subtasks they come from er an assessment called the cognitive linguistic quick test it's used erm as a screening test to identify erm it's designed er to be used erm with with everyone but also it has particular tasks that are helpful erm for indicating sort of whether someone might have a language difficulty erm and erm because we're doing research with erm people who have a diagnosis of schizophrenia and people who don't erm and some people who have a diagnosis of sc schizophrenia can sometimes develop language difficulties in relation to schizophrenia erm we use these erm language cognition subtests to give everybody who takes part erm a score on these and then we just make sure that when we're comparing the data from people across groups we're mm p comparing data from person ing in one group with person in another group who have the same level on these </INT>

<23OV14> mm </23OV14>

<INT> subtasks just to rule out any difference in language ability erm </INT>

<23OV14> mm </23OV14>

<INT> just to make sure that the comparisons that we make are actually because of the test and not because of differences erm </INT>

<23OV14> yeah </23OV14>

<INT> and erm but that's er that's the only reason we do it if you like we can talk about sort of erm if if you have any questions about the yeah any any aspect of it we can talk about it if you'd like to </INT>

<23OV14> yeah erm I dunno cos you you said everybody always does better than they think they do what what what's so do do people always think that they don't find as many M words </23OV14>

<INT> yeah yeah </INT>

<23OV14> or animals they </23OV14>

<INT> yeah so people </INT>

<23OV14> what's the average <Lh> </Lh> </23OV14>

<INT> people tend to walk away after coming up with like thirty words and they go ah that w er that was that was terrible and I'm I'm really bad at it but thirty is actually erm which incidentally is what erm y er r you gave thirty responses for animals and erm I think it's because th erm people people always produce less M words because it's a completely different cognitive process erm </INT>

<23OV14> mm </23OV14>

<INT> but you produced twenty-one M words and erm the score that you got for that one was the top score erm they're th </INT>

<23OV14> oh </23OV14>

<INT> the overall levels are between one and nine and you got a nine erm so that's what I mean like people think <Sh> </Sh> oh th b they think because it's difficult </INT>

<23OV14> <Lh> </Lh> yeah </23OV14>

<INT> they were like <Sh> </Sh> oh I must have done you know erm but no no that just means that what what we'll do with your data is that we will compare your data with someone who has a diagnosis of schizophrenia but whose language is pretty much preserved so erm language ability is pretty much </INT>

<23OV14> so don't do those two measures do those two measures so those two measures are a measure of language ability </23OV14>

<INT> they're really only measures of performance on those particular tasks because the actual assessment </INT>

<23OV14> OK </23OV14>

<INT> is done as a battery of ten assessments and erm </INT>

<23OV14> mhm </23OV14>

<INT> because we don't do all ten we couldn't actually generate erm an accurate measure of language cognition erm so these really only allow for erm a numerical value in in the specific context of that specific task which is enough for matching </INT>

<23OV14> mm </23OV14>

<INT> but it wouldn't be enough for for doing an analysis on a er w a er a </INT>

<23OV14> like linguistics type of thing </23OV14>

<INT> yeah any deeper level than than just matching their erm </INT>

<23OV14> so with sc schizophrenia though does it affect their like ah ah ah I h I have no idea like I'm not I haven't read up about schizophrenia or anything but sort of is there to some extent does it affect sort of their language or I assume that's why you're doing it particularly around creative writing </23OV14>

<INT> yeah so erm it's a v it's a very interesting and unique erm set of symptoms in schizophrenia you see very similar symptoms in erm other clinical pictures erm and s psychosis isn't you know psychosis pops up in a few other mm p places as well and it can it can come from like erm some people can get Lyme disease and and have a psychosis to do with that as well and so </INT>

<23OV14> mm </23OV14>

<INT> the psychosis spectrum is is really interesting and kind of separate but also there are overlaps er but in schizophrenia erm there are erm there's a current the current thinking around the symptoms is that you have sort of two sets of symptoms in

schizophrenia so positive symptoms which kind of add things like er y w hearing things that might not necessarily be there so it adds the perception of hearing something and then you've got the negative symptoms which kind of take stuff away erm and so people tend to say less if they have lots of negative symptoms </INT>

<23OV14> mm </23OV14>

<INT> and erm they tend to their movement tends to become less pronounced and that sort of thing so and in the negative symptom area language can be affected so things like words per sentence can go down and erm and also sort of vocabulary can shrink a bit and and and lots of other things can happen erm and so </INT>

<23OV14> so are you sort of expecting like erm so to do with th sort of the last test that we did are you sort of expect that I dunno that they find it harder to sort of make an association or what kind of things are you looking out for </23OV14>

<INT> my hope is that they will actually find it easier erm because </INT>

<23OV14> ah </23OV14>

<INT> the argument is erm or the the the idea I'm putting forward is erm there's something called formal thought disorder which we don't really know very much about and it's currently described in very vague terms because it's understood vaguely erm but one of the things about formal thought disorder is that it's been likened to erm ah mm poetic language so some people who erm experience formal thought disorder not everybody with schizophrenia with a diagnosis of schizophrenia experiences formal thought disorder but when people do their language becomes very abstract </INT>

<23OV14> OK </23OV14>

<INT> and so I'm hoping that what we'll see is that people in the schizophrenia group will show erm a lot more comfort with going both ways </INT>

<23OV14> OK </23OV14>

<INT> whereas erm er c because that would offer a potential explanation for why erm why the language does go abstract er d er or does take an abstract form because erm the experiment is based on erm </INT>

<23OV14> oh just bear with me a second <Noi=speaking in another language> </Noi> sorry </23OV14>

<INT> no no it's OK erm the the experiment is based or the items are constructed based on a few things we know about erm cognition and adjectives so th the idea is that if we see group differences on this experiment then we have a p erm we can start asking some questions about maybe whether these cognitive erm principles around adjectives might be involved in formal thought disorder er it's all very sort of tentative and exploratory and erm but it might be you know a step toward er explaining a piece of how language changes in in schizophrenia so </INT>

<23OV14> mm </23OV14>

<INT> fingers crossed like </INT>

<23OV14> <Lh> </Lh> yeah all the best with it have you done have you sort of reaching your sample size </23OV14>

<INT> erm </INT>

<23OV14> or is it still a way there </23OV14>

<INT> oh sorry the connection the connection skipped a bit but </INT>

<23OV14> oh sorry I was just asking how sort of are you sort of getting close to reaching the sample size you want or </23OV14>

<INT> yeah thank yeah thankfully erm </INT>

<23OV14> <Lh> </Lh> </23OV14>

<INT> due due to the ability to do it remotely erm s because of you know everything that's happened lately erm but er the Superlab the program that the experiment was designed in erm the Superlab remote thing wasn't available until June of this year so I only found out in June </INT>

<23OV14> oh wow </23OV14>

<INT> that we could do it outside of the lab so erm that's that's been helpful </INT>

<23OV14> yeah yeah where are you based like you're oh Manchester yeah or I don't know if you are </23OV14>

<INT> I'm studying erm with Manchester but I'm based in <An> </An> in the southwest <Sh> </Sh> yeah </INT>

<23OV14> oh nice <Lh> </Lh> I hope you've got better weather there then <Lh> </Lh> </23OV14>

<INT> oh yeah it's alright it's OK it's a bit cold but the sun's still out and er </INT>

<23OV14> yeah <Lh> </Lh> that's great <Lh> </Lh> it's always good yeah the midlands is a bit grim but </23OV14>

<INT> oh is it what's it what's it like at the moment </INT>

<23OV14> ah it's just grim and cloudy but no rain so I shouldn't complain really <Lh> </Lh> </23OV14>

<INT> ah well erm yeah n I th y er thank you so much </INT>

<23OV14> yeah </23OV14>

<INT> is th is there anything else that you'd like to to cover or or talk about </INT>

<23OV14> erm not that I can think of I mean yeah it was really interesting and yeah thanks for letting me take part thank </23OV14>

<INT> oh well no thank you erm I'll just stop the recording and
then I'll I'll let you know erm what happens next and stuff
</INT>

<INT> <Mis> </Mis> </INT>

<23EB14> mhm yeah sometimes <Lh> </Lh> I think

<INT> <Mis> </Mis> </INT>

<23EB14> erm so I'm quite an avid reader erm I read mm around all different subjects so sort of fiction nonfiction medical like all different kinds of books so I try and sort of like you know obviously <TC> take in take on </TC> board the language that I've sort of learnt and that and erm and in most situations try and use it in everyday life you know just sort of use words that are you know <Lh> </Lh> a bit more complicated perhaps and a bit more creative yeah mm <Lh> </Lh> yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> yeah I think it's just erm er b because the language is such a beautiful thing and obviously you know we're er we have we have the ability to use different phrases and we can be quite descriptive in our language as well I think modern day language we tend to s <TC> it just sort of </TC> go straight to the point we don't really sort of you know er <WS> confabulate </WS> anything so it's quite nice to be able to use a little bit of descriptive language when we're when we're talking to each other and that's sort of gone out the of general conversation now so it's quite nice to be able to you know be a little bit creative and descriptive in your language </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> yeah it's difficult really it depends on who you're talking to if you're if you're talking to other people that are sort of like again avid readers or if they're if they're quite well read then you tend to find that they'll sort of follow along and your your language sort of bounces off each other but if you're talking to people that are you know they're not that well read or they're not really into I dunno they're not really into reading or or creative writing or whatever er y yeah a lot of the the word seems sort of lost on them or they kind of give you a bit of a <Lh> </Lh> a bit of a lost look there as if they don't really know what you're talking about or they just kind of nod along as if they sort of understood the word but I don't <Lh> </Lh> think they really knew what the word was that you were saying yeah <Lh> </Lh> like </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> erm yeah they sort of let it ride <TC> really they think it's that </TC> it may be on their path it's just that they don't want to come across it and they're like they don't know the word or that you know they seem unintelligent or or you know feel that they're not you know not well read but they just sort of yeah they kind of just nod along and then yeah they don't really sort of say anything really whereas I'd rather them say like oh what does that mean or <Lh> </Lh> so you know you can kind of talk about it further really yeah yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> <Lh> </Lh> I get that </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> mm well I s I mean the thing is is I suppose if you've read something and then you've you've kind of seen a word that maybe you've not used in a while you think mm yeah that's quite a good word and <TC> then you I think you </TC> tend to sort of in your conversation the next few times <Gr> you'd maybe sort throw that in there </Gr> because it's something you think that's <TC> quite like it's a really </TC> enriching word you know you just sort of throw it in there or yeah erm I would yeah possibly like if you if you you're searching for a word in conversation that you want to describe something I'd maybe like just grab my own you know descriptive words but yeah er I suppose if you're reading something particularly if it's around a certain subject or you know you've read like a certain type of book then you'd maybe start using that word in in general conversations because you like it and you've not heard it in a while you know <Lh> </Lh> yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> erm yeah because er y I suppose if you're talking to people about a certain subject and there's like er just a I feel like a bog standard normal word that you could use or like a more descriptive word that you could use that's a bit more creative I think yeah it just seems think it's nice to sort of embellish the conversation a little bit with that with that creative word you know it just makes the the whole conversation a little bit richer yeah mhm </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> yeah mm mhm it's sort of like giving them an alternative to using <Gr> I suppose of like you say </Gr> we sort of have this core I don't know we like very ap <Gr> we have these core thing of words </Gr> that we just use sort of use day in day out and I yeah I suppose the conversation becomes quite monotonous if you're kind of using those same words all the time but if you can sort of throw in a few different words I don't know maybe people don't realize it at the time but if they absorb that and then perhaps they might go home and they might be talking to their other half and then throw a word in there and they'd be like ooh that's different <Lh> </Lh> you know yeah yeah it's just sort of enriching enriching a conversation and hopefully like sort of paying it forward a little bit maybe as well so we can we can you know er benefit from from the different different types of conversation mm mhm </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> erm yeah possibly I mean I to be honest obviously with COVID at the minute and you know with none of us are going anywhere are we <Lh> </Lh> that's the thing for me it's really more just like sort of talking to people in work so you know er oh I do a lot of night shifts that's that's like my thing as a <InAu> </InAu> do night shifts we tend to find that obviously on the night shift you do have a lot of time <Lh> </Lh> to fill which obviously would be like <InAu> </InAu> some conversations can become quite banal you know it's just sort of like the day to day thing and and it's nice to just get onto a bit of a topic that's a bit more you know abnormal maybe you know something that's not so run of the mill and it's nice to see

it like I say <TC> if you get talk to </TC> somebody that's like a bit of a an avid reader or if they're you know they're interested in different topics it's nice to you know have a bit of a different conversation rather than just like day to day m mundane <Lh> </Lh> stuff you know </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> mm yeah possibly all three I mean erm erm I w <Lh> </Lh> when I was little I was always into like sort of creative writing like at school or erm I was much more into literature than I was th erm numbers but I always think they ah you're either like a words or a numbers type of person so I've always been into like sort of like you know when I was little writing stories or erm you know just I forget reading so for me it's kind of yeah it's mm probably a way of expressing myself that I've always been a little bit more I d I quite like to <WS> flourish the conversation </WS> with a few different words w yeah maybe it's that er it's a way of me expressing myself just a little bit you know differently than everybody else I would say a lot of the time now I think maybe like you sort of lapse into like textual speak or erm you know we use like sort of you know a lot of shortened words because we just can't be bothered <Lh> </Lh> basically so it's really interesting yeah just like sort of <WS> flourish the conversation </WS> with something that's a little bit you know a little bit more descriptive like I say and then yeah just er I wouldn't say it's even about teaching people or I don't know if I'm erm trying to get other people to use different terminology it's just to it's just to liven up the conversation a little bit just but not yeah not just this like text speak all the time or you do you do find a lot of people tend to be like quite erm you know monotone just like sort of one word answers or you know if that's the word when you're on a shift then you sort of talking to somebody you literally get like one word answers back or just yeah and then mm you know it just makes makes makes the night go a lot slower but if you're able to sort of have a a full on you know backwards and forwards conversation with a little bit more descriptive language then it just makes the night a bit more interesting then mm <Lh> </Lh> </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> yeah yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> yeah the main issues are on the ability to sort of you know be able to like construct a full sentence as opposed just yeah alright then see you later or you know <Lh> </Lh> it's just like we w I think like the the quickest route possible or the easiest route possible sometimes especially at work e-mailing or if we're texting or we just sort of wanna get get straight to the point and you know we don't mm we don't really do anything else other than <Lh> </Lh> that straight to the point kind of thing you know yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> mm yeah I think so yeah cos er as I say I've always been into literature and that you know in school like really enjoyed you know English language and literature and I think yeah we've sort of like er well not everybody obviously but I

think w you know modern day we've kind of like lost that ability to enjoy language just for the sake of language you know just to enjoy words I tend to find if I'm reading a book and I come across the word that looks like mm I dunno what that word means I've actually got like erm a book with a like a list of words that like I don't know what they mean so I like look them up and then I've got like this little sort of list of you know words but they're just like g er amazing words you know you just don't come across in everyday language you know <Lh> </Lh> yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> mm erm let me just I've I know I've got them in a little er in a little folder wait a sec <Lh> </Lh> er yeah I always I was a bit sad just sort of writing these down but then you kind of like this it's such a you know the English language is so rich and we just like you know <Gr> there's a word that we come across and we don't really we don't really do anything with them </Gr> so let's have a look er mm <Lh> </Lh> so yeah erm like on this page I've got erm accidie A double C I D I E which means erm apathy spiritual or mental sloth <Lh> </Lh> yeah and then there's like a weird yeah it's like really bizarre and then erm er there's another word phocine P H O C I N E which means relating to or affecting to the true earless seals <Lh> </Lh> so randomly just relating to seals I don't actually know where I got that from that book and then nictating which means to blink so that's like another word for blink <Lh> </Lh> is to nictate which is just like such a random <Lh> </Lh> word and yeah oh I've got the the first one was ah I dunno <TC> I'm not dunno whether </TC> I'm pronouncing it right it's accidie A double C I D I E and that was spiritual or mental sloth or apathy <Lh> </Lh> yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> mm yeah possibly or e even I dunno yeah Greek or French maybe I'm not sure but erm yeah <Lh> </Lh> yeah and there's just yeah there's pages and pages that go on like that there's erm random yeah random ones er apotropaic means usual ritual or other magical means including charms or incantations to avert evil or bad luck <Lh> </Lh> mm </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> erm only I'd I'd say sort of only in the past couple of years to be honest cos I think erm at school obviously you've sort of like you're you're not really reading for pleasure are you you're kind of like <Lh> </Lh> forced to read what the curriculum kind of tells you and then I've always been like a you know read for pleasure but I think just it's only really appealed to me in the last couple of years just to do that to sort of make a little you know make a list of of yeah of just words that sort of just sound quite nice and yeah and they just appeal to me so I've just kept a little a little dictionary of them yeah but <Lh> </Lh> mm yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> to be honest I've not done it for a while I mean er I d I did try a little while ago but I kind of got out of the habit I think in school it was just kind of like ah I dunno just would get

an idea that just popped into my head and then just kind of wrote around it really erm but it yeah it's something that I've not done for a good I I keep meaning to get back to it and I know that they always sort of say like write about something that you know so it's kind of just trying to you know <Lh> </Lh> pick a subject that's yeah that that would be er that something I would er I'd know about and then try writing about it but I think it's harder when obviously when you're older and you're working and you've got other sort of commitments going on it is quite difficult to sort of just sit down and put things to paper isn't it whereas I think when you're little it's just like a more of a spontaneous you know an idea pops in your head and you think ooh <Lh> </Lh> and you just start writing about it you know yeah yeah whereas er <InAu> </InAu> me now I'd maybe overthink it a bit too much if I was gonna start like a story or like write something I'd probably maybe think about it a little bit too much maybe and then it would almost I dunno maybe take the pleasure out of it more so than when I was younger if you know what I mean yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> possibly yeah because I think when you're little you just kind of like you just run with it don't you sort of like write something down sounds alright just carry on with that you know just sort of sort of like tell the story but yeah I think possibly as an adult if you were kind of like you know creative writing you would always be like self editing and thinking that doesn't sound right or that doesn't sound grammatically correct or you know trying to t yeah <Gr> self correct before you sort of finished the paragraph </Gr> maybe takes that spontaneity out of the out of the storytelling I suppose which I suppose is the thing that <InAu> </InAu> you know if you're writing isn't it you know <Lh> </Lh> yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> mm yeah I don't know really alm er er I suppose it would be the way that you'd erm you'd possibly have to just write the the story and you kind of think it and then at the end go back and just kind of like edit it you know and then just sort of look for any any mistakes or something that doesn't sound right maybe but yeah probably never got that that far into it <Lh> </Lh> these days of you know sort of got to the point of writing enough to you know sort of get a whole story together or you know or then <InAu> </InAu> and edit at the end you know <Lh> </Lh> yeah <Lh> </Lh> </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> I would yeah I would've liked to I mean I've sort of had a few ideas over the years it sort of pops into me head and you're like write the idea down but then it's kind of like then it goes out me head again and then I forget all about it but yeah and I suppose it's one of those things you think oh when I've got the time or when I can sit down and you know have a few weeks just <Lh> </Lh> to write it but I don't I don't think it's ever gonna happen it's just one of those things if you're gonna do it you kinda have to just jump in and get going I suppose mm <Lh> </Lh> mm yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> erm to be honest ab a lot of what I read these days is actually nonfiction so it tends to sort of like you know yeah like sort of erm like it felt like it like say medical books or all different stuff really it's like all different subjects but it tends to be non fiction I do like short stories but I tend to find that some are av a I've read a few and there'd be like a few collections that have sort of left me a bit disappointed so I'm kind of like ooh I tend to sort of <Lh> </Lh> <InAu> </InAu> from the short stories erm and poetry yeah sort of in and out of it really it's I w er I wouldn't say it's my preference to be honest poetry but erm yeah I do like the odd the odd poem <Lh> </Lh> here and there yeah erm yeah yeah maybe nonfiction's sort of like er m my go to thing really yeah <Lh> </Lh> yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> a bit of everything absolutely everything it doesn't really matter like an stuff about nature animals psychology the medical stuff there's just like like trying to look at the books now there's like yeah just bits of everything really yeah any anything that just like sort of catches my eye and then I tend to I go on like erm there's like a a website I dunno if you've heard of it Goodreads it's like sort erm a review website yeah and then you can kind of you know if you review a book on there it'll kind of say like oh <Gr> this is kind of like it a referral thing </Gr> if you like this book you might be into this kind of b er er you know people'll name <Gr> some of the books that they've read similar </Gr> so you sort of like end up with a little s yeah collection of stuff that you might wanna read so yeah just tends to be a bit of everything bit of any sort of subject really <Lh> </Lh> yeah nothing's off the table <Lh> </Lh> mm mhm </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> mm yeah yeah I think it depends on the writer like the author and it depends on the subject cos I mean for some of the subjects obviously the author it's th they're quite dry because they're quite often they're not sort of you know they're not looking at the layperson to read it it's more of an academic text possibly so that they tend to be a little bit more dry and language possibly and maybe a little bit harder to get through but yeah you do you do find that there's yeah you know that there's some subjects that w there'll be non fiction books but they're still you know there's still a flourish in the writing and there's still like their descriptive elements are really you know they're they're quite pretty <Lh> </Lh> yeah <Lh> </Lh> yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> mhm yeah I think to be honest that probably makes sense but like teaching tools well like you just said you know if you sort of if you use a descriptive element about something then it you do find it you know a little bit easier to sort of remember facts and I know it er you know lots of places use like acronyms don't they for like remembering certain things or yeah erm erm I can't think of any now <Lh> </Lh> but you know how you sort of like you know never eat shredded wheat for like North East South West kind of thing you know that's the sort of thing we were taught in school you know erm mm but yeah er you know there's th there I think there's been like sort

of a few books where you know there's been a bit of a crossover between a fictional author or like just a a regular author kind of writing with the nonfiction type elements so like obv like the likes of Bill Bryson for example I think he's he's written a book about the body you know sort of more like the body erm an occupant's guide to the body and his is kind of like he goes through this system and it's more like erm it's more like obviously like a journey like a nature journey through the human body but because he makes it humorous I suppose it would be you know if you were using it as a teaching tool it would be a lot easier for people to remember stuff because it's like there's a bit of humour in there and there's like you know sort of like he makes it you know quite interesting rather than just like you say this is the femur this is the heart or you know there's a always a little story around <InAu> </InAu> <Gr> language make it more memorable I suppose </Gr> but <InAu> </InAu> and yeah yeah <Lh> </Lh> </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> mm erm what <Sh> </Sh> I there's I it just I'm always like I feel sad for people that sort of like have no creativity if you know what I mean like my my husband's an artist so like his creativity is more <InAu> </InAu> like a visual thing whereas <WS> man my intensity </WS> were in words but <Ch> </Ch> like I always find it funny if you're talking to somebody about like I dunno it sounds really random but like dreams and they say like I don't really have any dreams at all and you might have li I like have particularly like vivid dreams or I'll have like this so like sort of like a film reel or whatever and I always just think well like if you er I suppose if there's a complete lack of creativity in life whatever aspect whether it's dreams or painting or reading or you know arts and crafts I just think like it's a bit of a shame if people have got you know no creativity in their life at all I just think it's such a it's such an enriching thing to have you know and I just think it's sad if people haven't got it <Lh> </Lh> yeah yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> yeah yeah I'd say so and you know especially again if you're sort of like describing things to people I think particularly yeah sensory language is a is a is a big thing you know erm I think like when p if like I dunno people sort of describe something that they've eaten or that they've seen or what have you it's like again you know p people tend to stick to something that's like quite like an easy adjective or just like a very plain adjective where it's quite nice to sort of like get that fl if somebody can describe to you as much as possible what their sensory perception of it was it's makes it so much more you know you can you can relate to that yourself can't you you know mm er rather than just saying it was sweet or it was sour you know they you can give it like er a bigger description you know and just yeah y you get a better sense of what it was that they were experiencing yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> erm no not that I can think of no but I was gonna say you know the er the other part of your erm the research that you're doing n is it to were you looking at the link between schizophrenia and creative writing as in erm I was just cos I

know obviously I've been reading about that I actually read a book about schizophrenia and it was sort of erm they were they were relating or thinking about a word salad or the glossolalia which I was wondering whether that was part of the of the sort of the you know the research that we're doing whether there was that sort of word association or you know a a link between the two <Lh> </Lh> yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> mm erm I I find it fascinating to be honest and erm as I say I'm I'm a nurse so when I did my nurse training I actually came across it with a patient that erm that was like was very sort of florid erm schizophrenic and had this like word salad this stuff and I was absolutely I was fascinated it a th er <Lh> </Lh> I I was sort of like fearful <Lh> </Lh> and fascinated at the same time it was probably one of the most like bizarre experiences I've come across but it w at the same time I actually th I actually thought to myself what's going on in the brain for that sort of association to be taking place between those words and in such like sort of quick fire succession as well it was like just sort of firing off words sort of one after the other and it I actually found it really fascinating but yeah I've I've I've always that's sort of always baffled me really to be honest how the brain kind of like makes that association and then yeah w er and I remember thinking to myself that like that could be <WS> cut to </WS> put to good use <Lh> </Lh> in some way I suppose you know these sort of you know the patient involved was coming up with some absolutely mad words you know that were just yeah some of them were like proper words some of them were completely made up words and I just I yeah I found it really fascinating to be honest but er that's why I'm sort of interested in research like this it's just I I actually I find it so fascinating you know with th h <Gr> what's the human brain's capable of </Gr> and sort of how that fine line between you know erm sort of well madness in inverted commas you know and creativity and you know there's been a lot of like sort of you know history of that hasn't you know sort of like that fine line between you know sort of you know madness and illness I suppose yeah yeah I do find it fascinating <Lh> </Lh> yeah but </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> mm yeah I mean as I say it th erm as a I'm I'm erm a trained nurse but just in adult so general adult erm er nursing and obviously you have do as part of your nurse training you have to actually do like a placement either in erm learning disabilities or mental health so this is like back this is probably like 2000 2001 erm and I was only like sort of in my twenties at the time so I'd never actually come across any sort of mental illness or mental health issues at all erm and then obviously you're just sort of like put into this setting where you're you <Lh> </Lh> know you don't really know much about you've only sort of read you know read the basics around that erm around the subject and yeah I just found it really fascinating they would erm the patients would be s be able to see a psychiatrist once a week and this particular patient it was it was quite sad for him and obviously it's it's an anonymous thing you know that erm but this particular patient w in his florid psychosis had thought he could fly erm and thought he had the ability he was like a superhero so he'd jumped out through the window <Lh> </Lh>

and he'd actually like <An> </An> <An> </An> <An> </An> <An> </An> and it was just this sad story er that I found I was like oh my God you know you just it like beyond your comprehension of what you can sort of think wow <Lh> </Lh> and then obviously when he used to go into like these the psychiatry meetings every week I don't think he actually had any idea of what the meeting was about really so he would just he would basically pick up on a word that the psychiatrist said and that would be it that would be his his you know his cue <TC> to just he would just </TC> go on for about twenty minutes just one word to another to another to another and they'd they'd sound similar but there would be no relation between the words whatsoever the meaning or the structure there was no structure to the sentence <Lh> </Lh> there were no sort of paragraphs you know it was just I think he thought that he was making sense but I we would just kind of sit there like kind of you know open-mouthed just like wow and it yeah for me it was just it was just such erm it was like a teaching tool in one way where I just kind of thought like how I did I dunno how you'd manage like that sort of thing how do you manage somebody that's that their way of thinking is so disordered you know it was just yeah I f I found it really erm I found it fascinating but I also thought it was quite saddening as well I suppose just to think you know what do you do with erm a patient like that you know how do you sort of manage that really it was yeah it was quite erm quite baffling <Lh> </Lh> yeah but er yeah it's quite a seminal moment for me I suppose cos I'd never really sort of come across that kind of you know that f florid psychosis before and that yeah it was it was interesting <Lh> </Lh> to say the least but I think th it it's probably th it stuck with me so much because it was so much out of my ordinary you know comfort zone as well and it's erm yeah it was just something that stuck with me really <Lh> </Lh> yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> kind of sad I'm trying to sort of need to think of like stuff that he'd do sort of erm <Sh> </Sh> you know just kind of like even I like put two words tog I d dunno like erm ah I dunno he'd say something about like doll dolly Dolly Parton da da da Parton th er like partridge da da an th kind of like the words would just kind of like they'd just sort of flow for ah er in in his sort of mind the words were flowing and they were like flowing really sort of rhythmically but they had kind of no meaning to one another they were just s like say a couple of the letters in the words would sound similar erm it it and it's it's one of those it's kind of hard to think of what he would say afterwards but it was just yeah just kind of like words that sound slightly similar or there would be a few letters similar to each other that would just go together and it was just ba ba ba b but you know it was so quick like rapid fire like so it was just it was kind of hard to keep up with in some <Lh> </Lh> in some respects you'd be like oh right <Lh> </Lh> yeah yeah yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> yeah there must be in that in that patient's mind we've got like no idea what the process is I had <Lh> </Lh> and that was like the most fascinating thing about it was just I thought to myself how how is his brain putting those words together you know and and what what association is he making

between the two things and to him he was just like the words that were coming out would be you know like I say just sort of bam bam bam bam bam and I think he thought that was like er a complete sentence and he was kind of like looking around as if to sort of say like er you know do you know what I mean and we'd all be like just sitting there thinking mm yeah no I don't <Lh> </Lh> really but yeah it was just yeah the most bizarre experience ever I'd have to say yeah it's er especially in nursing you do come across a lot of different things but that definitely stuck with me for something that's like you know kind of like <Lh> </Lh> a once in a lifetime erm observation definitely yeah mm <Lh> </Lh> yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> mm not really to be honest no where I'm working at the moment I do agency so I do all different places but at the moment I'm m mainly based in it's kind of like elderly rehab although saying that we get a lot of people with erm like a dementia and they kind of have like almost like a form of psychosis sometimes and their language will be like sort of not it's not word salad or glossolalia particularly but they do have this kind of like association kind of thing you know they'll sort of like they'll say a word and then there's like something similar to it but it's kind of like mimics it a little bit it's not the same but ah yeah again it's like quite fascinating cos you kind of like you'll say to the person well what do you mean you know what do you mean by that or do you know where you are and then they launch off into s like a bit of a random sentence that's kind of got no structure at all but they're looking at you as if to go but yeah that's what that's what I mean <Lh> </Lh> and they sort of like I think in their head it makes total sense but you're sort of thinking erm <Lh> </Lh> so that's not making sense at all you know yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> it could be and to be honest sometimes you find that like <Lh> </Lh> randomly y you might get elderly people that will like make a word up they'll take two different words and kind of smash them together and make a different word and you're like OK that's quite an interesting word that's a good one it doesn't mean anything particularly and it's like just a bit of a nonsensical word but I do I like I find that quite erm yeah it's quite endearing and fascinating that they've kind of like made up this new word out of two existing words it's quite clever really but again it's I think they've got no idea that they've you know they made <Lh> </Lh> up this completely new word I think they just they think it's like a you know an existing word or they can't find the word that they want so they'll just replace the word like you know sort of a semblance of of something that they think sounds the same yeah I f it er it's quite interesting I mean at the you know it can again it can be quite heart breaking at times you know if they're not able to you know erm tell you what they want or communicate what they need erm but yeah it can be quite interesting in some ways cos obviously like if you've got an interest in language then if there's like just such an obscure random pattern of language you think ooh that's quite <Lh> </Lh> quite interesting you know <Lh> </Lh> yeah yeah </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> sometimes it's a little bit hit and miss to be honest sometimes you can kind of think oh I think they were saying that and you'll say to them oh did you want or did you mean da da da da and they'll go yeah yeah that's it but and then sometimes you'll say did you mean that and they'll go no and then they'll just go on to something completely different or like the word will have gone they'll just look for a completely different word altogether but yeah it can it can help if you've if your sort of knowledge of the English language is you know is pretty good then you can kind of think ooh perhaps they meant that you know or like you sort of look for a word similar to what they meant and maybe they meant that and that afterwards that's what they meant which is good but yeah it doesn't always follow that what you think they meant is what they meant you know <Lh> </Lh> yeah <Lh> </Lh> </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> yeah pos I know what you mean it's it's mm we've er we have looked after patients in the past say for example if they've had a stroke and they have like n mm you know er th problems with their speech so erm w like I think it's <TC> like dysar they can't </TC> quite sort of say they look for a word and what they wanna say they can't quite get that word so they say something instead and yeah you find that if they've been living at home with their family and their family I mean obviously it's not at the minute but if their family are with them in hospital and they come out with a sentence you're kind of thinking oh I n I really don't know what they're trying to say and the family go oh he wants so and so or you know he wants erm a drink or he wants but that doesn't sound anything like what they've said but their family'll immediately know yeah they they're like oh he wants this or he wants that and it yeah possibly it's just because y you know you get to know your family so much better or you y you just learn the nuances of the person that you live with so you kind of like you can pick up on cues a lot better you know erm but yeah I er I I find that interesting as well is that you know something that you're like you're really struggling you're thinking oh is that could be like one of five things that they want but immediately their family or their wife their husband their son their daughter'll just be like oh yeah that's what they want they want so and so and they can go straight to the thing that they want it's just yeah it's quit erm I think it's quite fascinating really <Lh> </Lh> yeah <Lh> </Lh> </23EB14>

<INT> <Mis> </Mis> </INT>

<23EB14> er I'll probably get off the phone now and be like oh yeah I could've asked this <Lh> </Lh> or I could've asked this it's always the way isn't it but no I just er I find the whole the whole subject is really interesting to me anything to do with language the human brain I just find it absolutely fascinating I just think we're just such a we're quite a creative species and we're sort of like our level of consciousness and awareness of of how bizarre and random our brains can be is just you know I think it's like really amazing it's such an amazing thing and I it's just nice being able to be sort of part of research as well you know take part it's really good <Lh> </Lh> </23EB14>

<INT> <Mis> </Mis> </INT>

<INT> er there's only one question in this interview and everything else we just carry on talking about er stuff in it's er how was the experiment </INT>

<23CT19> confusing <Lh> </Lh> </23CT19>

<INT> in what way </INT>

<23CT19> but yeah it was fine it was good er er yeah I just didn't really feel like many of the words had like much in common with each other I suppose </23CT19>

<INT> oh OK </INT>

<23CT19> erm it was funny I found myself I kind of found myself like <Gr> I think clicking similar every time </Gr> it came up but like yeah I'm not sure like I'm not sure like <TC> which like smoothed always </TC> made me think of boomerang for example but like I don't know smelly and spicy sometimes like <Lh> </Lh> I was like mm <Lh> </Lh> I dunno </23CT19>

<INT> oh OK and in terms of like how you were feeling </INT>

<23CT19> I dunno <Lh> </Lh> </23CT19>

<INT> as you were like responding how how were you feeling throughout </INT>

<23CT19> erm I suppose at the beginning I felt like a bit like yeah like anxious about like getting it right and wrong although it said like oh there's no correct answer it s was like I still kind of felt a bit mm er oh am I doing this right er but yeah I suppose like as I got into it I got quite like I don't know halfway through I kind of felt like there was a pattern oh oh yeah that one goes with that one and that one goes with that one and then I got one that that didn't match my pattern so then I <Lh> </Lh> was just er then I just kind of got quite into it and relaxed and just thought oh that those words go with that word da da da </23CT19>

<INT> I see </INT>

<23CT19> yeah so it was kind of like a <TC> three phase between phases </TC> I suppose that I went through <Lh> </Lh> </23CT19>

<INT> and you say </INT>

<23CT19> of like being quite stressed and then thinking there was like some kind of logic and then just kind of relaxing I suppose </23CT19>

<INT> wow that's that's really interesting </INT>

<23CT19> yeah </23CT19>

<INT> er it especially when you say erm that it felt like there was a a pattern like did you did you feel like you develop that pattern after sort of doing it for a while or do you f do you feel like that pattern was always there or </INT>

<23CT19> well er I kind of felt like oh there yeah oh there's there's the pattern oh that's what you're supposed to do like I kind of f thought like oh I'm supposed to put that one with that

one because <TC> those work those words work together </TC> but then I found one that like the words didn't work like you know it didn't meet my pattern so <Lh> </Lh> I kind of yeah it was like oh yeah I've discovered the pattern but then it didn't work with the next one so I was like mm OK maybe I haven't found a pattern <Lh> </Lh> </23CT19>

<INT> I see what was it about those items </INT>

<23CT19> er yeah </23CT19>

<INT> that came up that that er led you to feel oh that doesn't fit the pattern was there something about those items </INT>

<23CT19> that made me think there was a pattern erm no it's like a few in row that were like that made me think it was a pattern it was like I don't know one of the words would I would easily use to like describe someone's opinion so then I would put it with opinion but then it would be like I don't know spicy and salty and like boomerang and consideration and I mm wouldn't put any of those words together <Lh> </Lh> so then I was like </23CT19>

<INT> I see </INT>

<23CT19> oh yeah that may maybe <Lh> </Lh> maybe maybe my er logic isn't isn't sound and there's something else <Lh> </Lh> at play <Lh> </Lh> I don't know </23CT19>

<INT> well if it helps if it's helpful to know there is er there's nothing you're supposed to do in the experiment there's not there's not a way to do it right and a way to do it wrong </INT>

<23CT19> yeah </23CT19>

<INT> erm but it is interested in creativity </INT>

<23CT19> OK </23CT19>

<INT> and it is interested in erm so every question in the experiment is asking you to make a creative choice but erm under very very strict </INT>

<23CT19> yeah </23CT19>

<INT> linguistic conditions so erm you only have a a choice of you know you you have to make a creative choice cos you're assigning one of two words to the two previous words but you only have those two to choose from and those two are very particular types of words that have very </INT>

<23CT19> yeah </23CT19>

<INT> particular associations and the two words that you see first they have very particular qualities as well and so it's it's measuring erm what your creative preferences are under very strict conditions erm but there's no there's no c way to do that correctly it's it's just which direction does your creative voice </INT>

<23CT19> yeah </23CT19>

<INT> lean erm did you feel </INT>

<23CT19> yeah </23CT19>

<INT> erm </INT>

<23CT19> yeah </23CT19>

<INT> but did you f well I I mean it's it's interesting that you say that you felt like a pattern emerging do you do you think that was where do you think that pattern sort of came from </INT>

<23CT19> yeah oh it just kind of felt like within me like within me like I dunno it felt very th for some for most of them it felt very kind of clear which one it was for me I don't know like yeah like two words <TC> would be come up </TC> and I'd be like oh no it's definitely not that one it's definitely that one <Lh> </Lh> you know </23CT19>

<INT> I see </INT>

<23CT19> it was really strange I don't know but I found myself like doing really simple patterns as well like erm I don't know er like erm like the esses like if it was like S S I found myself being like erm S S and then sharpner I'd always pick sharpner cos it was like S S S and it sounds good </23CT19>

<INT> I see OK </INT>

<23CT19> I dunno but mm yeah that was like it's strange it's strange because it was like complete yeah like free choice but I felt like there was a very clear choice mostly with like I don't know it's strange like I felt I felt very kind of within myself like no it's definitely not that one <Lh> </Lh> </23CT19>

<INT> that's very that's very interesting and very erm very encouraging from from my point of view because it's it's designed to erm to see if people do have a sort of instinctive response to these items so if if you feel like </INT>

<23CT19> instinctive preference </23CT19>

<INT> yeah if if you feel like something's sort of it's interesting that you use the term like within you like sort of like er an a sort of intrinsic thing that's that's really interesting erm </INT>

<23CT19> yeah </23CT19>

<INT> did that happen when did that start </INT>

<23CT19> yeah </23CT19>

<INT> that feeling in in the course of things </INT>

<23CT19> mm of like feeling I mean like it ah mm yeah I suppose it all the way through I was kind of feeling like oh that one matches but it was only when I kind of like got rid of this feeling of like doing it right and wrong kind of probably like a third of the way through that like it started feeling like quite natural like when it's that one da da da da </23CT19>

<INT> I see </INT>

<23CT19> I suppose but yeah </23CT19>

<INT> I wonder why that is </INT>

<23CT19> it was quite like strongly either way or really strongly is the wrong word but I definitely like felt like a I don't know it's weird </23CT19>

<INT> like that was </INT>

<23CT19> that I was like yeah I was like drawn to one rather than the other </23CT19>

<INT> they they felt imbalanced in some way is that right </INT>

<23CT19> the what you mean the the two words felt balanced </23CT19>

<INT> er or or like they weren't balanced like that they </INT>

<23CT19> or d like the word two words written and one word it felt like balanced </23CT19>

<INT> yeah </INT>

<23CT19> yeah like with one of the words it was like balanced with the other it was like odd </23CT19>

<INT> ah right OK </INT>

<23CT19> erm yeah but it was quite confusing cos I felt like I didn't know why like why why that one would be the odd one out I don't know why but yeah it felt like oh no that one's the <WS> old one out </WS> you know </23CT19>

<INT> so h er have I understood right that erm in in some items </INT>

<23CT19> that er <InAu> </InAu> </23CT19>

<INT> it felt like one felt wrong but you couldn't put your finger on why </INT>

<23CT19> yeah absolutely </23CT19>

<INT> right OK that's really that's really interesting to know thank you so much </INT>

<23CT19> <Lh> </Lh> </23CT19>

<INT> I'm cos I'm I'm I'm going to stop the recording because the interviews are about ten fifteen minutes er on average erm and then and then after I've stopped the recording I'll w er or like tell you about what happens next and stuff </INT>

<23CT19> OK </23CT19>

<INT> erm </INT>

<INT> so how was the experiment </INT>

<23CT18> <Lh> </Lh> that's a very open question er it's good erm I'm not sure I get it <Lh> </Lh> as a reflection going through I was erm yeah I was trying to look at the link between the names and er yeah when you first start going through it it doesn't doesn't feel natural for most of them that that's not a link but then I found as I was going through I created links in my mind so er you know I decided this particular word was associated with this word and and I just linked those and then whenever I saw them I was basically matching them based on that but I found it was quite difficult to do that consistently cos obviously it changes the the the two words so I would I would then find it transformed in my mind as I went through so what <TC> at what at one </TC> point I had as a link then something else would kind of take over that link so yeah I don't know I'd it'd be interest <Lh> </Lh> it'd be interesting to at some point reflect and see how consistently we're matching things or if it is just a complete scatter gun cos they're er the the links felt quite tenuous that I created </23CT18>

<INT> oh OK and was it </INT>

<23CT18> but yeah </23CT18>

<INT> was it the words erm like the the types of words that were coming up that made the links feel tenuous </INT>

<23CT18> er g er it's more like the direct link between the two felt tenuous but then I I grouped certain things together so I found er certain adjectives matched different groups of words and other adjectives I er linked with other groups and then like I found my brain was working and matching on on those two so like adjectives that you would normally associate with say inanimate objects first adjectives you would <WS> accept associate </WS> with more descriptive words I found my brain was kind of trying to create links between them so yeah it's it's interesting kind of listening to your brain at work and <TC> it trying </TC> to create it it trying to work out what the connections are and sort of I don't know probing as you go through the study between ah maybe these things are linked and then <Gr> as you kind of work it through </Gr> sometimes those links become more concrete and then sometimes they fall apart so erm yeah as an example I decided I decided deaf was really closely linked with a boomerang and that was just really clear to me so every time that came up I just linked the two of them w which in hindsight is nonsensical but somehow my brain decided that those two things were completely linked <Lh> </Lh> out this selection yeah </23CT18>

<INT> that's fascinating what did er </INT>

<23CT18> yeah </23CT18>

<INT> how was it moving through the items when some of the same words were coming up a lot </INT>

<23CT18> er yeah I think th it depends on depends on how concrete I'd got it in my mind so I think in the sections I was really consistent you know you keep getting the same words coming up erm I would typically focus on one of the words which for me was typically like the second word erm you know if I could kind of create a link between them together then I'd

consider them as a pair but quite often cos they're not linked I found I was focusing on the second one erm it's probably quite yeah and then so then if it was quite repetitive then I could go through quite quickly if I had established links in my mind erm whereas then sometimes if you'd come up again you'd s er it's almost like my brain would recognise when I hadn't followed the pattern so I'd kind of followed a pattern on er this word goes with this one and I was clicking and then at a certain point your brain my brain would be like well hang on a minute you just said this word goes with this one but <Gr> you've been mm pairing it with this one for the last four times </Gr> so it's almost like it was like hang on a minute we need to re-evaluate which of these which of these go together erm </23CT18>

<INT> I see </INT>

<23CT18> which would then you know create a bit of a conundrum about which one you go for <Lh> </Lh> </23CT18>

<INT> and did it feel like there was a right answer </INT>

<23CT18> no not not a lot of the time and the answers that I did feel right w were mainly I don't know create er there was some <Gr> there was some that linked quite well </Gr> like er sh trying to think of examples now so like salty opinion er or like a a sour opinion so there were certain ones that I could definitely link and think OK I w I would I would describe something as that one w er but there was but there was a lot of them w where I couldn't really create a link and I just sort of made I a made a link in my mind so that I could match it basically </23CT18>

<INT> that's well that's good to hear because there there is no right answer so it it's good to know that it doesn't create the feeling that there that you have to do something in particular erm and it's </INT>

<23CT18> yeah </23CT18>

<INT> did you find that was because you mentioned sour and salty and opinion did did that happen a lot for you with those kinds of words </INT>

<23CT18> er as in matching those kind of words to opinion do you mean or </23CT18>

<INT> yeah and and words like it like did that feel like erm like like a pattern in in in your sort of process </INT>

<23CT18> I definitely noticed at one point I was assigning a lot of words like that to say opinion attitude and then it suddenly dawned on me that I was putting quite a lot of negative words with er I'm trying to remember the link now but there's like opinion attitude and there was another which was kind of about personal expression and I was putting a lot of the er like silent quiet with edge er that was more because when I was picturing edge in my mind I was picturing sitting on a quiet edge somewhere like looking out over a valley so that's kind of the picture my mind created with edge so all of the silent quiet still that was all going with there erm and I noticed that I was putting a lot of the like sour salty spicy with opinion attitude but not necessarily being comfortable at having to continuously do that <Lh> </Lh> </23CT18>

<INT> yeah yeah and erm that's th er that's really that's really fascinating is there anything we haven't talked about about the experiment that you'd like to talk about </INT>

<23CT18> erm yeah I mean er er yeah I'm quite so the the words at the top I guess with the words underneath because it doesn't feel like they're they're much of a connection you're looking to see whether d people do find consistent connection is that kind of the data analysis you'll do you'll look at kind of consistency and results and where there's groupings or </23CT18>

<INT> well </INT>

<23CT18> erm it's kind of a is that a really narrow way that you'll look at the data you'll look at it a lot more broadly </23CT18>

<INT> well I mean that that that pretty much is what we're what we're looking at in the sense erm the experiment is is designed on erm the basis of a few different things that we know people will do er when presented with language choices like these </INT>

<23CT18> mhm </23CT18>

<INT> er and the the investigation is primarily focused on whether we see erm the things that we expect to see have only been studied in populations that don't have schizophrenia so </INT>

<23CT18> OK </23CT18>

<INT> the study is is wondering how many of those things will still happen in people who have a diagnosis of schizophrenia </INT>

<23CT18> OK </23CT18>

<INT> and how many of them erm how many of them will or won't be different so </INT>

<23CT18> mm </23CT18>

<INT> but yeah it's the analysis looks at the experiment from several different levels and things like erm the order of words as they appear on the screen whether that influence his choices </INT>

<23CT18> yeah </23CT18>

<INT> erm the sensory modality for the adjectives like what happens you know does when you put a taste word up front or when you put a smell word up front does that change the choice </INT>

<23CT18> yeah </23CT18>

<INT> and that sort of thing so w so there are five levels that we'll look at erm that we'll analyse the experimental data from and one of them is group which is the primary erm </INT>

<23CT18> yeah </23CT18>

<INT> but there will be some other things that that we'll see just to check that like cos we might find for example that actually it's it's not group that's the most important thing in this experiment it might be erm something you know might happen in both groups and it and it we can trace it down to putting a sound word up front or something so </INT>

<23CT18> yeah </23CT18>

<INT> but yeah </INT>

<23CT18> OK interesting no it's funny it's sort of having two conversations in that yeah I think my brain was working away subconsciously on the on the kind of what er v er w what are they looking for which kind of created doubt so I tended to get into like set runs where I would run for a bit and then my brain would be like hang on a minute are you kind of don't wanna say trap cos it's obviously not a trap but <Lh> </Lh> you know </23CT18>

<INT> <Lh> </Lh> no no </INT>

<23CT18> are you are you f <Lh> </Lh> are you falling into doing something you're not supposed to and it was kind of a bit like oh we need to er we need to stop and just have a think about this one and reassess and then very quickly very quickly would get you know cos of the repetitive nature of it very quickly would get back into the no the way to get through this is to make some associations and then just stick with them erm you can't kind of think in this test every single every single link er at a time yeah </23CT18>

<INT> that's r w that's really helpful to know and that's also really interesting and erm if it helps </INT>

<23CT18> yeah </23CT18>

<INT> some of the erm in terms of how the experiment is actually structured and what it does erm it it presents </INT>

<23CT18> yeah </23CT18>

<INT> it presents adjectives that have a a mixed sensory er pairing so every pair of adjectives </INT>

<23CT18> yeah </23CT18>

<INT> will will have conflicting senses and then erm and then you'll be asked to associate those erm adjectives with nouns that fall into one of two types and so it </INT>

<23CT18> yeah </23CT18>

<INT> erm it's really a test of creativity with with some very strict parameters in enforced and it's about w which creative choices </INT>

<23CT18> yeah </23CT18>

<INT> you make in in the context </INT>

<23CT18> yeah </23CT18>

<INT> of those parameters and erm </INT>

<23CT18> yeah </23CT18>

<INT> what you've said about the experiment erm shows a lot of insight into how it works which is really nice to hear </INT>

<23CT18> yeah </23CT18>

<INT> because that means it's </INT>

<23CT18> <Lh> </Lh> </23CT18>

<INT> it's doing its job so erm </INT>

<23CT18> yeah </23CT18>

<INT> that's really cool so thank thank you so much for I'm going to stop the recording now because erm we're I'm sort of keeping each interview about fifteen minutes but thank you so much </INT>

<23CT18> no worries no worries </23CT18>

<INT> and er so I'll I'll stop the recording now </INT>

<INT> erm so there's only one one erm one question for the interview er one one erm formal question anyway erm how was the experiment </INT>

<19OV10> well it sort of reminded me of the sort of test you do on people with dementia <Lh> </Lh> so I think ooh <Lh> </Lh> </19OV10>

<INT> oh OK </INT>

<19OV10> erm that that sort of thing yeah I I think it's partly from my own experiences cos my father had it quite early so whenever I sit and do any kind of verbal reasoning test I get quite panicky but <Lh> </Lh> it was fine </19OV10>

<INT> oh yeah do you </INT>

<19OV10> erm </19OV10>

<INT> do you mean the the thing we did last or the erm the word selection </INT>

<19OV10> the the the <WS> tor </WS> the story about Anna and the diamond ring because when they do erm cognitive assessments they quite often ask you to repeat something after a little while afterwards </19OV10>

<INT> yeah yeah </INT>

<19OV10> so I you know it's just a personal thing really erm </19OV10>

<INT> oh yeah sure like erm so the the thing we we did there erm come from the cognitive linguistic quick test which is erm </INT>

<19OV10> right </19OV10>

<INT> and we did three sub tasks there erm we aren't analyzing what participants do in those t er tasks but we are matching people across groups so we're matching their data from the experiment that you did first according to </INT>

<19OV10> OK </19OV10>

<INT> erm w or language cognition so erm that's just so that we can make sure that when we're comparing what people do in the experiment erm that they that we aren't seeing differences in the data because erm they're of very different linguistic abilities or the schizophrenia group you know </INT>

<19OV10> right </19OV10>

<INT> s someone in the schizophrenia group's language is affected erm quite severely and we've matched them with someone who has quite high levels of verbal reasoning for example erm but </INT>

<19OV10> OK </19OV10>

<INT> when you were doing the choices on the on the software </INT>

<19OV10> yes </19OV10>

<INT> what was that like </INT>

<19OV10> erm it was fine I think sometimes I <TC> would be I'm </TC> er almost inclined to you know you sort of looked at something <TC> through I don't </TC> quite see the match there and you're sort of desperately trying to find the link and I think you go through that routine so then after a while I realized that the same things were coming up and I was thinking am I answering in the same way or erm y you know am I getting it right so it was interesting </19OV10>

<INT> how er did because I mean that's really interesting because a a lot of people have said that they felt like there was a right answer erm </INT>

<19OV10> yes </19OV10>

<INT> but it it's erm it's a test of preferences so both answers are correct erm in the case of every question erm but it's interesting that people feel a mm like there is a right answer erm </INT>

<19OV10> yeah </19OV10>

<INT> would would it help to know a bit more about what the experiment is actually doing </INT>

<19OV10> that is interesting oh w OK </19OV10>

<INT> like would would it help to know a bit more about what the experiment's are actually doing </INT>

<19OV10> yeah sorry lost you a little bit then <An> </An> </19OV10>

<INT> oh no that's OK erm </INT>

<19OV10> yeah definitely </19OV10>

<INT> so er the two words at the top </INT>

<19OV10> yeah </19OV10>

<INT> erm they're half of </INT>

<19OV10> yeah definitely </19OV10>

<INT> half of a a metaphor and the choice that the person makes completes the metaphor </INT>

<19OV10> oh <An> </An> I seem to be losing your signal a little bit </19OV10>

<INT> oh that's OK </INT>

<19OV10> w oh </19OV10>

<INT> how about now </INT>

<19OV10> there OK I think it's my net mm I'm clear now I think it's my network it's a bit ropy sometimes </19OV10>

<INT> oh that's OK </INT>

<19OV10> erm yeah </19OV10>

<INT> did erm would it help if I if I talked a l a little bit about what the experiment is measuring to help erm </INT>

<19OV10> yeah definitely </19OV10>

<INT> so </INT>

<19OV10> that would be interesting actually </19OV10>

<INT> the two words at the top are erm they're like half of a metaphor and then the choices </INT>

<19OV10> yes </19OV10>

<INT> are erm how you choose to complete that metaphor and erm the choices are between a literal and an abstract noun so </INT>

<19OV10> mm </19OV10>

<INT> we're interested in whether people when they see certain erm when certain senses are muddled up whether people go erm make a metaphor out of that in relation to an object or relation to something like an idea erm so knowing that how do you feel about mm in retrospect how do you feel about the process of what it was like to make those choices </INT>

<19OV10> oh well erm that's really interesting I think that to some extent you do some things subconsciously if that makes sense it it's the way your brain works because for me erm it's one of <TC> those it's interesting </TC> when you're using words like metaphor that that's not really in my vocabulary it's not something that I ever had to formally learn about although I know what it means so it's not you know erm part of <Gr> what can I say you </Gr> it's almost like <TC> you're for me </TC> the experience was like my brain was desperately hunting for oh I've heard that phrase before and it all links up if that makes sense </19OV10>

<INT> oh OK did you </INT>

<19OV10> erm </19OV10>

<INT> did that feeling come from did do you feel like you always had that feeling or did it happen sort of halfway through or or at the b just after the beginning or something like that </INT>

<19OV10> it was just after the beginning cos it is a kind of you know when you look <TC> at it's kind of </TC> I think it's the way you perceive it is to me it was a mind puzzle so I was thinking right OK w where's the connection and you you can feel your mind going backwards and looking for the words and then as you get to the repetition side you start to think did I answer like that last time and was that right and then the right or wrong thing </19OV10>

<INT> I see </INT>

<19OV10> that make sense </19OV10>

<INT> yeah and did you feel like you had to s sort of be consistent with certain words </INT>

<19OV10> yes I think so yeah yeah and I think I b I really put that down to like erm a sort of I don't know for me it was a bit like an educational thing if that makes sense </19OV10>

<INT> oh OK yeah so like erm if I've understood like er y coming from how erm things like grammar and stuff were taught at school </INT>

<19OV10> yes because interestingly it's like <DT> hopefully it's not a digression </DT> but my daughter </19OV10>

<INT> no </INT>

<19OV10> has been taught grammar at school but I never was so I've had to learn from her but I understand patterns if that makes sense </19OV10>

<INT> yeah </INT>

<19OV10> so I w I wouldn't necessarily know the name for what you're talking about but I would understand how to use it so </19OV10>

<INT> yeah </INT>

<19OV10> it with my daughters as the terms so you know I you know still struggle with the terms I have learnt them a little bit from her but I think well I I write anyway so when I'm writing I tend to look for patterns </19OV10>

<INT> I see and we we tend to find that that people who erm weren't formally taught grammar know grammar intuitively and use grammar </INT>

<19OV10> yeah </19OV10>

<INT> erm but it's er like you say it's it's th erm having the terms to describe the thing you're doing with grammar erm </INT>

<19OV10> yeah </19OV10>

<INT> that's erm what kind of teaching grammar at school is is doing really erm and </INT>

<19OV10> yeah </19OV10>

<INT> there is gr er grammatical stuff happening in the in the experiment as well because the two words at the top are erm they're both desc they're both adjectives so they're both describing the choices that </INT>

<19OV10> yeah </19OV10>

<INT> y you're making erm but they're also paired adjectives so because they both describe the same noun so when you make a choice both of those adjectives describe the same choice so then I wonder if did that did anything around that erm side of things drive your decisions like erm like how the the words at the top related to the words at the bottom </INT>

<19OV10> oh definitely that that was the whole thing you know I d er I think when I first started with the looking to put them into a phrase <Gr> and then after that I was well that's a consideration </Gr> that's that's you know and I really struggled with say boomerang cos I thought is that something that I don't quite know or is it you know it it I was looking at the top word so I was might be thinking erm for example if you said spice then if you said something that was a similar adjective would that mean that it was a boomerang cos it was bouncing back to the other word </19OV10>

<INT> wow </INT>

<19OV10> so all sorts of other <Lh> </Lh> crazy things were going on there </19OV10>

<INT> wow </INT>

<19OV10> erm <Lh> </Lh> yeah but yeah it was it was really interesting cos like I said you were sort of thinking or if you had edge you thought erm does it need an edgy word or does that mean that erm you have to fit that into the phrase it it just like you know it was quite interesting really <Lh> </Lh> </19OV10>

<INT> oh wow so I m I mean that's that's really interesting and it it sounds like you were doing a lot of erm of work to create erm a meaning out of </INT>

<19OV10> yeah </19OV10>

<INT> those and erm in a really creative way because the the p the point of the experiment in relation to creativity is to see erm what out of two different types of creative choice and there are only really two choices you you know you can either match the erm the words at the top with with the thing on the left or the thing on the right erm </INT>

<19OV10> sure </19OV10>

<INT> so what happens to creativity when you put all these limitations on it and did it feel </INT>

<19OV10> yeah </19OV10>

<INT> like you were doing something creative </INT>

<19OV10> yes it did yeah I I it er it started to think about the words that you use for the choices they were more erm you know I could sort of imagine a a Victorian book or a you know a really descriptive n novel or something from them rather than than being just technical words if that makes sense </19OV10>

<INT> yeah yeah it's I mean it's remarkable what people pick up from the experiment erm because what you're describing is er it a shows a a lot of insight into how the experiment was designed and it's really interesting that you've you've got that intuitively from just </INT>

<19OV10> yeah </19OV10>

<INT> just experiencing the experiment you know without seeing behind the er the scenes how it was put together erm

which is really interesting and and something that's c that's come up a lot as well </INT>

<19OV10> oh that's good yeah </19OV10>

<INT> and how did you how did you feel in response to the items </INT>

<19OV10> erm I think it was fine I d I sort of like you know I d I didn't have a moment where I thought what does that word mean which was like my slight panic on the side I thought what if there's a word I don't know what it is erm but it was always about mm like I said it's almost a creative pro well you said that it's creative process of sort of joining them up and making sense of them in a way </19OV10>

<INT> I see </INT>

<19OV10> you know what I think that that's there's part of the way that the mind works maybe is trying to put things into an order or </19OV10>

<INT> oh yeah yeah </INT>

<19OV10> erm process <TC> put the categorise them </TC> is <Lh> </Lh> is another way of looking at it I suppose but making <WS> a sense </WS> out of them and trying different ways to make <WS> a sense </WS> </19OV10>

<INT> yeah oh that's brilliant erm yeah th thank you so much is there anything that we haven't talked about about anything that we've done today that you'd like to talk about erm at all anything at all </INT>

<19OV10> erm er it was really interesting I really enjoyed it <TC> I think I don't </TC> know it it might you know I was saying about not knowing grammar and so on <TC> there's I don't know </TC> <DT> if this is something that is interesting to you </DT> but a lot of people of my generation didn't do grammar at school and you'll find people that are older than us did and then the system changed probably in the erm what nineties and they brought it back </19OV10>

<INT> yeah </INT>

<19OV10> so I don't know how that affects your experiment if that make sense </19OV10>

<INT> yeah </INT>

<19OV10> erm </19OV10>

<INT> er I mean it's it's funny because erm because there's so this kind of intuitive understanding of grammar is st is sort of still there </INT>

<19OV10> yeah </19OV10>

<INT> erm because I wasn't taught grammar formally at school I was er I I was at school I think just before they brought it back erm </INT>

<19OV10> OK </19OV10>

<INT> and so I was hearing terms like erm well you know I've only I've only recently learned what an adverb is because I had to for like </INT>

<19OV10> yeah </19OV10>

<INT> erm but it's erm but I've been using them for for you know er you know </INT>

<19OV10> yeah yeah yeah </19OV10>

<INT> all throughout whenever I've written anything so it's erm but the the experiment is it's testing erm so there are a couple of things going on there's erm there's a cognitive theory erm that er suggests that we like erm adjectives that are sensory in a certain order </INT>

<19OV10> yes </19OV10>

<INT> so </INT>

<19OV10> yes </19OV10>

<INT> so er there's a theory that we like that there's a hierarchy so erm so sight is the is the top of the hierarchy and then it goes sound smell taste and touch and the theory says that we like erm our sensory adjectives if they're liked in some way to go f from low to high so we like you know the expression the cold light of day </INT>

<19OV10> yes yes so there's an order to it yeah </19OV10>

<INT> yeah so apparent er apparently we like and the cold light of day is touch the bottom one being mapped onto the sight the top one so cold light erm </INT>

<19OV10> yes </19OV10>

<INT> and when we say light cold of day that feels a bit wrong erm </INT>

<19OV10> yes </19OV10>

<INT> and the theory says that the reason we like that order is because when we make metaphors that way around they're easier to understand than if we make them the other way around so </INT>

<19OV10> mm oh that's interesting </19OV10>

<INT> so throughout the experiment the order of the mapping changes and for all the questions that go low to high er we look at that data and for all the questions that go high to low we look at the other data and we're looking at whether low to high erm first of all whether that cognitive theory is is it holds cos it's only come from one experiment erm and secondly if it does hold whether er it is present or absent in people with schizophrenia </INT>

<19OV10> mhm </19OV10>

<INT> and if it's absent in people with schizophrenia then maybe it could explain erm formal thought disorder in some way erm because if the speech </INT>

<19OV10> oh </19OV10>

<INT> is really abstract and no one can understand it maybe it's abstract because that cognitive preference disappears </INT>

<19OV10> yeah </19OV10>

<INT> so that's the idea </INT>

<19OV10> OK oh that's interesting </19OV10>

<INT> but w who knows what we'll find but that's the sort of erm the thing we're we're the idea we're playing with and seeing what happens erm but yeah so it's </INT>

<19OV10> oh that interest cos you when you were working out of <An> </An> did you see people behave you know kind of acting out in that way </19OV10>

<INT> er </INT>

<19OV10> with their language </19OV10>

<INT> there didn't seem to be a erm there there seemed to be less of an of an interest in erm I don't know if interest is the right word but the language that people with schizophrenia were using seemed much more personal than </INT>

<19OV10> right </19OV10>

<INT> erm than shared so the meanings were much more personal erm </INT>

<19OV10> mm </19OV10>

<INT> so they would say metaphoric expressions that I hadn't heard before that that </INT>

<19OV10> right </19OV10>

<INT> they seemed to v to know the meaning behind but that other people didn't really understand so er that got me thinking about metaphors but it </INT>

<19OV10> oh mm </19OV10>

<INT> it's it's an interesting and w we still don't have any idea about what formal thought disorder sort of w er how to describe it or erm because it isn't quite like aphasia erm and because in aphasia people sort of notice that their language is changing but in formal thought disorder there's a sort of erm a sense that or people who are showing signs of formal thought disorder s seem to think their behavior indicates that they seem to think that what they're saying should be understandable erm </INT>

<19OV10> right </19OV10>

<INT> so there's like a erm er a lack of awareness about that the language is quite personally relevant erm which suggests maybe that they feel that what's personally relevant to them is also understood by other people so then things like delusions become erm important factors in how people are speaking and so but it's er </INT>

<19OV10> that's interesting </19OV10>

<INT> er it it'll be interesting to see where the the metaphor mapping falls in relation to the bigger picture about formal thought disorder erm </INT>

<19OV10> yeah yeah well it sounds really interesting <An> </An> it's a very interesting piece of work to be doing </19OV10>

<INT> oh thank you it's erm </INT>

<19OV10> that's alright <Lh> </Lh> </19OV10>

<INT> it's it's getting there it's er and er without </INT>

<19OV10> yeah </19OV10>

<INT> you know without people like you volunteering your time it doesn't the project doesn't exist so thank you you know thank you so much for for doing this </INT>

<19OV10> well that's well I I always feel you know erm I sort of think about <An> </An> and I think possibly there's more that could have been done and and so I'm really happy to help you know </19OV10>

<INT> ah well it's </INT>

<19OV10> erm <Lh> </Lh> </19OV10>

<INT> erm I d I I remember at the time I didn't know anything about research methods at all and </INT>

<19OV10> yeah </19OV10>

<INT> I looked at the the web er and every trust has one the kind of start your own research project page and it </INT>

<19OV10> yeah </19OV10>

<INT> it's written to be accessible to everyone erm and so you kind of think oh well then it it can't be that difficult and erm I think that influenced a lot of why I was such a nightmare but erm then </INT>

<19OV10> oh you weren't at all <Lh> </Lh> </19OV10>

<INT> oh well I </INT>

<19OV10> <Lh> </Lh> </19OV10>

<INT> I think just because I couldn't erm I had I had no idea what was involved I mean it's it's taken four four years to get to data collection </INT>

<19OV10> yeah yeah </19OV10>

<INT> because it's such an unusual project it doesn't fit within the IRAS framework very well so we have to do a lot of talking </INT>

<19OV10> yeah it's tough </19OV10>

<INT> to people and say where does this sit it's not a clinical trial so we don't need this form but we need these other forms that and and so on so </INT>

<19OV10> yeah </19OV10>

<INT> er </INT>

<19OV10> I think I think as well I think within the NHS understanding different things to sort of like you know if you take this medication or erm <Gr> observational studies is a real challenge </Gr> erm I've only learned that from doing my MSc really you know sort of standing outside of the circle cos I think you know it it there could be better research but the structure is not there to support people enough </19OV10>

<INT> yeah </INT>

<19OV10> you know and I'm sure your finding with university that it's much better and there are lots of resources to help you get off the ground </19OV10>

<INT> yeah but even even then erm th I th I think they could talk the NHS and universities could talk to one another erm more effectively </INT>

<19OV10> mm </19OV10>

<INT> because sometimes </INT>

<19OV10> oh definitely </19OV10>

<INT> universities are erm just as risk averse if not more but in different ways so you know the er NHS procedures are are are one thing and then the university is actually concerned about other things like whether they're going to be sued w er y and so it's trying to synthesize you know a way of working that keeps everyone happy who has different priorities and erm but I think it is definitely getting better like more much more is happening at the moment er w I think people are noticing what you say you know is that more a broader range of research can be happening erm but it needs </INT>

<19OV10> oh definitely </19OV10>

<INT> it needs er a fr er a framework or an adjustment to you know </INT>

<19OV10> I think that yeah I mean there are there are more things than perhaps you know a couple of years ago but I still think it could go a lot further and I think the other thing that I would say in hindsight is I think erm research in <WS> depart dud development departments </WS> in the NHS they're not you know I drifted into research I wasn't doing it before I got there and erm it was a massive learning curve erm and I think that's something else the NHS could be a bit better at if that that makes sense although they have got a bit more scrutiny from the NIHR now and and also the clinical research networks do sort of expect you to do certain things but in terms of staff understanding and training it was always quite limited erm you know you were sort of working it out on the job and I think that that you know really is the it it's easy <Gr> when it's like I said really straightforward experiment </Gr> cos consultants know

what they're doing but if it's something slightly more difficult or complicated then erm we just don't have the framework for it you know and we should do really </19OV10>

<INT> yeah I </INT>

<19OV10> erm </19OV10>

<INT> I agree and I think it's it also for s for student researchers who are learning too it's er I think </INT>

<19OV10> oh yeah </19OV10>

<INT> people panic when it's like oh we're all learning at the same time like erm and so f f er for that reason I think sometimes er erm people just think OK well actually this this project needs to go somewhere else because we it like mm we don't we don't know how to do the right thing for it you know and erm </INT>

<19OV10> yeah </19OV10>

<INT> but yeah but it's er I hope that w if we if we complete this study which er w it looks like we will but mm er it's been my experience never say <Lh> </Lh> never say never erm </INT>

<19OV10> <Lh> </Lh> ah </19OV10>

<INT> but hopefully we do and then we'll have a record of the methodology that we can then sort of offer to other people and say well if you're thinking of doing something like we did these are the steps we went through erm and so hopefully that'll make </INT>

<19OV10> yeah </19OV10>

<INT> make way for a bit more erm but there's a lot going on in linguistics clinically </INT>

<19OV10> yeah definitely </19OV10>

<INT> and I and I hope that </INT>

<19OV10> yes </19OV10>

<INT> that continues because yeah there's er and we've we're starting to see collaboration between psychology and linguistics for quite recently as well </INT>

<19OV10> oh that's good </19OV10>

<INT> it's quite nice erm </INT>

<19OV10> yeah </19OV10>

<INT> so yeah er er but </INT>

<19OV10> yeah there's yeah sorry </19OV10>

<INT> oh no no I was just going to say but er but thank you so much er for erm for doing this we d </INT>

<19OV10> that's </19OV10>

<INT> we don't have to stop talking it's just I'll I'll stop the recording ah unless there's anything else you want to talk about on on the interview erm </INT>

<19OV10> ah erm I er I can't think of anything and I mean like I said it's been a really interesting and I really hope that you know it it helps </19OV10>

<INT> oh it will yeah thank you and and it does and erm the you know the the contributions of every participant regardless of what group they're in is equally valid so erm yeah thank you so much because without you know w without erm people volunteering to be in the comparison group then e even you know even if we collected all the data from the </INT>

<19OV10> mm </19OV10>

<INT> clinical groups couldn't really do much with it without people volunteering their time so </INT>

<19OV10> yeah we're all </19OV10>

<INT> so yeah thank you so much I'll stop the recording and then erm yeah we'll just have a chat about erm what happens next and stuff and erm </INT>

<INT> so there's only one interview question and then the rest is just er a chat around what that kind of brings about erm how was the experiment </INT>

<17AR13> <Lh> </Lh> erm yes er I I you er oh I thought we were talking about the practice ones I didn't quite understand what I was trying to do erm and that's probably says more about my personality erm than anything else and wanting to know how er a task works erm but yeah it was strange <Gr> I was aware there was becoming a pattern </Gr> of how I was responding erm not a pattern in that erm you know it was always the left or the right but it was a pattern in that if a certain word was one of the two words then <TC> I would if if another </TC> certain word was one of the words at the bottom I would naturally be drawn there and started the word association between some words erm became quite strong erm and and also almost sort of a weird hierarchy of words of the two words erm s which I I can't tell you now probably which the words even are erm but y it sort of the other word almost didn't matter if that word was there I was in I had to then choose you know one of the two whichever one it was underneath if that makes any sense </17AR13>

<INT> yeah it does like erm oddly one of the things that we did when we were designing the experiment was to erm well a lot of time and effort went into making sure that the experiment itself didn't bias people choices and one of the things that's come out of this is that even though there is no er pattern that we're expecting like there is no er right way to do this everyone that I've interviewed after the experiment has said that they found themselves falling into a pattern and er that's not actually what we're investigating but it's a </INT>

<17AR13> <Lh> </Lh> </17AR13>

<INT> really fascinating consequence of the experiment that it's really funny it's one of the first things people say when I when I say how was the experiment they say you know it was weird and I f you know I felt like that er I developed a pattern so but the reasons people give for developing this pattern are actually quite different so if I erm if you don't mind my asking what drove the development of your pattern </INT>

<17AR13> I don't I think the first one I noticed was erm the word stroked if stroked was there consideration was always the first choice of the two words erm yeah that was that was the first one I n I noticed that like almost if if stroked there I didn't care what the other word was erm </17AR13>

<INT> I see </INT>

<17AR13> if consideration was an option stroked and consideration had to be linked erm yeah erm and then I noticed a pattern that was er er things like salty was going with sharp with sharpene erm I detested the word boomerang and I didn't want to give give it a chance erm but then I realised that I was ignoring it <Lh> </Lh> and felt sorry for it erm and then tried to go come on now seriously erm so I probably then put some bias back in it by choosing it b it when it was just the least you know it wasn't that bad a choice in that situation erm </17AR13>

<INT> that's another thing everyone dislikes boomerang </INT>

<17AR13> it was yeah it was really interesting </17AR13>

<INT> that's so interesting </INT>

<17AR13> <Lh> </Lh> yeah I know didn't like sharpener but when edge and attitude weren't an option for words er yeah that were sort of er so verbs I suppose like you know spicy erm fragrant obviously wasn't so bad but erm yeah then <WS> sharped </WS> starting to use at one point I decided it was a fix cos I was given sharpener and boom and boomerang and I just didn't know what to do with myself because at that point I I didn't want to use either of those words for anything </17AR13>

<INT> I see </INT>

<17AR13> erm <Lh> </Lh> yeah </17AR13>

<INT> I see so erm I I don't like erm leaving participants feeling like they don't understand what they did </INT>

<17AR13> <Lh> </Lh> </17AR13>

<INT> so erm at the end I'll I'll send you a link to erm er a YouTube video that explains how the experiment was built and what it looks at erm but </INT>

<17AR13> oh </17AR13>

<INT> there's also there are some things I'll I'll say now but the video gives more detail erm it's funny that you picked up on sharpner and boomerang appearing in the erm same set and not really knowing what to do that's erm the reason one of the reasons why you might not have known what to do is cos that was one of the distractor items so in the set there are items that where both choices are of the same category and in all the other non distractor items you have a choice of two categories and it sounds like when you saw sharpener and boomerang you were given one of the kind of dummy questions </INT>

<17AR13> yeah </17AR13>

<INT> that pops up and sort of it's designed to kind of refocus people and go w wait what's going on here and to try and see if </INT>

<17AR13> mm </17AR13>

<INT> erm to to kind of break that pattern of falling into a particular process and then sort of going oop what's going on here and then erm it's just part of the the experimental design but it's really interesting that you that you picked up on it and by the sounds of it then your your responses to the questions and the pattern that you developed had something to do with the differences between the standard items and the distractors maybe that's the impression I get </INT>

<17AR13> mm yeah </17AR13>

<INT> so which would from the erm having knowledge of how the experiment was built that would suggest that it's something to do with erm the nature of the items so what was your impression of the words at the top and and the words at the

bottom what did you think about what you were seeing there
</INT>

<17AR13> er to start with like sort of you know just didn't understand in you know er a a simple erm instruction to you know match match the words at the bottom and the the top and you th oh yeah that you know which word finishes this sentence that sort of thing and then just went and went oh no no it's not that kind of a task erm sometimes sometimes you could make it into that and I was I was trying to make sentences in my head erm and going you know oh that would oh that describing a person using the words at the top going oh they have you know they have quite you know spicy opinions or they have quite a erm a a si a silent visual attitude or something like that trying trying to build sentences trying trying to make sense of the task because I didn't understand it which is the entire point I know <Lh> </Lh> erm but <Lh> </Lh> erm yeah </17AR13>

<INT> did you feel like you were doing something creative
</INT>

<17AR13> sometimes yes yeah erm trying to find er creating a way of making that link and building a story perhaps in a way between to to make it make sense to link those bottom and those <WS> dotted </WS> and top words I wasn't thinking about the fact that this was an experiment erm a couple of times I think probab probably when you know the distractors came in and <Lh> </Lh> and then at that point went oh wait a minute what should I do but I did try and just go with what what would this be erm and try to build something up between them I suppose </17AR13>

<INT> yeah that's another thing that people have said as well that it didn't feel like an experiment and I have no idea what any of this means yet because we're still #00:08:16-2# </INT>

<17AR13> <Lh> </Lh> </17AR13>

<INT> discovering the data but erm I do find it interesting that so many people are reporting similar experiences with this do you mind telling </INT>

<17AR13> yeah </17AR13>

<INT> me a bit more about why it didn't feel like an experiment and what it might have felt like instead </INT>

<17AR13> erm I think because some of once I was trying to link things it became easier to link them and it was just I don't know it was just it was it was a simple task it was not a simple task it was a match these things up oh w w er you know like making a decision in a workplace what are we going to do about this oh do that do that you know erm in r in recruiting you know which which candidate are we going to go with oh well that one erm obviously it's not how recruitment works but <Lh> </Lh> I'm not a recruiter but erm yeah it it just became a task to complete and there was a point when I did go how long does this last <Lh> </Lh> erm because you had told me but I I that I wasn't really I wasn't paying any attention to time my screen was maximised I couldn't see the clock I mean I didn't even think of looking at my watch that would be far too logical erm but yeah I think also I don't know in some ways <TC> that's it

did </TC> feel like an experiment because I didn't understand what the endpoint was erm but yeah I j sort of got on with it I suppose <Lh> </Lh> </17AR13>

<INT> yeah </INT>

<17AR13> and tried not to think too much about it trying to go with gut reaction there were a couple times when I went oh yeah I've been on the right for a bit come on this just looks like I'm just pressing the right and then going no that's not what this is about come on actually and and don't dither about which answer you should give which answer was your first answer where where was your gut it instinct </17AR13>

<INT> yeah yeah because erm one of the things that happens in the experiment is that the order of the choices move around as well and the order of this top move around as well so even if you feel like I've been doing a lot on the right there might be a reason for that because you know you you might be choosing things that are one way round er w cos when I when I look at the data that people do I then sort of flip all the items back to one particular way and I see all the differences in the in the choices so so erm </INT>

<17AR13> mm </17AR13>

<INT> if you felt like you were leaning in one direction like you were clicking the right a lot or clicking the the left a lot that might be randomly determined because all the items are randomised as well so that might be just the way that the software generated and and erm </INT>

<17AR13> yeah </17AR13>

<INT> and then you kind of had no choice but to go for the right because the rule set that you were developing by the sounds of it I don't know if you know </INT>

<17AR13> yeah </17AR13>

<INT> but but it sounds like the rule set that you were developing was was going that way and erm yeah it's it's fascinating is there anything about the experiment or about the project at large that we haven't talked about that you'd like to talk about </INT>

<17AR13> not that I can think of it it's it's fascinating erm <Lh> </Lh> erm but no not really no but it the the rule thing yeah there definitely was a rule there was an attempt attempt to make make order out of what in my mind was chaos because </17AR13>

<INT> oh yeah like </INT>

<17AR13> I didn't understand the I didn't understand it total chaos that that yeah and desperately trying to build some rules and some structure and st and s some stability so then I knew what to do so it got easier erm </17AR13>

<INT> ah I see </INT>

<17AR13> until then something came in and derailed the whole thing <Lh> </Lh> </17AR13>

<INT> oh I see one of the distractors came up and it was like the rule doesn't work here </INT>

<17AR13> oh w the rule doesn't work what do I do mm yeah yeah </17AR13>

<INT> I see right that's er that's really helpful </INT>

<17AR13> I don't worry </17AR13>

<INT> because a lot of the erm effects that people are reporting like this like I felt like I was developing a rule we haven't really up until this point identified that it might be about the distractors and it might be that the rules are about the differences between the nouns and the words in the top so erm </INT>

<17AR13> mm </17AR13>

<INT> one noun is concrete one is abstract so then erm what we're seeing is that people tend to make rules based on the type of noun in relation to the type of word that's in the in the top erm and then when the distractor come up they're both concrete or they're both abstract and so it's like </INT>

<17AR13> people going what <Lh> </Lh> </17AR13>

<INT> but they're also sometimes in the erm in the destractors they're the erm words at the top are also from the same sense whereas in all of the experimental items they're different senses erm so it could have to do with the s the er them being from the same sense as well did you find that the diff like the words at the top being from different senses and then the distractors being from the same sense was that something that you were aware of or noticing or that you think might have driven your choices as well </INT>

<17AR13> it it may have done yeah it may have done I don't know in the data that you get if it records the response time </17AR13>

<INT> yeah it does yeah </INT>

<17AR13> oh good good yeah because that I I imagine that is yeah that b well that shows when you have that moment of going your rule has been broken what do I do now erm yeah g good I'm glad it does have that because that yeah must be really interesting erm yeah </17AR13>

<INT> yeah no I erm that's that's brilliant thank you so much for erm for er doing all of this I'm going to stop the recording and then I'll just let you know what the next steps are </INT>

<INT> so there's erm only one interview question and the rest is just a conversation around that and the question is do you feel like you use language creatively </INT>

<16UN13> do I feel like I use language creatively mm does it matter the context or just in er in general </16UN13>

<INT> it's it's entirely up to you how you interpret that question </INT>

<16UN13> OK OK well having been at university now for oh God almost five years wow almost five years it's th I think that has shaped a lot of how I use language as a whole I mean obviously y you're learning it in school that does shape how you use language but I think having to be so precise and concise with language in an academic sense has meant that mm I don't know if it's creative but I have had to you know make my sort of language very formal very sort of rigid to the point where you know I <TC> I will I won't </TC> use abbreviations because obviously you get penalised for using stuff like that in academic work and you just can't use them so in terms of my language being creative I would say that's probably er been damaged a little sort of having to write academically only because creative writing as sort of a er I mean that you know it's like stereotypical creative writing so things like you know poetry or what have you aren't really appropriate so I'd say that I may be not as creative in terms of my language as I have been in the past but I would say that my language as a whole is wider and more extensive now because of having to use so much academic verbiage if you will </16UN13>

<INT> I see so have I understood right that creativity and academic writing are kind are kind of at at odds </INT>

<16UN13> erm I wouldn't necessarily <WS> let's that </WS> th er oop <Lh> </Lh> tongue tied I wouldn't necessarily say that they're at odds but psychology specifically at least for me creative writing doesn't really have a point or like a purpose within it because at least as I understand it creative writing is very sort of fluid can be very informal academic psychological academic writing mm should be more rigid and sort of professional not to say that creative writing isn't professional but erm I would say that especially if you're doing quantitative work with stats and other you know graphs whatever creative writing doesn't really have a point to it because that's not the point of quantitative research I I focus mainly on qualitative research which is the interviews and stuff and erm it does there is an element of creativity in it because it in it involves a lot of interpretation of what people are saying so I guess it I guess if that <TC> is kind if that </TC> is part of creative writing I guess that it makes qualitative more creative but I would say as a whole psychological academic writing isn't very creative because that's not the point of that form of language I'd say it's more more sort of informative and scientific </16UN13>

<INT> OK and why do you think erm creative language doesn't sit within scientific writing I I understand what you mean about when you when you say erm it there isn't what or I think I understand what you mean when you say there isn't almost a point to it in that s sort of mode </INT>

<16UN13> yeah </16UN13>

<INT> of communication but why do you think that is what like </INT>

<16UN13> erm why do I think that is erm well I suppose it's erm w look to any other sort of harder science like biology or chemistry or physics creative writing as I've described it at least isn't really appropriate at all because you're not really it doesn't really matter sort of what the language is so long as you're stating the facts and you're being concise about what you're saying I sup I mean I suppose creative writing can be that but again like from my understanding f sort of <Gr> facts and figures and erm statistic whatever </Gr> all that sort of stuff doesn't really have a place in the hard sciences so I'd say that for the soft sciences like psychology like I said if it depending on the discipline would depend would sort of influence the sort of writing <Gr> so like a bit a like lot what I said </Gr> with the qualitative and quantitative differences but erm yeah </16UN13>

<INT> how do you define </INT>

<16UN13> I have </16UN13>

<INT> being creative with language in the broader sense like outside of maybe doing some creative writing </INT>

<16UN13> erm in the broader sense I would say that it involves a lot of sort of erm oh what does oh <Lh> </Lh> now I'm thinking about it I don't actually <Lh> </Lh> erm well I would say that it's f sort of like it's I th I don't know if this sort of works as a definition but it's very sort of fluid you sort of you s it's well it's like a story really sort of it you let it I sort of lead you rather than you just putting it down as sort of facts creative writing is uses a lot of erm as far as I'm aware anyway as far as I understand uses a lot of erm informal language erm a lot of sort of nuanced language as well and I don't think that is part of that you know that is part of creative writing which is why it's different from other types of writing like academic because it doesn't necessarily it doesn't matter it doesn't necessarily really matter how you interpret it because it's supposed to be interpreted you know in your own ways whereas academic writing as a contrast or I guess they are contrasted then yeah er academic writing it's not really up for interpretation it mostly it's more sort of this is what this is and there is no interpreting that like this is just what it is <WS> where </WS> it's creative writing you can say things in different ways you can say opposite things but mean the same thing you can have like metaphors and similes and stuff like that where that is appropriate where in other instances it isn't </16UN13>

<INT> I see and how do you feel about the way that academic writing and academic training has er influenced how much language creativity you do </INT>

<16UN13> erm how do I feel erm mm I I don't think I've ever really been a creative writer in any sense of the word er to be honest erm in school at least for me creative writing was something that was em emphasised and looked at a lot but I was never really interested in that I was always more interested in the science sciences erm and like history and stuff so where creative writing isn't really part of that so in in terms of how it's er f how I feel about my not being not erm creatively writing I wouldn't say it <TC> really has hasn't really </TC> had

an effect because it's never been something I've done a lot of where I've had the choice if I've had the choice to I'd rather write in a nuanced way that is more academic and factual

I wonder if we're talking about ambiguity and clarity based on what you've said

OK erm

what do you think about about that

ambiguity in terms of oh it in terms of what

in terms of the devices that are often used in creative writing I wonder if they

yeah

allow for more interpretations

oh yeah I see

that potentially introduce an ambiguity that is contextually inappropriate for

oh yeah I'd agree that yeah creative writing can be more ambiguous whereas other forms of writing are sort of look a lot at clarity and you know the lack of misinterpretation as it were I just I was just thinking about sort of like like Shakespearean plays and stuff if they were written academically or in a formal way they would make no sense and they'd be so boring

I

that's ah that's funny

I know what you mean yeah that erm

it's er it's er b creative writing is a more interesting and fun way to write because you can an you can just do whatever you want with it whereas you know yeah

why erm if if you don't mind my asking why er why is it fun

well it's just because it th it you can just do whatever you want with it whereas again I keep going back to it but like with my university work you can't just do whatever you want with the way you write stuff you literally have to follow rules and regulations with how you write your work and which is reflective of how papers and journals and articles want people to write journals and articles which is based on years and years and years of academic research and you know what have you that has been cultivated over a long period of time that ensures that you there is there is no possible way for you to misinterpret what someone is saying whereas because you don't have those constraints with creative writing it can be more fun to write it because you know you can do whatever you like or more so with other forms of writing

oh OK and is your preference for that academic style erm something that's erm well I get the sense that the preference for the academic style has been there almost before the academic training

er yeah I would I would say so only because I found sort of English and er s you know sort of more I don't want to say creative they're sort of the more well I guess so yeah the subjects that used more creative writing I didn't find those as interesting as sort of science and you know more academic stuff I've always been more academically inclined I suppose not that erm those subject you know more creative subjects can't be academic but in terms of how they write stuff I've always been more interested in the academically written subjects

I see and w what's erm where do you think that interest comes from

erm I don't know really I've I've always been that sort of way erm I I've always be had erm you know like do you know like those big like paperback books of like erm nature or sort of like erm er ah you know like animals and stuff you know like in blue planet or like do you know what I'm talking about like a big

yeah like the erm like the reference erm like encyclopedia

yeah ah yeah yeah but like with more pictures I've always I've always it liked those sort of erm books when I was younger and I still have a load a lot of those sort of books now I have actual funnily enough been more interested in the more creative writing stuff recently but in terms of reading it that is I've I've always been interesting in reading at more creative writing but when I was younger especially I preferred sort of more academic sort of documentarian style stuff

so is that have I have I understood right that there's that in like the production area like there was a preference for using more language techniques that we'd think of in terms of like science communication but then

yes

and nonfiction and that sort of thing but then in terms of actually like er in the comprehension area so like erm you know the stuff you'd like to hear the stuff you'd like to read there's there's more of an interest in that area in the creative stuff than in sort of if we had to say like experiencing creativity versus doing creativity is that fair to say

oh yeah yeah I'd I'd I would say that I'd be more to the former only because I've been doing academic writing for so long that I don't really I wouldn't say I can't do it but I'm more inclined to write academically than I would creatively if I were to try and you know write some sort of like story or something now it wouldn't be very good because it would just be you know it wouldn't be erm as sort of fluid and you know creative in the way that creative writing is because that's not what I'm used to doing

<INT> you mention rules as well and I'm I'm wondering how rules play into that potential difficulty like cos you mentioned the rules of academic writing </INT>

<16UN13> yeah </16UN13>

<INT> and then the absence of rules in creative writing </INT>

<16UN13> yeah </16UN13>

<INT> and I wonder whether for you that relates to that sense of difficulty or or not </INT>

<16UN13> erm well I think a major part of it is I think I wouldn't necessarily call it a fear but I don't like I pe I don't like being misinterpreted so academic writing is a very big is you know is obviously like I said is very big on making sure you're as clear and your writing is as clear as possible so it can't be misinterpreted whereas as we know a lot of creative writing especially stuff written years and years ago in new social contexts gets very misinterpreted and very sort of you know can g w be quite damaging if they were written now </16UN13>

<INT> yeah </INT>

<16UN13> and so creative writing is very sort of erm dependent on the social context whereas academic writing can be but because it's written in factual ways <Gr> you sort of know that reading it </Gr> whereas creative writing is less obvious in that way </16UN13>

<INT> I see yeah like it's more resistive to change like changes in social contexts cost it's </INT>

<16UN13> yeah </16UN13>

<INT> er it's sort of designed to be resistive to changes in erm </INT>

<16UN13> yeah </16UN13>

<INT> oh that's yeah that's really interesting like there's no set length to the interviews by the way but I could keep asking questions f you know </INT>

<16UN13> <Lh> </Lh> </16UN13>

<INT> for as long as you have time erm so do say if you need to go or anything but erm </INT>

<16UN13> well I'll give you I'll give you five more minutes <Lh> </Lh> </16UN13>

<INT> brilliant thank you </INT>

<16UN13> oh actually ten <Lh> </Lh> I'll give you ten more minutes </16UN13>

<INT> well that well that'd be amazing yeah thank you </INT>

<16UN13> that's all right </16UN13>

<INT> so cos the questions I I ask people like you know do you do creative things with language and then leave it to their interpretation erm </INT>

<16UN13> yeah </16UN13>

<INT> it's interesting to see how people define creativity with language and like we </INT>

<16UN13> yeah </16UN13>

<INT> we seem to have moved into creative writing which is absolutely fine erm </INT>

<16UN13> I I think writing and language are very much intertwined because you can't really have one without the other </16UN13>

<INT> yeah the things that you see in like say novels or or examples of what we think of with like classic creative writing that you read erm </INT>

<16UN13> yeah </16UN13>

<INT> what's your sense of like the differences between w r speech and writing like how do you look at those </INT>

<16UN13> well speech is well OK well actually we could start with writing first writing you can only go as far as what is on the page you know if there's er if you know if you have a paragraph in front of you that can be if creative writing now if that can be interpreted in different ways that can only be created in as many ways as it's written you know because writing doesn't necessarily have a context whereas language does you know if you're talking to someone you can you can see how you're supposed to interpret if they're saying something in like a positive way and you know the body language is you know comfort you know like positive then you know that oh well they're saying that you know it it is like erm if you tell a joke and your body language is positive you know that that's supposed to be funny whereas if someone says something that sounds like a joke but they don't have that sort of positive body language and you're like oh maybe that's an insult instead so I'd say that creative writing is very sort of erm social er has a very big emphasis on context but language regardless of what the language is has an even bigger emphasis on that context especially creative language </16UN13>

<INT> I see you mentioned mm misunderstandings and how </INT>

<16UN13> yeah </16UN13>

<INT> these are erm potentially more likely when creative forms are used </INT>

<16UN13> yeah </16UN13>

<INT> er I'm wondering what do you think about misunderstandings when cos y cos you mentioned humour as well which is like </INT>

<16UN13> yeah </16UN13>

<INT> and I think the example you gave is brilliant like how the context of erm the delivery th you know the environmental factors like you know where the joke is told </INT>

<16UN13> yeah </16UN13>

<INT> the body language you know so the kind of supporting communicative information that accompanies it all of these things change how the joke is interpreted </INT>

<16UN13> yeah </16UN13>

<INT> is it are we tapping into like there's more risk in creative language then </INT>

<16UN13> oh absolutely yeah I mean you can say er since creative writing and language can be interpreted and is supposed to be interpreted in many different ways there are many different ways people can interpret it and they can interpret it in bad ways you know erm I mean creative language like I mean <Gr> if someone from me example </Gr> or I don't get offended by anything really but if someone were to say er it's sort of like a a sort of a gay joke if I was in on the conversation then I would find it funny whereas someone else could find that offensive so it's very much sort of yeah it is it's very much erm misinterpretation is a very big part of language especially creative language because unless <TC> you're cos </TC> you <TC> know it because </TC> of that misinterpretation if that's that's <TC> the whole it's like </TC> a double-edged sword creative language is creative because you can interpret it in different ways it's like with critique people can critique it more in in many different ways because it's something cr you've created so critique is a natural part of I would say part of that </16UN13>

<INT> oh I see yeah </INT>

<16UN13> you know obviously we get I know mm I get <WS> create cr er critiqued </WS> all the time for academic wri er ap er academic writing and language but erm that's not necessarily the same thing because if I've if someone's misinterpreted what I've said it's because I've not said the right phrase or sort of you know I've not used the right terminology whereas creative language and writing can be interpreted interpreted in so many different ways that there's basically no one way to interpret it including negative </16UN13>

<INT> I see yeah so if in terms of like academic writing if I said that erm er an article prepared for submission to a journal under a particular journal's style guidelines </INT>

<16UN13> yeah </16UN13>

<INT> needed to be changed to go to another journal </INT>

<16UN13> yeah </16UN13>

<INT> would would you consider that process creative if you were changing a text that was say for journal A in </INT>

<16UN13> yeah </16UN13>

<INT> into something that then would be moved through the process at journal B </INT>

<16UN13> erm I I think it would depend on what needed to be changed erm I ah ah I y know I erm I would say that is quite a creative part of academic writing where you can obviously if you need to write stuff in different ways that is that c that is creative but I would say that it's not creative writing it's more of a creative way of writing academic writing if that makes sense <Lh> </Lh> </16UN13>

<INT> yeah yeah I see what you mean </INT>

<16UN13> because you can write academic writing in different ways that doesn't make it creative writing </16UN13>

<INT> yes yeah so that's about genre cos I the reason I ask is </INT>

<16UN13> yeah </16UN13>

<INT> erm because you know there's there's no right or wrong answer it but it's it's good to have a sense of where people define the parameters of creativity and creative language <Noi=telephone ringing> </Noi> </INT>

<16UN13> yeah </16UN13>

<INT> erm because er yeah different people have different scope I think in terms of what they consider a <Noi=telephone ringing> </Noi> creative language activity or a c or you know and </INT>

<16UN13> mhm yeah </16UN13>

<INT> and erm yeah so that's that's really good to know so it's is it er I mean when I say it's about genre do you do you agree with that </INT>

<16UN13> oh absolutely yeah absolutely like I said with the er like with psychology and quantitative and qualitative differences sort of stats versus sort of re er interviews and stuff I know they're not different genres ah they're er different subgenres of the same discipline so obviously the genre is very <TC> dic the genre dictates </TC> how you like creatively write or not creatively in more academic circumstances </16UN13>

<INT> and how do you define the doing creative stuff with language that's not part of the creative writing genre like if I go back to the very first question </INT>

<16UN13> yeah </16UN13>

<INT> and say sort of how much of that do you do </INT>

<16UN13> in terms of <WS> creating er creative wr er language and writing done being done creatively </WS> rather than it being creative writing I would say I would do that a lot because I mean people lecturers for example will want you to write a piece of a piece of research in specific ways that then that you can write that in many different ways because you know you pe individuals individuals have different ways of writing stuff doesn't make it creative writing because obviously if it's for a

university you know like a psychology sort of piece of research it's all academic that w p er individual inter er interpretation of the sort of parameters of what they want means that you're very unlikely <WS> to say th see the seem same </WS> two papers because people are creative with the way that they write for academic research and oh er the same with language </16UN13>

<INT> I see I l er have one last question based on erm something I l saw recently and I'd love to know your take on it erm </INT>

<16UN13> OK </16UN13>

<INT> there's an AI that writes journal articles </INT>

<16UN13> yeah </16UN13>

<INT> erm and some of these have been accepted but they they don't their content doesn't actually make sense erm </INT>

<16UN13> right right </16UN13>

<INT> and so based on our conversation I wonder what would you call what the AI is doing </INT>

<16UN13> I would s er I would say what the AI is doing is presenting facts without nuance because the whole point of writing and language to people is that we can interpret things different ways even regardless of if it's sort of erm creative language or academic language what have you we all interpret things different ways it's just it j it is just the amount of interpretation that there is between the different kinds of language so what I'd say that er that AI is doing is presenting things in an academic way but not in a creative way within that it is literally er y you know you can present s you know like statistics you can present them but if you're literally just presenting statistics <TC> without and you know </TC> without telling someone what that means then obviously that's not gonna make any sense <Lh> </Lh> </16UN13>

<INT> yeah just a graph with no </INT>

<16UN13> so it's er yeah like I said it's just statistics </16UN13>

<INT> context yeah </INT>

<16UN13> yeah </16UN13>

<INT> that's really thank you so much </INT>

<16UN13> no problem thanks </16UN13>

<INT> erm so I'll I'll stop the recording and then I'll just </INT>

<16UN13> OK </16UN13>

<INT> erm just before you go I'll just tell you a couple of things about the debrief and stuff </INT>

<INT> OK so there's only one question and that's how was the experiment </INT>

<16OV11> <Lh> </Lh> erm different and it was quite interesting I think I questioned my own abilities erm but it was it was fun and it was different to other experiments that I've done </16OV11>

<INT> you say questioned your own abilities did it feel like there was a right or a wrong answer </INT>

<16OV11> yes probably </16OV11>

<INT> I see </INT>

<16OV11> erm so I was yeah I was curious as to whether it was right the whole time <Lh> </Lh> </16OV11>

<INT> but there so erm it's I mean it's just measuring preferences so whatever you chose was was right because it's your your preference so there's no erm erm right or wrong did it feel like that from the beginning or </INT>

<16OV11> erm yeah I'd probably say it was because erm just because there were two answers on this one so it was either a yes or a no you're right or you're wrong </16OV11>

<INT> I see </INT>

<16OV11> so that's how it felt erm yeah </16OV11>

<INT> I see and er how did the words themselves er factor in to your experience </INT>

<16OV11> erm I don't know they were quite random words so I found that er interesting erm and I didn't know whether it made much sense and obviously because they were repeated so many times I think I probably made different answers and different choices erm cos I couldn't remember which I'd done originally erm so yeah no I c so <Lh> </Lh> there were so many different options it was it was confusing </16OV11>

<INT> would it would it help to know more about the experiment and sort of what it was doing </INT>

<16OV11> yeah </16OV11>

<INT> so you had erm two sensory words at the top erm and those two senses were kind of smashed together so you had you know like taste and smell or something combined and then er in every case there was a choice between a a concrete noun and an abstract noun so the experiment presents people with erm with a sensory kind of erm prime at the top and then erm when the participant makes a choice they're they're creating a metaphor erm and the experiment's looking at whether people choose to create metaphors that are about something concrete erm or something abstract so erm whether they form metaphors about things erm like objects or or ideas and er </INT>

<16OV11> yeah </16OV11>

<INT> does does knowing that when you look back on the experiment does that erm give you a bit more context that's

helpful to make sense of your experience of the experiment </INT>

<16OV11> er yeah I think so I think because I've done a few experiments before I thought not to read into it too much because obviously you'll be analysing a massive data set erm but yeah I think it's interesting and I'll be interested to find out the er outcomes of the study </16OV11>

<INT> cool and is there you mentioned the words erm being quite random </INT>

<16OV11> mhm </16OV11>

<INT> was there how did that affect your selections or did it affect your selections </INT>

<16OV11> erm I don't think it affected my selections I think I was surprised about how they were just they were so random but it didn't affect it no </16OV11>

<INT> oh OK </INT>

<16OV11> because they weren't difficult words to understand </16OV11>

<INT> and when you're when it comes to your choices how did you </INT>

<16OV11> mhm </16OV11>

<INT> f sort of feel er throughout </INT>

<16OV11> erm I didn't want to overthink my answers because obviously there were quite a lot to get through erm but I think my choices they probably differed so one question I'll have answered one way and then erm several questions down the line I'll have answered it a different way I think just because I c simply couldn't remember the way I answered it originally </16OV11>

<INT> oh OK and that sounds like that sort of looking for a rule finding a a kind of a strategy for responding to certain items </INT>

<16OV11> yeah </16OV11>

<INT> I see and did it feel like you were doing something creative </INT>

<16OV11> erm yeah I think so I think it's probably quite different to what I normally do so it was it was creative in that respect </16OV11>

<INT> cos one of the the things about the experiment that I guess is so bizarre is that it's about making a creative choice but under very very strict linguistic conditions like you know trying to build something out of Lego with only four blocks you know erm </INT>

<16OV11> yeah </16OV11>

<INT> and there's only so many things you can do with with those four blocks so many ways you can arrange them so erm

was that a thing for you did you find that er like the feeling of creativity being restricted in any way or </INT>

<16OV11> erm I <TC> don't it </TC> possibly was restricted like you said you were only given a few words erm but I don't know if I'm that creative anyway that I would've been able to think of other words erm especially I think cos you're under a time pressure I think it would have been difficult to have thought of my own er words to use </16OV11>

<INT> oh OK erm yeah well it well thanks so much is there anything that we er haven't talked about about the experiment or about the entire you know participation generally that you'd like to talk about or </INT>

<16OV11> erm possibly where erm where I stand in the first section of the experiment <Lh> </Lh> </16OV11>

<INT> oh sure yeah so erm I scored that while you were doing the experiment so erm </INT>

<16OV11> yeah </16OV11>

<INT> confrontation naming which is a erm like a a short cognitive linguistic assessment that erm is just really about vocabulary and erm executive functions and that sort of thing er ten out of ten the erm story retelling 16 out of 18 so the erm yeah and the questions about the story full marks and erm where is it the ah yeah and the generative naming so coming up with names of animals erm and coming up with M words er you're in the so that you you put all the scores together and then you get like a summary score and the highest summary score for this task for both animals and M words is nine and you got eight erm you got 39 </INT>

<16OV11> oh OK </16OV11>

<INT> and the score to be in the n the level nine is 41 so you're very </INT>

<16OV11> OK </16OV11>

<INT> very high end of eight so you're you're in the </INT>

<16OV11> I'll take </16OV11>

<INT> top band of all of the that those three assessments combined they measure memory attention executive functions language erm </INT>

<16OV11> mm </16OV11>

<INT> so it's er and they they just help us rule out er linguistic ability in the clinical group so if we have you know we we match controls who score the way that you scored with erm people in the schizophrenia group who whose language cognition is least affected by schizophrenia </INT>

<16OV11> mhm </16OV11>

<INT> erm so erm but yeah er working under time pressure is quite confounding when you're you know you have a minute to name as many words beginning with M as possible every word beginning with M that you know disappears so erm </INT>

<16OV11> <Lh> </Lh> mm yeah </16OV11>

<INT> but but yeah no like erm and that's you know it's an interesting thing cognitive assessments they tend to have that effect don't they people s seem to think they perform really really poorly when actually they do fine erm </INT>

<16OV11> exactly </16OV11>

<INT> so th </INT>

<16OV11> I think it's like being on a game show y just <Lh> </Lh> can't remember anything </16OV11>

<INT> yeah yeah and erm yeah that's brilliant thank you so much erm I'll stop the recording now unless there's anything else you want to talk about before I stop the recording </INT>

<16OV11> no thank you </16OV11>

<INT> OK </INT>

<INT> now so it's erm there's only one interview question
</INT>

<11AR18> OK </11AR18>

<INT> er and the rest is just like a a chat around around that question but erm the question is do you feel like you use language creatively </INT>

<11AR18> erm that's a very open question isn't it <Lh> </Lh> I think that er I I have a feeling that my profession is going to er sway the answer to this question quite a lot er so I'm a psychologist so the main part of my role is talking therapies erm so there's a lot of emphasis on kind of creative language and the use of metaphor within most therapies erm so yeah so I think we we use a lot of metaphors erm therapeutically with with the people that we're working with and probably also with each other because you just kind of get into the habit of of thinking in that <Lh> </Lh> way erm so there's there's kind of room for like a bit of playfulness er with language and and with the the meaning of of things and and how kind of experiences are constructed erm so I think I'm I think I'm probably think more creatively than certainly like my family and friends in in the way that I in the way that I talk erm but I think my job probably has a lot to do with that </11AR18>

<INT> I see and so d do you mind if I ask erm more about the role that creative language plays professionally in terms of the functions that it allows for </INT>

<11AR18> yeah of course </11AR18>

<INT> so like what does creative language let you do that what we might call non creative language might not let you do </INT>

<11AR18> erm lots of things probably so I think it allows you to be like a bit playful in in one sense so erm you you know you c you can maybe bring up quite difficult erm emotions or concepts or theories even and and and and make it a bit more playful and and a bit more interactive and erm in in the way that you do it I think it also it also helps with like externalizing problems erm so you know if if you find a metaphor like er you probably heard like you know the black dog metaphor for depression erm so so kind of having having an external metaphor for for distress or or a a feeling or a behavior I think helps it to er it it to be externalized so it doesn't feel like it's a a problem within or something that needs fixed or changed within it's that it's something that's that's there and we can describe it and put words to it and and find the meaning erm and I think that's an a safer way to approach things sometimes erm </11AR18>

<INT> so have I understood that like metaphor and similar types of language can let can erm let people having that interaction bring things into a kind of middle space that then you can both look at it </INT>

<11AR18> yeah yeah and yeah <Gr> and I think can </Gr> really personalize the meaning as well erm so you know like we might have like a a clinical word for like could use depression again for someone but you know that doesn't that doesn't carry meaning for everyone whereas kind of a cloud or a fog or more of like a

kind of descriptive language where you might assign a colour to something or erm you know you might assign a name to it or just use a a swear word or you know it just it just kind of gives a bit more freedom to personalize the thing erm </11AR18>

<INT> yeah </INT>

<11AR18> I don't I mean I er have you got like a definition of creative language like <Lh> </Lh> </11AR18>

<INT> that was going to be my next question how do you </INT>

<11AR18> that's good <Lh> </Lh> OK erm c er well this is well this is what I was wondering when I started talking I almost started kind of putting bits together and I was thinking I'm sure it's probably broader than just the use of metaphor when I'm sat across a room from someone <Lh> </Lh> erm I think er when I think of the word creative I automatically think of like like colour and erm like not kind of not something practical or prescriptive something a bit more er an I don't really think and I can think of a word for it but I don't and I know you're nodding I don't know if you can kind of grasp what I mean well for the purpose of the audio recording I'm going to have a word for it I think but I think for me it it just becomes something a bit more so there's like a kind of a freedom for kind of bringing yourself into it or or feelings or emotions or experiences rather than a bland word I guess so I don't know any opportunity you'd have to do that so whether that is swearing and and kind of you know er er getting something out erm in in a way that allows you to get feelings out at the same time or erm like er some like a metaphor or something that brings like imagery to mind or like outside the words maybe erm story telling I I don't know if if that's kind of linked erm yeah like <TC> somebody narrative I guess </TC> </11AR18>

<INT> yeah cos I I'd like I think all of these things qualify as examples of of creativity and I've been asked more than once in the course of these interviews like well what do you mean that's a very open question and I I say well if I </INT>

<11AR18> <Lh> </Lh> </11AR18>

<INT> if I knew what erm if I if I knew the definition for linguistic creativity I'd I wouldn't be doing this you know like </INT>

<11AR18> yeah <Lh> </Lh> </11AR18>

<INT> erm so I but I know what you mean it's like w what what people are actually asking is do you have some parameters in which I can position my answer you know like </INT>

<11AR18> yeah </11AR18>

<INT> erm is is there a like a context in which we can place the discussion and in that case the answer I've generally leant towards is I've said well is it like play you know is it like anything that involves playing with language erm or sort of doing play language play ern and I d I wonder if that relates to that's it rang a bell when you when you mentioned sort of its role in professional practice and erm sense making exploring with people I think almost like playing with experience </INT>

<11AR18> yeah yeah and I think I think storytelling as well er I think kind of fits not necessarily with kind of playing with language but mm but I guess <DT> what you've just said </DT> in terms of using it as a way to to kind of convey meaning or explore it you know well a lot a lot of what I do at work is to just have someone share their story and I think that involves lots of different erm techniques but the the main one is is someone finding the words to describe what's happened to them or or what they're feeling <Gr> or what they want it to happen </Gr> erm and I think maybe part of it yeah actually cos if I think for if I think about kind of er being creative with language I think you stand alone and you can probably be quite creative with language in in the way that you might kind of express how you feel through poetry songs speech w or written language however that might be but there's also something about like dialogue I think and and a bit of the like dance or back and forth and how you kind of co-create that erm and I think it's where we have a different process but both both as creative as as the other I guess yeah </11AR18>

<INT> yeah I'm I'm smiling cos I my next question that I'm thinking then is er does it allow you to do things communicatively that or does it add a maybe another level to erm what's possible communicatively between people </INT>

<11AR18> I think so I think especially thinking about the example of humour and and finding er a kind of phrase or using somebody's own words to be able to like introduce something a bit more difficult or or something a bit controversial it I think it if you can do that with playful language such as using somebody's own language or or finding a metaphor or or using like a kind of I I don't know like a quote of a famous quote or or something I think you can you can say a bit more </11AR18>

<INT> yeah </INT>

<11AR18> than than you could if you were to just deliver it directly or or plainly erm yeah </11AR18>

<INT> that's like e e everything you've said is is fascinating but the thing that really stuck out just then was erm repeating erm what someone has said back to them in that kind of playful way and the direction I went in interpreting that was I imagined you in a therapeutic context drawing someone's attention to something significant in what they've said </INT>

<11AR18> yeah </11AR18>

<INT> and like I I wonder if if you wouldn't mind elaborating on that a bit more cos that's that's like a really erm I think a really good example of what we've been talking about like how creativity and play can be used to erm kind of bring people together and explore ideas </INT>

<11AR18> yeah yeah and I think er also give a bit of power to the person that's said something as well so you know sometimes er you just like in this context I guess <DT> I've rambled on and you've picked something up and you've delivered it back and it then it then places significance on it </DT> and and gives it a bit of power and I think in a therapeutic context that's r that can be really reassuring or or really kind of meaningful for someone to to have been heard and and also to kind of have their own their own not even

experience but the way they've they've described that experience using language to be acknowledged and and kind of given a bit of a platform erm and we do that a lot like <TC> your one </TC> of the key things in therapy is like summarizing and in any type of interview I guess you know I y someone'll sit down and speak sometimes for an hour sometimes for ten minutes and without taking a breath and it's how you summarize it and and I guess part of that is picking people's words or strings of words that have stuck out or you know have kind of struck you or made you a bit more curious or erm or or kind of felt important and and I th that's probably like a r a large part of what I do but then you're right it gives you the freedom to explore that a little bit further erm which might be you know let's look at that in a different way or erm you know let's think about a c a colour or a memory or a song that I I links to that and and and I think words are quite often embedded in that erm yeah I I mean cos there's certain colours that that have certain words associated with them and would you know I th gave someone today like this colour wheel that's got like a kind of inner circle of like core pain feelings like fear erm sadness joy pleasure and then it's got like ripples out but each section's in a different colour and obviously the sadness one's blue and it goes to like a lighter shade of blue and you've got words such as like guilt and shame erm like and then yeah and then even like tertiary words like feeling neglected or whatever and they're all they're all together in that blue group and then you've got like a yellow group and and then that gives people the f the kind of freedom to then use a colour to describe a feeling so even in that sense </11AR18>

<INT> yeah </INT>

<11AR18> it it's like a shortcut almost sometimes having a kind of more personal I guess creative definition of something for you is a bit of a shortcut and once people get to know that shortcut y it means something between you both erm I dunno if that makes sense </11AR18>

<INT> yeah yeah it's it's erm without like sort of influencing where we take the conversation too much it does map on to to a lot of the things that erm </INT>

<11AR18> yeah </11AR18>

<INT> have inspired the project like erm I think of erm there are some I think in some inpatient settings they have traffic light systems traffic light cards </INT>

<11AR18> yeah </11AR18>

<INT> for sort of like erm communicating to staff like the general feeling of the day like if </INT>

<11AR18> yeah </11AR18>

<INT> obviously that's you know that's an oversimplification of of what it's doing but like er and it's more than just the general feeling of the day but like as a way of sort of having the conversation without having the conversation right then and there sort of thing erm </INT>

<11AR18> yeah </11AR18>

<INT> see that shortcut thing </INT>

<11AR18> yeah </11AR18>

<INT> which to go back to what I said about not wanting to influence the discussion too much but that's erm one of the erm one of the things that a lot of metaphor theorists think metaphor is kind of for is to sort of help us very erm quickly find common connections in our experiences and go here's the commonality in the complexity you know </INT>

<11AR18> yeah yeah yeah it's it's interesting that just even thinking about like <DT> what you just said there </DT> numerous times working with young people especially you you know you you spend a lot of time working on these shortcuts so you might do like an emotions thermometer that has I d er a colour scale but also has kind of certain words on or things that are associated so you know on on kind of the angry end of of the thermometer you might have like the colour black or red you you might have images that are particularly triggering or or names of people that that bring about those emotions and and and then that's used to communicate to either family members or or staff if erm if you're on a ward setting that mm this is where I'm at right now erm and and obviously when you become well any intense emotion but with anger when it starts to build you then you lose language is one of the things that goes isn't it you you know you can't communicate effectively to s to someone erm when you're in any form of distress so you need to be creative with how you tell someone what you're feeling or how you're feeling erm yeah and I guess you can do that without verbalizing it as well can't you you know a lot of people find very creative ways to get their needs met erm yeah whether that's certain behaviors or noticing that when you make a certain stand or raise your voice you get a certain reaction erm you know you learn that that er that kind of gets the desired outcome and and gets whatever the need is met erm yeah it's f it's ah yeah because I guess creative language maybe doesn't doesn't tap into kind of the nonverbal stuff so much erm or maybe it does I don't know <Lh> </Lh> </11AR18>

<INT> well like I I know what you mean I I think erm because thinking about anger I like what you said there about how sort of language goes like I totally agree and that it seems to be as the intensity of the anger increases it's the gesturing and the the emphasis you know the erm the speed of the gestures, and you know how abruptly they come to a a stop you know like pointing is no longer just pointing it's thrusting at the air you know </INT>

<11AR18> yeah </11AR18>

<INT> and that kind of thing and erm all of the things that we normally do with language like the nuance that we seem to apply to language we start to apply to our physicality as language </INT>

<11AR18> yeah </11AR18>

<INT> goes it's really interesting and erm and I personally consider that creative language but we don't have a a very good erm we haven't mapped the territory of how we would describe say like a nonverbal metaphor very well </INT>

<11AR18> yeah </11AR18>

<INT> like it gets harder to talk about nonverbal behavior the way we talk about verbal behavior </INT>

<11AR18> yeah </11AR18>

<INT> but I think we totally should look into that like as a like a way of thinking about nonverbal behavior erm because I think it functions similarly I just don't think we have the right erm framework for it yet </INT>

<11AR18> no I suppose it's a bit harder to kinda measure or kind of draw meaning from isn't it but there's certainly er you know you know ways of of er of communicating I mean think about like an eye roll er <Lh> </Lh> like that's that's communicating a very clear message erm </11AR18>

<INT> mm </INT>

<11AR18> and and and that I I guess like is or feels to me anyway like it kind of fits into that more creative communication like when you're in a situation you kind of see a a way of verbally sharing how you feel or getting out of that situation or whatever then you've got that set of kind of more creative nonverbal strategies that you can use erm yeah </11AR18>

<INT> you've just reminded me of erm something erm some an example of where nonverbal behavior does function a bit like erm verbal communication erm </INT>

<11AR18> mhm </11AR18>

<INT> sometimes when you invert the order of a phrase or something it changes the meaning so when you change you know the syntax or the or the order of the words and sometimes that can happen with eye movements like the difference between someone looking at a table and then looking up at someone or looking at someone and then looking down at the table like </INT>

<11AR18> yeah that's true </11AR18>

<INT> erm so there's all er th like it's like sometimes there's some overlap but then ah yeah like in other times it's it's hard to erm I I think there's more ambiguity in non verbals </INT>

<11AR18> yeah yeah </11AR18>

<INT> and ah and yeah like emo emotions and and colours and language if if you don't mind just erm my asking about that cos that sounds like a </INT>

<11AR18> <Lh> </Lh> </11AR18>

<INT> erm like a really interesting area to explore in the context of metaphor </INT>

<11AR18> mhm </11AR18>

<INT> erm which is not something I I've asked anyone else actually but I'm I'm just putting together what we've talked

about and thinking it would be really nice to hear what you think about emotions colours and metaphor erm </INT>

<11AR18> mhm </11AR18>

<INT> w in the context of therapies and communication or or just communication generally </INT>

<11AR18> yeah well I think er it I mean er I guess kind of more generally I think most people if you name a colour would very quickly <Gr> kind of associate and emotion </Gr> with that so think about this saying oh I'm feeling a bit blue you know that has a lot of that has a lot of meaning erm and people say that because it's a bit milder than saying I'm I feel depressed or or my mood is really low it's it it I think has a bit of safety it erm p p perhaps take some of the kind of severity out of it erm but definitely feels mm more erm relatable er maybe is the word erm so I think er you know everyone er I I imagine if you say what colour is associated with anger would probably say red you know you've got this saying oh I just saw red I couldn't do anything else so you've got the red rag to a bull mm er expression so I think they're they're c really commonly used the kind of general ones erm but I think in a therapeutic context you possibly get to explore that a bit more so it might come about by well like there's this technique called externalizing that erm we'd use a lot in systemic therapy which is just </Gr> creating an identity for a feeling out with you </Gr> and and mm part of exploring that is what if this thing looked like something <TC> what it what does it </TC> look like so you know if your depression was sat in the room with us what does it look like erm what colour is it like you know is it does it float is it heavy is it soft is it rough erm and most you know there's always there's common themes of <Gr> like black clouds or fog or mist or like storm </Gr> you know those kind of things are associated with erm with low mood and then y you know you might have things such as kind of lightning or erm like waves being er w associated with like ang er like more kind of worries or erm or anxiety I guess but it makes it er that it makes it takes it out of you I think it takes it out of your body and and gives you like mm a bit of power over it so I think you know you wanna be in control of that thing so you know if you think that it's a black cloud that's over here and you can think about it it comes closer and that's when I start to feel X Y Z erm it allows you to play with it a bit more so then you can start to have the conversations about right so when the black cloud isn't so black when it's grey what are you doing what does it look like what does your day look like erm when the black cloud is over you what you know what's that like erm how can we make the black cloud smaller I think it it just it gives a nice way of of pushing that a bit erm and I think sometimes that can be a bit playful like if you especially with children <Gr> and I think might always need to be better at it with adults </Gr> so I think adults lose some of that playfulness because you you get it more with children about the drawing like big monsters erm to be their worries or whatever and I think it's a bit harder to do with adults erm but just as important I think erm </11AR18>

<INT> yeah </INT>

<11AR18> yeah <DT> I think I deviated from your question </DT> just about colours there but it just made me think of all the kind of bigger descriptions or the kind of imagery that that

comes with giving something a colour or a name or and being a bit playful with that erm </11AR18>

<INT> yeah and that's fine by the way like the for the conversation to go </INT>

<11AR18> <Lh> </Lh> yeah </11AR18>

<INT> you know the way it goes like erm like erm just because I'm aware look thank you so much for giving so much of your time to this </INT>

<11AR18> no that's OK </11AR18>

<INT> do you mind if I just ask sort of a closing question around </INT>

<11AR18> yeah </11AR18>

<INT> just generally how you feel about sort of like art music writing like the sort of erm er w what things like poetry and and things mean to you if if they do or if you prefer music or art or or you know erm you don't have to like these things but like what you think about them and and that sort of thing </INT>

<11AR18> <Lh> </Lh> yeah erm well er well I think I like all of those things and I'm not I don't er I used to keep a like a one line a day diary for five years where I'd just kind of like write down a a like a thought or something that happened or and it was falling to bits and I finished it this Christmas it was a Christmas present five years ago and I keep saying to myself I must find another thing to to replace that because it was like such a cathartic process just just writing down every day <Gr> and you know ask people every day at work to keep diaries </Gr> or log log things I d like I do think there's a lot of of usefulness in that erm but it wasn't particularly creative erm I'd <TC> I'd love I think </TC> I'd love to be able to write like poetry or or kind of do a bit more creative writing but I just I don't I don't think ap apart from kind of like metaphor and and kind of understanding I think personally it doesn't come out so easily for me verbally erm I think <TC> I'm I much </TC> prefer art and erm I do a lot of kind of drawing and painting erm murals lots of </11AR18>

<INT> are those yours </INT>

<11AR18> yeah this we just moved into this house recently so I drew this this is my makeshift office until I can er buy wallpaper so </11AR18>

<INT> they're beautiful </INT>

<11AR18> oh thank you well I very much just express myself through pen and paper really rather than words erm I do always kind of want to be better at that but like I say it just doesn't come as easily for me erm but music you mentioned music I absolutely love music and find it quite powerful erm like I spoke with someone the other day actually about how there's certain songs that just bring such strong emotions for me that I'm like why do I listen to these songs because I was in a great mood before I put them on <Lh> </Lh> <Gr> them now I'm like driving along like with a lump in my throat </Gr> but there's

<Gr> there's just kind of some pieces of music </Gr> that really do like just kind of touch me a bit erm yeah </11AR18>

<INT> yeah I don't you know I I don't want to pursue a topic that's that's potentially erm up upsetting or anything but my my first thought there was erm is that maybe a combination of the music and the lyrics or more the myrics er lyrics or or more the music or if you'd rather talk about something else I'm very happy to very like to go back to the wall cos </INT>

<11AR18> <Lh> </Lh> </11AR18>

<INT> the it's like now I know you've done it it's amazing like erm and have you done have you been doing art long </INT>

<11AR18> erm well I did it at school for like GSCE and a <Gr> all I wanted to be an art therapist </Gr> but erm that costs a lot of money to train <Gr> as as art therapist </Gr> and whereas the NHS pay for your clinical doctorate so I just went down that route instead erm but I do I absolutely love art erm like all types of it as well not just s some like I you know I love going to art galleries and looking at kind of really old traditional pieces and then I love to just chuck paint on a canvas as well </11AR18>

<INT> amazing that's wonderful thank you </INT>

<11AR18> yeah </11AR18>

<INT> thank you so much </INT>

<11AR18> no that's alright </11AR18>

<INT> erm I'll I'll stop the recording and then I'll I'll just let you know sort of why we've been doing what we've been doing </INT>

<INT> and then the rest is just a conversation around that question for however long you'd like to chat about it erm </INT>

<09AR14> oh OK </09AR14>

<INT> so the question is how was the experiment </INT>

<09AR14> cool er <Lh> </Lh> it was it was interesting it was good it was yeah like that makes sense like I if I had an expectation of like what an experiment like that would be like that all seemed to make some sense <Lh> </Lh> I guess </09AR14>

<INT> what did it feel like sort of going through the items </INT>

<09AR14> going through like oh the items which what like the like the phases of the experiment what do you think do you which what <Lh> </Lh> </09AR14>

<INT> like the the thing you did first where the words were coming up on the screen </INT>

<09AR14> yeah that was that was strange that was cool erm yeah like it it r remind it reminded me of like er a book I read that was written by someone with schizophrenia I was like oh yeah OK <Lh> </Lh> erm so unfortunately maybe I was a bit loaded up with that but like obviously like there was no sense and it was really hard initially and then I was like that's OK just go with it and then like I kinda sort of found a rhythm with it weirdly even though there was like no rhythm to be found potentially but there was because <Lh> </Lh> I dunno <Lh> </Lh> I dunno because words are like a </09AR14>

<INT> that's OK th there are like three </INT>

<09AR14> <Lh> </Lh> </09AR14>

<INT> very in you you've made three very interesting points that if you don't mind I'd really like to like ask more about each of them so erm </INT>

<09AR14> mm <Lh> </Lh> </09AR14>

<INT> the f the first one was about the book erm </INT>

<09AR14> yeah yeah </09AR14>

<INT> do you mind if I ask about that who who that was and what it was about </INT>

<09AR14> sure yeah ah what was it called erm I only read half of it and it was like last summer maybe erm er I think over there maybe er it was like <Lh> </Lh> what was it called hang on two seconds I think it's gonna be in there <Lh> </Lh> erm um oh bummer it's not in here </09AR14>

<INT> no no worries I mean erm if </INT>

<09AR14> it was called <Lh> </Lh> it was called the center cannot hold and it was like erm it was about a person who like er kind of like gradually got like diagnosed with like really quite severe schizophrenia but they kind of went on to do loads of

like I think they became a lawyer like <TC> how lots of people but they just </TC> kept their life was interrupted by all these like breaks of just like severe like medical trauma basically because like her experience with the institution which was like terrible and all this stuff but like throughout like the the prose of it like er it would just be like there would be like parts where like when she would have like a break or whatever like there would be she would yeah she would like just like write like the kind of like stream of like word association stuff so like I've r I've read like that before so like those those that that that like set of questioning like makes sense as like a thing erm that you would maybe like present to someone yeah sorry <Lh> </Lh> is that I hope that's not too biasing or whatever but </09AR14>

<INT> no no no like the the so everything is designed so that erm so that if there's bias in the study it's it's it's because we've we've messed up not the participants </INT>

<09AR14> OK <Lh> </Lh> </09AR14>

<INT> erm but er but yeah no that's that's really interesting that's erm I know the person you're you're talking about I've forgotten her name erm she did a TED talk about </INT>

<09AR14> er yeah she did a few I think yeah erm yeah really cool bit of literature I thought it really might help </09AR14>

<INT> the things </INT>

<09AR14> yeah </09AR14>

<INT> in the experiment reminded you of her writing is is that right </INT>

<09AR14> well not well like all of her writing obviously just like the parts where she was kind of <WS> exit expressing</WS> like like like when she was having like a like an episode or whatever you would call it so like er yeah so she in she did include those bits like or like when she was like <WS> accounting </WS> erm when she was like talking to her psychiatrist and stuff like it would be like it along those lines I mean like apart from like like there there was other stuff as well but like that was definitely part of it that was like really obviously like specifically yeah </09AR14>

<INT> I see </INT>

<09AR14> yeah yeah <Lh> </Lh> I know what you mean <Lh> </Lh> yeah </09AR14>

<INT> do you mind if ask about the rhythm that you mentioned like finding a rhythm </INT>

<09AR14> oh yeah erm that's yeah erm uh I don't know erm mm well I guess I guess cos I I read poetry as well sometimes and stuff like writing notes and sometimes <Gr> I'll just like stream of consciousness a bit </Gr> and like you know it doesn't always have to like like align too much like I don't know but like with those words like I found myself like erm attaching like only towards the end mind like this was like I guess how I started to make sense of it it was like <Noi= hitting desk with sides of hands, fingers straight> </Noi> da da da da da da da da da da da da da da da da da da kind of thing like that sort of thing like

only towards the end and like but like initially when I started doing it I was like oh like the words themselves it's like oh you have a this or this or this like that could make sense as like a thing but then like eventually it didn't seem because everything was coming up so many times then it's like OK well they're having like this rhythm this rhythm kind of like as a as a whole thing would be a way to answer this question <Lh> </Lh> or this association or whatever because otherwise you're just clicking randomly I suppose which I basically was but not really actually <Lh> </Lh> yeah </09AR14>

<INT> I know what you mean it feels it can feel like that even when you're making the choices that you want to make </INT>

<09AR14> yeah </09AR14>

<INT> because of the way that erm things are presented and things come back but with different </INT>

<09AR14> yeah </09AR14>

<INT> th something something at the bottom that you saw with the previous item might be there again but with something different at the top and so it feels erm kind of uncanny like you are making your choices </INT>

<09AR14> mhm </09AR14>

<INT> but sometimes that feels like you aren't and erm </INT>

<09AR14> yeah yeah so like at one point I think I like even felt like <WS> I wrote that I clicked the wrong one </WS> I was like ah er no <Lh> </Lh> do you know </09AR14>

<INT> that's really interesting cos there's </INT>

<09AR14> yeah </09AR14>

<INT> there's like did did you know throughout or did you feel throughout like erm like it wasn't a test that had a right answer though </INT>

<09AR14> I like I kind of I knew that it was but I felt like erm I felt like in the way that I was answering it erm it was like projecting meaning almost like a like so like it would be like if I like if I was like inconsistent with the way that I approached it I felt like I was doing it wrong that sort of thing maybe even though the consistency wasn't consistent <Lh> </Lh> it was incon it wasn't really consistency there was just sort of like a leaning into a rhythm of how to answer it and like gathering meaning towards the end or something <Lh> </Lh> </09AR14>

<INT> was that </INT>

<09AR14> because </09AR14>

<INT> did you feel like </INT>

<09AR14> yeah </09AR14>

<INT> that was because you were giving the rule or because there was a rule </INT>

<09AR14> I didn't think it didn't seem like there was a rule erm I don't know <Lh> </Lh> but erm if there was a rule it would be to be consistent I guess or like I don't know erm yeah yeah <Lh> </Lh> </09AR14>

<INT> the reason I ask </INT>

<09AR14> I don't know sorry </09AR14>

<INT> is because erm </INT>

<09AR14> yeah </09AR14>

<INT> it's becoming a theme when I ask people this question I go oh how was the experiment and people say like that they felt like there was a rhythm and that sometimes it felt like there was a right answer even though there isn't and we we aren't actually testing for this rhythm or or for this feeling of there being a right answer </INT>

<09AR14> right </09AR14>

<INT> but it's a thing that seems to be popping up in people's experiences that's really erm unexpected and interesting that's why I sort of ask people like oh tell me more cos like it's erm </INT>

<09AR14> ah yeah I get it <Lh> </Lh> OK yeah erm I guess because like because like it is presented like a test and it like obviously it's and like obviously it's like kind of like it's like totally open because none of it has like anything like coherency really erm but at the same time if you're not engaging with it then like you're not actually like then it's like you're not doing anything at all with the with the thing that you're interacting with so you just have to like engage with it one on one w otherwise you haven't got like it's a meaningless interaction I think or something like that </09AR14>

<INT> yeah one of the ways I describe it er one of the ways of describing w w what the experiment asks people to do </INT>

<09AR14> yeah yeah </09AR14>

<INT> that's come up over a few interviews now is I say it's like if I gave you like four blocks of Lego and said make something </INT>

<09AR14> <Lh> </Lh> yeah </09AR14>

<INT> it's like </INT>

<09AR14> <Lh> </Lh> yeah </09AR14>

<INT> you can make like probably three or four different things like stack the bricks in different ways or but you're you're being asked to do something creative in a very very restrictive context in that experiment </INT>

<09AR14> mhm </09AR14>

<INT> and did it feel like you were doing something creative </INT>

<09AR14> erm er er like only in that that like anything is creative I think like you can make anything sort of like yeah I wouldn't necessarily like maybe it was like more towards creative than than like a test <Lh> </Lh> but I don't know I think everything is pretty much creative so like that's that's the answering that is a bit </09AR14>

<INT> no no I agree </INT>

<09AR14> yeah <Lh> </Lh> </09AR14>

<INT> I think that's that's a lovely way of looking at it as well so do you have any questions for me about the experiment or the study that we haven't covered in the interview or before erm or j just anything you'd like to talk about that we haven't </INT>

<09AR14> erm <TC> I wish I did I feel a </TC> bit like <WS> brain splattered </WS> <Lh> </Lh> so I don't really know </09AR14>

<INT> it's a lot to do it's a lot to do in one sitting you know erm </INT>

<09AR14> but yeah </09AR14>

<INT> well you know y if you if over the next few days or or you know anything you you think of stuff that you'd you'd like me to answer about the study erm just send me an email and I'll erm </INT>

<09AR14> well thank you <Lh> </Lh> yeah </09AR14>

<INT> do you do a lot of creative stuff </INT>

<09AR14> yeah erm that's kind of like all I really do at the moment <Lh> </Lh> erm yeah like er like music mostly but at the moment I'm doing like like er lyrics as well which is a bit new relatively speaking so like sort of in this flow and I do baking which is not specifically creative but like it is <Lh> </Lh> so I don't know it's like improvising and like creating kind of thing so yeah I don't know erm <Gr> and I'm a graphic designer but so it's all creative over here </Gr> <Lh> </Lh> </09AR14>

<INT> so yeah very creative like with your like with lyrics and stuff do you </INT>

<09AR14> mhm </09AR14>

<INT> do the kinds of things that you were seeing in the experiment do they pop up in your process at all like mixing words that don't feel like they fit together or stuff like that </INT>

<09AR14> <Lh> </Lh> yeah it's just like <Gr> a favourite thing </Gr> to try and do just like really really kind of like quite straightforward things like things that kind of like should be like <WS> to get to give </WS> like one like very small example from something I wrote like ages ago I think I I like synthesise the word <WS> lifescape </WS> and like put that in a in like a set of lyrics and I was like that's so good <Lh> </Lh> like you know it's not a thing but you know what it means you know that kind of stuff </09AR14>

<INT> yeah yeah </INT>

<09AR14> yeah <Lh> </Lh> erm yeah it's always a bit like that it's just kind of like <WS> input </WS> like I just a think a little part of like a familiar thing and then just like kind of like release this whole new association <Lh> </Lh> kind of thing that's what I try and do </09AR14>

<INT> is that when you say new association erm </INT>

<09AR14> or like <Lh> </Lh> yeah </09AR14>

<INT> that sounds awesome and I'd just love to know more about what you mean by that and and if the newness is important as well </INT>

<09AR14> yeah I think like you know it's stuff that is like it's not it's not like brand new like it is referring to something that is already something that you would like already know about like like cos it is just using it is using like familiar like concepts like life and scape <Lh> </Lh> like as in like a like a landscape like you know like it's the whole scope of it kind of thing so it could be like the scope of your life or whatever erm so yeah it's just like joining together things that like already probably should be together cos it is already a concept it's just like identifying it with the words sort of thing that's how I get it <Lh> </Lh> if you if that is a does that make sense <Lh> </Lh> is that yeah </09AR14>

<INT> yeah yeah yeah I'm following yeah that's like it's awesome the </INT>

<09AR14> mm </09AR14>

<INT> one of the things that's coming out of the erm the study so far is some of the people I've interviewed in the clinical group </INT>

<09AR14> mhm </09AR14>

<INT> have come up with some some incredibly erm unconventional erm like language that's like just amazing there's er a quote erm from one of the interviews that I'm I'm using as the title of a talk at the moment erm because I was asking the participant about how they felt about creativity and language and do they do creative things with language and they said I feel like a cello in concrete </INT>

<09AR14> wow <Lh> </Lh> that's amazing </09AR14>

<INT> yeah I know it gave me chills </INT>

<09AR14> oh that's great that's amazing oh </09AR14>

<INT> so that's one of those things the projects interested in is how people use and understand creative language in and we're looking at it from different ways so the experiment is looking at it erm in a very restrictive context you know what do people do with creativity when the parameters in which to be creative are very narrow </INT>

<09AR14> mm </09AR14>

<INT> and then in the interview we're asking people a lot more freeform how do they feel about creativity and language and then like but yeah </INT>

<09AR14> wow that first bit's so powerful sorry <Lh> </Lh> that's really good </09AR14>

<INT> it's lovely isn't it feeling like a cello in concrete </INT>

<09AR14> yeah <Lh> </Lh> </09AR14>

<INT> erm </INT>

<09AR14> nice image right yeah </09AR14>

<INT> so is there anything else you'd like to talk about in the interview erm before I stop the recording and </INT>

<09AR14> er no er no I don't I think that's that's that's me good <TC> I rea I wish </TC> I did have something additional to say but I think not <Lh> </Lh> on this occassion </09AR14>

<INT> no it's brilliant like no it's it's been amazing OK I'll I'll stop the recording and I'll just let you know what happens next with erm </INT>

<INT> OK only one question the question is how was the experiment </INT>

<O2AR17> I really enjoyed it erm I felt in parts frustrated with myself because obviously with the pressure of finding some words the archives of your head erm but I found it enjoyable it was interesting during the creating words through the <WS> smart lab </WS> experiment just going through that process was interesting finding a rhythm behind it </O2AR17>

<INT> when you say finding a rhythm </INT>

<O2AR17> yeah </O2AR17>

<INT> was it like do you mind telling me a bit </INT>

<O2AR17> mm </O2AR17>

<INT> more about the rhythm </INT>

<O2AR17> erm so from my understanding of it it was almost like it was constructing it felt like constructing your own rules behind erm if that makes sense so with the way the words came through and beginning to associate erm certain words with other words towards the bottom so if it came through with an opinion and it felt like it could be phrased as an opinionated phrase assigning that and then when that <TC> change starting </TC> to put together a different word that would associate with opinion or attitude erm and then feeling that moment when you felt like the rules kind of flipped from that to try to associate that new phrase as you were going through until it felt like you'd self-constructed your own ruleset with that particular experiment </O2AR17>

<INT> that's really interesting </INT>

<O2AR17> that's how it felt anyway </O2AR17>

<INT> yeah at what point in the experiment did that happen? </INT>

<O2AR17> erm probably within the first five to ten words that came through as soon as it changed from being attitude opinion or something else as soon as the word edge or erm or con yeah considerations as well since they started to change and it f I'm yeah for some reason it just seemed to work in my head that I could put say edge and associate that with consideration another word could be associated with opinion it just became interchanging changing those words </O2AR17>

<INT> that's really interesting and what was your rule set like like if you had to describe it which I I I know is a very unfair question but like did it feel a certain way or did it </INT>

<O2AR17> yeah erm think of it <TC> from the so you'd </TC> have a word you'd consider you could associate with the top word you know if you had something that said salty sour and it was edge or opinion then obviously I'd have clicked on opinion before but if it came and it had consideration and edge I'd have associated edge more with opinion so that would have been that construct of the rule and then the other one would have been switched away from it so from there unless opinion and edge appeared together and then I would flip the way the

words were assigned edge would have stayed as that one </O2AR17>

<INT> I see OK </INT>

<O2AR17> erm so that was the feeling I got behind it </O2AR17>

<INT> and how did what impact did the words at the top have or did they were they less important </INT>

<O2AR17> no no they they erm I would find if obv if I had two that were very very clearly linked together salty and sour for example I'd associate that with an opinion <Gr> because of the differing tastes that people could have the same for </Gr> but then if it was something a bit more subjective like it could be sour and smelly I would flip that to a consideration <Gr> because something to be smelly </Gr> seems like it would overwhelm something being sour in terms of what's with other people so that would be the one I would choose for that one </O2AR17>

<INT> so have I understood that </INT>

<O2AR17> which was just </O2AR17>

<INT> you </INT>

<O2AR17> mm </O2AR17>

<INT> you developed almost like a rule set where you had some for some of the different words at the top erm the different sen like cos they're different senses like was it for some senses you thought </INT>

<O2AR17> mm </O2AR17>

<INT> that th some senses go better with that type of option and some senses go better with the other type of option </INT>

<O2AR17> yeah cos interesting I think when I was picturing it in my head it was almost picturing it as though it would then impact on someone else not necessarily for me but on another person so that's when it that's when that idea of what would have a bigger impact of it being smelly or sour generally it would be the sense of smell would be something that would affect someone else first so that's where that came from so yeah the top problems almost got a ranking and then the bottom ones were assigned their own little rule set </O2AR17>

<INT> that's amazing so there is actually a ranking erm in a theoretical ranking for the the top rows and one of the things that the experiment tries to understand is whether that ranking is legitimate and by the sounds of it you might have experienced a form of it if not the form </INT>

<O2AR17> mm </O2AR17>

<INT> that's in the theory like that's really interesting and the words at the bottom then are they what what was your feeling about them like just generally what what they were doing and and </INT>

<O2AR17> I think erm initially <Gr> I definitely felt like I've misread something </Gr> or not read something because I was waiting to know what I should have clicked or shouldn't have clicked erm but then after I think it was just after sort of using the more familiar words to associate with the top words and realising the words will change and then eventually you get two words you wouldn't probably place with those two top ones and it was like aromatic and fragrant in your words were edge and something </O2AR17>

<INT> yeah </INT>

<O2AR17> then you'd <TC> have to obv that's when </TC> that idea of creating the rule set for it came from </O2AR17>

<INT> I see I see and is there anything about the experiment that you'd like to know that we haven't talked about that you'd like to to sort of discuss </INT>

<O2AR17> I would be interested in how in the bottom words they were created just to know why they were chosen in the way they were </O2AR17>

<INT> sure erm so </INT>

<O2AR17> if you can divulge that information </O2AR17>

<INT> yeah yeah I I can at the end yeah definitely the only th tricky bit is like the er is at the beginning because I don't want to influence the choices that people make or the way that they see the words </INT>

<O2AR17> yeah yeah </O2AR17>

<INT> but erm so in terms of what's actually happening when a participant makes a choice on any particular item erm you have at the top the two words they are erm synaesthetic adjectives because they jointly modify whichever choice you make so because they're two adjectives </INT>

<O2AR17> mhm </O2AR17>

<INT> and they come from different sensory modalities when they jointly modify the noun that you choose erm then they become the synaesthesia which is the source component of the target which is the noun and together they create a metaphor er erm a synesthetic metaphor </INT>

<O2AR17> mhm </O2AR17>

<INT> so what participants are actually doing is erm we're showing them half the metaphor and then we're asking them having seen half of it to choose the direction of where the other end of the metaphor ends up </INT>

<O2AR17> mhm </O2AR17>

<INT> and the differences between the nouns will be abstract and concrete unless you get an item that is designed to be a distractor and then you will get two abstracts together or you'll get two concretes together to erm to prevent participants from falling into a habit a fixed pattern of responses erm </INT>

<O2AR17> yeah yeah </O2AR17>

<INT> and so it kind of like resets the the participants expectations of that particular set of items like oh erm well maybe what I was the rule set I was developing maybe that and that helps erm er it kind of reorients participants to do their instinctive er preferences </INT>

<O2AR17> yeah </O2AR17>

<INT> as but we're just as interested in the rules that people develop as well and it's really interesting that you mentioned developing a ruleset because a lot of participants in the interview have mentioned that they've said oh I f felt like </INT>

<O2AR17> yeah </O2AR17>

<INT> I had to kind of create my own rules to to navigate the experiment and I don't know why that is but I'm hoping I'll I'll find out more to be able to explain it in some way </INT>

<O2AR17> mm </O2AR17>

<INT> erm but that's a really surprise like pleasantly surprising </INT>

<O2AR17> yeah </O2AR17>

<INT> unexpected outcome from the study lots of people saying oh I I developed </INT>

<O2AR17> that's cool </O2AR17>

<INT> my own rules erm but yeah like I can't thank you enough for for giving </INT>

<O2AR17> yeah no that's no problem </O2AR17>

<INT> your time to it and it it means a lot </INT>

<O2AR17> it was an enjoyable experience <An> </An> </O2AR17>

<INT> that's good I'm really pleased to hear that because er I know it's not the shortest of studies but it's um it's all gonna be worth it I think when we erm look at all the data together and everything erm is there any anything else about the the experiment or participation in the study that you'd erm like to talk about before I end the recording or </INT>

<O2AR17> no no I think erm I'm I'm just I'm just glad to know roughly what we have from those ideas I've just been given this thing as well </O2AR17>

<INT> oh hello OK I'll stop the recording and then erm </INT>

Appendix V – Delgaram-Nejad et al., 2020

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Article

What is linguistic creativity in schizophrenia?

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Abstract

Background: In an experiment in which clinicians were asked to identify formal thought disorder (FTD) in schizophrenia based on writing samples, the manta and creative writing samples received more FTD diagnoses than the FTD samples. We conducted a systematic review to see whether figuraton, associated with both schizophrenia and creative uses of language, could contextualize these findings.

Methods: This was a systematic review only (PROSPERO ID:116255). We searched AMED, Child Development and Adolescent Studies, CINAHL, MEDLINE, PsycARTICLES, and PsycINFO.

Results. Many studies used figuraton tasks to test creativity and vice versa, and key factors affecting figurative language output and processing were positive and negative symptom ratios, IQ, and schizophrenia subtype.

Discussion/conclusion: Our review suggests that the clinicians in the experiment mentioned above perceived FTD as characterized by linguistic markers of verbal and figural creativity that are impacted by FTD itself. FTD is more likely characterized by expressional disfluencies in specific contexts.

KEYWORDS: SCHIZOPHRENIA; THOUGHT DISORDER; CREATIVITY; LANGUAGE
COMMUNICATION

1. Introduction

In 1974, Andreasen, Tsuang, and Canter asked clinicians to diagnose formal thought disorder (FTD) using proverb interpretations and writing samples

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from schizophrenia, mania, and creative writing cohorts. Mania and creative writing texts received more FTD diagnoses and mentions of traits thought to indicate FTD, and clinicians did not distinguish the non-psychotic cohort. The authors reconsidered FTD in terms of thought, language, and communication disorders (Andreasen, 1979a) inclusive of a positive-negative subtype approach (Andreasen, 1979b). Over time, linguistic creativity received less interest. We queried whether figuration, often seen when language is used creatively and associated with speech in schizophrenia (McKenna and Oh, 2005), could contextualize Andreasen's findings and we therefore reviewed empirical studies of figurative language and creativity in schizophrenia and psychosis cohorts. Given that languages are influenced by interaction, our review is motivated by the view that FTD and clinical interaction studies are mutually informative.

2. Methods

This was a systematic review only (i.e. an assessment of heterogeneous trials with no summary estimate). A PRISMA-P protocol was developed and registered with PROSPERO (ID:116255), and the search strategy followed the PICOS framework (Moher *et al.*, 2015). We excluded mixed samples (e.g., where individuals with schizophrenia and/or schizoaffective diagnoses were treated as one cohort) to more clearly distinguish psychosis from schizophrenia (Arciniegas, 2015) and figurative language in relation to the latter (see Table 1).

Throughout March 2018–March 2021, we searched AMED, Child Development and Adolescent Studies, CINAHL, MEDLINE, PsycARTICLES, and PsycINFO. Keyword combinations were searched against paper titles via 'AND' and 'TI' operators.¹ We assessed individual paper quality using the Quality Appraisal Tool for Studies of Diverse Designs (QATSDD; Sirriyeh, Lawton, Gardner, and Armitage, 2012). We chose this tool because our objective was a narrative synthesis of papers covering a range of data, collection methods, and analytical approaches. The tool measures study quality across

1. ¹ 'TI schtzophrenta AND TI creatvity'; 'TI psychosts AND TI creatvity'; 'TI schtzophrenta AND TI creative'; 'TI psychosts AND creative'; 'TI schtzophrenta AND TI figurative'; 'TI psychosts AND TI figurative'; 'TI schtzophrenta AND TI metaphor'; 'TI psychosts AND TI metaphor'; 'TI schtzophrenta AND TI speech'; 'TI psychosts AND TI speech'; 'TI schtzophrenta AND TI language'; 'TI psychosts AND TI language'; 'TI schtzophrenta AND TI lnguistic'; 'TI psychosts AND TI lnguistic'; 'TI schtzophrenta AND TI language AND TI thought'; 'TI psychosts AND TI language AND TI thought'; 'TI schtzophrenta AND TI speech AND TI language'; 'TI psychosts AND TI speech AND TI language'; 'TI schtzophrenta AND TI language AND TI figurative'; 'TI psychosts AND TI language AND TI figurative'; 'TI schtzophrenta AND TI language AND TI metaphor'; 'TI psychosts AND TI language AND TI metaphor'.

Table 1. Inclusion and exclusion criteria

PICOS	Inclusion criteria
Population	A formal diagnosis of schizophrenia
Intervention	A direct investigation of the production and/or comprehension of figuration
Comparison	Any other group(s) or individual(s)
Outcome	Any outcome, behavior, quality, and/or improvement measure
Study design	Peer-reviewed reports of empirical studies that have employed a quantitative, qualitative, or mixed methodology to generate primary data; seen publication in the English language (i.e., either by origin or translation); hold a publication status of either (1) approved for publication or (2) published
PICOS	Exclusion criteria
Population	Formal diagnosis and/or comorbidity of any psychiatric condition other than schizophrenia
Intervention	Reference to the production and/or comprehension of figuration consequent to an unrelated main research aim
Comparison	Multiple psychiatric cohorts allocated to a single sample
Outcome	N/a
Study design	Any methodology that examined secondary data only; non-research articles, dissertations, theses, and/or 'grey' literature

16 indices: two apply to qualitative and two to quantitative designs. Any given study was therefore scored against 14 criteria. Per index scores range from zero to three, and the maximum score obtainable is 42. We rated studies whose scores fell within the ranges 0–14, 15–28, and 29 or above as low, moderate, and high quality, respectively. The appraisal process was conducted by the corresponding author and an independent reviewer blind to the screening and selection processes. We resolved interrater disagreements via discussion when categories, rather than total scores, were discrepant. Apart from four studies (two 'low' and two 'moderate'), we rated the majority as high quality. The final category weightings, as they refer to each study, are outlined in Table 2.

It is important to note that a low QATSDD score does not necessarily mean a low-quality study. Factors such as publication conventions and methodological advancements make it harder to apply certain criteria to some papers. Bilgrami and co-workers (2020) is a good modern example. The study meets all the criteria for inclusion in this review, but only a conference presentation summary is available for appraisal.

We synthesized the extracted data narratively, as per Popay and associates (2006).

Table 2. Paper quality weightings

Study	Aggregate rating
Abraham, Windmann, McKenna, and Guntürkün, 2007	High
Al-Issa, 1976	Low
Andreasen and Powers, 1975	High
Bergemann <i>et al.</i> , 2008	High
Bilgrami, Guittierez, Sarac, Cecchi, and Corcoran, 2020	Low
Billow, Rossman, Lewis, Goldman, and Raps, 1997	High
Binz and Brüne, 2010	High
Brüne and Bodenstein, 2005	High
Chakrabarty <i>et al.</i> , 2014	High
Cropley and Sikand, 1973	High
Deamer <i>et al.</i> , 2019	High
De Bonis and Epelbaum, 1997	High
Elvevåg, Helsen, De Hert, Sweers, and Storms, 2011	High
Forrest, Hay, and Kushner, 1969	Moderate
Fukuhara <i>et al.</i> , 2017	High
Jaracz, Patrzala, and Rybakowski, 2012	High
Keefe and Magaro, 1980	Moderate
Ketteler, Theodoridou, Ketteler, and Jäger, 2012	High
Kircher, Leube, Erb, Grodd, and Rapp, 2007	High
Marini <i>et al.</i> , 2008	High
Mashal, Vishne, Laor, and Titone, 2013	High
Mashal, Vishne, and Laor, 2014	High
Mazza, Di Michele, Pollice, Casacchia, and Roncone, 2008	High
Mo, Su, Chan, and Liu, 2008	High
Pawelczyk, Kotlicka-Antczak, Łojek, Ruzpel, and Pawelczyk, 2018	High
Piovan, Gava, and Campeol, 2016	High
Rodriguez-Ferrera, McCarthy, and McKenna, 2001	High
Sampedro <i>et al.</i> , 2020	High
Schneider <i>et al.</i> , 2015	High
Son <i>et al.</i> , 2015	High
Varga <i>et al.</i> , 2014	High
Wang <i>et al.</i> , 2017	High
Zeev-Wolf, Faust, Levkovitz, Harpaz, and Goldstein, 2015	High

3. Results

The search returned 912 studies. A total of 912 abstracts (735 excluded) and 177 full texts (144 excluded) were screened against inclusion and exclusion criteria. Thirty-three met the inclusion criteria in full. Figure 1 shows the PRISMA flowchart, and Table 3 reports the study characteristics.

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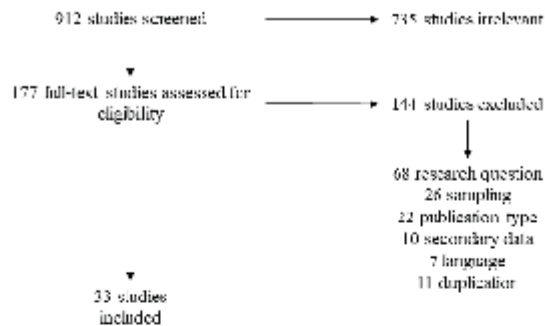


Figure 1. PRISMA flowchart.

3.1 Date

Articles were published between 1969 and 2020. The majority were published post-2001 ($n = 27$). The study pool has good international representation, with most based in Germany (Bergemann *et al.*, 2008; Binz and Brüne, 2010; Brüne and Bodenstein, 2005; Ketteler *et al.*, 2012; Kircher *et al.*, 2007; Schneider *et al.*, 2015). Other countries included the United States of America (Andreasen and Powers, 1975; Bilgrami *et al.*, 2020; Billow *et al.*, 1997; Keefe and Magaro, 1980), Italy (Marini *et al.*, 2008; Mazza *et al.*, 2008; Piovan, Gava, and Campeol, 2016), Canada (Al-Issa, 1976; Cropley and Sikand, 1973), Japan (Fukuhara *et al.*, 2017; Son *et al.*, 2015), Poland (Jaracz, Patrzala, and Rybakowski, 2012; Pawelczyk *et al.*, 2018), the United Kingdom (Deamer *et al.*, 2019; Forrest, Hay, and Kushner, 1969; Rodriguez-Ferrera, McCarthy, and McKenna, 2001), China (Mo *et al.*, 2008), France (de Bonis and Epelbaum, 1997), Belgium (Elvevåg *et al.*, 2011), Hungary (Varga *et al.*, 2014), Spain (Sampedro *et al.*, 2020), and Israel (Zeev-Wolf *et al.*, 2015). The remaining studies involved transnational collaboration (Abraham *et al.*, 2007: Germany and the United Kingdom; Chakrabarty *et al.*, 2014: India and the United States of America; Mashal *et al.*, 2013: Canada, Israel, and the United States of America; Mashal, Vishne, and Laor, 2014: Israel and the United States of America; Wang *et al.*, 2017: China and the United States of America).

3.2 Demographics

The most common psychosocial matching criteria were age ($n = 22$) and participant education ($n = 18$). In a few cases, full or subscale IQ measures were used (Abraham *et al.*, 2007; Deamer *et al.*, 2019; Forrest, Hay, and Kushner,

Table 3. Study characteristics

Author(s)	Setting(s)	Sample(s) (mf)	Linguistic interest(s)
Abraham <i>et al.</i> , 2007	Germany; UK	schizophrenia: 28 (23:5); non-psychiatric comparison: 18 (14:4)	production: irony
Al-Issa, 1976	Canada	schizophrenia: 50	production and comprehension: figuration
Andreasen and Powers, 1975	US	schizophrenia: (15); mania: (16); non-psychiatric comparison (15)	production: figuration
Bergemann <i>et al.</i> , 2008	Germany	schizophrenia, paranoid: 19 (0:19)	comprehension: figuration
Billow <i>et al.</i> , 1997	US	schizophrenia: 36 (36:0); borderline personality: 36 (36:0); non-psychiatric comparison: 36 (36:0)	production: figuration
Bilgrami <i>et al.</i> , 2020	US	schizophrenia: 25; clinical high risk: 63; non-psychiatric comparison: 33	production: metaphor
Binz and Brüne, 2010	Germany	schizophrenia: 49 (34:25); non-psychiatric comparison: 29 (10:19)	production: irony; comprehension: proverb
Brüne and Bodenstein, 2005	Germany	schizophrenia (23:8); non-psychiatric comparison (10:11)	comprehension: proverb
Chakrabarty <i>et al.</i> , 2014	India; US	schizophrenia: 16 (7:9); non-psychiatric comparison: 16 (7:9)	comprehension and production: figuration
Cropley and Sikand, 1973	Canada	schizophrenia: 20 (15:5); creative writers: 20 (17:3); non-psychiatric comparison to schizophrenia group: 20 (17:3); non-psychiatric comparison to creative writing group: 20 (15:5)	comprehension: figuration
Deamer <i>et al.</i> , 2019	UK	schizophrenia: 19 (6:13); non-psychiatric comparison: 15 (8:7)	production and comprehension: figuration
De Bonis and Epelbaum, 1997	France	schizophrenia: 20; major depressive: 13; non-psychiatric comparison: 20	comprehension: metaphor and proverb
Elvevåg <i>et al.</i> , 2011	Belgium	schizophrenia: 21; non-psychiatric comparison: 20	production and comprehension: figuration
Forrest, Hay, and Kushner, 1969	UK	schizophrenia: 10; non-psychiatric comparison: 10; schizophrenia: 22; non-psychiatric comparison: 25	production and comprehension: figuration
Fukuhara <i>et al.</i> , 2017	Japan	schizophrenia: 34 (25:9); non-psychiatric comparison: 34 (24:10)	comprehension: irony
Jaracz, Patrzala, and Rybakowski, 2012	Poland	paranoid schizophrenia: 43 (22:21); non-psychiatric comparison: 45 (17:28)	production: figuration

Table 3 (continued)

Author(s)	Setting(s)	Sample(s) (m:f)	Linguistic interest(s)
Keefe and Magaro, 1980	US	paranoid schizophrenia: 10; non-paranoid schizophrenia: 10; non-psychotic psychiatric comparison: 10; non-psychiatric comparison: 10	production and comprehension: figuration
Ketteler <i>et al.</i> , 2012	Germany	schizophrenia: 40 (27:13); non-psychiatric comparison: 40 (27:13)	comprehension: figuration
Kircher <i>et al.</i> , 2007	Germany	schizophrenia: 12; non-psychiatric comparison: 12	comprehension: figuration
Marini <i>et al.</i> , 2008	Italy	schizophrenia: 29; non-psychiatric comparison: 48	production and comprehension: irony
Mashal <i>et al.</i> , 2013	Canada; Israel; US	schizophrenia: 14 (9:5); non-psychiatric comparison: 14 (7:7)	comprehension: figuration
Mashal, Vishne, and Laor, 2014	Israel; US	schizophrenia: 12 (7:5); non-psychiatric comparison: 12 (5:7)	comprehension: figuration
Mazza <i>et al.</i> , 2008	Italy	schizophrenia: 38 (30:8); first degree relatives: 34 (20:14); non-psychiatric comparison: 44 (18:26)	comprehension: irony
Mo <i>et al.</i> , 2008	China	schizophrenia: 33 (17:16); non-psychiatric comparison: 22 (12:10)	comprehension: metaphor and irony
Pawelczyk <i>et al.</i> , 2018	Poland	schizophrenia: 40 (23:17); non-psychiatric comparison: 39 (23:16)	production and comprehension: metaphor and irony
Piovan, Gava, and Campeol, 2016	Italy	schizophrenia: 30 (19:11); non-psychiatric comparison: 24 (12:12)	production and comprehension: figuration
Rodriguez-Ferrera, McCarthy, and McKenna, 2001	UK	schizophrenia: 40 (29:11)	production and comprehension: metaphor, irony, and proverb
Sampedro <i>et al.</i> , 2020	Spain	schizophrenia: 45 (35:10); non-psychiatric comparison: 45 (15:30)	production and comprehension: figuration
Schneider <i>et al.</i> , 2015	Germany	schizophrenia: 22 (15:7); non-psychiatric comparison: 22 (10:12)	comprehension: figuration
Son <i>et al.</i> , 2015	Japan	schizophrenia: 43 (21:23); non-psychiatric comparison: 36 (12:24)	production: figuration
Varga <i>et al.</i> , 2014	Hungary	paranoid schizophrenia: 19 (10:9); non-psychiatric comparison: 19 (8:11)	comprehension: irony
Wang <i>et al.</i> , 2017	China; US	schizophrenia: 43; low-schizotypy: 39; high-schizotypy	production: figuration
Zeev-Wolf <i>et al.</i> , 2015	Israel	schizophrenia: 15; non-psychiatric comparison: 17	production and comprehension: figuration

1969; Kircher *et al.*, 2007; Rodriguez-Ferrera, McCarthy, and McKenna, 2001; Schneider *et al.*, 2015; Varga *et al.*, 2014). Other variables included participant and parent education (Mashal *et al.*, 2013; Mashal, Vishne, and Laor, 2014), socioeconomic status (Chakrabarty *et al.*, 2014; Keefe and Magaro, 1980; Pawelczyk *et al.*, 2018), and marital status (Keefe and Magaro, 1980).

3.3 Assessments

All studies established a diagnosis of schizophrenia (either current or historic), and symptomatology was assessed alongside [diagnosis] in many cases. Nine studies did not assess symptomatology (Al-Issa, 1976; Andreasen and Powers, 1975; Bilgrami *et al.*, 2020; Billow *et al.*, 1997; Cropley and Sikand, 1973; Deamer *et al.*, 2019; Forrest, Hay, and Kushner, 1969; Fukuhara *et al.*, 2017; Zeev-Wolf *et al.*, 2015). IQ measures were taken in 18 cases. Seven studies reported appropriate IQ matching procedures (Abraham *et al.*, 2007; Deamer *et al.*, 2019; Forrest, Hay, and Kushner, 1969; Kircher *et al.*, 2007; Rodriguez-Ferrera, McCarthy, and McKenna, 2001; Schneider *et al.*, 2015; Varga *et al.*, 2014). Abraham and colleagues (2007) included participants with preserved pre-morbid intellectual functioning. Deamer and co-workers (2019) obtained a pre-morbid IQ and generated a full-scale IQ. In four cases, executive functioning was used as a matching criterion (Brüne and Bodenstein, 2005; Marini *et al.*, 2008; Mazza *et al.*, 2008; Schneider *et al.*, 2015). In the seven studies to establish right handedness, three employed measurement (Schneider *et al.*, 2015; Son *et al.*, 2015; Zeev-Wolf *et al.*, 2015), and four utilized self-report (Kircher *et al.*, 2007; Mashal *et al.*, 2013; Mashal, Vishne, and Laor, 2014; Pawelczyk *et al.*, 2018). All the studies focused on adults. Nine did not report female ratios (Al-Issa, 1976; Bilgrami *et al.*, 2020; de Bonis and Epelbaum, 1997; Elvevåg *et al.*, 2011; Forrest, Hay, and Kushner, 1969; Keefe and Magaro, 1980; Kircher *et al.*, 2007; Marini *et al.*, 2008; Wang *et al.*, 2017). Across the studies, participants totalled 1,972.

3.4 Cohorts

Authors categorized their cohorts as follows: [subtype-independent] schizophrenia ($n = 847$), non-paranoid [subtype-dependent] schizophrenia ($n = 10$), paranoid [subtype-dependent] schizophrenia ($n = 91$), borderline personality ($n = 36$), mania ($n = 16$), major depression ($n = 13$), low schizotypy ($n = 39$), high schizotypy ($n = 35$), first degree relative ($n = 34$), professional creatives ($n = 20$), non-psychotic psychiatric comparison ($n = 10$), non-psychiatric comparison ($n = 758$), and clinical high risk ($n = 63$).

Mostly, authors did not distinguish between schizophrenia subtypes ($n = 29$). The remainder focused on paranoid schizophrenia specifically

(Bergemann *et al.*, 2008; Jaracz, Patrzala, and Rybakowski, 2012; Keefe and Magaro, 1980; Varga *et al.*, 2014). Of these, two studies (Bilgrami *et al.*, 2020; Keefe and Magaro, 1980) involved more than one comparison group: clinical high risk and healthy controls (Bilgrami *et al.*, 2020) and non-paranoid schizophrenia, non-psychotic psychiatric comparison, and non-psychiatric comparison (Keefe and Magaro, 1980). Two studies (Jaracz, Patrzala, and Rybakowski, 2012; Varga *et al.*, 2014) utilized one non-psychiatric comparison group. The remainder was a randomized controlled trial (Bergemann *et al.*, 2008). In studies of subtype-independent schizophrenia ($n = 28$), the majority involved one non-psychiatric comparison sample ($n = 23$), whereas a smaller number involved either two (Andreasen and Powers, 1975; Bilgrami *et al.*, 2020; Billow *et al.*, 1997; de Bonis and Epelbaum, 1997; Mazza *et al.*, 2008; Wang *et al.*, 2017) or three (Cropley and Sikand, 1973) comparison samples. Andreasen and Powers (1975) compared schizophrenia, mania, and non-psychiatric/healthy volunteer groups. Bilgrami and colleagues (2020) compared schizophrenia, clinical high-risk, and non-psychiatric comparison groups. Billow and associates (1997) compared schizophrenia, borderline personality, and non-psychiatric groups. Cropley and Sikand (1973) compared individuals with schizophrenia, professional creatives, and two non-psychiatric comparison groups (one for the schizophrenia group and another for the professional creative group). De Bonis and Epelbaum (1997) compared schizophrenia, major depression, and non-psychiatric groups. Mazza and co-workers (2008) compared schizophrenia, first degree relative, and non-psychiatric groups. Wang and colleagues (2017) compared schizophrenia, low schizotypy (non-psychiatric), and high schizotypy (non-psychiatric).

3.5 Designs

In two cases, all participant groups were blind to the aims of the study (Brüne and Bodenstein, 2005; Varga *et al.*, 2014). Bar one randomized controlled trial (Bergemann *et al.*, 2008), all studies were observational ($n = 32$). The majority of these were controlled experiments ($n = 29$), one used open-ended interviewing (Bilgrami *et al.*, 2020), and the remainder were single cohort (Al-Issa, 1976; Rodriguez-Fererra, McCarthy, and McKenna, 2001).

3.6 Linguistic focus

Studies focused variously on language production (Abraham *et al.*, 2007; Andreasen and Powers, 1975; Bilgrami *et al.*, 2020; Billow *et al.*, 1997; Jaracz, Patrzala, and Rybakowski, 2012; Son *et al.*, 2015; Wang *et al.*, 2017), comprehension (Bergemann *et al.*, 2008; Brüne and Bodenstein, 2005; Cropley and Sikand, 1973; de Bonis and Epelbaum, 1997; Fukuhara *et al.*, 2017; Ketteler

et al., 2012; Mashal *et al.*, 2013; Mashal, Vishne, and Laor, 2014; Mazza *et al.*, 2008; Mo *et al.*, 2008; Kircher *et al.*, 2007; Schneider *et al.*, 2015; Varga *et al.*, 2014), or a combination of the two (Al-Issa, 1976; Binz and Brüne, 2010; Chakrabarty *et al.*, 2014; Deamer *et al.*, 2019; Ellevåg *et al.*, 2011; Forrest, Hay, and Kushner, 1969; Keefe and Magaro, 1980; Marini *et al.*, 2008; Pawelczyk *et al.*, 2018; Piovan, Gava, and Campeol, 2016; Sampedro *et al.*, 2020; Rodriguez-Ferrera, McCarthy, and McKenna, 2001; Zeev-Wolf *et al.*, 2015). The majority of studies examined one linguistic device only ($n = 15$); ten examined figuration (Bergemann *et al.*, 2008; Billow *et al.*, 1997; Chakrabarty *et al.*, 2014; Ellevåg *et al.*, 2011; Keefe and Magaro, 1980; Kircher *et al.*, 2007; Mashal *et al.*, 2013; Mashal, Vishne, and Laor, 2014; Schneider *et al.*, 2015; Zeev-Wolf *et al.*, 2015), three focused on irony (Abraham *et al.*, 2007; Marini *et al.*, 2008; Mazza *et al.*, 2008), and one explored proverb (Brüne and Bodenstern, 2005). A moderate number examined multiple devices ($n = 13$) and/or used natural language elicitation procedures that may have prompted a range of figurative responses (Al-Issa, 1976; Andreasen and Powers, 1975; Bilgrami *et al.*, 2020; Cropley and Sikand, 1973; Deamer *et al.*, 2019; Forrest, Hay, and Kushner, 1969; Jaracz, Patrzala, and Rybakowski, 2012; Ketteler *et al.*, 2012; Piovan, Gava, and Campeol, 2016; Rodriguez-Ferrera, McCarthy, and McKenna, 2001; Sampedro *et al.*, 2020; Son *et al.*, 2015; Wang *et al.*, 2017). Six studies focused on two devices. Of these, most tended toward figuration and irony (Fukuhara *et al.*, 2017; Mo *et al.*, 2008; Pawelczyk *et al.*, 2018; Varga *et al.*, 2014), over irony and proverb (Binz and Brüne, 2010), or figuration and proverb (de Bonis and Epelbaum, 1997).

3.7 Metaphor decoding

Eleven studies found evidence for metaphor decoding difficulties in subtype-independent schizophrenia cohorts (Binz and Brüne, 2010; Chakrabarty *et al.*, 2014; Deamer *et al.*, 2019; Ellevåg *et al.*, 2011; Kircher *et al.*, 2007; Mashal *et al.*, 2013; Mashal, Vishne, and Laor, 2014; Mo *et al.*, 2008; Piovan, Gava, and Campeol, 2016; Schneider *et al.*, 2015; Zeev-Wolf *et al.*, 2015). Five examined conventional and novel metaphors (Chakrabarty *et al.*, 2014; Deamer *et al.*, 2019; Mashal *et al.*, 2013; Mashal, Vishne, and Laor, 2014; Zeev-Wolf *et al.*, 2015), and two examined conventional and novel metaphors in addition to unrelated word pairs (Chakrabarty *et al.*, 2014; Zeev-Wolf *et al.*, 2015). Two studies found evidence for atypical left hemispheric activity during metaphor comprehension tasks (Kircher *et al.*, 2007; Mashal *et al.*, 2013). Two studies found evidence for reduced decoding accuracy, independent of verbal IQ (Mo *et al.*, 2008; Schneider *et al.*, 2015). Two studies reported metaphor and irony comprehension difficulties (Mo *et al.*, 2008; Piovan, Gava, and Campeol, 2016).

Two studies found conflicting evidence for increased accuracies in the cases of novel metaphors (Schneider *et al.*, 2015; Zeev-Wolf *et al.*, 2015). Deamer and colleagues (2019) noted a tendency to select pictures that depicted metaphoric story elements represented literally. Elvevåg and co-workers (2011) observed an increased tendency to interpret metaphoric speech literally, but also reported a general trend, across groups, for non-emotional metaphors to elicit a higher number of literal concrete responses. Kircher and associates (2007) noted increased left hemispheric activation during metaphor processing tasks that followed a literal decoding task directly and significant activation of the left and right precuneus during literal item tasks that followed a metaphor item task directly. Mashal and co-workers (2013) reported greater left inferior frontal gyrus, fusiform, thalamus, and visual cortical activity in the specific cases of novel metaphors. In a subsequent study, correlations between novel metaphor decoding accuracy and increased activity in the right precuneus were noted (Mashal, Vishne, and Laor, 2014). Mo and associates (2008) noted reduced comprehension accuracy for both metaphor and irony, independent of both global and verbal IQ measures. Significant performance differences between paranoid and non-paranoid schizophrenia subgroups were observed on measures of irony comprehension specifically. In addition, metaphor and irony decoding performances were found to correlate with one another. Pawelczyk and colleagues (2018) noted difficulties with the comprehension of humor, which is often figuration dependent. In Schneider and colleagues' (2015) study, accuracy was higher for literal and meaningless phrases over metaphoric items, independent of age, education, and verbal IQ. Contrary to the findings of other studies, Zeev-Wolf and associates (2015) noted increased accuracy for novel metaphors specifically independent of age and gender.

3.8 Figurative production

Five studies examined figurative production in subtype-independent schizophrenia cohorts (Bilgrami *et al.*, 2020; Billow *et al.*, 1997; Elvevåg *et al.*, 2011; Pawelczyk *et al.*, 2018; Sampedro *et al.*, 2020; Schneider *et al.*, 2015), one of which reported significant strengths on commentary tasks (Pawelczyk *et al.*, 2018). Bilgrami and co-workers reported participants in the schizophrenia and clinical high-risk groups used metaphors significantly more than healthy controls. Billow and colleagues (1997) noted increases in the use of autistic bizarre and tangential forms, and a reduction in the use of idiomatic and evocative forms. Elvevåg and co-workers (2011) identified a general reduction in the use of figurative language. Pawelczyk and associates (2018) observed difficulties with the explanation of written and picture metaphor prompts.

Schneider and colleagues (2015) reported increased uses of meaningful partly concrete and meaningful entirely concrete forms in circumstances that called for meaningful abstract forms. Sampedro and co-workers (2020) noted significant differences between schizophrenia and non-psychiatric comparison groups for only some figural creativity subscales: figural abstractness of titles, figural strengths, and total figural creativity score. Significant group differences were present for all verbal creativity submeasures (i.e., verbal fluency, flexibility, and creativity). Importantly, there were no significant group differences on the remaining figural submeasures (i.e., figural originality, fluency, elaboration, flexibility, and resistance to closure).

3.9 Correlations

3.9.1 Decoding

Only four studies reported correlations between higher symptom severity and lower figuration task performance scores (Kircher *et al.*, 2007; Mashal *et al.*, 2013; Piovan, Gava, and Campeol, 2016; Schneider *et al.*, 2015). Bergemann and colleagues (2008) observed improvements in metaphoric priming abilities following the administration of 17 β Estradiol. Kircher and associates (2007) noted an inverse correlation between concretism and metaphor comprehension scores. Higher scores on measures of concretism correlated with decreased activity in the inferior frontal gyrus and cerebellum. Mashal and co-workers (2013) reported a link between higher 'difficulty with abstract thinking' symptom scores and greater difficulties with the decoding of conventional metaphors. Piovan, Gava, and Campeol (2016) observed that the severity of negative symptoms correlated with metaphor decoding errors, independent of the 'difficulty with abstract thinking' symptom measure. Schneider and colleagues (2015) reported a correlation between the severity of FTD and decreased P200 (non-literal language processing) activity in the period directly following exposure to metaphoric items. Three studies identified correlations between comprehension task performance and IQ results (Piovan, Gava, and Campeol, 2016; Rodriguez-Ferrera, McCarthy, and McKenna, 2001; Varga *et al.*, 2014).

3.9.2 Production

Rodriguez-Ferrera, McCarthy, and McKenna (2001) identified a relationship between FTD and difficulties on one expressive (picture description) task. Expressive difficulties were also found to correlate with higher global symptom scores. Forrest, Hay, and Kushner (1969) identified a relationship between abstract response accuracies and IQ.

A tabular summary of sections 3.7–3.9 is shown in Table 4.

Table 4. Tabular summary of sections 3.7–3.9

Decoding	[Subtype-independent] schizophrenia	Paranoid schizophrenia
Metaphor	Comprehension difficulties ($n = 11$) Atypical left hemispheric activity during metaphor comprehension tasks ($n = 2$) Reduced decoding accuracy, independent of verbal IQ ($n = 2$)	
Novel metaphors	Mixed evidence for increased accuracy ($n = 1:1$)	
Pictorial forms of metaphoric story elements	Tendency toward literal representations ($n = 1$)	
Metaphoric speech	Increased tendency to interpret literally ($n = 1$)	
Non-emotional metaphors	Higher number of literal concrete responses ($n = 1$)	Higher number of literal concrete responses ($n = 1$)
Metaphor processing tasks that follow a literal decoding task directly	Increased left hemispheric activation ($n = 1$)	
Literal item tasks that follow a metaphor item task directly	Significant activation of the left and right precuneus ($n = 1$)	
Novel metaphors	Greater left inferior frontal gyrus, fusiform, thalamus, and visual cortical activity ($n = 1$) Increased activity in the right precuneus ($n = 1$) Increased accuracy ($n = 1$)	
Metaphor and irony	Reduced comprehension accuracy, independent of both global and verbal IQ measures ($n = 1$) Performance correlated ($n = 1$)	Performance correlated ($n = 1$)
Irony	Comprehension difficulties ($n = 2$)	Preserved accuracy ($n = 2$)
Humor	Comprehension difficulties ($n = 1$)	
Literal and meaningless phrases, compared with metaphoric items	Higher accuracy, independent of age, education, and verbal IQ ($n = 1$)	

Table 4. (continued)

Production	[Subtype-independent] schizophrenia	Paranoid schizophrenia
Metaphor	Significantly more in speech ($n = 1$) Difficulty explaining written and picture prompts ($n = 1$)	
Autistic bizarre and tangential forms	Increased use in speech ($n = 1$)	
Idiomatic and evocative forms	Reduced use in speech ($n = 1$)	
General figurative language	Reduced used in speech ($n = 1$)	
Meaningful partly-concrete and meaningful entirely concrete forms	Increased use in speech circumstances that called for meaningful abstract forms ($n = 1$)	
Verbal fluency, flexibility, and creativity	Significant differences to non-psychiatric comparison ($n = 1$)	
Figural abstractness of titles, strengths, and total creativity	Significant differences to non-psychiatric comparison ($n = 1$)	
Figural originality, fluency, elaboration, flexibility, and resistance to closure	No significant differences to non-psychiatric comparison ($n = 1$)	
Decoding correlations	[Subtype-independent] schizophrenia	Paranoid schizophrenia
Symptom severity and lower figuration task performance	Metaphoric priming abilities improved with 17β estradiol ($n = 1$) Inverse correlation between concretism and metaphor comprehension scores ($n = 1$)	
Decreased activity in the inferior frontal gyrus and cerebellum	Higher scores on measures of concretism ($n = 1$)	
Higher 'difficulty with abstract thinking' Symptom scores	Greater difficulties with the decoding of conventional metaphors ($n = 1$)	
Severity of negative symptoms	More metaphor decoding errors, independent of the 'difficulty with abstract thinking' symptom measure ($n = 1$)	
Severity of FTD	Decreased P200 (non-literal language processing) activity in the period directly following exposure to metaphoric items ($n = 1$)	
IQ results	Comprehension task performance ($n = 3$)	

Table 4. (continued)

Production correlations	[Subtype-independent] schizophrenia	Paranoid schizophrenia
Expressive difficulties and formal thought disorder	One specific picture description task ($n = 1$)	
Expressive difficulties	Higher global symptom scores ($n = 1$)	
Abstract response accuracy	IQ ($n = 1$)	

4. Discussion

The results reveal the important roles of schizophrenia subtype, symptomatology, and IQ when discussing figurative language. Production performance is better in the positive syndrome; the corollary sees negative symptoms restrict creative cognition. Higher irony comprehension accuracy in paranoid schizophrenia (relative to nonparanoid), irrespective of correlations between metaphor and irony comprehension, reveals a need to study irony comprehension in nonparanoid subtypes. It is also worth noting that authors who studied irony did not distinguish between the types of irony examined. Potential further avenues include comparing linguistic, situational, and dramatic irony comprehension in paranoid and non-paranoid cohorts.

4.1 Metaphor comprehension

4.1.1 Symptomatology and metaphor type

Individuals with negative symptoms encounter metaphor comprehension difficulties. This may have to do with concretism specifically, given the inverse relationship between high concretism and low metaphor comprehension in Kircher and co-workers' (2007) study. While conventional metaphor decoding difficulties were found to correlate with higher scores on the 'difficulty with abstract thinking' measure (Mashal *et al.*, 2013), general metaphor decoding difficulties were observed independent of this index (Piovan, Gava, and Campeol, 2016). Future studies could explore whether or how novel metaphors are affected by negative symptoms, and whether the 'difficulty with abstract thinking' measure affects conventional metaphors only.

4.1.2 IQ and metaphor type

Preferences for literal interpretations are thought to result from an inability to inhibit first-order literal interpretations. Mashal and colleagues' (2013) inverted pattern of inferior frontal gyrus activation suggests that more is

happening than this alone, however. Mo and associates' (2008) study noted metaphor and irony comprehension difficulties independent of both global and verbal IQ, but reported significant between-group IQ differences. The correlation between metaphor comprehension and verbal IQ reported by Schneider and co-workers (2015) is more stable under appropriate matching. Robust IQ and neuropsychological matching protocols are important in studies of language in schizophrenia (Heinrichs and Zakzanis, 1998), given evidence for nuanced alterations in brain function, rather than broad structural abnormalities (Ortiz-Gil *et al.*, 2011). Even in the cases of those few studies whose IQ matching procedures were of good quality, mixed results were reported. Of these, greater difficulties with both unconventional and, to a subtler degree, conventional metaphors correlated with lower overall IQ in some cases (Rodriguez-Ferrera, McCarthy, and McKenna, 2001; Varga *et al.*, 2014), but not with verbal IQ in others (Schneider *et al.*, 2015). Potential relationships between elements of non-verbal IQ and non-literal language processing could be explored further. There is also a need to review how studies of language in schizophrenia are designed and conducted. For example, Deamer and associates' (2019) picture description task, while a valid test of metaphor comprehension, uses 'incorrect' choices that may appeal to overinclusive thinking.

4.2 Figurative production

4.2.1 Expressivity and formal thought disorder

Correlations between expressional disfluencies in picture description tasks, global symptom severity, and the extent of FTD (Rodriguez-Ferrera, McCarthy, and McKenna, 2001) suggest more complex production interactions. Similar outputs were reported in Pawelczyk and co-workers' (2018) study, although no symptom correlations were noted. An interesting line of further research involves exploring how FTD and global symptom severity relate to observed difficulties with figural abstractness of titles, figural strengths, total figural creativity score, verbal fluency, verbal flexibility, and verbal creativity and preservation of figural originality, fluency, elaboration, flexibility, and resistance to closure (Sampedro *et al.*, 2020). Such an investigation may lead to a more specific definition of FTD and symptom severity, and their relationship with expressional disfluency.

While the production studies included here elicited natural language responses, they did so within controlled (*i.e.*, task-dependent) contexts. Future production studies might compare post-task interview responses with interviews more akin to general conversation, in order to see whether task contexts influence responses.

4.2.2 Expressivity and affect

Negative symptom and figurative task performance relations also raise questions about relationships between affect and creativity. This relationship may depend on task type, affect intensity, and the time window between creative affective and affective-referent states (Davis, 2009), given that a portion of the negative symptoms (e.g., anhedonia sociality) dull affective intensity. When we consider Elvevåg and colleagues' (2011) observation of a group-independent link between non-emotional metaphors and literal-concrete responses and Andreasen and Powers' (1975) reports of higher creativity scores in individuals with mania, we could conceive of a study in which non-emotional and emotional metaphors are assessed from production and comprehension standpoints, with clinical and non-clinical groups and symptomatology factored into account.

4.2.3 IQ and assessment

Higher IQ correlated with the accuracy of abstract response productions in one study of good matching quality (Forrest, Hay, and Kushner, 1969). This finding is, however, restricted to the context of the instrument used, rather than that of natural interaction(s) in the broader sense. Language assessment practitioners should therefore consider their own positionality (including during the development of their measures) when assessing the linguistics of schizophrenia. As many creativity measures involve or leverage tests of executive function, working memory, and/or cognitive flexibility, known to be impaired in schizophrenia, it is worth defining creativity for the purposes of that given investigation and selecting appropriate measures on that basis.

4.2.4 Schizophrenia, mania, creative writing, and FTD

The clinicians in Andreasen, Tsuang, and Canter's (1974) experiment viewed writing samples from mania and creative writing cohorts as more indicative of FTD in schizophrenia than FTD in schizophrenia itself. Within the context of our review, one potential reason for this could be that the clinicians perceived FTD as characterized by linguistic markers of verbal and figural creativity that are impacted by the negative syndrome, global symptom severity, and the presence of FTD itself. These markers are more likely to be preserved in the positive syndrome, mania cohorts, and non-psychiatric cohorts doing creative things with language. Our review suggests that FTD is more likely characterized by expressional disfluencies in specific contexts. Linguistic creativity in schizophrenia remains present, but is selectively impaired by the balance of positive and negative symptoms, the presence or absence of FTD,

global symptom severity, verbal IQ, and other factors requiring further study (such as affect).

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The DAIS-C: A small, specialised, spoken, schizophrenia corpus

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ABSTRACT

This paper describes the design and development of the DAIS-C (Discussing Abstract Ideas in Schizophrenia Corpus), a small, specialised corpus of spoken language in which speakers with a diagnosis of schizophrenia and those with no self-reported psychiatric or neuroleptic history were interviewed on the same topics. The corpus was constructed to allow for comparative analyses of speech behaviour in relation to linguistic creativity and formal thought disorder (FTD), but additional steps were taken to ensure that the corpus could be of use to other researchers and research questions. The present paper covers design decisions relevant to the construction of clinical corpora alongside information about the corpus of potential use to researchers interested in its use.

The present paper describes the design and characteristics of a corpus built to support an investigation of linguistic creativity and formal thought disorder (FTD) in schizophrenia. A key feature of its design was its capacity for reuse by other researchers, which is the focus of this paper. It is intended to act both as a description of the corpus' content and as a reference aid for potential users.

Although corpus linguists make up the primary audience of this paper, introductory sections on building spoken and specialised corpora are provided for interdisciplinary readers, unfamiliar with corpus linguistics, who may also be interested in using the corpus and/or building corpora of their own. These sections are also included given their relevance to the design criteria discussed later.

This paper also functions as a call for more linguistic work within the medical humanities to consider the theoretical aspects of corpus design. These guidelines are practically useful and also empirically important, and yet many text analytic studies of clinical populations that employ corpus methods tend not to incorporate corpus building practices into data collection. More awareness of corpus design will lead to improved data quality and greater confidence in the findings reported by these studies.

The paper begins by outlining reasons for corpus construction and related guidance. It then discusses decisions specific to the development of a corpus interested in clinical questions, particularly the

symptomatology of schizophrenia and how these considerations were integrated into extant guidance and theory on corpus design. The final part presents a brief review of the resulting corpus' characteristics, which were affected by design issues secondary to recruitment challenges/the COVID pandemic. These are explored ahead of a discussion of potential applications of the corpus.

Background

Why build a corpus

Corpus linguistics is gaining popularity as a research method, in and outside of linguistics itself (see Mouritsen 2019 for practical applications in law; Mitkov 2022). This has led to an increase in the production of reference and specialised corpora. Reference corpora tend to be larger and aim to represent language varieties as a whole, such as the British National Corpus (BNC, 2007) or Corpus of Contemporary American English (COCA; Davies, 2015), whereas specialised corpora focus on specific linguistic contexts and communities.

Researchers wanting to use corpora to answer a research question will need to check for existing corpora or build one if nothing suitable exists. Corpus design stems from the original research question. A corpus is not just a text database. It is a body of linguistic examples curated to

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answer a set question (Randi, 2010).

There is no quantitative answer to the question of how big a corpus should be. Representativeness describes the extent to which a corpus accounts for the language variety it samples. A corpus of an author's collected works, for example, would be completely representative. This is impractical in most cases, and enough data for an accurate representation usually suffices (Adolphs and Knight, 2010).

Representativeness is more challenging with respect to schizophrenia. One reason is symptom heterogeneity (Oomen et al., 2022). Schizophrenia symptoms range in nature and degree and affect linguistic production and comprehension (McKenna and Oh, 2005). It is arguable that we cannot currently assess representativeness in this population because the true extent of linguistic variation is not yet understood (McKenna and Oh, 2005; Mikesell and Bromley, 2016).

This paper discusses the design and characteristics of the DAIS-C (Discussing Abstract Ideas in Schizophrenia Corpus), which was built to answer the following question: *is there a relationship between linguistic creativity and formal thought disorder in schizophrenia?*

Despite an increase in corpus linguistic applications, no British English corpus of speech in schizophrenia prior to the DAIS-C existed. A reference schizophrenia corpus would be a phenomenal undertaking, one exceeding the scope of a thesis. A specialised corpus built to explore linguistic creativity in this population offers a useful first step, nonetheless. The next sections review best practices in the design of small, specialised, and spoken corpora. These are synthesised to form a set of requirements for the DAIS-C. A description of how I approached these requirements follows before a summary of the DAIS-C's main characteristics.

Building spoken language corpora

Spoken language corpora fall under the class of special corpora, meaning that they do not necessarily seek to represent the full extent of a language variety but rather a special case of language use. Prominent examples like the BNC spoken represent speech orthographically and sample from a range of spoken contexts such as lectures, speeches, and conversations. More recent work has taken interest in informal conversation (CANCODE; McCarthy 1998).

FTD manifests in speech and writing, but more work has sampled FTD in spoken contexts. Historic work has noted that FTD in speech is more readily elicited in the context of proverb interpretation tasks and comprehension subsets of standardised intelligence tests (Marengo et al., 1986). These approaches have been replicated substantially. Indeed, much of this work was reviewed systematically in Delgarum-Nejad et al. (2020). It is important to point out that although interactional, these remain only semi-naturalistic events due to their location within the context of formal testing. Less work has examined FTD in the context of fluid, informal conversation (Mikesell and Bromley, 2016).

Several best practices exist for the construction of spoken corpora. There are both general construction guidelines and guidance specific to particular construction stages. Sinclair (2005) provides some of the most formal, comprehensive, and general (reproduced here from Adolphs and Knight 2010, p.39):

- 1 The contents of a corpus should be selected without regard for the language they contain, but according to their communicative function in the community in which they arise.
- 2 Corpus builders should strive to make their corpus as representative as possible of the language from which it is chosen.
- 3 Only those components of corpora which have been designed to be independently contrastive should be contrasted.
- 4 Criteria for determining the structure of a corpus should be small in number, clearly separate from each other, and efficient as a group in delineating a corpus that is representative of the language or variety under examination.

5 Any information about a text other than the alphanumeric string of its words and punctuation should be stored separately from the plain text and merged when required in applications.

6 Samples of language for a corpus should wherever possible consist of entire documents or transcriptions of complete speech events, or should get as close to this target as possible. This means that samples will differ substantially in size.

7 The design and composition of a corpus should be documented fully with information about the contents and arguments in justification of the decisions taken.

8 The corpus builder should retain, as target notions, representativeness and balance. While these are not precisely definable and attainable goals, they must be used to guide the design of a corpus and the selection of its components. Any control of subject matter in a corpus should be imposed by the use of external, and not internal, criteria.

9 A corpus should aim for homogeneity in its components while maintaining adequate coverage, and rogue texts should be avoided.

It is recognised that complete adherence to Sinclair's guidelines is challenging in practice. There is good agreement, however, that they function well as guiding ideals (Adolphs and Knight, 2010). A corpus design that makes reasonable attempts to follow this advice as closely as possible stands a better chance of being reflective of the language variety under study and usable to the wider research community.

The importance of metadata is also stressed, and it is helpful to consider collecting editorial, analytic, descriptive, and administrative types of metadata (Burnard, 2005). 'Editorial' metadata provides information about how corpus components relate to original sources. 'Analytic' provides information about interpretation and analysis. 'Descriptive' provides classification data on internal and external properties. 'Administrative' provides information about the corpus itself, such as title, revisions, etc.

The ethics of spoken corpus construction require careful thought. Informed consent, despite being essential, should not only specify consent to record but also to distribute (Leech et al., 2014; Thompson, 2005). Anonymisation also requires care. Data that could potentially identify a participant must be located and obscured (Du Bois, 1992), and not all identifying features are immediately obvious. 'Raw' audio records may contain unique phonetic features that can potentially identify individuals (Adolphs and Knight, 2010). Anonymisation may also extend to sensitive topics (Wray et al., 1998).

Guidelines on audio recording in the construction of spoken corpora emphasise audio quality alongside an adequate account of the environmental features of a spoken interaction (Strassel and Cole, 2006). The transcription of spoken language is a complex task. Spoken language is fundamentally multimodal, with meaning constructed from textual, prosodic, gestural, and environmental elements (Adolphs and Knight, 2010). Representing this interplay in writing can be challenging, and investigators can quickly become consumed by attempts to capture the full richness of the data (Cook, 1990; McCarthy 1998; Carter, 2015; Halliday, 2004). Transcription ultimately boils down to theorising (Ochs, 1979; Edwards, 1993; Thompson 2005), and there is significant tension between validity and reading ease (Graddol et al., 1994).

There is a growing interest in and a need for spoken language corpora that deal with naturalistic interactions (Batinic et al., 2021). FTD can be elicited in informal spoken contexts, particularly when the discussion focuses on open, abstract topics. Best practices for the construction of spoken language corpora emphasise careful and systematic corpus construction, consideration of technical and environmental factors relevant to spoken discourse, collecting comprehensive metadata, practising ethical corpus construction, and transcribing on a robust theoretical basis. The next section discusses guidance on the development of small, specialised corpora.

Building small, specialised corpora

Specialised corpora are gaining popularity (Flowerdew, 2014) and represent a departure from the established trend of compiling sizable reference corpora. These smaller corpora focus on specific genres and registers.

Small corpora are unsuitable for some analyses because not all linguistic features manifest in small samples. Some lexicographical features are so rare that only a few examples appear in corpora composed of hundreds of millions of words. Grammatical patterns do however occur with enough regularity for reliable analysis within small corpora (Carter and McCarthy, 1995). Smaller corpora also allow analysts to be more precise about the original contexts of use, because there tends to be less contextual variation (Flowerdew, 2004). Builders and analysts of small corpora are usually one and the same, and familiarity with the context allows analysts to supplement their quantitative observations with supportive qualitative analyses (Flowerdew, 2004; O'Keefe, 2007).

The present investigation is interested not only in schizophrenia and FTD but also the relationship between linguistic disturbances and their interactional contexts. Specialised corpora allow for a deeper examination of this context and the potential to build contextual variation into the design. A specialised corpus can be specialised in several ways: purpose of investigation (what), contextualisation (where, who, why), genre, type of text (conversation), subject matter, and variety of English (Flowerdew, 2004). They can also contain specialised sub-corpora, such as in the Hong Kong Corpus of Spoken English (Warren, 2004) that contains conversation, business, academic, and public sub-corpora. It is also recommended that builders of spoken, specialised corpora transcribe laughter and related features where the objective is to analyse interaction (Almut, 2010).

Even builders of specialised corpora are required to factor representativeness into their design. This has been defined as the extent to which the full range of variability is captured by the sample (Biber, 1993), with variability expressed as being either situational or linguistic (Biber, 1993; Almut, 2010). Situational variability refers to the spread of registers or genres in the population, whilst linguistic variability refers to the extent of linguistic variety in the population. It is argued that situational representativeness must be defined first to allow for the subsequent analysis of linguistic representativeness: the main thing is to ensure that samples are taken from a range of typical situations (Almut, 2010). Linguistic representativeness can be achieved with samples of 1000 words, and genres or registers can be well represented with samples as low as five in some cases, although ten is preferable according to Biber (1990).

Authors building specialised corpora for reuse by others can factor future use into their designs. Transcription conventions for specialised corpora tend toward 'one-offness' or the tendency for annotation to cater only to the needs of a given project (Almut, 2010). Planning for reuse by others can (and, where possible, arguably should) inform following design stages.

Larger corpora can also be used to support specialised corpus work, such as by checking whether high frequency words in the specialised corpus are more or less frequent in general usage (Almut, 2010). Specialised corpora therefore need not exist in a vacuum.

Interest in specialised corpora is increasing, especially among those interested in the role of context in interaction. Although not suitable for all analyses, they are well positioned for analysts interested in a close examination of features that appear reliably in small samples. They also suit analysts with a disposition toward mixed methods. Linguistic examinations of schizophrenia and FTD stand to benefit from a specialised corpus approach because general reference corpora do not adequately represent schizophrenia populations (Gabić et al., 2021). Representativeness remains a consideration, but this can be partly addressed by sampling from a range of situational contexts. The next section brings together the guidance for building small, specialised corpora and spoken corpora as a set of operational requirements for the DAIS-C.

Requirements for the DAIS-C

The DAIS-C needed to permit an investigation of linguistic creativity, schizophrenia, and FTD. None of these concepts are particularly well defined linguistically. Requirements relevant to the research question are outlined below:

- Allows for linguistic creativity and FTD comparison.
- Compares schizophrenia and nonpsychiatric cohorts.
- Compares semi-naturalistic (experimental) and naturalistic (conversational) contexts.

Guidelines on the creation of spoken and specialised corpora were also important to the design. The spoken corpus requirements for the DAIS-C can be summarised as follows below:

- Close compliance with Sinclair's (2005) and Adolphs and Knight (2010, p.39) general guidance.
- Good audio quality and transcription of relevant environmental features.
- Comprehensive metadata covering editorial, analytic, descriptive, and administrative dimensions.
- Informed consent to record and also archive data via a repository for use by other researchers, comprehensive anonymisation, the avoidance of sensitive topics unless agreed by the participant, and, if applicable, the destruction of raw audio.
- Detailed and relevant transcription that captures key textual, prosodic, gestural, and environmental elements while preserving reading ease.

The specialised corpus requirements for the DAIS-C can be summarised thusly:

- Samples from a range of linguistic and situational contexts within the population.
- Gathers detailed contextual information.
- Aims for a minimum of 1000 words per speaker.
- Aims for a minimum of five samples per register or genre.
- Builds potential reuse by others into the planning and design.

A corpus that allows for an exploration of both the FTD framework (a theory-driven model of FTD that focuses on grammatical, word selection, thought completion, and discourse tracking features, under review) and linguistic creativity stands to benefit from a combination of best practices in the design of specialised and spoken corpora. The next section recounts the construction process through reference to the requirements above in combination with in-text examples.

Building the DAIS-C

Design statement

Sinclair's (2005) and Adolphs and Knight (2010, p.39) first recommendation about corpus building raises important questions about where language disturbance in schizophrenia sits in relation to corpus linguistic theory:

The contents of a corpus should be selected without regard for the language they contain, but according to their communicative function in the community in which they arise.

Individuals with schizophrenia represent a speech community. They also experience a heterogeneous set of symptoms that affect linguistic production and comprehension (McKenna, 2007; McKenna and Oh, 2005). Some such symptoms correspond reliably to linguistic manifestations. The act of observing schizophrenia symptoms results in embedded assumptions about the linguistic potential of an individual's

speech. Someone with pronounced negative symptoms has a good chance of showing poverty of speech, for example (Andresen, 1982; Fervaha et al., 2016). I should build a corpus based not on these language features but instead on contents that reflect the 'communicative function in the community in which they arise' (Adolphs and Knight, 2010, p.39). The problem in this case, though, is that the contents that reflect those communicative functions also happen to imply specific language features. The present paper recounts how this was managed at the design and construction levels, in accordance with Sinclair's (2005) and Adolphs and Knight (2010, p.39) seventh recommendation:

The design and composition of a corpus should be documented fully with information about the contents and arguments in justification of the decisions taken.

Ethics

Ethical review

A favourable ethical opinion was granted by the Health Research Authority (HRA; IRAS ID: 225295) following review by The South West-Plymouth and Cornwall REC on 3 July 2018. The study was also reviewed and approved by the Manchester Metropolitan University's Research Ethics and Governance team (EthOS ID: 5342) on 4 December 2018.

Informed consent

Participants were asked to provide separate statements of consent for audio recording and data archival/distribution (as per Leech et al. 2014 and Thompson 2005). Consent was also sought for GP notification, as the General Medical Council (GMC) recommends notifying participants' GPs, with their consent, of their involvement in research (GMC, 2013) regardless of their group allocation. Neither GP notification nor consent to archival were conditions of participation. The referring psychiatrists handled this process for clinical participants unless this was deemed unnecessary by the participant and/or their treating clinician. Comparison participants who consented to this were advised to share the latest participant information sheet (IS; v.3.2, 13 October 2020) with their GPs. All participants signed the latest approved version of the informed consent form (ICF; v.2.2., 13 October 2020) and medical declaration (MD; v.1.0, 12 February 2020) after reviewing the IS for a second time and raising any questions they might have had with the interviewer. IS and MD documents were distinct for each group (see Section 2.4.2).

Inclusion and exclusion criteria

Clinical group. Collaborating clinicians were asked to identify potentially eligible clinical participants who met the following inclusion criteria, from the latest approved study protocol (v.3.2., 13 October 2020):

- A formal, historic diagnosis of schizophrenia.
- Prescription of, and compliance with, antipsychotic medication (identified by referral and/or self-report).
- Deemed to hold capacity, and suitable, via SCA (structured capacity assessment).
- Referred by principal investigators and/or local collaborators.

Eligible potential participants were not approached or were withdrawn if they met the following exclusion criteria, from the latest approved study protocol (v.3.2., 13 October 2020):

- Comorbid neuropathology external to the scope of the research question—e.g. traumatic brain injury (identified by both the self-declaration and the CLQT—Cognitive Linguistic Quick Test Plus).

- Deemed unsuitable following SCA.
- Part one participants belonging to groups A and B who, due to a change of circumstances, no longer meet the relevant inclusion criteria and/or have since met the relevant exclusion criteria.

Comparison group. Comparison participants self-referred in response to public advertisement and needed to meet the following inclusion criteria, from the latest approved study protocol (v.3.2., 13 October 2020):

- No formal, historic diagnosis of schizophrenia.
- Deemed to hold capacity, and suitable, via SCA.

Eligible potential participants were withdrawn if they met the following exclusion criteria, from the latest approved study protocol (v.3.2., 13 October 2020):

- Comorbid neuropathology external to the scope of the research question—e.g. traumatic brain injury (identified by both the self-declaration and the CLQT—Cognitive Linguistic Quick Test Plus).
- Deemed unsuitable following SCA.
- Historic and/or current prescription of antipsychotic, antidepressant, and/or mood-stabilising medication (identified by self-declaration).

These criteria are consistent with Sinclair's (2005) and Adolphs and Knight (2010, p.39) fourth recommendation:

Criteria for determining the structure of a corpus should be small in number, clearly separate from each other, and efficient as a group in delineating a corpus that is representative of the language or variety under examination.

The aim of the DAIS-C is to create a small, specialised, spoken language corpus that permits comparison of groups (clinical and comparison) on the basis of homogenous factors (such as interview question, mode of administration, etc.). This is consistent with Sinclair's (2005) and Adolphs and Knight (2010, p.39) ninth recommendation:

A corpus should aim for homogeneity in its components while maintaining adequate coverage, and rogue texts should be avoided.

Here, the exclusion criteria offer protection against 'rogue texts'. Sinclair and Wynne (2004) define these as texts that stand out as unrepresentative of the variety in question. The homogenous distinctions between individuals with schizophrenia and nonpsychiatric comparison speakers are important for the creation of the DAIS-C and its distinct sub-corpora. Within these sub-corpora, it is important that samples taken from both groups of speakers are as free from competing clinical noise as possible. This is particularly important because, in the case of comorbid neuropathology, noise and signal are difficult to distinguish. The suggestion that FTD may represent a form of dysphasia, for example, is neither a conceptually nor linguistically light one.

Sampling

Clinical group

Collaborating clinicians applied a purposive, maximum variation sampling approach to the eligible participant pool. Clinicians did not select participants based on predefined linguistic criteria but rather an attempt to represent the range of symptom heterogeneity expressed in schizophrenia populations as a whole. This is consistent with Sinclair's (2005) and Adolphs and Knight (2010, p.39) first and second recommendations:

The contents of a corpus should be selected without regard for the language they contain, but according to their communicative function in the community in which they arise.

Corpus builders should strive to make their corpus as representative as possible of the language from which it is chosen.

It is reasonable to expect clinicians' familiarity with a participant's linguistic style to be problematic for the above. This was addressed by using an unstructured interviewing approach and blinding clinicians to the interview questions and their order of assignment. Clinicians were nevertheless aware of the broad study aims as listed on the IS and the general direction of interviews as described in the study protocol:

From the IS (v.3.2., 13 October 2020)

'What is this study about?

This study is about creative language and schizophrenia. I want to see if there is a relationship between creativity and the speech changes that can sometimes occur with schizophrenia. The findings from this study could advance our understanding of these speech changes and may prompt clinicians to think about language differently.

What do you mean by creative language?

By creative language, we mean the language of creative writers. Poets and novelists often break the 'rules' of language to achieve their effects: to inspire unique feelings, ideas, and perspectives.'

From the protocol (v.3.2., 13 October 2020)

'Participants will be asked to speak freely on the topic of their participation experiences and/or any other uncontested topics.'

Reasonable attempts were made to ensure that clinicians could exercise clinical judgement about participant suitability and apply a maximum variation sampling approach that did not introduce significant linguistic bias in the form of their familiarity with potential participants' linguistic styles. This familiarity is closer to the definition of external (rather than internal) corpus construction criteria, as it is difficult to anticipate a participant's level and style of engagement when the line of questioning is not known: 'In general, external criteria can be determined without reading the text in question, thereby ensuring that no linguistic judgements are being made' (Atkins et al., 1992, p.8). Clinicians were surprised by the extent of variation in subject matter on viewing the transcripts, which suggests that the blinding was successful.

It is also important to point out that the interactional context on which the clinicians' familiarity is based differs substantially from that of the interviews and the corpus. These were informal conversations that performed no clinical or therapeutic function. This may have further helped to separate selection and corpus construction factors.

Another important factor guiding participant selection with reference to corpus construction is that clinicians are trained in the assessment of language pathology in a manner that differs from a detailed linguistic analysis. This also provides some protections against the (hypothetical but reasonable) view that clinician knowledge of speaker style may negatively impact the design.

Sampling a clinical population whose symptoms affect linguistic production and comprehension is challenging for corpus designers. Schizophrenia symptoms that affect language ability are arguably external criteria, yet their correspondence to specific linguistic manifestations makes it difficult to construct a corpus for this population that completely avoids building on internal criteria. The fact that symptoms correlate with certain manifestations, however, does not guarantee prediction of what language a corpus involving those symptoms will contain.

Comparison group

Self-selection sampling was used for comparison participants. Potential comparison participants responded to public advertisement. Their role in the corpus design process is much simpler. Self-selection sampling entirely avoids the problem of a corpus builder making linguistic judgements about speakers in this cohort.

Their lack of homogenous membership within a specific linguistic community is also beneficial as a point of contrast. This speaks to Sinclair's (2005) and Adolphs and Knight (2010, p.39) third recommendation:

Only those components of corpora which have been designed to be independently contrastive should be contrasted.

The ability to compare speech in a clinical subgroup against that of a comparison subgroup was an integral aspect of the design. Early plans included no collection of comparison interview data due to the availability of the BNC. A general reference corpus does not, however, offer an increase in the homogenous components within the corpus. This can be achieved by including a comparison cohort and is consistent with Sinclair's (2005) and Adolphs and Knight (2010, p.39) ninth recommendation:

A corpus should aim for homogeneity in its components while maintaining adequate coverage, and rogue texts should be avoided.

Relying on the BNC for comparison would have effectively produced a sub-corpus of 'rogue texts', because the DAIS-C's interactional contexts are not reflected in the BNC. It is preferable in the context of a specialised corpus to compare clinical and comparison speech drawn from the same interactional contexts. This leverages the main strength of specialised corpora.

Interviewing

FTD can be elicited in informal spoken contexts, particularly when the discussion focuses on open, abstract topics (Marengo et al., 1986). These interviews tend to be administered by clinicians in a test or clinical interactional context. Less work has looked at how individuals with schizophrenia converse in informal conversation on abstract topics.

Interviews were unstructured and involved three initiating questions. Only one such question was asked per participant, and two of the questions were randomised across participants. It was not possible to randomise the third question because it was reserved for participants who had also completed a psycholinguistic task. It was only used with one clinical speaker, and the referring clinician did not know in advance which of the referred participants would complete all measures or only the interview. All of the questions were about creative uses of language and did not broach clinical topics unless they were raised by the participants. These topics were only explored with participants' consent.

Three questions were developed to allow for representation of three concepts important to the research question.

The first is about whether creativity is defined narrowly or broadly. The psycholinguistic experiment described in Delgaram-Nejad et al. (2022) offers a narrow, experiential definition. In that experiment, participants may make creative choices but only under restrictive linguistic conditions. This question is important for eliciting information on broad concepts confined to a limited experiential frame. The opposite of this involves inviting participants to define linguistic creativity themselves. This provides more opportunity for digression and abstraction but can be intimidating for respondents. Varying these question types allowed for data capture at both extremes.

The second concept was the role of an open or closed initiating question. Open questions invite a range of responses, whereas closed offer less (usually affirmative or negative). As an initiating question, closed questions allow for the quick categorisation of participants' viewpoints before the reasoning is unpacked with a subsequent open question. It was important to capture data on both question types in the initiation (or cue) position for two reasons: (1) because wh-questions and closed questions exert different effects in interview contexts (Waterman et al., 2001); (2) because some individuals with schizophrenia perform poorly on tests of social cognition and open questions place greater demands on those (and broader cognitive) resources; question type studies in childhood-onset schizophrenia suggest difficulty with wh-questions independent of cognitive functioning and/or

the presence of FTD (Abu-Akel et al., 2000). A corpus including data reflective of both types provides helpful information on interviewing styles as they relate to schizophrenia cohorts, response formulation and structure by genre, and more.

The third concept was about whether emphasis fell on language or creativity. One question framed creativity as an action that could involve language, whereas another framed language as a tool that could be exploited for creative purposes. This ensured that responses within the corpus were generated from a variety of conceptual prompts.

These variations in question type aimed to be consistent with the idea that samples should be taken from a range of typical situations (Almut, 2010). Descriptions of interview behaviour tend to make up a smaller part of corpus design (as in Pedraza 2019).

The questions are as follows:

[1] 'How was the experiment?'

This question was used only with participants who had completed the psycholinguistic task described in Delgarum-Nejad et al. (2022). It was intended to gather data for the 'open initiating' and 'narrow creativity context' genres.

[2] 'Do you feel like you do creative things with language?'

This question was randomised across all participants who did not take part in the psycholinguistic task. It was intended to gather data for the 'closed initiating' and 'broad creativity context' genres. Emphasis was placed on affect ('feel' - to prompt abstract reasoning) and creativity as an action that could involve language ('do creative things with').

[3] 'Do you feel like you use language creatively?'

This question was also randomised across all participants who did not take part in the psycholinguistic task. It was intended to gather data for the 'closed initiating' and 'broad creativity context' genres. As above, emphasis was placed on affect ('feel' - to prompt abstract reasoning) and, in this case, language as a tool that could be exploited for creative purposes ('use language creatively').

These decisions represented attempts to observe Sinclair's (2005) and Adolphs and Knight (2010, p.39) eighth recommendation:

The corpus builder should retain, as target notions, representativeness and balance. While these are not precisely definable and attainable goals, they must be used to guide the design of a corpus and the selection of its components. Any comparison of subject matter in a corpus should be imposed by the use of external, and not internal, criteria.

The interviewer used an unstructured approach with the chief goal of maximising ecological validity. The interviewer spent the interaction processing participants' responses to one of the initiating questions and developing follow-up questions online (i.e. in real time). This approach was about communicating interactional parity, as both interviewer and interviewee had to formulate their contributions in real time. The interviewer would ask for clarification of specific concepts and elaboration on certain terms, focusing on points of metalinguistic awareness. The interviewer reintroduced creativity as a topic only if the participant had deviated significantly and reached the point where they could no longer advance the conversation themselves. The interviews were concluded when participants indicated that they had said all that they wished to. They were advised at the start of the conversation that they could do this at any time, and the interviewer checked participant views on this at various points throughout the interview. The interviewer signalled this point in the interaction with a closed (and closing) question: 'is there anything that you'd like to talk about that we haven't talked about?' This is consistent with Sinclair's (2005) and Adolphs and Knight (2010, p.39) sixth recommendation:

Samples of language for a corpus should wherever possible consist of entire documents or transcriptions of complete speech events, or should get as close to this target as possible. This means that samples will differ substantially in size.

Many participants sought a definition of linguistic creativity, even though (a generic and somewhat nonspecific) one was provided on the IS. The interviewer provided their own opinions on this and other topics when asked, again to sustain ecological validity and communicate interactional parity. The interviewer would even offer alternative points of view. These were introduced because naturalistic interaction regularly requires the navigation of difference, something often missing from traditional qualitative interviewing paradigms. The interviewer never insisted upon their views, though, and events where this was situationally appropriate were rare.

Recording

Audio quality, interview duration, recording date, and recording time were documented (as per Strassel and Cole 2006). This allows for calculations of words per audio minute and other analyses.

Information about the devices used by the interviewer and participant and interview recording arrangements was also logged to contextualise the audio quality tables. Some participants were interviewed via telephone, with the speakerphone function activated, which was then recorded using a desktop condenser microphone. This degrades the final audio signal because the speech data is filtered at several points. This had transcription implications that are discussed later (see Section 2.5.) and was a significant factor in the need to exclude '<26AR12>' data.

Demographics

Age, sex, gender, and education

Data on biological sex (female or male) and gender identity (woman, man, or a specified alternative) were recorded because both influence outcomes in clinical research (Clayton and Tannenbaum, 2016). Data on age range and education level is missing for some clinical participants due to errors in data collection, although some education information has been recovered as it is referenced in the transcripts. Education was recorded as positioning in relation to the UK National Qualifications Framework (NQF).

Setting and geography

A design benefit of offering multiple participation routes (in-person, remote, all measures, interview only) was that it provided situational variety (Almut, 2010). Genres and registers can be well represented with samples spanning the five to ten range (Biber, 1990).

Transcription

Conventions

Transcription conventions were developed by modifying those present in the BNC User Manual and Reference Guide (v.1.1., Lancaster University, 2014). The original BNC formatting and approaches were retained wherever possible. When adaptations were necessary, they were designed to work with existing BNC conventions.

This part of the design stage was about identifying textual, prosodic, gestural, and environmental elements (as per Adolphs and Knight 2010) useful to the present study of linguistic creativity and schizophrenia. Attention was given to features that might also benefit other researchers (especially where they coincide with the aims of the current study). The general aim was a lightweight set of broadly useful conventions that capture those environmental properties that contribute to the multimodality of spoken language (Strassel and Cole, 2006). The selection of transcription elements therefore focused on those of potential relevance to spoken interactions overall, clinical cohorts and creativity, and the

broadest levels of linguistic analysis: phonology, morphology, syntax, semantics, and pragmatics.

Table 1, below, displays the conventions used in the DAIS-C.

Most conventions follow the Extensible Markup Language (XML) format, having an opening and closing tag. This decision was made to improve the end-user experience, especially within corpus analysis software. This approach also allows those interested in more granular analyses to situate these features at any point in the raw text, as in the following example:

<Lr>al</Lr>right then

This approach was not required for the present study, but the text has been prepared such that others can adopt this approach if they choose.

XML tags are also easy to extract en-masse, allowing for rapid and precise token/word counts of both features of interest and of the raw text. This approach is consistent with Sinclair's (2005) and Adolphs and Knight (2010, p.39) fifth recommendation:

Any information about a text other than the alphanumeric string of its words and punctuation should be stored separately from the plain text and merged when required in applications.

Speaker labels are composed of participants' unique identifiers, which were developed using the study debrief sheet (DS; v.1.1, 13 June 2018).

Laughter, coughing, sighing, and sniffing were included because they provide valuable paralinguistic information about participant status, potential emotional state, and so on. Lateral clicks were recorded for both their paralinguistic value and for their potential relevance to EPSSEs and clozapine (Li et al., 2009). Inaudible speech was coded to provide a qualitative account of missing speech. It was not possible to discriminate the number of inaudible utterances in all cases, and so the convention is catch-all for the word and phrase levels. Miscellaneous noise, given its variability, was covered with a single code that allowed for transcriber comments. Specifics about the nature of the noise (e.g. whether it was a human voice, a motor vehicle, or music in the distance) was added within this layout. Anonymised information and missing data are treated separately for record-keeping purposes.

Anonymisation was carried out at the transcription stage. All personally identifiable information (PII), such as names and e-mail addresses was redacted and processed in accordance with the latest approved study protocol (v.3.2, 13 October 2020). Data that was not PII but may still have been identifying in some circumstances was also

removed (as per Du Bois, 1992). Examples include reference to frequented locations and landmarks, sites of previous hospital admission, and anecdotes about other people. There are instances where the identity of public figures can be inferred despite anonymisation, such as the following:

but princess <An> </An> and I met <An> </An> he came to er the hospital in <An> </An> princess <An> </An> and like the patients were very upset because then you got celebrities coming in and just taking the piss out of the patients y I mean you know and then you have people like er <An> </An> lady <An> </An> I do like lady <An> </An> she's the one person that I like in the royal family yeah

This is not problematic in itself as these figures are widely known. Thought was given, though, to whether this speaker's reference to meeting said figures while an inpatient could be identifying. The ultimate determination was that it could not, as none of the details, when anonymised and combined, indicated without doubt any one hospital or occasion.

Hyphenation was avoided for compounds but retained for orthographic number (e.g. 'fifty-five'), as were pauses and sentence boundaries. It became clear early in the transcription process that any attempt to delineate sentence units (as in s-units in the BNC) in the more disorganised examples required considerable time and effort. Given that doing so would not be of great benefit to the research question, it has not been done in this version. It would be possible to introduce them later, however.

Pauses were annotated in early transcription attempts. This greatly slowed transcription, which was already taking some time. There was also much agonising over the value that timed pauses would offer other researchers, their potential relevance to speech disorganisation in schizophrenia (given what they may reveal about executive function), and the work involved in their inclusion. Pauses were ultimately dropped, and the audio files were destroyed on the production of a final transcript. The knowledge that the files could not be retained for further transcription also shaped the approach taken here. A great deal of data had to be discarded, such as detailed prosodic information of potential interest to speech and language therapists and phoneticians. The desire to transcribe with ever-increasing precision (Cook, 1990; McCarthy 1998; Carter, 2015; Halliday, 2004) was particularly apparent at this stage. To ensure that not all prosodic information was lost, an economical (and unusual) form of (what might be called onomatopoeic) transcription was employed (shown below):

<2IAN11> because they see something good but they don't like it it it it upsets them like they have a problem with me listening y I mean if I was a lis er f if I'm a very good listener y I mean I I I listen in reality I listen crystal clear it's nm I may not think the other way the way other people think but I think the way I think </2IAN11>

The phonetic properties of the participant's speech are represented in examples like 'y I mean', and truncated words are presented as they sounded on the recording 'lis er f if'. This form of representation was chosen because the DAIS-C is not a written corpus, dysfluencies and their articulatory properties are potentially relevant to the research question and certainly relevant to the language community and interactional context under study, and the method (although non-standard) allows for the detailed representation of phonological information without the use of intensive phonemic or phonetic annotation. It also avoids the problem of estimating the intended word in the case of truncation, which was often not possible with any confidence. In the rare cases where this form of representation conflicted with standard orthography, for example where 'well' truncated to 'we' would lead to confusion with the pronoun, an alternative that still conveyed the main concept was used: 'w'. This is a good example of how transcription is indeed highly theoretical (Ochs, 1979; Edwards, 1993; Thompson 2005). This approach attempts to tread the difficult line between validity and reading ease (Graddol et al., 1994).

Table 1
DAIS-C transcription conventions, modified from the BNC 2014.

Tags	Description
<XXXXXX> </XXXXXX>	speaker label/ID
<INT> </INT>	interviewer speech
<FAM> </FAM>	family members
<DOC> </DOC>	clinicians
<Lh> </Lh>	laughing
<Ch> </Ch>	coughing
<Sh> </Sh>	sighing
<Sn> </Sn>	sniffing
<Cl> </Cl>	lateral clicking
<InAud> </InAud>	inaudible speech
<Noi=description> </Noi>	miscellaneous noise
<An> </An>	anonymised data
<Mix> </Mix>	missing data
mm	voiced pause
mhm	voiced pause, affirmative
er	filler sound, as in 'her'
erm	filler sound, as in 'erm'
ah	filler sound, as in 'ah'
ch	filler sound, as in 'ch'
ay	filler sound, as in 'ay'
v, wh, l, la	truncated words
cos, wanna, gotta	standardised contractions
pleasure, P L E I S U R E	words spelled aloud

Software

EasyTranskript, a free-to-use transcription environment, was used to process audio files. The software was chosen because it allows for the quick production of timestamps. These are provided as a separate file group within the corpus file structure.

Storage

The corpus data are presented variously across a range of file types and formats, to counter the problem of 'one-offness' common to the development of specialised corpora (Almut, 2010).

Interactional files contain both interviewer and participant dialogue, presented in a running sequence as shown below:

```
<INT> wow </INT>
<03EB14> so but that it it that is about it really that is about it so I write
a poem <InAu> </InAu> it's the first time in a long long time but it is
mostly songwriting that I get creative with so </03EB14>
<INT> what's the the thing you like about the songwriting more than the
poetry </INT>
```

Timestamped files mirror the interactional files but contain only the timestamps associated with each speaker's turn, as shown below:

```
<03EB14> #00:06:11-5# </03EB14>
<INT> #00:06:08-4# </INT>
<03EB14> #00:06:34-6# </03EB14>
```

Disruptions in the chronological order, as above, can be used to infer overlaps. This is because timestamp markers correspond to the end of each speaker's utterance, irrespective of the order of turns.

'Speaker Only_XML' files contain only the participant's turns and all XML annotation, as shown below:

```
<03EB14> yeah erm I I sorry </03EB14>
<03EB14> erm I I use erm what I do is erm I will I w I will build like a a
single PNG like what what w one moment one d is one way of doing it is to
create many individual
```

'Speaker Only_Raw' files contain only the participant's turns, with all but the plain text removed as shown below:

```
erm yeah
is that what
sorry
erm
I erm could be may erm that erm erm if I hadn't hadn't had all this erm
like say like bad stuff in
```

These decisions focus mainly on Sinclair's (2005) and Adolphs and Knight (2010, p.39) fifth recommendation:

Any information about a text other than the alphanumeric string of its words and punctuation should be stored separately from the plain text and merged when required in applications.

DAIS-C characteristics

Corpus characteristics

The tables below show the total number of tokens, audio hours, and audio minutes across the DAIS-C as a whole and also by sub-corpora. It is important to note that tokens account for speakers only, whereas audio hours and minutes account for the interaction as a whole (speaker and interviewer).

Tables 2–4 display this information.

Speaker characteristics

Overrepresentation

The corpus is characterised by two forms of overrepresentation at the group level. The first is the distribution of females and males and the second is the distribution of interview contexts.

Tables 5–7 show this in cross tabular format.

Education is arguably a third source of overrepresentation, as comparison participants range L6 to L8 on the NQF. A full comparison against the clinical cohort is not possible due to insufficient data, though there is data suggesting clinical representation of L3, L6, and L7.

The above are clearly problematic for Sinclair's (2005) and Adolphs and Knight (2010, p.39) ninth recommendation:

A corpus should aim for homogeneity in its components while maintaining adequate coverage, and rogue texts should be avoided.

The design included plans to recruit an equal number of males and females and to spread the questions and contexts evenly across groups. Achievement of demographic representation was largely dependent on illness severity and suitability, availability, and interest in or inclination toward taking part in the study. Variations in participation route arose mainly in response to the situational and operational challenges presented by the pandemic, and question type was tied to the experimental approaches, particularly the block randomisation processes, described in Delgaram-Nejad et al. (2022).

Schizophrenia and FTD affect language acutely, chronically, and markedly (McKenna, 2007; McKenna and Oh, 2005). Sociolinguistic influences relating to sex and education follow a different pattern and course. Context has a more acute effect, but sociolinguistic influence and language pathology are sufficiently distinct to allow for the detection of schizophrenia-specific effects within the DAIS-C. Their sociolinguistic and contextual dependencies will require a larger corpus (but perhaps not a reference corpus, as covered in Delgaram-Nejad et al. (2022) and further study, and corpus expansion can correct the demographic imbalances of this early version.

Corpus data

Tables 8 and 9 below show the number of tokens per speaker and their contribution to the total corpus and their respective sub-corpora as percentages.

Fig. 1 shows the distribution of token counts.

13 comparison speakers and 11 clinical speakers are within the 0–5000 token range. One comparison speaker and three clinical speakers are in the 5000–10,000 token range. One clinical speaker is an outlier, being within the 15,000–20,000 token range.

Fig. 2 below shows the distribution of audio minutes per speaker.

Eight comparison speakers and five clinical speakers are within the 0–20 min range. Four comparison speakers and six clinical speakers are within the 20–40 min range. Two comparison speakers and two clinical speakers are within the 40–60 min range. Two clinical speakers are outliers, one being within the 80–100 min range and another being within the 100–120 min range.

These values suggest some success in sampling according to Sinclair's (2005) and Adolphs and Knight (2010, p.39) sixth recommendation:

Table 2
Token count, audio duration, and audio minutes.

	Tokens	Audio hours	Audio minutes
DAIS-C	97,367	21:24:50	1294.8
DAIS-C-CL	58,444	15:47:28	947.5
DAIS-C-CO	33,025	05:37:22	337.4

Table 3
Token count, mean, and standard deviation.

	Tokens	Mean	SD
DAIS-C	97,357	3154	3011
DAIS-C-CL	58,444	3896	3700
DAIS-C-CO	33,025	2358	1864

Table 4
Audio minutes, mean, and standard deviation.

	Audio minutes	Mean	SD
DAIS-C	1204.8	29.21	22.31
DAIS-C-CL	947.5	34.97	27.12
DAIS-C-CO	337.4	23.04	14.19

Table 5
Sex.

		Female	Male	Total
Group	Clinical	3	12	15
	Comparison	11	3	14
Total		14	15	29

Table 6
Interview only.

		No	Yes	Total
Group	Clinical	1	14	15
	Comparison	10	4	14
Total		11	18	29

Table 7
Topic breadth.

		Broad	Narrow	Total
Group	Clinical	14	1	15
	Comparison	4	10	14
Total		18	11	29

Table 8
DAIS-C-CL: tokens, % of corpus, and % of sub-corpus.

Speaker ID	Tokens	% of corpus	% of sub-corpus
<03AR15>	3800.00	3.90	6.50
<03BR14>	15,473.00	15.89	26.47
<10BR14>	2345.00	2.41	4.01
<10BR15>	4274.00	4.39	7.31
<12AY15>	2040.00	2.10	3.49
<18UG09>	2344.00	2.41	4.01
<18UG10>	186.00	0.19	0.32
<18UG11>	2288.00	2.35	3.91
<18UG14>	5239.00	5.38	8.96
<18UG15>	1066.00	1.09	1.82
<21AN11>	6499.00	6.68	11.12
<21AP15>	4137.00	4.25	7.08
<21UN11>	1686.00	1.73	2.88
<22AP15>	1179.00	1.21	2.02
<26AR16>	5888.00	6.05	10.07

Samples of language for a corpus should wherever possible consist of entire documents or transcriptions of complete speech events, or should get as close to this target as possible. This means that samples will differ substantially in size.

One challenge associated with this recommendation is that samples of various sizes can skew relative contributions to the corpus, with some

Table 9
DAIS-C-CO: tokens, % of corpus, and % of sub-corpus.

Speaker ID	Tokens	% of corpus	% of sub-corpus
<02AR17>	819.00	0.84	2.48
<09AR14>	1693.00	1.74	5.13
<11AR18>	3371.00	3.46	10.21
<16OV11>	477.00	0.49	1.44
<16UN13>	4210.00	4.32	12.75
<16UN16>	4867.00	5.00	14.74
<17AR13>	1289.00	1.32	3.90
<19OV10>	1692.00	1.74	5.12
<23CT18>	1330.00	1.37	4.03
<23CT19>	939.00	0.96	2.84
<23BR14>	7031.00	7.22	21.29
<23OV14>	1842.00	1.89	5.58
<26CT11>	1210.00	1.24	3.66
<28CT11>	2255.00	2.32	6.83

speakers constituting a much larger portion than others. It is worth reviewing each speaker's contributions on the level of their specific sub-corpora and that of the wider corpus.

Fig. 3 below shows each speaker's contribution to their relevant sub-corpus as a percentage.

14 comparison speakers and 13 clinical speakers are within the 0–10% range. One clinical speaker is in the 10–20% range. One clinical speaker is an outlier, being within the 20–30% range.

Fig. 4 below shows each speaker's contribution to the overall corpus as a percentage.

6 comparison speakers and 9 clinical speakers are within the 0–5% range. Four comparison speakers and three clinical speakers are within the 5–10% range. Three comparison speakers are in the 10–15% range. One clinical speaker is in the 15–20% range. One comparison speaker is in the 20–25% range.

The DAIS-C incorporates complete speech events, resulting in samples varying significantly in size. The rates of these variations are somewhat balanced across groups, but speaker overrepresentation is apparent at the sub-corpus and corpus levels. The result is a fair compromise between numerical uniformity and participant heterogeneity.

It is also important to review interviewer token data, as differences in interviewer behaviour are likely to influence participant behaviour.

Fig. 5 below shows the distribution of interviewer token counts.

Interviewer tokens range 0–1000 for four comparison and five clinical speakers. Interviewer tokens range 1000–2000 for seven comparison and eight clinical speakers. Interviewer tokens range 2000–3000 for two comparison and two clinical speakers. Interviewer token data is missing for one clinical participant: <23EB14>.

Fig. 6 below shows the distribution of speaker to interviewer token ratios.

Token count ratios (describing the number of speaker tokens for each interviewer token) are relatively balanced across groups. 13 (14 including the missing value for <23EB14>) comparison ratios and 12 clinical ratios fell within the 0–5 range. There are two clinical outliers in the 5–10 range. There was one clinical outlier in the 15–20 range.

Group characteristics

Overrepresentation

It is worth examining the speaker characteristics discussed in Section 3.2.2. In relation to the overrepresentation issues presented in Section 3.2.1.

Mean differences by sex. Fig. 7 below shows the mean token counts across groups by speaker sex.

Female comparison participants show a higher token mean than male comparison participants, with the means and dispersions in this group being somewhat similar. Female clinical participants show a

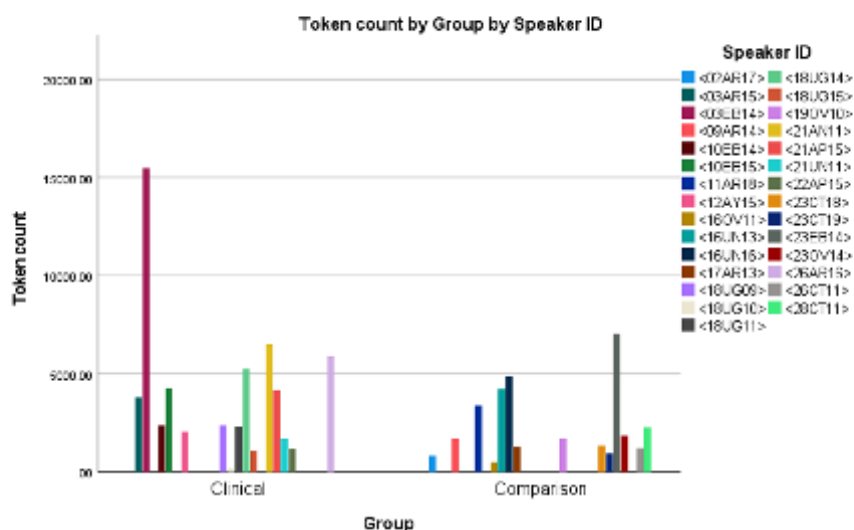


Fig. 1. Token count by group by speaker ID.

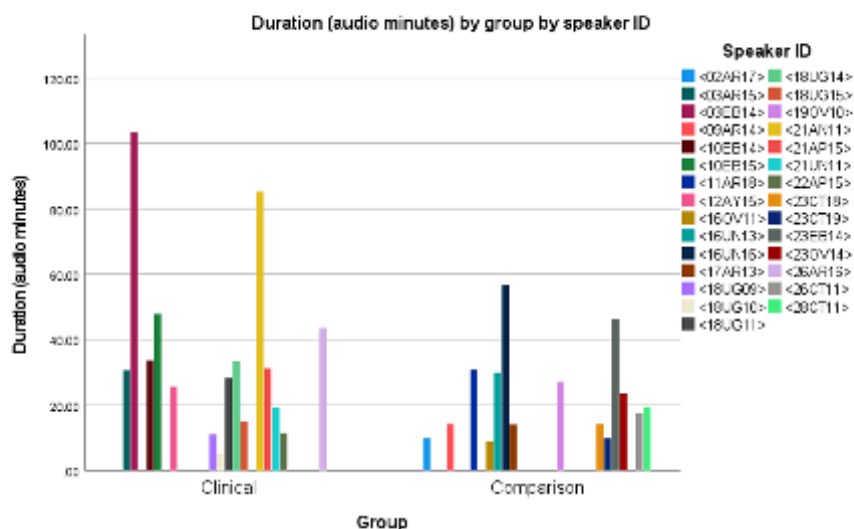


Fig. 2. Duration (audio minutes) by group by speaker ID.

higher token mean than male clinical participants, despite male overrepresentation in this cohort, alongside a smaller dispersion than the male clinical participants and comparison participants overall. Male clinical participants show a higher token mean than comparison females and males but with the overall largest dispersion across groups. Readers are reminded of the following: comparison females ($n = 11$), comparison males ($n = 3$), clinical females ($n = 3$), clinical males ($n = 12$).

Fig. 8 below shows duration in audio minutes by group by sex.

Female comparison participants show a higher duration mean than

male comparison participants, with the comparison means and comparison dispersions being somewhat similar. Female clinical participants show a higher duration mean than male clinical participants, despite male overrepresentation in this cohort. And, again, female clinical participants display a smaller dispersion than the male clinical participants and comparison participants overall. Male clinical participants show a higher token mean than comparison females and males but with the overall largest dispersion. Readers are reminded of the following: comparison females ($n = 11$), comparison males ($n = 3$), clinical females

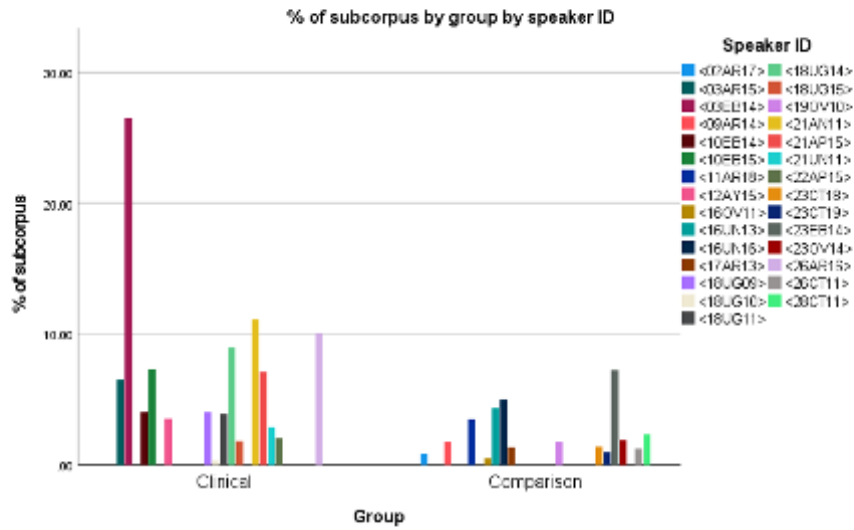


Fig. 3. % of subcorpus by group by speaker ID.

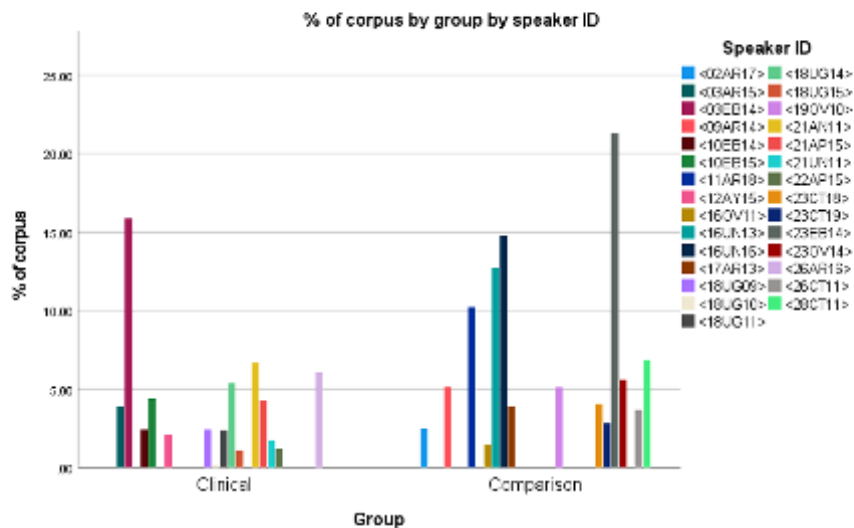


Fig. 4. % of corpus by group by speaker ID.

(n = 3), clinical males (n = 12).

Fig. 9 below shows mean % of sub-corpus by group by sex.

Female comparison participants show a higher sub-corpus contribution than male comparison participants, with the comparison means and comparison dispersions being somewhat similar. Female clinical participants show a higher sub-corpus contribution than male clinical participants, despite male overrepresentation in this group. And, as above, there is a smaller dispersion in the female clinical subgroup than the male clinical participants and the comparison participants overall.

Male clinical participants continue to show the largest dispersion. Readers are reminded of the following: comparison females (n = 11), comparison males (n = 3), clinical females (n = 3), clinical males (n = 12).

Fig. 10 below shows mean % of corpus by group by sex.

Female comparison participants show a higher corpus contribution than male comparison participants and clinical participants overall, with the comparison means and comparison dispersions being somewhat similar. Notably, comparison dispersions are larger than that seen

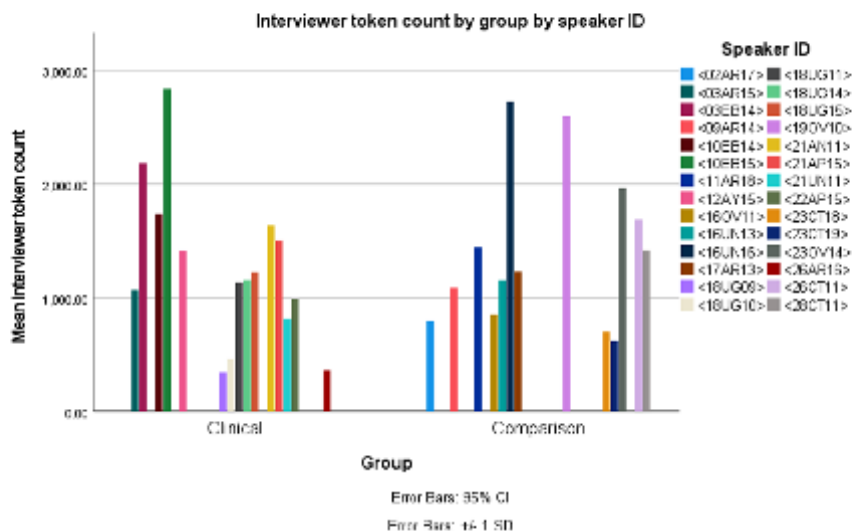


Fig. 5. Interview token count by group by speaker ID.

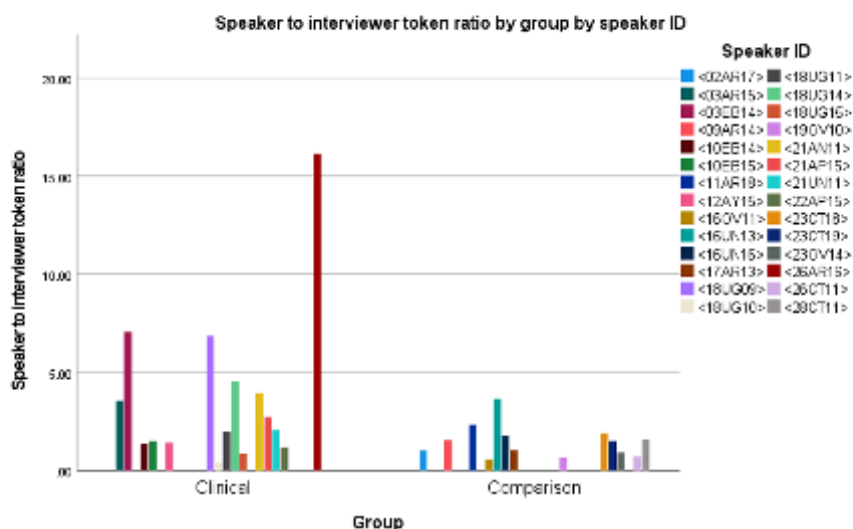


Fig. 6. Speaker to interviewer token ratio by group by speaker ID.

for clinical males. Female clinical participants show a higher corpus contribution than male clinical participants, despite male overrepresentation in this group. As above, female clinical participants display a smaller dispersion than male clinical participants and the comparison participants overall. Male clinical participants show the lowest corpus contribution, despite being the over representative demographic in the clinical group. Readers are reminded of the following: comparison females ($n = 11$), comparison males ($n = 3$), clinical females ($n = 3$), clinical males ($n = 12$).

In the DAIS-C, on average, female clinical participants produced more tokens, spoke for longer, contributed more to their respective sub-corpus, and contributed more to the overall corpus than clinical males despite being demographically underrepresented at a ratio of 1:4. Female clinical participants also showed the least variance across all sex indices.

3.1.1.2. Mean differences by topic breadth (open versus closed: broad versus narrow). Fig. 11 below shows the mean token counts across

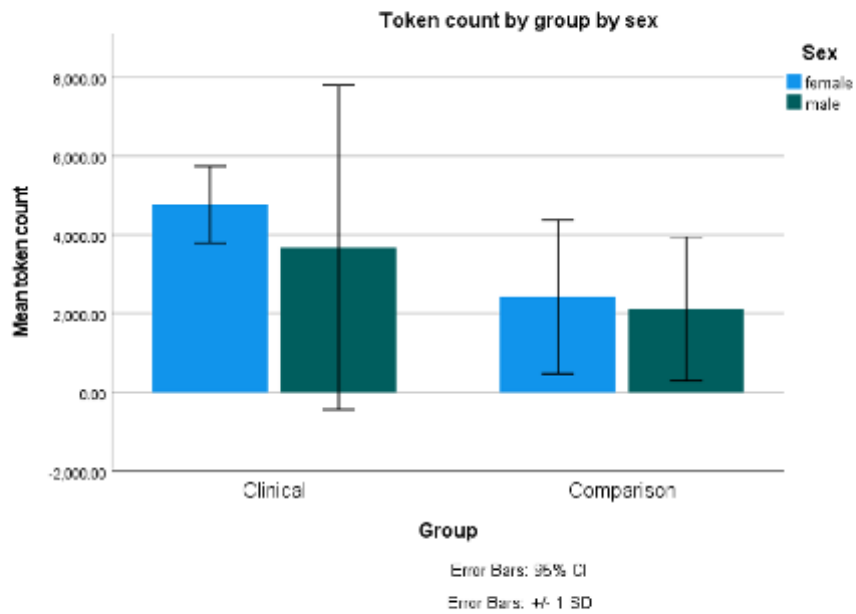


Fig. 7. Token count by group by sex.

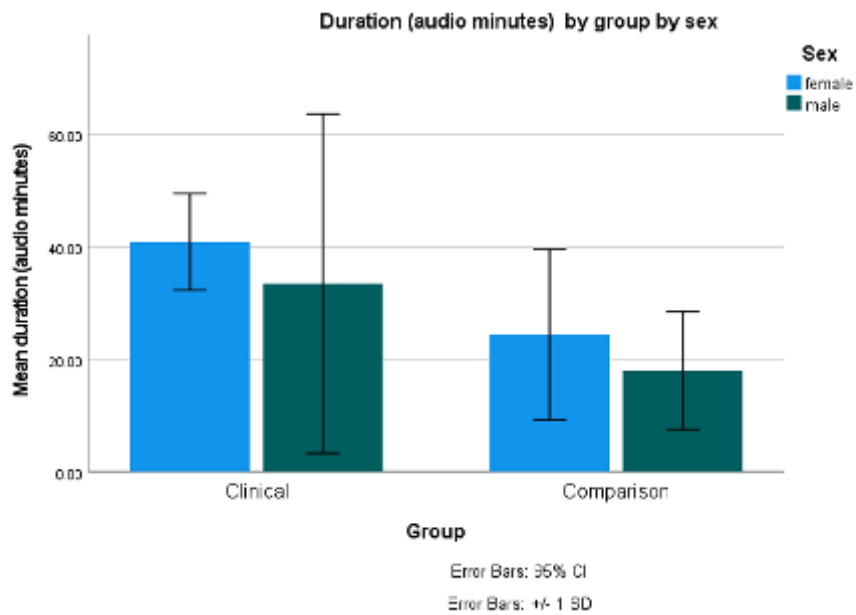


Fig. 8. Duration (audio minutes) by group by sex.

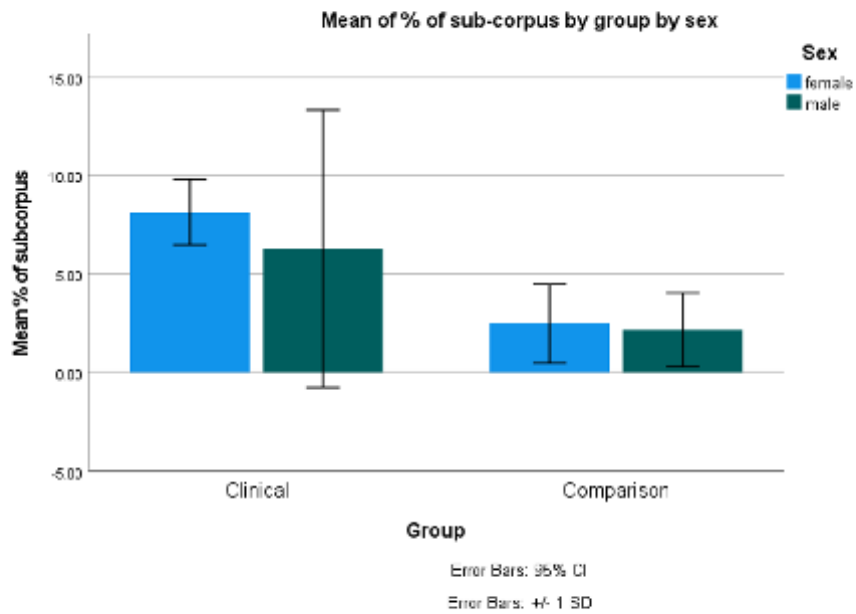


Fig. 9. Mean % of sub-corpus by group by sex.

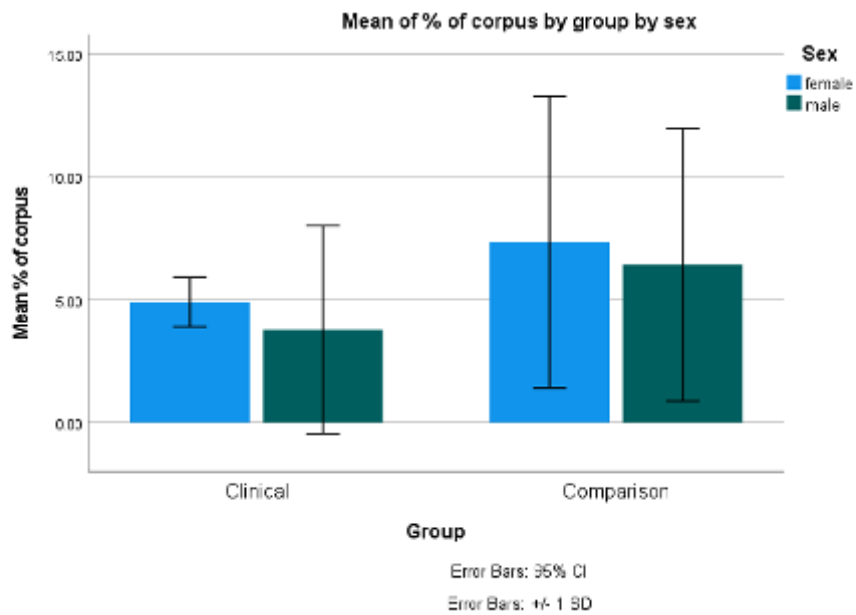


Fig. 10. Mean % of corpus by group by sex.

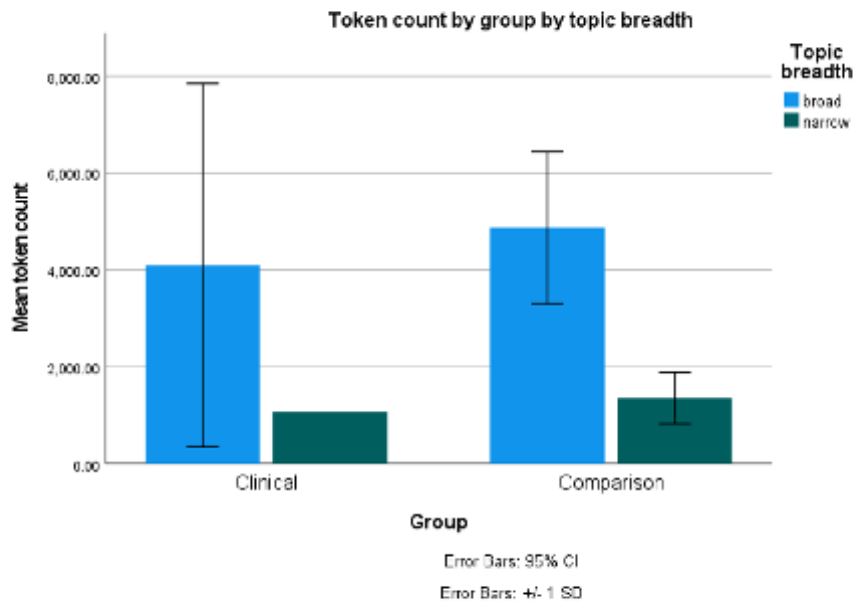


Fig. 11. Token count by group by topic breadth.

groups by topic breadth.

Comparison participants show a higher token mean on the broad topic than the narrow topic and the highest token mean across groups,

despite overrepresentation of the narrow topic in the comparison group and overrepresentation of the broad topic in the clinical group. Comparison dispersions were closer to the comparison means. Clinical

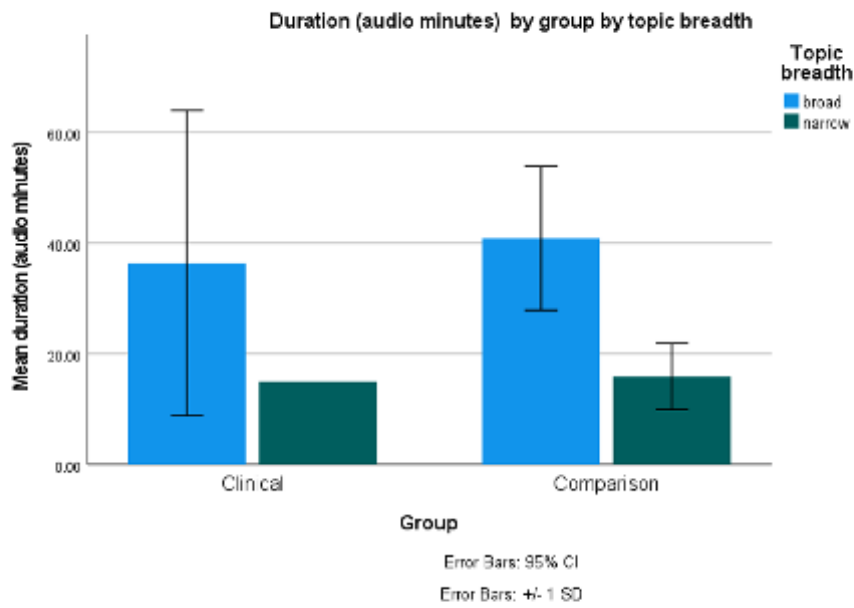


Fig. 12. Duration (audio minutes) by group by topic breadth.

participants also produced a higher token mean on the broad topic than the narrow topic, but the broad topic dispersion is much greater. Comparison participants addressing the narrow topic showed the smallest dispersion overall. Readers are reminded of the following: comparison broad ($n = 4$), comparison narrow ($n = 10$), clinical broad ($n = 14$), clinical narrow ($n = 1$).

Fig. 12 below shows the mean duration in audio minutes by group by topic breadth.

Comparison participants show a higher duration mean on the broad topic than the narrow topic and the highest duration mean overall, despite overrepresentation of the narrow topic in the comparison group and overrepresentation of the broad topic in the clinical group. Comparison dispersions were closer to the comparison means. Clinical participants also produced a higher duration mean on the broad topic, but the broad topic dispersion is much greater. Readers are reminded of the following: comparison broad ($n = 4$), comparison narrow ($n = 10$), clinical broad ($n = 14$), clinical narrow ($n = 1$).

Fig. 13 below shows the mean % of sub-corpus by group by topic breadth.

Clinical and comparison participants show the highest sub-corpus contributions in the broad genre, with clinical participants contributing more to their respective sub-corpus per speaker than the comparison group. Comparison participants show the highest sub-corpus contributions in the broad genre, despite overrepresentation of the narrow topic in the comparison group. The dispersion is much larger for the clinical group. Clinical participants show higher sub-corpus contributions than the comparison group for the narrow genre, as well, with the comparison group producing the smallest dispersion. Readers are reminded of the following: comparison broad ($n = 4$), comparison narrow ($n = 10$), clinical broad ($n = 14$), clinical narrow ($n = 1$).

Fig. 14 below shows the mean % of corpus by group by topic breadth. Comparison participants show the highest contributions in the broad genre, despite overrepresentation of the narrow genre in this cohort. This is also one of only two cases (the other being mean % of corpus by

sex) where dispersion is greater in the comparison group than the clinical group. Clinical group participants show higher contributions in the broad genre than the narrow genre. Comparison group participants show higher contributions in the narrow genre than the clinical participants in the narrow genre. Dispersion was smallest in the comparison narrow genre. Readers are reminded of the following: comparison broad ($n = 4$), comparison narrow ($n = 10$), clinical broad ($n = 14$), clinical narrow ($n = 1$).

Broad genre comparison participants produced more tokens, spoke for longer, contributed more to their respective sub-corpus, and contributed more to the corpus overall than narrow genre comparison participants despite being situationally underrepresented at a ratio of 1:3.6. Comparison participants showed the greatest variance for % of corpus by sex and % of corpus by topic breadth.

Summary

The DAIS-C was built with close reference to best practices in the development of spoken and specialised corpora. Design issues were expected on the topics of internal versus external building criteria, sampling and selection bias, and recruitment factors (pandemic aside). Reasoned attempts at mitigation followed, and a review of corpus characteristics suggest that they were generally successful. Demographic overrepresentation issues, although inconvenient, do not compromise the data collected so far. They simply limit the extent of viable analyses and their conclusions. These issues can be resolved in time with corpus expansion work.

A review of group-level data suggests that overrepresentation has had little effect on mean token count, mean duration, mean contributions to respective sub-corpora, or mean contributions to the corpus as a whole. On average, female clinical participants produced more tokens, spoke for longer, contributed more to their respective sub-corpus, and contributed more to the overall corpus than clinical males despite being demographically underrepresented at a ratio of 1:4. Broad genre

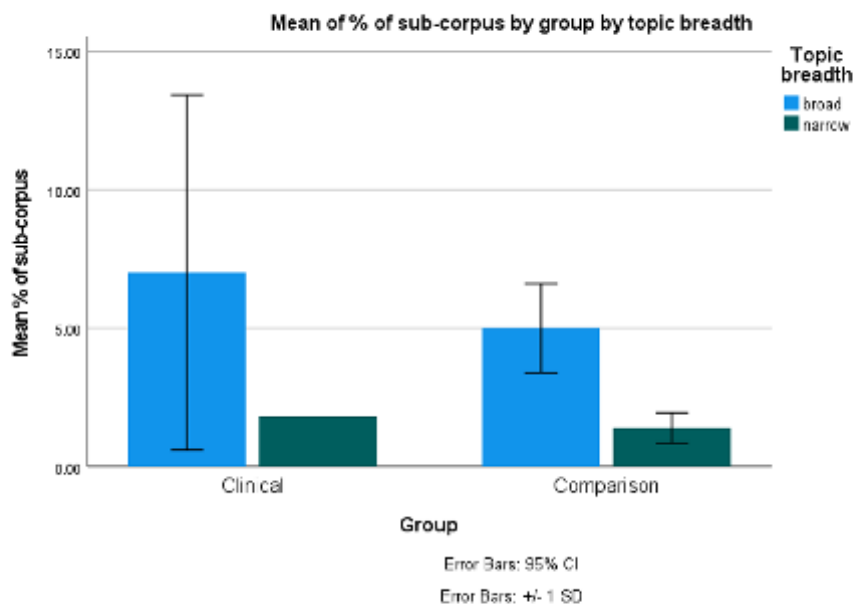


Fig. 13. Mean % of sub-corpus by group by topic breadth.

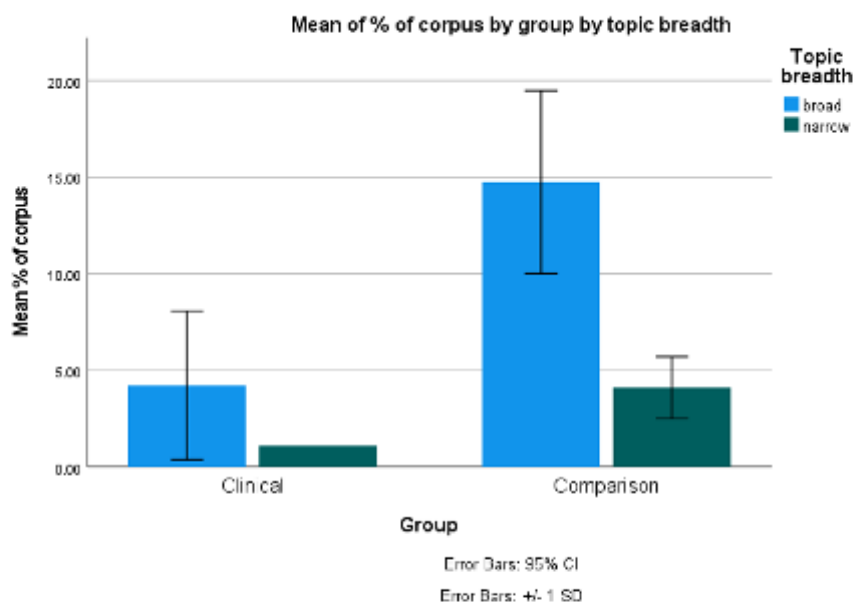


Fig. 14. Mean % of corpus by group by topic breadth.

comparison participants produced more tokens, spoke for longer, contributed more to their respective sub-corpus, and contributed more to the corpus overall than narrow genre comparison participants despite being situationally underrepresented at a ratio of 1:3.6. Female clinical participants also showed the least variance across all sex indices. Comparison participants showed the greatest variance for % of corpus by sex and % of corpus by topic breadth.

Availability

Repository

The UK Data Service has confirmed acceptance of the corpus for archival through its ReShare repository.

Release

Version 1.0 of the DAIS-C will be made available in late 2023.

Applications

The corpus was designed, transcribed, annotated, and stored with multiple future applications in mind. Raw text versions of the corpus are ready for automatic tagging, and pre-annotated versions allow for supplementary analyses beyond those already carried out by the corpus creators. The corpus can be integrated into programmatic or software-based workflows, as speaker labels and interview turns are already bracketed by XML tags. Users wanting to expand this approach can do so by beginning with the XML versions of each speaker file or the full interview file. Sentiment analysis is also possible, as each speaker's responses are stored as individual text files, without interview contributions, in plain text or XML formats, ready for input into software that works file by file. Files can be combined easily either programmatically or with software designed for this purpose, like TXTCollector. It is not

possible to list all potential applications of the corpus, but those working in the medical humanities may benefit from comparing clinical and comparison speakers to determine patterns of potential diagnostic or predictive importance. The presence of speakers with and without a history of FTD also allows for some further comparison, although only a handful of speakers in the clinical group meet this criterion. Those working in machine learning might find the corpus helpful as a source of training data, for instance. The corpus is also potentially suited to some qualitative analyses, although it was not designed for this. Work that does not require strict adherence to semi-structured interviewing practices is more likely to benefit from this corpus. While it is not possible to predict how useful this corpus will be to other researchers, this paper nonetheless demonstrates that it is possible to build corpora with reuse in mind. Corpus builders are encouraged to attempt this where feasible given the relative lack of corpora designed according to best practices in corpus linguistics.

Declaration of Competing Interest

We declare no competing interest.

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APPENDIX VII – Tables exceeding two pages

Table 70 - linguistic changes from historic to TLC Scale descriptions of FTD symptoms

Change type	original descriptor	revised descriptor	original linguistic categories	revised linguistic categories
collapsed	neologisms and related abnormalities	neologisms	morphological, syntactic, and semantic	morphological (Andreasen, 1986)
	derailment	n/a	syntactic (Kraepelin, 1913), linguistic pragmatic (Kraepelin, 1913; Andreasen, 1979a) and morpho-semantic (Kraepelin, 1913)	syntactic and/or linguistic pragmatic (Andreasen, 1986)
expanded	loss of goal	n/a	syntactic (Andreasen, 1979a)	syntactic and/or linguistic pragmatic (Andreasen, 1986)
	metonymic distortion/word approximation	word approximation	morpho-syntactic (Cameron, 1938)	morpho-syntactic-semantic-linguistic pragmatic (Andreasen, 1986)
retained	incoherence	n/a	syntactic (Andreasen, 1979a)	syntactic (Andreasen, 1979a)
	incoherence	n/a	semantic (Andreasen, 1979a)	semantic (Andreasen, 1979a)
	poverty of content	n/a	linguistic pragmatic (Wing et al. 1974; Andreasen, 1979a)	linguistic pragmatic (Wing et al. 1974; Andreasen, 1979a)
	perseveration	n/a	morpho-syntactic (Andreasen, 1979a)	syntactic and/or linguistic pragmatic (Andreasen, 1986)
	circumstantiality	n/a	syntactic-linguistic pragmatic (Andreasen, 1979a)	syntactic-linguistic pragmatic (Andreasen, 1979a)
	stilted speech	n/a	syntactic-linguistic pragmatic (Andreasen, 1979a)	morpho-syntactic-semantic-linguistic pragmatic (Andreasen, 1986)
	paraphasias	phonemic paraphasia; semantic paraphasia (aphasia) / incoherence (FTD)	phono-semantic (Kleist, 1914)	phono-morphological (Andreasen, 1986); semantic (Andreasen, 1986)
removed	interpenetration of themes	n/a	linguistic pragmatic (Cameron, 1938)	n/a
	loosening of associations	n/a	linguistic pragmatic (Bleuler, 1911)	n/a

	loss of the central determining idea	n/a	linguistic pragmatic (Bleuler, 1911)	n/a
	paragrammatism	n/a	syntactic (Kleist, 1914)	
	idiosyncratic use of words	n/a	syntactic (Wing, 1974)	
	concrete thinking	n/a	semantic-linguistic pragmatic (Goldstein, 1944),	n/a
	vorbeireden	n/a	semantic-linguistic pragmatic (Andreasen, 1979a)	n/a
	asyndetic thinking	n/a	syntactic-linguistic pragmatic (Cameron, 1938)	n/a
introduced	blocking	n/a	syntactic (Andreasen, 1986)	n/a
	illogicality	n/a	linguistic pragmatic (Andreasen, 1986)	n/a
	self-reference	n/a	linguistic pragmatic (Andreasen, 1986)	n/a
	pressure of speech	n/a	syntactic-linguistic pragmatic (Andreasen, 1986)	n/a
	distractible speech	n/a	syntactic-linguistic pragmatic (Andreasen, 1986)	n/a
	tangentiality	n/a	syntactic-linguistic pragmatic (Andreasen, 1986)	n/a
	clanging	n/a	phono-semantic (Andreasen, 1986)	n/a
	poverty of speech	n/a	morpho-syntactic-linguistic pragmatic (Andreasen, 1986)	n/a
	echolalia	n/a	phono-linguistic pragmatic (Andreasen, 1986)	n/a

Table 71 - paper quality weightings

Study	aggregate rating
Abraham, Windmann, McKenna, and Güntürkün, 2007	high
Al-Issa, 1976	low
Andreasen and Powers, 1975	high
Bergemann, Parzer, Jaggy, Auler, Mundt, and Maier-Braunleder, 2008	high

Bilgrami, Guittierez, Sarac, Cecchi, and Corcoran, 2020	low
Billow, Rossman, Lewis, Goldman, and Raps, 1997	high
Binz and Brüne, 2010	high
Brüne and Bodenstern, 2005	high
Chakrabarty Sarkar, Chatterjee, Ghosal, Guha, and Deogaonkar, 2014	high
Cropley and Sikand, 1973	high
Deamer, Palmer, Vuong, Ferrier, Finkelmeyer, Hinzen, and Watson, 2019	high
deBonis and Epelbaum, 1997	high
Elvevåg, Helsen, De Hert, Sweers, and Storms, 2011	high
Forest, Hay, and Kushner, 1969	moderate
Fukuhara, Ogawa, Tanaka, Nagata, Nishida, Haga, Nishikawa, 2017	high
Jaracz, Patrzala, and Rybakowski, 2012	high
Keefe and Magaro, 1980	moderate
Ketteler, Theodoridou, Ketteler, and Jäger, 2012	high
Kircher, Leube, Erb, Grodd, and Rapp, 2007	high
Marini, Spoletini, Rubino, Ciuffa, Bria, Martinotti, and Caltagirone, 2008	high
Mashal, Vishne, Laor, and Titone, 2013	high
Mashal, Vishne, and Laor, 2014	high
Mazza, Di Michele, Pollice, Casacchia, and Roncone, 2008	high
Mo, Su, Chan, Liu, 2008	high
Pawelczyk, Kotlicka-Antczak, Łojek, Ruzpel, and Pawelczyk, 2017	high
Piovan, Gava, and Campeol, 2016	high
Rodriguez-Ferrera, McCarthy, and McKenna, 2001	high
Sampedro, Peña, Ibarretxe-Bilbao, Sánchez, Iriarte-Yoller, Pavón, Hervella, Tous-Espelosin, and Ojeda, 2020	high
Schneider, Wagels, Haeussinger, Fallgatter, Ehli, and Rapp, 2015	high

Son, Kubota, Miyata, Fukuyama, Aso, Urayama, and Takahashi, 2015	high
Varga, Schnell, Tényi, Németh, Simon, Hajnal, and Herold, 2014	high
Wang, Xu, Wang, Healey, Su, and Pang, 2017	high
Zeev-Wolf, Faust, Levkovitz, Harpaz, and Goldstein, 2015	high

Table 72 - study characteristics

Author(s)	setting(s)	sample(s) (m:f)	linguistic interest(s)
Abraham et al. 2007	Germany; United Kingdom	schizophrenia: 28 (23:5); non-psychiatric comparison: 18 (14:4)	production: irony
Al-Issa, 1976	Canada	schizophrenia: 50	production and comprehension: figuration
Andreasen and Powers, 1975	United States of America	schizophrenia: (15); mania: (16); non-psychiatric comparison (15)	production: figuration
Bergemann et al. 2008	Germany	schizophrenia, paranoid: 19 (0:19)	comprehension: figuration
Billow et al. 1997	United States of America	schizophrenia: 36 (36:0); borderline personality: 36 (36:0); non-psychiatric comparison: 36 (36:0)	production: figuration
Bilgrami et al. 2020	United States of America	schizophrenia: 25; clinical high-risk: 63; non-psychiatric comparison: 33	production: metaphor
Binz and Brüne, 2010	Germany	schizophrenia: 49 (34:25); non-psychiatric comparison: 29 (10:19)	production: irony; comprehension: proverb
Brüne and Bodenstern, 2005	Germany	schizophrenia (23:8); non-psychiatric comparison (10:11)	comprehension: proverb
Chakrabarty et al. 2014	India; United States of America	schizophrenia: 16 (7:9); non-psychiatric comparison: 16 (7:9)	comprehension and production: figuration

Cropley and Sikand, 1973	Canada	schizophrenia: 20 (15:5); creative writers: 20 (17:3); non-psychiatric comparison to schizophrenia group: 20 (17:3); non-psychiatric comparison to creative writing group: 20 (15:5)	comprehension: figuration
Deamer et al. 2019	United Kingdom	schizophrenia: 19 (6:13); non-psychiatric comparison: 15 (8:7)	production and comprehension: figuration
deBonis et al. 1997	France	schizophrenia: 20; major depressive: 13; non-psychiatric comparison: 20	comprehension: metaphor and proverb
Elvevåg et al. 2011	Belgium	schizophrenia: 21; non-psychiatric comparison: 20	production and comprehension: figuration
Forest et al. 1969	United Kingdom	schizophrenia: 10; non-psychiatric comparison: 10; schizophrenia: 22; non-psychiatric comparison: 25	production and comprehension: figuration
Fukuhara et al. 2017	Japan	schizophrenia: 34 (25:9); non-psychiatric comparison: 34 (24:10)	comprehension: irony
Jaracz et al. 2012	Poland	paranoid schizophrenia: 43 (22:21); non-psychiatric comparison: 45 (17:28)	production: figuration
Keefe and Magaro, 1980	United States of America	paranoid schizophrenia: 10; non-paranoid schizophrenia: 10; nonpsychotic psychiatric comparison: 10; non-psychiatric comparison: 10	production and comprehension: figuration
Ketteler et al. 2012	Germany	schizophrenia: 40 (27:13); non-psychiatric comparison: 40 (27:13)	comprehension: figuration

Kircher et al. 2007	Germany	schizophrenia: 12; non-psychiatric comparison: 12	comprehension: figuration
Marini et al. 2008	Italy	schizophrenia: 29; non-psychiatric comparison: 48	production and comprehension: irony
Mashal et al. 2013	Canada/Israel/United States of America	schizophrenia: 14 (9:5); non-psychiatric comparison: 14 (7:7)	comprehension: figuration
Mashal et al. 2014	Israel/United States of America	schizophrenia: 12 (7:5); non-psychiatric comparison: 12 (5:7)	comprehension: figuration
Mazza et al. 2008	Italy	schizophrenia: 38 (30:8); first degree relatives: 34 (20:14); non-psychiatric comparison: 44 (18:26)	comprehension: irony
Mo et al. 2008	China	schizophrenia: 33 (17:16); non-psychiatric comparison: 22 (12:10)	comprehension: metaphor and irony
Pawelczyk et al. 2017	Poland	schizophrenia: 40 (23:17); non-psychiatric comparison: 39 (23:16)	production and comprehension: metaphor and irony
Piovan et al. 2016	Italy	schizophrenia: 30 (19:11); non-psychiatric comparison: 24 (12:12)	production and comprehension: figuration
Rodriguez-Ferrera et al. 2001	United Kingdom	schizophrenia: 40 (29:11)	production and comprehension: metaphor, irony, and proverb
Sampedro et al. 2019	Spain	schizophrenia: 45 (35:10); non-psychiatric comparison: 45 (15:30)	production and comprehension: figuration
Schneider et al. 2015	Germany	schizophrenia: 22 (15:7); non-psychiatric comparison: 22 (10:12)	comprehension: figuration
Son et al. 2015	Japan	schizophrenia: 43 (21:23); non-psychiatric	production: figuration

		comparison: 36 (12:24)	
Varga et al. 2014	Hungary	paranoid schizophrenia: 19 (10:9); non- psychiatric comparison 19 (8:11)	comprehension: irony
Wang et al. 2017	China/United States of America;	schizophrenia: 43; low-schizotypy: 39; high-schizotypy	production: figuration
Zeev-Wolf et al. 2015	Israel	schizophrenia: 15; non-psychiatric comparison: 17	production and comprehension: figuration

Table 73 - tabular summary of sections 3.4–3.6

Decoding	[subtype independent] schizophrenia	paranoid schizophrenia
metaphor	comprehension difficulties (n=11) atypical left hemispheric activity during metaphor comprehension tasks (n=2) reduced decoding accuracy, independent of verbal IQ (n=2)	
novel metaphors	mixed evidence for increased accuracy (n=1:1)	
pictorial forms of metaphoric story elements	tendency toward literal representations (n=1)	
metaphoric speech	increased tendency to interpret literally (n=1)	
non-emotional metaphors	higher number of literal concrete responses (n=1)	higher number of literal concrete responses (n=1)
metaphor processing tasks that follow a literal decoding task directly	increased left hemispheric activation (n=1)	
literal item tasks that follow a metaphor item task directly	significant activation of the left and right precuneus (n=1)	
novel metaphors	greater left inferior frontal gyrus, fusiform, thalamus, and visual cortical activity (n=1) increased activity in the right precuneus (n=1) increased accuracy (n=1)	
metaphor and irony	reduced comprehension accuracy, independent of both global and verbal IQ measures (n=1) performance correlated (n=1)	performance correlated (n=1)
irony	comprehension difficulties (n=2)	preserved accuracy (n=2)
humour	comprehension difficulties (n=1)	

literal and meaningless phrases, compared with metaphoric items	higher accuracy, independent of age, education, and verbal IQ (n=1)	
production	[subtype independent] schizophrenia	paranoid schizophrenia
metaphor	significantly more in speech (n=1) Difficulty explaining written and picture prompts (n=1)	
autistic bizarre and tangential forms	increased use in speech (n=1)	
idiomatic and evocative forms	reduced use in speech (n=1)	
general figurative language	reduced used in speech (n=1)	
meaningful partly-concrete and 606eaningful entirely-concrete forms	increased use in speech circumstances that called for meaningful abstract forms (n=1)	
verbal fluency, flexibility, and creativity	significant differences to non-psychiatric comparison (n=1)	
figural abstractness of titles , strengths, and total creativity	significant differences to non-psychiatric comparison (n=1)	preserved
figural originality, fluency, elaboration, flexibility, and resistance to closure	no significant differences to non-psychiatric comparison (n=1)	
decoding correlations	[subtype independent] schizophrenia	paranoid schizophrenia
symptom severity and lower figuration task performance	metaphoric priming abilities improved with 17 β Estradiol (n=1) inverse correlation between concretism and metaphor comprehension scores (n=1)	
decreased activity in the inferior frontal gyrus and cerebellum	higher scores on measures of concretism (n=1)	
higher 'difficulty with abstract thinking' symptom scores	greater difficulties with the decoding of conventional metaphors (n=1)	
severity of negative symptoms	more metaphor decoding errors, independent of the 'difficulty with abstract thinking' symptom measure (n=1)	
severity of FTD	decreased P200 (non-literal language processing) activity in the period directly following exposure to metaphoric items (n=1)	
IQ results	comprehension task performance (n=3)	
production correlations	[subtype independent] schizophrenia	paranoid schizophrenia
expressive difficulties and formal thought disorder	one specific picture description task (n=1)	
expressive difficulties	higher global symptom scores (n=1)	
abstract response accuracy	IQ (n=1)	

Table 74 - main item list characteristics

	List A	List B
primes	90	90
directional prime, concrete first noun	0	45
non-directional prime, concrete first noun	45	0
directional prime, abstract first noun	45	0
non-directional prime, abstract first noun	0	45
smell-sight (directional)	0	9
sound-sight (directional)	0	9
taste-sight (directional)	0	9
touch-sight (directional)	0	9
taste-smell (directional)	0	9
touch-smell (directional)	9	0
smell-sound (directional)	9	0
taste-sound (directional)	9	0
touch-sound (directional)	9	0
touch-taste (directional)	9	0
sight-smell (non-directional)	9	0
sight-sound (non-directional)	9	0
sight-taste (non-directional)	9	0
sight-touch (non-directional)	9	0
smell-taste (non-directional)	9	0
smell-touch (non-directional)	0	9
sound-smell (non-directional)	0	9
sound-taste (non-directional)	0	9
sound-touch (non-directional)	0	9
taste-touch (non-directional)	0	9
concrete nouns	90	90
abstract nouns	90	90
visual	12	12
watchful	12	12
scanned	12	12
quiet	12	12
silent	12	12
deaf	12	12
aromatic	12	12

fragrant	12	12
smelly	12	12
sour	12	12
spicy	12	12
salty	12	12
rough	12	12
smoothed	12	12
stroked	12	12
edge	30	30
sharpener	30	30
boomerang	30	30
opinion	30	30
attitude	30	30
consideration	30	30

Table 60 – concordance lines and grammatical error types by subcorpus

Error/d eviation	clinical	comparison
ambiguous: extracts that are only erroneous based on context, which is unclear in the transcript	<p><Gr> <u>talk create</u> using language </Gr></p> <p><Gr> that I 'm <u>up with creativity</u> cos </Gr></p> <p><Gr>I 'm <InAu> </InAu> write </Gr></p> <p><Gr>I <u>used still</u> write </Gr></p> <p><Gr> I <u>did used to</u> </Gr></p> <p><Gr> can do anything you want <u>it</u> so you 're dealing with like </Gr></p> <p><Gr> ..that is mostly well <u>it</u> to be creative so like </Gr></p> <p><Gr><u>they got folder</u> as a workspace </Gr></p>	<p><Gr>.....you sort of know that reading it </Gr></p> <p><Gr>..technical university bachelor and master </Gr></p> <p><Gr>....leaning <u>more to using</u> them to describe something </Gr></p>
omission	<p><Gr>I 'd (.) a way </Gr></p> <p><Gr>going out for (.) drink </Gr></p> <p><Gr> that kind of wants to withdraw and <u>find</u> communication difficult </Gr></p> <p><Gr>I build like maybe like a toolkit (.) could call it </Gr></p> <p><Gr> I 've got like (.) hundred songs I 've written </Gr></p> <p><Gr> cos (.) er terrible brain fade </Gr></p> <p><Gr>it 's (.) bit erm </Gr></p>	<p><Gr>.because (.) something to be smelly </Gr></p> <p><Gr>.....and I think (.) can </Gr></p> <p><Gr>... like black clouds or fog or mist or like (.) storm </Gr></p> <p><Gr>..... and I think (.) might always need to be better at it with adults </Gr></p> <p><Gr>. and you know (.) ask people every day at work to keep diaries </Gr></p> <p><Gr>..... all I wanted to be (.) an art therapist </Gr></p> <p><Gr>.....as as (.) art therapist </Gr></p>

	<p><Gr> and I get <u>(.)</u> so it 's not raining </Gr></p> <p><Gr> like <u>(.)</u> coke can </Gr></p> <p><Gr> ...I 'm not sure erm that 's <u>(.)</u> say to me it always felt </Gr></p> <p><Gr>rather than <u>(.)</u> technical side </Gr></p> <p><Gr> but <u>(.)</u> the schizophrenia the psychosis will go or not I do n't know </Gr></p> <p><Gr> I <u>(.)</u> have any feelings </Gr></p> <p><Gr> they <u>(.)</u> all happy </Gr></p> <p><Gr> I <u>(.)</u> tell you something </Gr></p> <p><Gr> all I want <u>(.)</u> peace of mind peace of mind I want my life </Gr></p> <p><Gr>I would never <u>(.)</u> been in this <WS> [sic] predictament </WS> </Gr></p> <p><Gr>why <u>(.)</u> I doubting it </Gr></p> <p><Gr> ...you 're not finishing to <u>(.)</u> courtesy </Gr></p> <p><Gr> how did you get away from the children <u>(.)</u> dad </Gr></p> <p><Gr> who that happening <u>(.)</u> that Mrs </Gr></p> <p><Gr> I should <u>(.)</u> never cooperated </Gr></p>	<p><Gr>. so like a bit a like lot <u>(.)</u> what I said </Gr></p> <p><Gr>.....they retell <u>(.)</u> story </Gr></p> <p><Gr>.. you 'd maybe sort <u>(.)</u> throw that in there </Gr></p> <p><Gr>.....if someone from me <u>(.)</u> example </Gr></p> <p><Gr>.....went for <u>(.)</u> technical er degree </Gr></p>
addition	<p><Gr> a weekly from <u>the</u> getting the depot </Gr></p> <p><Gr> .I want <u>it</u> to use my creative abilities </Gr></p> <p><Gr> <u>there 's</u> was n't really </Gr></p> <p><Gr> ...with the depot <u>with</u> my muscles become tight </Gr></p> <p><Gr> <u>first 's</u> line got ta be taken out </Gr></p> <p><Gr> a whole section of the game that might take them six months to build <u>it</u> </Gr></p> <p><Gr> <u>it 's it 's</u> comes out </Gr></p> <p><Gr>if I was like I 'm <u>am</u> building a website </Gr></p> <p><Gr> ..but there 's not much not much hands on code <u>thing</u> </Gr></p> <p><Gr> .. probably <u>only</u> set any language you want </Gr></p> <p><Gr> .. it 's like you need it now <u>in</u> years ago you </Gr></p> <p><Gr> .. a plastic bag that <u>they they</u> do n't want <u>it</u> </Gr></p> <p><Gr> so I had to got </Gr></p> <p><Gr> I 've got kids make <u>a</u> mischief </Gr></p>	<p><Gr>.....because of the differing tastes that people could have the same <u>for</u> </Gr></p> <p><Gr>.....or what they want <u>it</u> to happen </Gr></p> <p><Gr>..... I 've always <u>it</u> liked those sort of erm books </Gr></p> <p><Gr>.....you can use <u>a</u> very dull language </Gr></p> <p><Gr>..... that a <u>per</u> certain adjective </Gr></p> <p><Gr>..... when when will you have written <u>and</u> everything up </Gr></p>
agreement	<p><Gr>not really kind of <u>expression</u> </Gr></p> <p><Gr> ...designed to <u>explaining</u> kind of the day to day </Gr></p>	<p><Gr>..... kind of associate <u>and</u> emotion </Gr></p> <p><Gr>. <u>them</u> now I 'm like driving along like with a lump in my throat </Gr></p>

(tense, plural)	<p><Gr> the bigger the <u>worst</u> </Gr></p> <p><Gr>are kind of <u>reduce</u> </Gr></p> <p><Gr> within them with inside <u>that</u> </Gr></p> <p><Gr> . when I first had the er schizophrenia I <u>see</u> </Gr></p> <p><Gr>a couple of <u>year</u> ago </Gr></p> <p><Gr> ... the software that the IDE that they 'd be using <u>are</u> absolutely free </Gr></p> <p><Gr> I have <u>win</u> premium bonds </Gr></p> <p><Gr> I have <u>so much marks</u> </Gr></p> <p><Gr> now I 'm on the depot <u>then</u> I feel </Gr></p> <p><Gr> because my feelings <u>is</u> blocked to have kids </Gr></p> <p><Gr>yeah money 's not <u>a</u> issue </Gr></p>	<p><Gr>I 've always been <WS> interesting </WS> in reading <u>at</u> more creative writing</p> <p><Gr>..... I definitely <u>felt</u> like I 've misread something </Gr></p> <p><Gr>.....facts and figures and erm <u>statistic</u> whatever </Gr></p> <p><Gr>.....those <u>sort</u> of books </Gr></p> <p><Gr>..... there <u>was</u> some that linked quite well </Gr></p> <p><Gr>.....<u>what 's</u> the human brain 's capable of </Gr></p>
part of speech shift	<p><Gr> .. not really opportunity <u>to er language in a different way</u> </Gr></p> <p><Gr> a <u>weekly</u> from the getting the depot </Gr></p> <p><Gr> what I think of <u>creative</u> </Gr></p>	<p><Gr>. I 'll just like <u>stream of consciousness</u> a bit </Gr></p> <p><Gr>.... I think clicking <u>similar</u> every time </Gr></p>

Table 75 - concordance lines and word selection error types by subcorpus

Error/deviation	clinical	comparison
approximation	<p><WS> when </WS> (for what)</p> <p><WS> amends </WS> (for amendments)</p> <p><WS> regret </WS> (regret)</p> <p><WS> stay </WS> (play)</p> <p><WS> assan </WS> (assassinated)</p> <p><WS> their </WS> (that)</p> <p><WS> up tangent </WS> (off tangent)</p> <p><WS> recap </WS> (recall)</p> <p><WS> singles from you signals </WS></p> <p><WS> predictament </WS> </Gr> (predicament)</p> <p><WS> corroperated </WS> (corroborated)</p> <p><WS> corroperated </WS> (corroborated)</p>	<p><WS> smart lab </WS> (super lab)</p> <p><WS> exit expressing </WS></p> <p><WS> create cr er critiqued </WS></p> <p><WS> quantic physics </WS> (quantum physics)</p> <p><WS> sharpened </WS> (sharpener)</p> <p><WS> dottom </WS> (bottom)</p> <p><WS> tor </WS> (story)</p> <p><WS> accept associate </WS></p> <p><WS> old one out </WS> (odd one out)</p> <p><WS> took </WS> (taken)</p>

	<WS>ansed </WS> (asked)	
	<WS>arcsed </WS> (asked)	
	<WS> occup er occupied observation </WS>	
	<WS>quate creativity </WS>	
	<WS> when I 'm reaning it </WS>	
	<WS> borry you do n't flame </WS>	
	<WS>skimpy </WS> (pinky)	
	<WS> excalate </WS> (escalate)	
archaic or unusua l word	<WS> fillip </WS>	<WS> brain splattered </WS>
	<WS> cliques </WS>	<WS> banal </WS>
	<WS> stolid </WS>	<WS> confabulate </WS>
	<WS> zippy </WS>	<WS> flourish the conversation </WS>
	<WS> originally </WS>	<WS> abstracting </WS>
	<WS> fertile </WS>	<WS> impetus </WS>
	<WS> colourfully </WS>	
	<WS> vociferously </WS>	
blend	<WS>sike </WS> (on like)	<WS> lifescape </WS>
	<WS> thair </WS> (share things)	<WS> creativeiveness </WS>
	<WS> tobably </WS> (probably, totally)	<WS> creativity-ness </WS>
	<WS>interpretate </WS> (interpret, ?)	<WS>spart </WS> (part of speech)
	<WS> ansk </WS> (answer, ask)	
	<WS> tweven </WS> (twelve, eleven)	
phone mic	<WS> that kinda ring </WS> (for that kind of thing)	
	<WS> needs to </WS> (for leads to)	
opposi te	<WS> logical </WS> (illogical)	
onoma topoei a	<WS> poom </WS>	
	<WS>gagging </WS>	
	<WS>sweeping road and bang bang bang </WS>	
	<WS> just boop because Dettol kill </WS>	

Table 76 - concordance lines and thought completion error types by subcorpus

Error/d eviatio n	clinical	comparison
'I interru ptions:	<TC>...the opportunities I suppose the answer is yes </TC>	<TC>I wish I did I feel a </TC> <TC> I rea I wish </TC>

phrases that are abandoned and restarted with 'I'	<TC>..... when I 'm ill I 'm really kind of </TC>	<TC> not very I 'm probably </TC>
	<TC>..... I 'm I was kind of </TC>	<TC> I ca n't really no I do n't think </TC>
	<TC>.that I have to be kind of I feel a bit like I 'm </TC>	<TC> I will I wo n't </TC>
	<TC>.that I have to be kind of I feel a bit like I 'm </TC>	<TC> not very I 'm probably </TC>
	<TC>.....I like I 'm I do websites </TC>	<TC> I think I do n't </TC>
	<TC>..... I build erm I blog as well </TC>	<TC> just more I think </TC>
	<TC>..that 's my what 's so good with erm I used to struggle for ideas </TC>	
	<TC>..... I wrote a bl I can write with pencil and paper </TC>	
	<TC>..... it 's the kind of thing my brain I I I write each line </TC>	
	<TC>.....it 's <Gr> I did used to </Gr> </TC>	
	<TC>.. and it was I read this on somebody 's blog </TC>	
	<TC>..... I do n't kn I suppose </TC>	
	<TC>..... I 'd I 've </TC>	
	<TC>... this has been I been going through </TC>	
	<TC>..... I 'm not I I may be </TC>	
	<TC>..... I tend to I mean </TC>	
	<TC>..... do you I know </TC>	
<TC>..... telling I 'm he </TC>		
<TC>..... I 'm highly I 'm h I 'm a kind of </TC>		
<TC>..... I like I 'm always </TC>		
other interruptions: phrases that are abandoned and restarted with features other than 'I'	<TC>.....are n't always there 's no real </TC>	<TC> how lots of people but they just </TC>
	<TC>..... that 's one of are the struggles </TC>	<TC> somebody narrative I guess </TC>
	<TC>..... like it every other line rhymes </TC>	<TC> I have actual funnily enough </TC>
	<TC>..... with like first time in quite a long time </TC>	<TC> those it 's interesting </TC>
	<TC>..... tell me show me </TC>	<TC> ... those work those words work together </TC>
	<TC>..... every why is it </TC>	<TC>for by myself </TC>
	<TC>..... my my this has been going </TC>	

Table 77 - concordance lines and discourse tracking error types by subcorpus

Error/deviation	clinical	comparison
topic	<DT>.....we 've kind of covered the what I think happened and what I think 's really	<DT>it 's outside the topic </DT>

<p><DT>... we 've been quite comprehensive </DT></p> <p><DT>... we 've talked about it have n't we </DT></p>	<p><DT>it 's outside the study sorry </DT></p> <p><DT> ..sorry it 's not related to this study </DT></p>
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<p>uncerta inty</p> <p><DT>..... I hope that er what I 've said will be helpful to you for your project </DT></p> <p><DT>..... I do n't know if that could be cu called creative or not what do you think </DT></p> <p><DT>.....I 'm not sure whether I completely understand that question </DT></p> <p><DT>.....maybe I did n't really understand the question </DT></p> <p><DT>.. I said I do n't think that 's answering your question sorry </DT></p> <p><DT>I do n't know how this helps you with your <Lh> </Lh> research though </DT></p> <p><DT>. well have I said anything that 's helpful to you or has it all been a load o</p> <p><DT>.I do n't want to sort of turn it into a a rant <Lh> </Lh> or something that</p> <p><DT>..... are we going off the tracks here </DT></p> <p><DT>..is this what we 're supposed to be talking about </DT></p> <p><DT>.....well have I answered your questions </DT></p> <p><DT>..... if that 's got anything to do with your question </DT></p> <p><DT>...if that 's got anything to do with it </DT></p> <p><DT>..as you say you asked me a question what do you mean what 's your meaning of</p>	<p><DT> I think I deviated from your question </DT></p> <p><DT> . I do n't know if I answered your question </DT></p> <p><DT> hopefully it 's not a digression </DT></p> <p><DT> ... if this is something that is interesting to you </DT></p> <p><DT> I do n't know if that makes any sense </DT></p>
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<p>own speech</p> <p><DT>..... like I 'm talking about </DT></p> <p><DT>. I 've forgotten what I was gon na say now </DT></p> <p><DT>.....was saying before </DT></p> <p><DT>.....as I mentioned </DT></p> <p><DT>..... as I say </DT></p> <p><DT>..... I may have gone off tangent </DT></p> <p><DT>..... ca n't think of anything sorry about this </DT></p> <p><DT>.....as I said </DT></p> <p><DT>..... like I said before </DT></p> <p><DT>.....as I said </DT></p> <p><DT>..... I know I I 'm going on a bit </DT></p>	<p><DT> I 've rambled on and you 've picked something up and you 've delivered it ba</p> <p><DT>as I said </DT></p> <p><DT> like I said </DT></p>
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others' speech	<DT>..... as you mentioned before </DT>	<DT>what you 've just said </DT>
	<DT>.... what were you talking about what what did you say </DT>	<DT> what you just said there </DT>
	<DT>..... as you say </DT>	
	<DT>..... we 're going on to you talking </DT>	

Table 78 - overused words across clinical (O1) and comparison (O2) sub corpora

Item	O1	%1	O2	%2		LL	LogRatio
code	40	0.07	0	0.00	+	32.12	5.30
man	69	0.11	1	0.00	+	47.14	5.09
copy	29	0.05	0	0.00	+	23.29	4.84
get_on	28	0.05	0	0.00	+	22.48	4.79
computer	28	0.05	0	0.00	+	22.48	4.79
camera	27	0.04	0	0.00	+	21.68	4.74
show	26	0.04	0	0.00	+	20.88	4.68
programming	24	0.04	0	0.00	+	19.27	4.57
inside	24	0.04	0	0.00	+	19.27	4.57
paste	23	0.04	0	0.00	+	18.47	4.51
games	23	0.04	0	0.00	+	18.47	4.51
fishing	23	0.04	0	0.00	+	18.47	4.51
mum	22	0.04	0	0.00	+	17.67	4.44
stupid	21	0.03	0	0.00	+	16.86	4.38
voices	20	0.03	0	0.00	+	16.06	4.30
photo	20	0.03	0	0.00	+	16.06	4.30
paid	20	0.03	0	0.00	+	16.06	4.30
happy	40	0.07	1	0.00	+	24.93	4.30
money	39	0.06	1	0.00	+	24.18	4.27
world	19	0.03	0	0.00	+	15.26	4.23
upset	19	0.03	0	0.00	+	15.26	4.23
software	19	0.03	0	0.00	+	15.26	4.23
photography	19	0.03	0	0.00	+	15.26	4.23
girl	19	0.03	0	0.00	+	15.26	4.23
fish	19	0.03	0	0.00	+	15.26	4.23
Javascript	19	0.03	0	0.00	+	15.26	4.23
photos	18	0.03	0	0.00	+	14.45	4.15
hear	18	0.03	0	0.00	+	14.45	4.15
care	34	0.06	1	0.00	+	20.43	4.07
cares	16	0.03	0	0.00	+	12.85	3.98
pound	15	0.02	0	0.00	+	12.04	3.89
nobody	15	0.02	0	0.00	+	12.04	3.89

netbeans	15	0.02	0	0.00	+	12.04	3.89
mentally_ill	15	0.02	0	0.00	+	12.04	3.89
food	15	0.02	0	0.00	+	12.04	3.89
doctor	15	0.02	0	0.00	+	12.04	3.89
composition	15	0.02	0	0.00	+	12.04	3.89
song	28	0.05	1	0.00	+	16.00	3.79
internet	14	0.02	0	0.00	+	11.24	3.79
friend	14	0.02	0	0.00	+	11.24	3.79
coding	14	0.02	0	0.00	+	11.24	3.79
catch	14	0.02	0	0.00	+	11.24	3.79
breathe	14	0.02	0	0.00	+	11.24	3.79
tv	13	0.02	0	0.00	+	10.44	3.68
street	13	0.02	0	0.00	+	10.44	3.68
out_there	13	0.02	0	0.00	+	10.44	3.68
nt	13	0.02	0	0.00	+	10.44	3.68
kids	13	0.02	0	0.00	+	10.44	3.68
hospital	26	0.04	1	0.00	+	14.54	3.68
hearing	13	0.02	0	0.00	+	10.44	3.68
HTML	13	0.02	0	0.00	+	10.44	3.68
view	12	0.02	0	0.00	+	9.64	3.57
relationships	12	0.02	0	0.00	+	9.64	3.57
park	12	0.02	0	0.00	+	9.64	3.57
no_one	12	0.02	0	0.00	+	9.64	3.57
media	12	0.02	0	0.00	+	9.64	3.57
i_say	12	0.02	0	0.00	+	9.64	3.57
hurt	12	0.02	0	0.00	+	9.64	3.57
PNG	12	0.02	0	0.00	+	9.64	3.57
problems	67	0.11	3	0.01	+	35.67	3.46
sir	11	0.02	0	0.00	+	8.83	3.44
one_day	11	0.02	0	0.00	+	8.83	3.44
of_the_day	11	0.02	0	0.00	+	8.83	3.44
mine	11	0.02	0	0.00	+	8.83	3.44
artwork	11	0.02	0	0.00	+	8.83	3.44
v	21	0.03	1	0.00	+	10.94	3.38
pictures	21	0.03	1	0.00	+	10.94	3.38
picture	21	0.03	1	0.00	+	10.94	3.38
wit	10	0.02	0	0.00	+	8.03	3.30
watching	10	0.02	0	0.00	+	8.03	3.30
solve	10	0.02	0	0.00	+	8.03	3.30
reality	10	0.02	0	0.00	+	8.03	3.30

prison	10	0.02	0	0.00	+	8.03	3.30
playing	20	0.03	1	0.00	+	10.23	3.30
medication	20	0.03	1	0.00	+	10.23	3.30
margin	10	0.02	0	0.00	+	8.03	3.30
laugh	10	0.02	0	0.00	+	8.03	3.30
lady	10	0.02	0	0.00	+	8.03	3.30
jealous	10	0.02	0	0.00	+	8.03	3.30
has_to	10	0.02	0	0.00	+	8.03	3.30
game	10	0.02	0	0.00	+	8.03	3.30
digital	10	0.02	0	0.00	+	8.03	3.30
Paintshop	10	0.02	0	0.00	+	8.03	3.30
listen	38	0.06	2	0.01	+	19.06	3.23
free	19	0.03	1	0.00	+	9.53	3.23
feelings	37	0.06	2	0.01	+	18.36	3.19
week	9	0.01	0	0.00	+	7.23	3.15
web	9	0.01	0	0.00	+	7.23	3.15
truth	9	0.01	0	0.00	+	7.23	3.15
stack	9	0.01	0	0.00	+	7.23	3.15
paranoid	9	0.01	0	0.00	+	7.23	3.15
overflow	9	0.01	0	0.00	+	7.23	3.15
lockdown	9	0.01	0	0.00	+	7.23	3.15
ill	18	0.03	1	0.00	+	8.83	3.15
hours	9	0.01	0	0.00	+	7.23	3.15
helpful	9	0.01	0	0.00	+	7.23	3.15
hand	9	0.01	0	0.00	+	7.23	3.15
graphic_design	9	0.01	0	0.00	+	7.23	3.15
functional	9	0.01	0	0.00	+	7.23	3.15
die	9	0.01	0	0.00	+	7.23	3.15
design	9	0.01	0	0.00	+	7.23	3.15
days	9	0.01	0	0.00	+	7.23	3.15
crying	9	0.01	0	0.00	+	7.23	3.15
cello	9	0.01	0	0.00	+	7.23	3.15
builds	9	0.01	0	0.00	+	7.23	3.15
listening	17	0.03	1	0.00	+	8.14	3.07
case	17	0.03	1	0.00	+	8.14	3.07
talk	65	0.11	4	0.01	+	30.50	3.01
phone	16	0.03	1	0.00	+	7.45	2.98
away	16	0.03	1	0.00	+	7.45	2.98
y	321	0.53	21	0.07	+	146.36	2.92
fair	15	0.02	1	0.00	+	6.78	2.89

em	15	0.02	1	0.00	+	6.78	2.89
music	68	0.11	5	0.02	+	29.21	2.75
group	27	0.04	2	0.01	+	11.55	2.74
play	26	0.04	2	0.01	+	10.89	2.68
she	124	0.21	10	0.03	+	50.56	2.62
take	61	0.10	5	0.02	+	24.63	2.59
ta	48	0.08	4	0.01	+	19.19	2.57
look	35	0.06	3	0.01	+	13.75	2.53
called	58	0.10	5	0.02	+	22.71	2.52
taking	23	0.04	2	0.01	+	8.96	2.51
old	23	0.04	2	0.01	+	8.96	2.51
important	23	0.04	2	0.01	+	8.96	2.51
alright	34	0.06	3	0.01	+	13.12	2.49
problem	38	0.06	4	0.01	+	12.95	2.23
used_to	66	0.11	7	0.02	+	22.36	2.22
life	74	0.12	8	0.03	+	24.70	2.19
wan	64	0.11	7	0.02	+	21.16	2.18
so_that	26	0.04	3	0.01	+	8.23	2.10
mostly	25	0.04	3	0.01	+	7.65	2.04
line	33	0.05	4	0.01	+	10.00	2.03
out	31	0.05	4	0.01	+	8.87	1.94
main	29	0.05	4	0.01	+	7.76	1.84
m	43	0.07	6	0.02	+	11.37	1.82
my_own	27	0.04	4	0.01	+	6.69	1.74
went	39	0.06	6	0.02	+	9.26	1.68
i_mean	385	0.64	60	0.20	+	89.97	1.66
by	51	0.08	8	0.03	+	11.83	1.66
na	117	0.19	19	0.06	+	26.00	1.61
here	55	0.09	9	0.03	+	12.10	1.59
go	99	0.16	18	0.06	+	18.87	1.44
got	270	0.45	50	0.17	+	50.09	1.42
difficult	47	0.08	9	0.03	+	8.28	1.37
all	202	0.33	40	0.13	+	33.74	1.32
people	287	0.48	59	0.20	+	44.99	1.27
gon	56	0.09	12	0.04	+	8.15	1.21
who	55	0.09	12	0.04	+	7.74	1.18
have_to	108	0.18	24	0.08	+	14.67	1.15
why	85	0.14	19	0.06	+	11.41	1.14
me	432	0.72	98	0.33	+	56.31	1.12
on	298	0.49	68	0.23	+	38.38	1.11

ca	124	0.21	29	0.10	+	15.17	1.08
GR	570	0.94	138	0.46	+	64.65	1.03
'm	555	0.92	134	0.45	+	63.34	1.03
get	198	0.33	49	0.16	+	21.35	1.00
now	117	0.19	30	0.10	+	11.58	0.95
my	423	0.70	110	0.37	+	40.39	0.93
said	82	0.14	22	0.07	+	7.21	0.88
talking	83	0.14	23	0.08	+	6.66	0.83
as_well	116	0.19	33	0.11	+	8.61	0.80
er	1055	1.75	313	1.05	+	68.40	0.74
from	107	0.18	32	0.11	+	6.75	0.72
ws	262	0.43	80	0.27	+	15.37	0.69
what	538	0.89	165	0.55	+	31.05	0.69
erm	1567	2.60	490	1.64	+	84.13	0.66
about	232	0.38	82	0.27	+	7.15	0.48
they	534	0.88	198	0.66	+	12.40	0.41
do	776	1.29	300	1.01	+	13.47	0.35
so	821	1.36	323	1.08	+	12.41	0.33
is	602	1.00	236	0.79	+	9.37	0.33
i	3755	6.22	1503	5.04	+	48.95	0.30
and	1598	2.65	674	2.26	+	12.11	0.23
's	1359	2.25	574	1.92	+	10.12	0.23

Table 79 - underused words across clinical (O1) and comparison (O2) sub corpora

Item	O1	%1	O2	%2		LL	LogRatio
there	272	0.45	175	0.59	-	7.27	-0.38
that	1279	2.12	847	2.84	-	42.74	-0.42
like	1145	1.90	768	2.57	-	41.97	-0.44
be	254	0.42	178	0.60	-	12.47	-0.50
if	279	0.46	197	0.66	-	14.36	-0.52
of	699	1.16	500	1.68	-	38.91	-0.53
which	82	0.14	67	0.22	-	9.08	-0.73
way	80	0.13	68	0.23	-	10.54	-0.78
maybe	76	0.13	65	0.22	-	10.28	-0.79
think	235	0.39	204	0.68	-	33.80	-0.81
as	105	0.17	92	0.31	-	15.69	-0.83
does	63	0.10	57	0.19	-	10.69	-0.87
find	46	0.08	42	0.14	-	8.08	-0.89
because	138	0.23	126	0.42	-	24.24	-0.89
you_know	172	0.28	159	0.53	-	31.66	-0.90

something	147	0.24	136	0.46	-	27.14	-0.91
always	44	0.07	41	0.14	-	8.34	-0.92
just	320	0.53	308	1.03	-	68.26	-0.96
other	47	0.08	46	0.15	-	10.63	-0.99
then	163	0.27	162	0.54	-	38.88	-1.01
yeah	619	1.03	633	2.12	-	162.52	-1.05
more	144	0.24	148	0.50	-	38.44	-1.06
two	37	0.06	39	0.13	-	10.72	-1.09
or	272	0.45	287	0.96	-	79.07	-1.09
mm	117	0.19	127	0.43	-	37.18	-1.14
'd	70	0.12	78	0.26	-	24.10	-1.17
oh	92	0.15	105	0.35	-	34.02	-1.21
myself	26	0.04	30	0.10	-	9.93	-1.22
quite	77	0.13	89	0.30	-	29.55	-1.23
a_bit	44	0.07	51	0.17	-	17.02	-1.23
obviously	38	0.06	45	0.15	-	15.64	-1.26
stuff	25	0.04	30	0.10	-	10.68	-1.28
creative	86	0.14	103	0.35	-	36.54	-1.28
i_think	96	0.16	118	0.40	-	43.84	-1.31
in_that	17	0.03	21	0.07	-	7.87	-1.32
than	28	0.05	36	0.12	-	14.44	-1.38
was	380	0.63	498	1.67	-	206.05	-1.41
would	111	0.18	148	0.50	-	62.94	-1.43
whether	12	0.02	16	0.05	-	6.80	-1.43
probably	36	0.06	48	0.16	-	20.41	-1.43
able	12	0.02	16	0.05	-	6.80	-1.43
different	54	0.09	74	0.25	-	32.83	-1.47
create	15	0.02	21	0.07	-	9.62	-1.50
actually	25	0.04	36	0.12	-	17.18	-1.54
language	78	0.13	115	0.39	-	56.73	-1.58
especially	9	0.01	14	0.05	-	7.42	-1.65
english	11	0.02	17	0.06	-	8.94	-1.65
were	46	0.08	72	0.24	-	38.48	-1.66
someone	26	0.04	41	0.14	-	22.12	-1.67
story	11	0.02	18	0.06	-	10.17	-1.73
kind_of	71	0.12	120	0.40	-	70.53	-1.77
colour	7	0.01	12	0.04	-	7.17	-1.79
sort	19	0.03	33	0.11	-	20.02	-1.81
interested	8	0.01	14	0.05	-	8.57	-1.82
guess	11	0.02	20	0.07	-	12.77	-1.88

felt	12	0.02	22	0.07	-	14.18	-1.89
study	7	0.01	14	0.05	-	9.87	-2.02
possibly	8	0.01	16	0.05	-	11.28	-2.02
in_my_mind	5	0.01	10	0.03	-	7.05	-2.02
idea	6	0.01	12	0.04	-	8.46	-2.02
for_example	5	0.01	10	0.03	-	7.05	-2.02
conversation	9	0.01	18	0.06	-	12.69	-2.02
ways	11	0.02	24	0.08	-	18.38	-2.14
supposed	5	0.01	11	0.04	-	8.49	-2.15
part	15	0.02	33	0.11	-	25.46	-2.15
finding	4	0.01	9	0.03	-	7.08	-2.19
research	7	0.01	16	0.05	-	12.77	-2.21
mhm	25	0.04	59	0.20	-	48.37	-2.26
had_to	8	0.01	19	0.06	-	15.66	-2.27
creating	5	0.01	12	0.04	-	9.98	-2.28
a_little_bit	10	0.02	24	0.08	-	19.95	-2.28
in_terms_of	6	0.01	15	0.05	-	12.89	-2.34
word	33	0.05	87	0.29	-	77.89	-2.42
wow	3	0.00	8	0.03	-	7.22	-2.43
very_much	3	0.00	8	0.03	-	7.22	-2.43
particularly	3	0.00	8	0.03	-	7.22	-2.43
also	7	0.01	19	0.06	-	17.38	-2.46
university	4	0.01	11	0.04	-	10.16	-2.48
those	17	0.03	47	0.16	-	43.58	-2.48
between	9	0.01	25	0.08	-	23.26	-2.49
tend	4	0.01	12	0.04	-	11.78	-2.60
boomerang	8	0.01	25	0.08	-	25.20	-2.66
words	41	0.07	130	0.44	-	132.26	-2.68
certain	9	0.01	29	0.10	-	29.81	-2.71
almost	7	0.01	23	0.08	-	23.93	-2.73
harder	3	0.00	10	0.03	-	10.50	-2.75
sense	7	0.01	24	0.08	-	25.62	-2.79
whereas	8	0.01	28	0.09	-	30.25	-2.82
test	2	0.00	7	0.02	-	7.56	-2.82
seem	2	0.00	7	0.02	-	7.56	-2.82
interesting	16	0.03	56	0.19	-	60.51	-2.82
i_guess	6	0.01	21	0.07	-	22.69	-2.82
go_with	4	0.01	14	0.05	-	15.13	-2.82
created	2	0.00	7	0.02	-	7.56	-2.82
along	2	0.00	7	0.02	-	7.56	-2.82

sort_of	70	0.12	250	0.84	-	273.31	-2.85
subjects	2	0.00	8	0.03	-	9.30	-3.02
subject	2	0.00	8	0.03	-	9.30	-3.02
fit	2	0.00	8	0.03	-	9.30	-3.02
connection	3	0.00	12	0.04	-	13.96	-3.02
link	4	0.01	18	0.06	-	22.19	-3.19
aware	2	0.00	9	0.03	-	11.09	-3.19
technical	3	0.00	14	0.05	-	17.55	-3.24
random	3	0.00	14	0.05	-	17.55	-3.24
a_bit_of_a	3	0.00	14	0.05	-	17.55	-3.24
perhaps	2	0.00	10	0.03	-	12.92	-3.34
experiment	2	0.00	10	0.03	-	12.92	-3.34
describe	2	0.00	10	0.03	-	12.92	-3.34
towards	2	0.00	11	0.04	-	14.79	-3.48
taught	1	0.00	6	0.02	-	8.34	-3.60
similar	2	0.00	12	0.04	-	16.68	-3.60
rough	1	0.00	6	0.02	-	8.34	-3.60
rhythm	1	0.00	6	0.02	-	8.34	-3.60
psychology	1	0.00	6	0.02	-	8.34	-3.60
more_so	1	0.00	6	0.02	-	8.34	-3.60
as_if	1	0.00	6	0.02	-	8.34	-3.60
apply	1	0.00	6	0.02	-	8.34	-3.60
amazing	1	0.00	6	0.02	-	8.34	-3.60
understanding	1	0.00	7	0.02	-	10.27	-3.82
task	1	0.00	7	0.02	-	10.27	-3.82
ooh	1	0.00	7	0.02	-	10.27	-3.82
clear	1	0.00	7	0.02	-	10.27	-3.82
came_up	1	0.00	7	0.02	-	10.27	-3.82
weird	1	0.00	8	0.03	-	12.23	-4.02
rule	1	0.00	8	0.03	-	12.23	-4.02
gcse	1	0.00	8	0.03	-	12.23	-4.02
even_though	1	0.00	8	0.03	-	12.23	-4.02
come_across	1	0.00	8	0.03	-	12.23	-4.02
abstract	2	0.00	16	0.05	-	24.46	-4.02
salty	2	0.00	18	0.06	-	28.44	-4.19
metaphor	1	0.00	9	0.03	-	14.22	-4.19
exam	1	0.00	9	0.03	-	14.22	-4.19
descriptive	2	0.00	18	0.06	-	28.44	-4.19
found	3	0.00	28	0.09	-	44.67	-4.24
necessarily	2	0.00	19	0.06	-	30.45	-4.27

process	1	0.00	10	0.03	-	16.23	-4.34
linked	1	0.00	11	0.04	-	18.26	-4.48
makes_sense	1	0.00	14	0.05	-	24.44	-4.82
associate	1	0.00	14	0.05	-	24.44	-4.82
felt_like	1	0.00	15	0.05	-	26.52	-4.92
adjectives	1	0.00	20	0.07	-	37.03	-5.34
edge	1	0.00	25	0.08	-	47.66	-5.66
creative_writing	1	0.00	40	0.13	-	79.93	-6.34

Table 80 - overused semantic categories across clinical (O1) and comparison (O2) sub corpora

Item	O1	%1	O2	%2		LL	LogRatio	
I1	56	0.09	1	0.00	+	37.35	4.80	Money generally
L1-	47	0.08	1	0.00	+	30.43	4.55	Dead
S2.1	45	0.08	1	0.00	+	28.90	4.48	People: Female
L3	22	0.04	0	0.00	+	17.76	4.45	Plants
G1.1	22	0.04	0	0.00	+	17.76	4.45	Government
B4	20	0.03	0	0.00	+	16.15	4.31	Cleaning and personal care
A5.4-	38	0.06	1	0.00	+	23.58	4.24	Evaluation: Unauthentic
G2.1-	16	0.03	0	0.00	+	12.92	3.99	Crime
Y2	219	0.37	7	0.02	+	129.81	3.96	Information technology and computing
S2.2	94	0.16	3	0.01	+	55.74	3.96	People: Male
B5	31	0.05	1	0.00	+	18.33	3.95	Clothes and personal belongings
S1.2.2+	15	0.03	0	0.00	+	12.11	3.90	Greedy
W1	29	0.05	1	0.00	+	16.85	3.85	The universe
N5---	13	0.02	0	0.00	+	10.49	3.69	Quantities: little

I1.1	11	0.02	0	0.00	+	8.88	3.45	Money and pay
S6-	20	0.03	1	0.00	+	10.31	3.31	No obligation or necessity
I3.1-	10	0.02	0	0.00	+	8.07	3.31	Unemployed
I2.1	20	0.03	1	0.00	+	10.31	3.31	Business: Generally
M3	58	0.10	3	0.01	+	29.51	3.27	Vehicles and transport on land
S3.2	38	0.06	2	0.01	+	19.21	3.24	Relationship: Intimacy and sex
N3.2+++	9	0.02	0	0.00	+	7.27	3.16	Size: Big
I1.1-	9	0.02	0	0.00	+	7.27	3.16	Money: Lack
S1.2.6-	33	0.06	2	0.01	+	15.72	3.04	Foolish
A5.1+++	33	0.06	2	0.01	+	15.72	3.04	Evaluation: Good
A1.9	15	0.03	1	0.00	+	6.83	2.90	Avoiding
M7	85	0.14	6	0.02	+	37.62	2.82	Places
K4	27	0.05	2	0.01	+	11.65	2.75	Drama, the theatre and show business
O1.1	24	0.04	2	0.01	+	9.68	2.58	Substances and materials: Solid
H4	44	0.07	4	0.01	+	16.80	2.45	Residence
E3-	43	0.07	4	0.01	+	16.17	2.42	Violent/Angry

A6.3+	21	0.04	2	0.01	+	7.77	2.38	Comparing:
								Varied
K5.1	81	0.14	8	0.03	+	29.22	2.33	Sports
K2	151	0.25	15	0.05	+	54.25	2.32	Music and related activities
I2.2	57	0.10	6	0.02	+	19.62	2.24	Business: Selling
C1	276	0.47	30	0.10	+	92.65	2.19	Arts and crafts
H2	36	0.06	4	0.01	+	11.87	2.16	Parts of buildings
S3.1	98	0.17	11	0.04	+	32.06	2.15	Personal relationship: General
K1	71	0.12	8	0.03	+	23.15	2.14	Entertainment generally
L1+	79	0.13	9	0.03	+	25.53	2.13	Alive
F1	86	0.15	10	0.03	+	27.32	2.10	Food
I1.2	42	0.07	5	0.02	+	13.07	2.06	Money: Debts
Q4	24	0.04	3	0.01	+	7.15	1.99	The Media
A10-	29	0.05	4	0.01	+	7.85	1.85	Closed; Hiding/Hidden
Q4.3	43	0.07	6	0.02	+	11.51	1.83	The Media: TV, Radio and Cinema
A12-	171	0.29	24	0.08	+	45.48	1.83	Difficult
Q1.3	40	0.07	6	0.02	+	9.90	1.73	Telecommunications
S9	42	0.07	7	0.02	+	9.15	1.58	Religion and the supernatural

S1.1.2+	41	0.07	7	0.02	+	8.65	1.54	Reciprocal
H1	70	0.12	13	0.04	+	13.12	1.42	Architecture, houses and buildings
S4	141	0.24	28	0.09	+	23.80	1.32	Kin
O4.4	73	0.12	15	0.05	+	11.64	1.28	Shape
T2-	63	0.11	13	0.04	+	9.97	1.27	Time: Ending
B2-	171	0.29	36	0.12	+	26.13	1.24	Disease
S8+	85	0.14	18	0.06	+	12.85	1.23	Helping
S2	394	0.66	86	0.29	+	56.34	1.19	People
B3	135	0.23	31	0.11	+	17.48	1.11	Medicines and medical treatment
X3.2	145	0.24	34	0.12	+	17.97	1.08	Sensory: Sound
Z99	481	0.81	119	0.40	+	52.95	1.01	Unmatched
E4.1+	122	0.21	31	0.11	+	12.60	0.97	Happy
T1.1.1	154	0.26	40	0.14	+	15.07	0.94	Time: Past
Z3	195	0.33	53	0.18	+	16.92	0.87	Other proper names
T1.3	197	0.33	55	0.19	+	15.84	0.83	Time: Period
M1	541	0.91	151	0.51	+	43.54	0.83	Moving, coming and going
T1.1.2	210	0.35	62	0.21	+	14.21	0.75	Time: Present; simultaneous
B1	203	0.34	62	0.21	+	12.23	0.70	Anatomy and physiology
A9+	983	1.66	305	1.03	+	55.94	0.68	Getting and possession

T1.1.3	281	0.47	88	0.30	+	15.45	0.67	Time: Future
M2	212	0.36	68	0.23	+	10.62	0.63	Putting, pulling, pushing, transporting
N5.1+	272	0.46	91	0.31	+	11.39	0.57	Entire; maximum
N1	269	0.45	94	0.32	+	9.15	0.51	Numbers
M6	690	1.16	278	0.94	+	9.03	0.30	Location and direction
Z8	11669	19.68	5243	17.78	+	37.70	0.15	Pronouns

Table 81 - underused semantic categories across clinical (O1) and comparison (O2) sub corpora

Item	O1	%1	O2	%2		LL	LogRatio	
Z4	503 0	8.48	292 3	9.91	-	44.21	-0.22	Discourse Bin
A13.3	630	1.06	399	1.35	-	14.00	-0.35	Degree: Boosters
A4.1	251	0.42	171	0.58	-	9.84	-0.45	Generally kinds, groups, examples
Z7	284	0.48	201	0.68	-	14.30	-0.51	If
A7+	777	1.31	585	1.98	-	55.93	-0.60	Likely
A10+	113	0.19	87	0.30	-	9.15	-0.63	Open; Finding; Showing
A5.4+	86	0.15	67	0.23	-	7.39	-0.65	Evaluation: Authentic
X4.1	85	0.14	72	0.24	-	10.77	-0.77	Mental object: Conceptual object
A6.1-	191	0.32	171	0.58	-	30.43	-0.85	Comparing: Different
X2.4	45	0.08	41	0.14	-	7.68	-0.87	Investigate, examine, test,

								search
N6+++	44	0.07	41	0.14	-	8.18	-0.91	Frequent
N4	241	0.41	226	0.77	-	45.86	-0.92	Linear
								order
X2.1	654	1.10	622	2.11	-	131.0	-0.94	Thought,
						6		belief
A14	346	0.58	336	1.14	-	74.73	-0.97	Exclusivizers/particularizers
A7	79	0.13	78	0.26	-	18.09	-0.99	Probability
X9.1+	41	0.07	42	0.14	-	10.64	-1.04	Able/intelligent
X4.2	121	0.20	131	0.44	-	37.52	-1.12	Mental
								object:
								Means,
								method
X2.5+	77	0.13	83	0.28	-	23.55	-1.12	Understanding
A6.2+	52	0.09	57	0.19	-	16.76	-1.14	Comparing:
								Usual
A4.2+	65	0.11	72	0.24	-	21.63	-1.16	Detailed
A13.5	83	0.14	93	0.32	-	28.60	-1.17	Degree:
								Compromisers
Q4.1	76	0.13	92	0.31	-	32.80	-1.28	The
								Media:
								Books
O4.5	18	0.03	22	0.07	-	7.98	-1.30	Texture
Q3	358	0.60	491	1.67	-	215.3	-1.46	Language,
						8		speech
								and
								grammar
A13	15	0.03	22	0.07	-	10.65	-1.56	Degree
A13.6	63	0.11	95	0.32	-	47.78	-1.60	Degree:
								Diminishers
N5.1-	30	0.05	46	0.16	-	23.66	-1.62	Part
P1	95	0.16	149	0.51	-	78.96	-1.66	Education
								in
								general
X5.2+	57	0.10	99	0.34	-	59.45	-1.80	Interested/excited/energetic
A6.2-	17	0.03	30	0.10	-	18.35	-1.83	Comparing:
								Unusual
X2.5-	7	0.01	17	0.06	-	14.15	-2.29	Not
								understanding
A1.6	7	0.01	17	0.06	-	14.15	-2.29	Concrete/Abstract

X3.4+	3	0.01	8	0.03	-	7.17	-2.42	Seen
A6.1+	35	0.06	99	0.34	-	92.59	-2.51	Comparing: Similar
A13.7	7	0.01	21	0.07	-	20.45	-2.59	Degree: Minimizers
X3.5	6	0.01	27	0.09	-	33.07	-3.18	Sensory: Smell
Y1	13	0.02	63	0.21	-	79.83	-3.28	Science and technology in general
X3.1	6	0.01	33	0.11	-	44.10	-3.47	Sensory: Taste
A11.1-	1	0.00	11	0.04	-	18.17	-4.47	Unimportant
X3.3	1	0.00	16	0.05	-	28.47	-5.01	Sensory: Touch