

Cognitive Enhancing Drug Use Amongst
Higher Education Students in an Age of
Neoliberalism: A Critical Discourse Study.

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Abstract

In recent decades, there has been a growing body of literature and media coverage regarding the use of cognitive enhancing drugs (CEDs), especially amongst university students. This surge in interest appears to align with the rise of neoliberalism, particularly in the West, which has permeated almost all aspects of society, including higher education. As the trend of enhancement drug usage expands within the continued neoliberal age, the specific use of CEDs by students calls for fresh theoretical insights into drug consumption.

Traditional drug use theories, often rooted in medical and legal perspectives, are not adequate for capturing the nuances and dynamics of this contemporary drug trend. For example, dominant medical and legal perspectives tend to oversimplify drug use, divorcing it from the socio-cultural, (neoliberal) ideological contexts, whilst categorising it into binary classifications, such as recreational versus problematic, or legal versus illegal. As stated, the increase in contemporary student CED use has hypothetically aligned with the spread of neoliberal ideology into higher education. In addition, this form of drug use does not sit within simplistic binary categorisations - it is not recreational nor largely problematic and often blurs the boundary between legal and illegal substance use.

To address this gap, this doctoral research draws on neoliberalism and employs a qualitative approach that combines netnography with fifteen semi-structured face-to-face interviews. The data from which are analysed through a Dialectical Relational Approach to Critical Discourse Studies. This process leads to the development of a novel “Functional Response Framework” for augmenting understandings of CED use amongst higher education students. A framework that can not only support the development of judicious and effective policies and practices regarding student CED use, but also broader substance use, whilst enriching the theoretical discourse on the topic.

Table of Contents

Acknowledgements	2
Associated Publications & Presentations.....	3
Abstract.....	4
List of Tables and Figures	8
Chapter One: Introduction	9
1.1. <i>Background</i>	9
1.2. <i>Rationale for this Research</i>	11
1.3. <i>Personal Interest in Contemporary Student CED Use.....</i>	12
1.4. <i>Thesis Structure and Layout.....</i>	14
Chapter Two: Literature Review Part One	19
<i>Introduction</i>	19
2.1. <i>Terminology.....</i>	20
2.2. <i>Cognitive Enhancement and CEDs: Issues with Formal Definitions and Meanings.....</i>	22
2.3. <i>Prevalence</i>	25
2.4. <i>Definitions and Meanings: A Standardised Solution</i>	31
2.5. <i>Dominant Drug Use Perspectives and Student CED Use</i>	34
2.6. <i>Instrumental Drug Use and Functional Drug Use</i>	37
2.7. <i>Drug, Set and Setting</i>	42
2.8. <i>Summary and Conclusion</i>	45
Chapter Three: Literature Review Part Two.....	47
<i>Introduction</i>	47
3.1. <i>Neoliberalism</i>	48
3.2. <i>Neoliberal Governmentality.....</i>	53
3.3. <i>Student CED Use and Higher Education in the Neoliberal Age</i>	59
3.4. <i>The Neoliberal Normalisation of Higher Education</i>	64
3.5. <i>Higher Education Student CED Use and Normalisation</i>	65
3.6. <i>Student CED Use: Academic Misconduct and Cheating</i>	69
3.7. <i>Summary and Conclusion</i>	75
Chapter Four: A Dialectical Relational Approach to Critical Discourse Studies	78

<i>Introduction</i>	78
4.1. <i>Critical Discourse Studies</i>	78
4.2. <i>A Dialectical Relational Approach</i>	81
4.3. <i>Summary and Conclusion</i>	86
Chapter Five: Research Methodology	88
<i>Introduction</i>	88
5.1. <i>Research Aim and Objectives</i>	88
5.1.2. <i>Research Questions</i>	89
5.2. <i>Philosophical Foundations: Epistemology</i>	90
5.3. <i>Research Methods</i>	91
5.3.1. <i>Method One: Netnography</i>	91
5.3.2. <i>Netnography: Data Collection and Analysis Strategy</i>	93
5.3.3. <i>Netnography: Ethical Considerations</i>	100
5.3.4. <i>Netnography: Limitations</i>	103
5.4. <i>Method Two: Semi-Structured Face-to-Face Interviews</i>	106
5.4.1. <i>Sample Characteristics</i>	107
5.4.2. <i>Sampling: Participant Access and Recruitment</i>	109
5.4.3. <i>Snowball Sampling: Limitations</i>	112
5.4.4. <i>Semi-Structured Interview Schedule</i>	113
5.4.5. <i>Semi-Structured Interviews: Ethics and Limitations</i>	117
5.4.6. <i>Coding and Analysis of Interview Data</i>	120
5.5. <i>Summary and Conclusion</i>	122
Chapter Six: Results Part One: Emerging Neoliberal Themes	125
<i>Introduction</i>	125
6.1. <i>Neoliberalism and Student Users' Recontextualisation of Other Drugs as CEDs</i>	126
6.2. <i>Neoliberalism and Students' Functional Drug Use for Cognitive Enhancement</i>	146
6.3. <i>Individual Responsibility, Self Reliance and Meanings of Functionality</i>	153
6.4. <i>Functionality: The Age Demographic and Perceptions of Future Success</i>	159
6.5. <i>Summary and Conclusion</i>	164
Chapter Seven: Results Part Two: A Functional Response, Neoliberalism and Dialectical Tensions	166
<i>Introduction</i>	166

7.1. <i>Student Drug Use for Cognitive Enhancement: Dialectical Tensions and a Functional Response</i>	167
7.2. <i>Is it Ethical? Is it Cheating?</i>	181
7.3. <i>The Responsible, Strategic and Risk Averse Entrepreneurial Student Subject</i>	188
7.4. <i>Summary and Conclusion</i>	200
Chapter Eight: Discussion & Conclusion	202
<i>Introduction</i>	202
8.1. <i>Methodological Contribution to Knowledge</i>	203
8.2. <i>A Functional Response Framework: A Contemporary Theoretical Development</i>	204
8.2.1. <i>A Functional Response Framework & Rational Choice Theory</i>	206
8.2.2. <i>A Functional Response Framework & Drug Normalisation Theory</i>	209
8.2.3. <i>A Functional Response Framework & Drug, Set and Setting</i>	210
8.3. <i>Implications for CEDs Policy and Practice</i>	213
8.4. <i>Implications for Wider Drug Policy and Practice</i>	218
8.5. <i>Limitations: A Functional Response Framework</i>	226
8.6. <i>Research Limitations</i>	227
8.7. <i>Recommendations for Future Research</i>	228
References	232
Appendices	270
<i>Appendix 1.</i>	270
<i>Appendix 2.</i>	271
<i>Appendix 3.</i>	274
<i>Appendix 4.</i>	275
<i>Appendix 5.</i>	276

Tables and Figures

TABLE 1. <i>Illustrates the trend in initiation of forum threads between 2006 and 2021 identified for this research</i>	94
TABLE 2. <i>Details nodes developed for manifest codes</i>	100
TABLE 3. <i>Details nodes developed for latent codes</i>	100
TABLE 4. <i>Details the fundamental characteristics of interview participants</i>	108
TABLE 5. <i>Details the range of substances identified in the netnography and discussed by interview participants</i>	126
TABLE 6. <i>Details the drugs and substances used for cognitive enhancement by interview participants.</i>	134
FIG. 1. <i>Line chart illustrating the trend in initiation of forum threads between 2006 and 2021 identified for this research</i>	95
FIG. 2. <i>Image representation of the analytic process for conceptualising student CED use</i>	99
FIG. 3. <i>Snowball sampling process one</i>	110
FIG. 4. <i>Snowball sampling process two</i>	111
FIG. 5. <i>Snowball sampling process three</i>	112

1. Introduction

This doctoral thesis explores the link between the contemporary trend in cognitive enhancing drug (CED) use amongst students and neoliberalism. The thesis therefore theorises the ways in which neoliberal ideology serves as a crucial driver of the phenomenon. Directed by a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010), the study employs a qualitative, mixed methods design. It incorporates netnography (Kozinets, 2015) and includes fifteen face-to-face semi-structured interviews, to establish a theoretical framework - A Functional Response Framework (Mann, 2022a) - for conceptualising the contemporary trend in higher education student CED use. The following introductory chapter will discuss the background and rationale for the study, and the researcher's personal interest in the student CEDs phenomenon. In addition, it will detail the overall structure of the thesis and provide a brief overview of the content of the subsequent chapters.

1.1. Background

CEDs sit within the broader human enhancement drugs category which is considered primarily as being drugs that are used for 'self-improvement' (Coveney et al., 2019; Van de Ven et al., 2019; Mann, 2022a). According to Evans-Brown et al. (2012: 10), human enhancement drugs can be divided into six subsequent categories of drugs, used to enhance:

1. Muscle structure and function.
2. Weight loss.
3. Cosmetic appearance.
4. Sexual behaviour.
5. Mood and social behaviour.
6. Cognitive function.

It is enhancement category six that is, therefore, the focus here and as Coveney et al. (2019: 320) discuss, motivations are framed around the "improvement" or "enhancement" of cognitive abilities often to boost workplace performance.

The emergence of the contemporary trend in the use of CEDs amongst the general population can be traced back to various historical and societal developments spanning several decades (Cakic, 2009). Although humans have always sought ways and means to augment their cognitive capabilities, the roots of the current CEDs trend can be found in the mid-20th century (Pisera et al., 2023). In the West, societal attitudes towards drug use during this period underwent significant shifts, influenced by cultural movements, medical advancements, and changes in regulatory policies (Musto, 1996).

The countercultural movements of the 1960s and 1970s brought about a re-evaluation of traditional norms and values, including perceptions of drug use (Wesson, 2011). Whilst the widespread use of illicit substances during this period was often associated with recreational and anti-establishment motivations, it also contributed to a broader acceptance of pharmacological interventions to alter consciousness and enhance cognitive function (Mateo, 2023). Indeed, with the advent of stimulant medications such as amphetamines during this time, initially prescribed for medical conditions such as attention deficit hyperactivity disorder (ADHD) and narcolepsy, these drugs were later repurposed for off-label use as cognitive enhancers due to their ability to improve focus, concentration, and wakefulness (Wood et al., 2014). As these medications became more widely available, particularly with the introduction of formulations such as dextroamphetamine salts (Adderall™) and methylphenidate (Ritalin™), their use among higher education students seeking academic performance enhancement began to gain traction (Vrecko, 2013).

Throughout this thesis, it will be illustrated that the desire for students to enhance cognitive performance further intensified within the competitive climate of higher education, particularly under neoliberalism (Mann, 2022a). In this context, there is an increasing emphasis on educational attainment as a pathway to socioeconomic success, compelling students to confront mounting academic pressures further fuelling the demand for cognitive enhancement (Mann, 2022a). Moreover, the advent of the internet and digital technologies in the late 20th and early 21st centuries have facilitated the increased dissemination and procurement of CEDs (McDermott et al., 2020). Online forums, social media platforms, and underground marketplaces have provided students with easy access to a wide array of

substances purported to improve cognitive function and thus, academic performance (Vagwala et al., 2017).

Hence, whilst the use of substances to enhance cognitive performance is not new, the widespread availability and accessibility of such drugs, alongside ideological shifts in the political economy and evolving societal attitudes, have contributed to the proliferation of CED use among students in contemporary higher education (Vagwala et al., 2017). Thus, the allure of CEDs for students appears to reflect a complex relationship between individual aspirations, societal conditions and institutional dynamics (Vagwala et al., 2017). More broadly, the emergence of the current trend in the use of CEDs amongst students in higher education reflects a convergence of historical, ideological, societal, and institutional factors (Vagwala et al., 2017).

The student CEDs trend has therefore garnered an increased amount of attention over the past few decades and has emerged as a multifaceted and increasingly prevalent phenomenon, which has sparked considerable debate (Cakic, 2009; Goodman, 2010; Hupli et al., 2016; Vagwala et al., 2017; Aikins, 2019; McDermott et al., 2020; Mann, 2021; Mann; 2022a). Certainly, in recent years, the phenomenon has acquired widespread attention from scholars, policymakers, and the media, prompting debates about its ethical, social, and academic implications (Hupli et al., 2016). Concerns about the potential health risks, ethical dilemmas - particularly around notions of academic misconduct - and inequities associated with student CED use (Aikins, 2019), have prompted calls for greater regulation, education, and support for students grappling with academic pressures and the temptation to resort to pharmacological interventions (Vrecko, 2013). Thus, as the pursuit of academic excellence and success potentially becomes increasingly intertwined with the availability and accessibility of CEDs, understanding the drivers and dynamics of this drug trend will be crucial for developing informed, evidence-based policies and interventions to promote student well-being and academic integrity in contemporary higher education.

1.2. Rationale for this Research

As discussed, it is widely recognised that the use of CEDs by higher education students has seen increased prevalence, particularly since the turn of the last millennium (Cakic, 2009). Whilst some studies mention the spread of neoliberal ideology as being a potential factor

(E.g., Aikins, 2019), there is a dearth of research that explores in depth, the role of neoliberalism in this drug trend. In addition, as will be discussed in more detail in Chapter Two, dominant theoretical perspectives of drug use, rooted in medical and legal models are not sufficient for theorising the phenomenon, given the functional nature of student CED use (Mann, 2022a) and that many of the substances used fall outside of legislative regulation.

Furthermore, prevailing medical and legal viewpoints have significantly contributed to the development of binary classifications of drugs, such as 'good' versus 'bad' drugs (Tupper, 2012), 'controlled' versus 'uncontrolled' drug use, and the distinction between 'recreational' and 'problematic' use (Booth-Davies, 1997, 1998; Decorte, 2001; Moore et al., 2017; Pienaar et al., 2017; Askew & Williams, 2021; Mann, 2022a). However, the use of CEDs amongst higher education students does not efficiently align with these binary drug categories (Askew & Williams, 2021; Mann, 2022a). Therefore, this research seeks to address these gaps, with the overall aim of drawing on neoliberalism to develop a theoretical framework for conceptualising the contemporary trend in higher education student CED use. This is not only important in terms of innovative theoretical insight around student CED use and indeed, drug use more broadly - which is also often lacking (Pennay & Duff, 2022) - but also, to potentially aid in the development of effective and judicious (student) CEDs policy moving forward.

1.3. Personal Interest in Contemporary Student CED Use

I developed a keen interest in substance use and society back in the mid 1990s. During this time, it was the pinnacle of the subcultural 'rave' movement (Davidson, 2023) and drugs, chiefly MDMA (ecstasy), were a key driver of the phenomenon, which within the subculture, came to supplant alcohol as the drug of choice amongst young people (Collin & Godfrey, 1997). It was interesting to observe the ways in which MDMA (ecstasy) was seemingly more than just a drug to achieve pleasure and escape, it was also a subcultural signifier and an elemental organising artefact (Collin & Godfrey, 1997). Importantly therefore, it was apparent that MDMA (ecstasy) and its use within the 'rave' subculture, was a part of the socio-cultural historical moment and thus, bound up with wider social forces (Redhead, 1993).

This sparked interest in drugs and society, which was further enforced through my sister being employed in drug and alcohol services, was influential in my decision to return to education and study for a degree in sociology - my undergraduate dissertation focused on the social

construction of (alcohol and other drug) addiction and sought to challenge and debunk many commonly held myths prevalent within dominant addiction discourse. I then went on to complete a master's degree in social and political theory, where I became increasingly interested in political economy - particularly neoliberalism and its impact on human behaviour - before being invited back as a Visiting Lecturer to the university where I completed my first degree. It was during this time that my interest in CED use amongst students began to emerge.

Given my interest in drugs and society, I was already aware, to a certain extent, of the CEDs phenomenon; chiefly, through the odd media report and online searching around the use of supplements to improve my own mental health. However, immediately after a seminar I had delivered on a drugs and crime focused module, three students approached me wanting to discuss their use of CEDs, specifically modafinil. I had only previously encountered the use of modafinil for the purpose of enhancing a person's studies through media reports and online sources, not during my own degree or, up to that point, whilst working in academia. Two of the students informed me that they had used modafinil once for the purpose of study, whilst the other student had used it on numerous occasions. When I asked why they had felt the need to use modafinil for study, they essentially explained that it gave them more focus, helped them to work for longer periods, and get more done. Of course, I advised them to perhaps seek safer alternatives - plan their time more effectively, exercise, maintain regular and healthy sleep patterns, a good diet, etc. However, what did seem to stand out was an ostensible allusion to neoliberal ideology, with what they were reporting to me about their motivations to use modafinil.

Over the subsequent days, this interaction led me to search for more information on the contemporary student CED use phenomenon - exploring academic books, journal articles and online forums. Again, what I read appeared to exude a significant neoliberal flavour - an emphasis on productivity, competition and individual success, for instance. Moreover, the academic books and journal articles I read, although alluding to neoliberalism, did not appear to overtly explore or link student CED use to the wider neoliberal milieu. For a while, I had been thinking about developing a PhD research project and it was at this point, I began to conceive of a project exploring the role of neoliberalism in higher education student CED use

and that this would potentially be an extremely interesting, relevant and innovative research endeavour.

Therefore, I sketched-out an initial draft research proposal which I emailed over to appropriate academics at various institutions, including, Professor Rob Ralphs at Manchester Metropolitan University (MMU), to whom I had been previously introduced through shared connections in UK drug and alcohol services. Professor Ralphs declared a significant interest in the proposed project and invited me to interview at MMU with two potential supervisor colleagues - Dr Rebecca Askew and Dr Nigel Cox - who were also interested in the proposal. The interview was a success and coupled with the extremely positive impression I had got from MMU, Professor Ralphs and the supervisory team, I accepted the offer to study under their stewardship; thus, my student CED use, and neoliberalism PhD journey was set in motion.

1.4. Thesis Structure and Layout

Chapter One, this introductory chapter, presents a background discussion on CEDs, including CEDs positioning within the HEDs category and the ways in which the emergence of the CEDs phenomenon - particularly CED use amongst students - throughout the 20th century was bound up with dynamic social processes and societal shifts. Before discussing my personal interest in the student CEDs phenomenon, the introduction then outlined the rationale for this research, noting that dominant medical and legal perspectives of drugs and drug use, along with prevailing drug binaries, are inadequate for conceptualising the contemporary student CEDs phenomenon. Consequently, there is significant gap in theoretical insight in the area. Furthermore, it is asserted that existing research in this area has often overlooked the potentially significant role of neoliberalism in shaping this drug trend. Hence, it is argued that an exploration of neoliberalism is crucial for developing a robust theoretical framework for understanding CED use amongst higher education students. Thus, the introductory discussion explained that this research aims to address these gaps by utilising neoliberalism to more effectively inform understandings of CED use within the student demographic.

Chapter Two forms the first part of the literature review and will provide an overview of the literature on CEDs, student CED use and drug use more broadly. Given the methodological issues around CEDs research – which will be explored in this chapter – and the depth of

literature on broader drug use, it was decided that an overview of the literature would be more appropriate, than for instance, a systematic approach. The chapter begins by illustrating and discussing the contested meanings and definitions within CEDs discourse - a factor in the said methodological issues.

This chapter will thus demonstrate that ultimately, what defines a CED is not the specific pharmacological constitution of a given substance, but rather, the motivations and meanings ascribed by the user (Mann, 2022a). Therefore, rather than focusing on specific drugs and terminology such as 'CEDs', it will be argued that it is perhaps more methodologically beneficial in future research, for instance, to focus on 'drug use for cognitive enhancement'. Moreover, the chapter also identifies and discusses the theoretical gaps in knowledge and concludes by identifying the diminished focus on the neoliberal ideological context, within established literature and research into contemporary higher education student CED use.

Chapter Three, which forms the second part of the literature review, will therefore provide an overview of the literature on neoliberalism. It was again deemed that an overview of the literature would be most appropriate, given the extensive literature dedicated to neoliberalism and associated topics. This review will discuss how understanding the neoliberal ideological context and its impact on contemporary higher education can offer significant insights into the meanings students construct around CEDs and their discursive legitimations, which are ostensibly linked to neoliberalism. This exploration will also discuss the concept of drug, set, and setting (Zinberg, 1984), to illustrate the ways in which the neoliberalisation of higher education could be a significant factor in the potential normalisation of CED use amongst student users.

Chapter Four will detail and discuss a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010). It will highlight why this analytical approach is most suitable for directing the research methods, particularly given the focus on discourse and the hypothetical role of neoliberal ideology in shaping user meanings, motivations and justifications identified in the literature review.

Chapter Five outlines in depth, the research methodology chosen to effectively investigate the role of neoliberal ideology embedded in discourse, in the use of CEDs by students in

contemporary higher education. The methodology was established according to the overall aim of the research - to develop a theoretical framework of CED use by students in higher education – which would make a significant contribution to understandings of higher education student CED use and indeed, drug use generally. To achieve this aim, the research sought to address the following objectives:

1. Interpret how the term enhancement is understood by higher education student CED users.
2. Critically analyse the narratives of higher education student CED users in terms of how they construct meaning around motivations for use, the benefits, and costs, etc.
3. Ascertain higher education students' ethical positions/perspectives around CEDs and whether these perspectives demonstrate an internalisation of the key neoliberal aspects of competition and the entrepreneurial subject position.
4. Understand the terms in which higher education students frame their experiences with CEDs.

To meet these objectives and achieve the overall aim, the research critically analysed the narratives of CED users regarding self-perception, ethics, and motivations for use. Specifically, to understand the extent to which participants support or internalise neoliberal ideology, and the key characteristics, competition, and entrepreneurialism and how or if, they challenge or reject it. Hence, the research analyses the ideologies, knowledges and values that are utilised within the narratives of student CED users. Therefore, the following research questions were formulated to achieve the objectives and thus, overall aim of the research:

1. In what ways do higher education students construct meanings around their use of CEDs?
2. Is neoliberal ideology embedded within the discourses of higher education student participants who are explaining their use of CEDs?
3. Do higher education students legitimise their use of CEDs, via the discourse of (neoliberal) competition?

4. Do higher education students frame their use of CEDs in terms of functionality, as a response to the entrepreneurial subject position, and hence, as a form of self-investment (human capital)?

Thus, the methodology chapter presents the philosophical foundations and epistemological framework of the study, emphasising a qualitative approach directed by a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010). The chapter also discusses the two qualitative methods chosen for data collection: Netnography (Kozinets, 2015) and semi-structured interviews. It outlines the strategies for collecting and analysing online data, recruiting interview participants, and the schedule developed for gathering and analysing interview data. Additionally, the chapter addresses the ethical considerations associated with each method and discusses the limitations of the respective approaches and thus, the ways in which they are complementary methods.

Chapter Six forms the first of the two results chapters. Directed by a dialectical relational approach to critical discourse studies, it identifies the emerging neoliberal themes found in the discursive repertoires of student participants, in both the netnography and face-to-face interviews, focusing on their meanings, motivations, and justifications for using drugs to enhance cognitive performance in academic environments. The chapter provides an in-depth examination of how students recontextualise a variety of drugs and substances as CEDs, rooted in notions of functionality and perceived benefits and the ways in which neoliberal governmentality is instrumental to this process. Thus, the results presented in this chapter demonstrate the limitations of prevailing medical and legal theoretical frameworks, along with established drug binaries - for instance, recreational versus problematic; legal versus illegal - in understanding the current trend in CED use amongst students (Mann, 2022a).

Chapter Seven constitutes the second part of the results chapters and directed by a dialectical relational approach to critical discourse studies, will explore and elaborate on the key themes presented in the previous chapter, emphasising the intricate and nuanced nature of contemporary student CED use within the neoliberal context. Central to the analysis in this chapter are the dialectical tensions that highlight the critical interactions between discourses and the ways in which these tensions, contribute to CED use as a manifest functional response (Mann, 2022a) and to the normalisation of CEDs amongst student users.

In addition, the chapter examines the ethical considerations surrounding student drug use for cognitive enhancement, particularly whether students perceive it as a form of cheating that undermines (neoliberal) notions of fairness in competition. Here, by emphasising the dialectical tension between the discourses of structure and agency, the chapter illustrates how students navigate a competitive academic environment that both constrains and facilitates their choices. Hence, this further serves to illustrate that contemporary student CED use reflects a functional response by entrepreneurial students, wrought through the dialectical relations between discourses, within the prevailing neoliberal context.

Chapter Eight presents the discussion and conclusion, firstly setting out the methodological contribution to knowledge of the research. Secondly, it sets out and discusses the theoretical contribution to knowledge provided by a Functional Response Framework (Mann, 2022a), developed from the research findings and how this framework offers a valuable, innovative approach for conceptualising CED use amongst contemporary higher education students. Here, the chapter also discusses the ways in which the framework differs from rational actor models, such as Rational Choice Theory and the ways in which it can aid in expanding on drug normalisation theory (Measham et al., 1994) and in addition, the concept of 'drug, set and setting' (Zinberg, 1984). Thirdly, this chapter discusses the implications of the research and a Functional Response Framework (Mann, 2022a) for CEDs policy and practice and the contribution that they can make to understandings of drug use more broadly and indeed, associated wider drug policy and practice. Finally, the chapter sets out the limitations of the framework and the research, and based on these limitations, puts forward recommendations for future research.

2. Literature Review: Part One

Introduction

This literature review will provide an overview firstly, of the CEDs literature and secondly, literature on neoliberalism and the ways in which neoliberal ideology can hypothetically be linked with the contemporary trend in higher education student CED use. It was decided that an overview of the literature would be beneficial, as this approach can afford a broad, comprehensive synopsis (Grant & Booth, 2009) of CEDs literature, which is often varied and lacking in consistency (which will be discussed in this chapter). Moreover, a broad comprehensive synopsis is advantageous given the wide-ranging associated drug use literature and further, the literature on neoliberalism, which is vast. Accordingly, the following literature review will be separated into two chapters.

This initial literature review chapter will begin by discussing, in Section 2.1, common CEDs terminology and the different terms utilised in research and literature. Section 2.2 will then illustrate and discuss the ostensible lack of clarity and consensus around formal meanings and definitions of CEDs, before detailing further methodological issues in CEDs research and that the combination of these has resulted in manifest problems. Section 2.3 will therefore discuss these manifest problems; specifically, the often-wide-ranging prevalence estimates in the literature, particularly amongst student groups and that currently, there remains an absence of judicious, effective and workable legislation and policy around (student) CED use (Ram et al, 2020). Section 2.4 will thus put forward a potential solution to the lack of formal clarity and consensus concerning meanings and definitions around CEDs, which might be a useful consideration in terms of CEDs research moving forward.

Section 2.5 discusses the limited theoretical insight concerning student CED use and the ways in which dominant bio-medical, legal drug use perspectives and associated drug binaries, are somewhat inadequate for conceptualising contemporary student CED use. The notions of instrumentalised and functional drug use will therefore be subsequently detailed and discussed in Section 2.6, demonstrated as being increasingly useful for understanding student CED use. However, the chapter will then illustrate that there remains a theoretical gap in the

literature; that the contextual significance of neoliberalism to contemporary student CED use, has been principally, unheeded. Therefore, by drawing on the concept of, drug, set and setting (Zinberg, 1984), in Section 2.7 the hypothetical importance of neoliberalism to the contemporary trend in student CED use will be briefly outlined, to set up a comprehensive discussion around this in Chapter Three.

2.1. Terminology

As discussed in the previous chapter, CEDs are associated with the potential for ‘improving’ or ‘enhancing’ a person’s cognitive abilities, largely to foster increasingly effective workplace performance (Coveney et al., 2019: 320). The literature denotes numerous designations to refer to drugs targeted towards enhancing cognition, including cognitive enhancing drugs (CED), pharmacological neuroenhancers (or pharmacological cognitive enhancers), study drugs, smart drugs, and nootropics (Cakic, 2009; Cleveland, 2016; Vargo & Petróczi, 2016; Chatwin, et al., 2018).

Increasingly formal terms such as CEDs, pharmacological neuroenhancers, pharmacological cognitive enhancers, etc, are most commonly used in the academic / scientific sphere (E.g., see Maier et al, 2018; Sharif et al, 2021). In addition, Singh et al, (2014) state that the term pharmacological neuroenhancers (or pharmacological cognitive enhancers) generally refers to the pharmaceutical drugs methylphenidate (Ritalin™), dextroamphetamine salts (Adderall™) - both of which are officially prescribed as treatments for ADHD, - and modafinil (E.g., Provigil™) - officially prescribed to treat sleep disorders, including narcolepsy and shift work sleep disorder (Schleim, 2020; Mann, 2021). Although also appearing in academic literature are the terms smart drugs and study drugs, which are colloquial terms more frequently used in popular enhancement discourse and amongst users (Petersen, 2018).

Regarding nootropics, according to the original definition, a nootropic must meet certain criteria (Mann, 2022a). Coined by Giurage (1973), a nootropic substance should, enhance learning and memory, be non-stimulant or sedative, promote interhemispheric transfer, augment cerebral resistance, reinforce subcortical processes and cause no harm, or negative side effects (Mann, 2022a). Consequently, the drugs popularised and often discussed as CEDs in much literature, the pharmaceutical stimulants, methylphenidate and dextroamphetamine salts, would not meet the criteria to be classed as nootropic. As stated, methylphenidate and

dextroamphetamine salts are both classified as stimulants and in addition, have the latency for negative side effects; for instance, sleep disruption and the potential for tolerance and thus, dependency (Lakhan & Kirchgessner, 2012).

Conversely, modafinil might be representative of a nootropic; firstly, although considered a mild stimulant, disparate to methylphenidate and dextroamphetamine salts, modafinil has reportedly, minimal negative side effects (Teodrine et al., 2020). Modafinil for example, does not appear to significantly disrupt normal sleep, produce tolerance and therefore, has little to no dependency potential (Lyons & French, 1991; Teodorini et al., 2020). Secondly, some studies indicate that modafinil potentially has neuroprotective qualities. For instance, a study in the field of behavioural pharmacology demonstrates that modafinil has the potential to be an effective treatment for the degenerative brain illness Parkinson's disease (Van Vliet, et al, 2006). Therefore, given the limited number of drugs and substances captured by the term pharmacological neuroenhancer (or pharmacological cognitive enhancer), that a nootropic represents those substances that meet specific criteria, and that the terms smart drugs and study drugs are popular colloquial terms, the term CEDs would appear beneficial, to encapsulate a significantly broader range of substances.

Certainly, there are a wide variety of pharmaceuticals and other natural and synthetic substances, that are purportedly marketed and used as CEDs (Sharif et al, 2021; Mann, 2022a). These include pharmaceuticals such as beta-blockers or benzodiazepines (Mann, 2022a; Askew & Williams, 2021); natural vitamin and mineral supplements, herbal remedies, and increasingly 'novel' synthetic drugs such as, racetams, phenibut and noopept (Mann, 2022a). The growing contemporary trend in microdosing more 'traditional', often illicit compounds, for instance, psilocybin ('magic mushrooms'), might similarly be framed around CED use (Liokaftos, 2021). Indeed, Schifano et al (2019) identify 142 inimitable CEDs which are subsequently classified into sub-groups: prescribed drugs, plants/herbs/products, psychostimulants, image-and performance-enhancing drugs (IPEDs), GABAergic drugs, phenethylamines, cannabimimetic, tryptamine derivatives, piperazine derivatives, and miscellaneous (Sharif et al, 2021). It should be noted that, the regulatory landscape varies across different countries whereby, some substances may be available over the counter or

via the internet, as dietary supplements¹, while others may require a prescription² and others, are prohibited.³

Although the term CEDs might therefore encapsulate a broader range of substances, the literature evidently remains somewhat devoid of formal, standardised terminology (Arria et al, 2008; Coveney & Bjørnness, 2019). As a result, at the time of writing there remains an absence of formal clarity and consensus around concepts and meanings of cognitive enhancement and thus, what constitutes and defines a drug or substance as a CED; therefore, theoretical bias (Niemeyer et al, 2022) will present significant issues (Arria et al, 2008; Coveney & Bjørnness, 2019). This will be discussed in the following section.

2.2. Cognitive Enhancement and CEDs: Issues with Formal Definitions and Meanings

The lack of formal, standardised terminology and subsequent clarity and consensus in the literature around meanings of cognitive enhancement resulting in confusion around what defines a drug as a CED poses significant issues (Arria et al., 2008; Coveney & Bjørnness, 2019). For example, inconsistencies in the data, born out of methodological discrepancies in the research (Arria & Wish, 2006; Arria et al., 2008; Mann, 2022a), will be a factor in why there is yet to be practical, judicious, effective legislation and policy developed around CED use (Ram et al., 2020). As discussed in the previous section, one of the methodological issues is that some studies tend to narrowly focus on and emphasise the nonmedical use of prescription stimulants as CEDs, such as methylphenidate and modafinil; whilst other studies broaden the emphasis and include a wider variety of drugs and substances that produce greater variation in terms of cognitive effects (Schelle et al., 2015; Coveney et al., 2019).

Similar to other phenomena, the topic of CEDs transcends individual academic disciplines; thus, theoretical concepts, meanings and definitions will be rooted in the paradigmatic, discursive particulars of a specific discipline (Benelhadj, 2019), which is a source of theoretical bias (Niemeyer et al., 2022). Therefore, when it comes to CEDs literature and research, studies

¹ These would be natural vitamin, mineral supplements and herbal remedies, and in some countries, those 'novel' synthetic drugs such as, racetams, phenibut and noopept.

² For example, methylphenidate, dextroamphetamine salts, modafinil, beta-blockers, benzodiazepines.

³ In the UK psilocybin (magic mushrooms) remain prohibited, whilst in other countries, they are less tightly regulated.

include and rely on varying, discipline specific theoretical concepts, meanings and definitions (Coveney & Bjørnness, 2019). For example, the biological sciences are those that have tended to consider the meaning of cognitive enhancement in a quantitative fashion, according to a narrow definition that centres on executive cognitive functions – working memory, attention control, flexible thinking, etc (E.g., see Greely et al., 2008) and hence ultimately, cognitive stimulation. Therefore, disciplines such as Neuroscience and Psychiatry, for instance, have generally focused on and defined an attenuated selection of drugs and substances as CEDs; chiefly, methylphenidate and modafinil (E.g., see Sahakian et al., 2015).

Whilst the social sciences, by focusing on increasingly diverse qualitative aspects beyond individual biology, such as user context, motivations for use, user constructed meanings, etc, have tended to widen out the meaning of cognitive enhancement beyond executive cognitive functions and stimulation, to include for example, increasingly relaxed cognitive states (E.g., see Askew & Williams, 2021). As such, within the social sciences, scholars are generally not so exclusive in terms of the drugs and substances that they focus on in CEDs literature and research. For example, Coveney et al. (2019: 320) discuss that the, “[...] term ‘cognition enhancing drug’ can refer to a wide range of substances, from prescription medications to caffeine to illegal drugs.”

Coveney and Bjørnness (2019) also make an important point that research and literature out of North America - the focus of a significant proportion of CEDs research - tends to narrowly emphasise the non-medical use of prescription stimulants. Whereas the increasingly limited volume of literature and research from Europe, for example, often includes a broader range of drugs and substances used as CEDs. For instance, the Finnish CEDs scholar Aleksi Hupli defines cognitive enhancement as the use of a wide variety of substances - such as pharmaceuticals, illicit drugs, and alcohol - to improve cognition, social behaviour, or mood in work-related contexts, including academic environments (Hupli, 2020). This suggests therefore, that there are culturally specific differences, particularly between North America and Europe, in the formal concepts, meanings, and definitions surrounding CEDs.

Moreover, a further significant weakness and issue in CEDs literature and research for Lucke et al. (2011), concerns research focusing on the use of ADHD medications as CEDs by university students. Surveys within such studies seldom ask students about their

enhancement use of such medications; rather, they enquire about ‘non-medical’ use, a broader question which could also imply recreational use of such medications, or as an alternative to illicit ‘party drugs’, in order to stay awake (Lucke et al., 2011). Furthermore, non-medical use of pharmaceutical stimulant medications could be a form of self-medication, to treat self-diagnosed symptoms of ADHD, for example (Peterkin et al., 2010; Upadhyaya et al., 2010; Lucke et al., 2011). As such, these uses are distinct from the more specific purpose of using a drug whilst in the context of study, for cognitive enhancement (Lucke et al., 2011).

In summary, rather than a clearly defined, established standardised consensus, concepts around the meaning of cognitive enhancement and the subsequent definition of a CED in formal literature and research, is largely contingent upon culturally specific meanings and discipline specific interpretations (Coveney & Bjønness, 2019). Thus ultimately, concepts, meanings and definitions in CEDs research design are theoretically biased and thus, will reflect the perspective of and be determined by the discretion of the researcher, who is embedded within a specific culture and informed by their particular discipline (Mohamed, 2014).

There are also further methodological issues in CEDs research that are born out of a lack of clarity and consensus around terminology, meanings and definitions. Hupli et al. (2016) make the important point that in terms of CEDs research generally, particularly the large volume focusing on students, most surveys vary in sample, sampling size, and methods. In addition, Smith and Farrah (2011) point out that there are also often significant disparities in demographics – some studies concentrate on just one educational institution, or a single department / course within an institution, whilst others are large scale institutional or national surveys.

Theoretical bias and subsequent methodological discrepancies will clearly present manifest problems when endeavouring to establish observable, quantitative facts around CED use (Schelle et al., 2015), which are crucial for assessing potential risks and harms, and for informing practical, judicious, effective legislation and policy⁴ (Ragan et al., 2021; Mann, 2025). For example, quantitative facts such as, comparative accuracy around prevalence (Schelle et al., 2015), both in terms of the general population and importantly here, student

⁴ At the time of writing practical, judicious, effective legislation and policy is yet to be developed around CEDs (Ram et al, 2020).

cohorts. The following section will therefore detail and discuss a range of studies, local and international, to illustrate the challenges in establishing comparative accuracy in terms of CED use prevalence, specifically in relation to higher education student CED use.

2.3. Prevalence

Although much literature suggests that CED use is an increasing drug trend, Faber (2016) remarks that reliable prevalence data on CEDs is difficult to obtain. Certainly, Nicholson and Wilson (2017) suggest that prevalence, particularly amongst the general population, remains largely unknown and inconclusive. As Vagwala et al. (2017) remark in reference to the UK, some studies estimate high levels of use, whilst others report ongoing usage to be no more than 2%. There are, however, some studies that have endeavoured to accurately depict prevalence of contemporary CED use amongst the general population. In 2008, an informal survey of 1400 readers from 60 countries of the scientific journal 'Nature', asked about the use of three specific pharmaceuticals used as CEDs: methylphenidate, modafinil, and beta-blockers (Maher, 2008). With an overall prevalence of 20%, methylphenidate was the most widely used (62%), then modafinil (44%), followed by beta-blockers (15%) (Maher, 2008).

In a more recent study Maier et al. (2018) undertook a cross-sectional study of fifteen countries, comparing the 2015 and 2017 Global Drug Surveys (GDS). The study focused on drugs used for the purpose of cognitive enhancement, rather than a limited range of specific drugs, such as pharmaceutical stimulants (Maier et al., 2018). The authors concluded that drug use for the purpose of cognitive enhancement is increasing amongst the global, general population (Maier et al., 2018). The authors did however acknowledge several limitations to drawing conclusions around CEDs prevalence from the GDS. Crucially, concerning, "[...] the self-selection of GDS survey participants and the use of self-report data. Since the sample is self-selected and the substance use for [cognitive enhancement] consists of self-report data, the actual extent [...] in the participating countries is not accurately known. The sample should not be considered representative of any countries' general population." (Maier et al., 2018: 111).

Importantly here however, Nicholson and Wilson (2017) suggest that more might be known about prevalence amongst student groups, as they are the most targeted population in terms of CEDs research (Sharp, 2016), with Sahakian (2016) estimating that 10 – 15% of the

worldwide student population use CEDs; though this could be an underestimation (Sharif et al., 2021). Although there has been a higher volume of studies focusing on student groups, these reveal similar disparities as prevalence studies that focus on the general population; some demonstrate widespread use, whilst others the opposite. It should be noted that, a large proportion of the data on student CED use has come out of the US where much of the research has tended to be focused (Mann, 2021; Mann, 2022a), with a limited quantity out of the UK and Europe, whilst countries in the global south remain significantly under-represented (Sharif, 2022).

In the US, the disparities in student CED prevalence in the literature are typified. Nicholson (2017) states that broadly speaking, studies would indicate prevalence to be 11% - 25% of US student populations. Whilst a systematic review of 22 studies into the use of pharmaceutical stimulants for cognitive enhancement by US students, published in the journal *Experimental and Clinical Psychopharmacology*, found that prevalence is anywhere between 5% and 35% of US student populations (Weyandt et al., 2013). For example, an online study in 2008, reaching more than two thousand college student respondents, conducted predominantly by researchers in health and behaviour, reported a 5.5% prevalence concerning the non-medical use of methylphenidate by students (DuPont et al., 2008). Whereas cross-sectional research in 2013, focusing on the use of prescription stimulants for academic performance amongst US medical students, reported a prevalence of 15% during medical school and a lifetime prevalence of 20%, in a sample of 144 participants (Webb et al., 2013). Surpassing the prevalence range of between 5% and 35% documented by Weyandt et al. (2013), a 2009 study investigating the nonmedical use of ADHD stimulants amongst 307 fraternity members at a university in the US, found usage to be 55% of the sample, with the majority reporting academic motives for use (De Santis et al., 2009).

In the UK where prevalence data remains relatively sparse (Singh et al., 2014), a 2009 informal study by Cambridge University's student magazine, 'Varsity', reported that 10% of Cambridge University students admitted to taking medicines without prescription, with the intention of enhancing cognition, to help with their work (Lennard, 2009). In 2017, informal research conducted by Oxford University media and news outlet, 'The Tab', found of 11,000 students surveyed, 35% had used 'study drugs' with modafinil being the most popular (Jenkin, 2017). The 'Tab' study is also one of only a limited number to compare institutions and departments,

reporting that prevalence varies across these demographics (Jenkin, 2017). For instance, 'The Tab' reports that CED use is increasingly prevalent at 'elite' universities, such as Oxford and Cambridge.

Moreover, in terms of departments / courses within institutions, the study suggests that arts students generally use less CEDs than those students on STEM courses, with Economics students being the largest group of users (42%), then Engineering and Veterinary Science students (40%), followed by Business (39%) and Education students (19%) (Jenkin, 2017). Importantly however, notice the difference in terminology between the 'Varcity' study and the 'Tab' study: 'taking medicines without a prescription to enhance cognition, to help with work', in the 'Varcity' study, and 'study drugs' in the 'The Tab' - where interestingly, a small number - eight of the respondents - reported using cocaine as a CED (Jenkin, 2017).

In terms of increasingly formal UK studies, research conducted in 2014 found that 20.4 % of a UK and Irish study group had considered using modafinil and Adderall™, whilst 9.4% had used these drugs at least once (Singh et al., 2014). The lead researcher is based in health and medicine within the social sciences and for this study, the term pharmacological cognitive enhancer was employed. Although the authors acknowledge that this term generally refers to methylphenidate, dextroamphetamine salts (Adderall™) and modafinil, they not only included these drugs, but 24 others, including several illicit drugs, such as heroin and LSD, and also a fake drug, 'Revelin'. The authors state however that, "For the purposes of this study we considered the following drugs to be cognition enhancers: methylphenidate, modafinil, Adderall, donepezil, piracetam, and atomoxetine." (Singh et al., 2014: 2).

More recently, a formal mixed methods study (McDermott et al., 2021) which included an online survey of 506 respondents registered at 54 UK universities, directed by researchers in the health sciences, found that 19.2% of respondents had used a CED during periods of study. In this research, the term CEDs was utilised and although the authors acknowledge that pharmacological cognitive enhancement refers to not only pharmaceuticals, but also illicit drugs and drugs such as alcohol and tobacco, the study nevertheless focused narrowly on the use of modafinil, armodafinil⁵, methylphenidate (Ritalin™) and dextroamphetamine salts

⁵ Armodafinil is the R-isomer and longer-lasting than modafinil, which is the S-isomer (Darwish et al., 2009).

(Adderall™) (McDermott et al., 2021). As such, CEDs were predefined for participants undertaking the survey as follows: “Cognitive enhancers are a range of substances that were originally developed with the aim of supporting cognitive function, and include, but are not limited to: Modafinil, designed to combat narcolepsy, and Ritalin™ (methylphenidate) and Adderall™ (dextroamphetamine) intended as a treatment for attention deficit hyperactivity disorder (ADHD)” (McDermott et al., 2021: 273).

In Europe more widely, overall prevalence of CED use amongst European university students is estimated at being 1% - 16% (Champagne et al, 2019); however, Esposito et al. (2021) report that prevalence data remains largely unclear. That being said, studies targeted at student populations within individual countries might provide an indication. For example, in Switzerland, biomedical ethics researchers exploring ‘neuroenhancement’ amongst Swiss students, found that 4.7% of 1765 student survey respondents at the University of Zurich had used Ritalin™ (methylphenidate), Adderall™ (dextroamphetamine), or modafinil as cognitive enhancers for study purposes, with Ritalin™ being the most popular (Ott & Biller-Andorno, 2014). Whilst a German study exploring, “Non-Medical Use of Prescription Stimulants and Illicit Use of Stimulants for Cognitive Enhancement in Pupils and Students” (Franke et al., 2011: 60), conducted principally by researchers in Psychiatry and Psychotherapy, found that, out of a sample of 512 university students⁶ across three departments (Medicine, Pharmacy, Economics), lifetime prevalence for the pharmaceutical stimulants, methylphenidate and amphetamines, used as CEDs, stood at 0.78% (Franke et al, 2011). Whereas lifetime use of illicit stimulants as CEDs - amphetamines, cocaine, ecstasy - was 2.93% (Franke et al., 2011).

Although as stated, the global south remains generally under-represented in terms of CEDs research, there are some extant studies that report on prevalence of CED use amongst university students. For example, a study conducted by medical scientists at the University of Tehran, Iran (Mousavi et al, 2019), found 17.6% of a sample of 579 medical sciences student respondents, reported using cognitive enhancers on at least one occasion. As is apparent, in this study the term ‘cognitive enhancers’ was employed and referred specifically to, methylphenidate, amphetamines, and modafinil, with the authors specifically describing

⁶ The study also explored the use of prescription and illicit stimulants, used as CEDs, amongst vocational and grammar school students (Franke et al., 2011).

cognitive enhancement as being achieved by, “[...] the use of central nervous system stimulant medications [...].” (Mousavi et al., 2019: 1).

The studies discussed above illustrate the methodological issues in CEDs research - sample, sample size, demographics, etc, and importantly, unstandardised concepts and theoretical bias (Niemeyer et al., 2022). Specifically, around terminology, concepts and meanings of cognitive enhancement and thus, what defines a drug or substance as a CED. For instance, terminology, concepts, meanings and definitions seemingly vary across disciplines and countries and although at times these variations may appear subtle, they are evidently present. Indeed, some studies tend to focus on a narrower selection of drugs and substances - pharmaceutical stimulants - whilst other studies, regularly focus on and include an increasingly diverse range. Therefore, Lucke et al. (2011) argue that consistently cited studies, generally out of the US such as those discussed above, drawn upon to estimate or demonstrate the overall prevalence of CEDs, particularly the increased use of CEDs amongst contemporary university students, do not support such claims.

Lucke et al. (2011) draw attention to Larriviere et al. (2009), who cite five articles to uphold their claim that pharmaceutical medications to treat ADHD are being increasingly sought and used by healthy individuals including students, for cognitive enhancement, to augment executive functions and memory. Rather than quantitative prevalence studies, two of the articles cited by Larriviere et al (2009) are neuroethical commentaries (Farah 2005; Farah et al. 2004); according to Lucke et al. (2011) however, bioethicists generally over-estimate prevalence. Another drawn on by Larriviere et al (2009) to support their claim, is the previously discussed, online survey of readers of the journal ‘Nature’ (Maher, 2008) concerning the use of methylphenidate, modafinil, and beta-blockers, as CEDs amongst the general population. Whilst a further study by McCabe et al. (2005) surveyed students about their non-medical use of prescription opioids, with no reference made to motivations associated with CED use. The remaining study (McCabe et al., 2004) cited by Larriviere et al (2009), estimating the prevalence of methylphenidate use and focused on use amongst high school, rather than university students and there was again an absence of data concerning motivations for use (E.g., recreational, or for enhancement purposes). Lucke et al. (2011) indeed maintain, that there is generally, a need for improved knowledge around students’

motivations for use of such pharmaceuticals, before conclusions are drawn as to whether the use is categorically, for the purpose of cognitive enhancement.

Although focusing specifically on the use of stimulants as CEDs by students, Lucke et al. (2011) thus put forward the notion of, 'a neuroenhancement bubble'. Although acknowledging a trend, Lucke et al. (2011) argue however, that the regularly reported widespread use of CEDs amongst contemporary student cohorts is due to a high occurrence of false-positive findings and is thus often, largely overstated. It is merely a "recent manifestation of a common cycle of enthusiasm and disillusionment with the enhancement use of drugs with stimulant effects" (Lucke et al., 2011: 41). This a potential consequence of what Hupli (2020) observes as current media sensationalism and thus, an increased scholarly interest in the contemporary CEDs phenomenon. Certainly, Schleim (2020) makes the point that rather than being principally novel, there is significant evidence that the phenomenon of CED use, particularly in academic settings, has existed at least since the 1930s.

From this perspective, the reported extent of CED use could in a sense also reflect at least in part, the a-priori exuberance, or bias of the researcher for the popularised contemporary CEDs phenomenon amongst higher education students. This exuberance or bias is not necessarily problematic when endeavouring to exclusively demonstrate in the first instance, the prevalence of different, specific drugs that might be used by students. What is problematic, as Lucke et al. (2011) allude to, is that the prevalence data that emerges from diverse studies is frequently collated by others and due to researcher bias, misrepresented and generalised to demonstrate CED use. For instance, considerations concerning different concepts and meanings around CEDs, that specific drugs are often predefined as CEDs, or that motivations for use might not have been established in diverse research, are often overlooked by other scholars keen to demonstrate an increased trend. Consequently, a skewed or inaccurate overall picture of prevalence will thus emerge, observable in the regularly inconsistent, wide-ranging prevalence reports, or potential overestimates of higher education student CED use in the literature. Hupli et al. (2016) subsequently contend that interpreting data on prevalence requires absolute caution.

The existence of researcher and theoretical bias born out of unstandardised notions and concepts is not an issue unique to CEDs research but is a wider issue in research more broadly

and is a key factor in the reported high incidence of false-positive findings in a large proportion of scientific studies (Niemeyer et al., 2022). Arria et al. (2008) therefore, stress the importance of clarity and, the necessity to arrive at a standardised consensus in terms of terminology and formal conceptual understandings around cognitive enhancement and ensuing definitions of CEDs. This in part, because of the pressing need for comparability and relative accuracy in terms of depicting prevalence and indeed, to assess potential risks and harms, which as stated previously, is crucial to inform judicious and effective, legislation and policy moving forward (Ragan et al., 2013).

2.4. Definitions and Meanings: A Standardised Solution

Hope et al. (2021) argue that in a sense, there are no ‘enhancement’ drugs, as enhancement is a meaning designated to a drug, contingent upon anticipated effects, rather than being an objective characteristic of a drug or substance. Askew and Williams (2021) likewise discuss that ultimately, all drug use could be framed around enhancement, according to user constructed meanings associated with expectations concerning the functionality of a given drug or substance. From this perspective, a CED is neither a specific drug or group of drugs (E.g., stimulants), nor therefore, demarcated by the chemical composition of a substance or drug. Rather, a CED is constituted in discourse, according to the specific situational context in which a drug or substance is used (E.g., workplace or academic settings), the motivations for use, the broad range of desired effects (E.g., reduced stress, increased wakefulness, or enhanced creativity) and outcomes (tangible gains), and significantly therefore, the meanings ascribed by the user (Askew & Williams, 2021; Mann, 2022a). Accordingly, Coveney et al. (2019) also argue that what it means to be cognitively enhanced is in a sense, distinctly subjective and contingent upon the attributed meanings of the user.

For some, to be cognitively enhanced might mean cognitive stimulation through the use of methylphenidate, modafinil, or caffeine, which might enable a student user for example, to be increasingly productive - to study harder and for longer periods (Mann, 2022a). It could mean increased wakefulness and the potential for improved short-term memory via the use of modafinil (Kumar & Maqbool, 2020). Allowing the student user maybe, to be increasingly productive – to study for longer periods with increased focus - and further, to more easily retain information, at least in the short-term. Although, Vrecko (2013) argues that when

many users describe the pronounced effects of stimulants, such as methylphenidate, modafinil, or caffeine, they are actually describing emotional - improved mood, motivation and energy - rather than cognitive effects.

That being said, if a person describes improvements in their emotional state, then they will surely perceive and describe an augmented cognitive state, as the two states are in no way mutually exclusive (Chai et al., 2017). Indeed, a person's emotional state will afford a significant influence over their cognitive function and processes – their perception and memory; attention and learning; reasoning and problem solving (Chai et al., 2017). Cognitive enhancement for some users, therefore, might also mean anxiolytic effects, wrought perhaps through the use of beta-blockers or benzodiazepines, permitting the student user to function more effectively during exams, for instance (Askew & Williams, 2021; Mann, 2022a). Or conceivably for some, cognitive enhancement might mean augmented creativity via microdosing psilocybin, or other (illicit) drugs (Mason et al, 2021) which for a student user, enables them to be increasingly creative when in the process of essay writing perhaps.

The notion that cognitive enhancement is largely subjective and dependent upon desired effects, is perhaps illustrated firstly, by Napoletano et al. (2020), who used NPSfinder web crawler to analyse online 'psychonaut'⁷ forums to gain insight into the online landscape concerning drugs and substances used as CEDs. Napoletano et al. (2020) identified 142 unique CEDs and categorised these into 10 groups, encompassing plants/herbs/products (29%), prescribed medications (17%), image and performance enhancing drugs (IPEDs) (15%), psychostimulants (15%), miscellaneous substances (8%), Phenethylamines (6%), GABAergic drugs (5%), cannabimimetic compounds (4%), tryptamine derivatives (0.5%), and piperazine derivatives (0.5%). In addition, a total of 105 distinct chemical substances were individually identified (Napoletano et al., 2020). Secondly, the data table below, taken from the Singh et al. (2014: 3) study discussed in Section 2.3, might provide further, deeper insight around notions of cognitive enhancement and user specific meanings. Each of the drugs and

⁷ A psychonaut is an individual who explores altered states of consciousness, often through various techniques such as meditation, sensory deprivation, or the use of psychoactive substances and also is sometimes associated with religion or spirituality. The term is derived from the Greek words "psyche," meaning mind or soul, and "naut," meaning sailor or navigator (Monteith, 2016).

substances listed, were identified as CEDs, by at least a small percentage of participants.

Substance	% of respondents identifying it as a smart drug	Substance	% of respondents identifying it as a smart drug
1. caffeine pills	42.1%	15. LSD	6.2%
2. methylphenidate	41.5%	16. MDMA	5.7%
3. energy drinks	33.9%	17. DMT	4.3%
4. vitamin supplements	29.2%	18. magic mushrooms	4.3%
5. modafinil	25.9%	19. sleeping pills	4.2%
6. Adderall	25.3%	20. Relevin	3.9%
7. speed	22.4%	21. crystal meth	3.8%
8. piracetam	13.1%	22. mephedrone	3.3%
9. ephedrine	9.2%	23. alcohol	2.6%
10. marijuana	9.3%	24. pain killers	2.6%
11. donepezil	8.9%	25. ketamine	2.5%
12. tobacco	8.3%	26. tranquilizers	22.2%
13. cocaine	7.8%	27. heroin	1.5%
14. atomoxetine	6.8%		

Interestingly, notice that a relatively large percentage (22.2%) of participants identified tranquilizers as CEDs. This ostensibly again validates the notion that cognitive enhancement does not necessarily exclusively mean cognitive stimulation for a lot of users, given that tranquilizers are anxiolytic, and therefore, produce calmative effects. That's not to say that some drugs or substances are more popular as CEDs, than others, as is evident in the table above and indeed demonstrated by wider research. Sharif et al. (2021), via a systematic literature review of 48 CEDs related articles, which focused on a variety of drugs and substances (dextroamphetamine salts, methylphenidate, modafinil and piracetam, caffeine, cobalamin (vitamin B12), guarana, pyridoxine (vitamin B6) and vinpocetine), found that the most popular drugs used as CEDs were indeed, methylphenidate, modafinil, dextroamphetamine salts and caffeine (Sharif et al, 2021). Nevertheless, as per the data contained in the table above from Singh et al. (2014: 3), notions of cognitive enhancement and the drugs conceived as CEDs, are as stated previously, ostensibly contingent upon anticipated effects and thus, user constructed meanings rather than the objective properties of a drug or substance (Hope et al., 2021), or that of formality, via a 'top down' theoretically biased imposition.

Therefore, as with the Maier et al. (2018) study discussed in Section 2.3, when undertaking research into (student) CED use, it would be beneficial theoretically and methodologically, to focus on and form a consensus around utilising something akin to the following terminology – 'drug use for cognitive enhancement'. Rather than, focusing on a specific drug or group of

drugs predefined as CEDs relating to the properties of a drug or indeed, the a-priori conceptions of the researcher(s). Similarly, rather than substance-based, Wolff and Brand (2013) advocate and propose what they term a behavioural approach. This approach allows for increased inclusivity in terms of the drugs or substances used as CEDs and mitigates issues of theoretical bias around concepts, meanings and definitions, which are understood as being, user specific (Coveney et al., 2019; Askew & Williams, 2021).

Moreover, such an approach addresses the concerns raised by Lucke et al. (2011), that survey designs in existing studies have rarely asked university students about their enhancement use of different drugs or substances. Doing so, will therefore expedite the establishment of certain generalisable facts around CED use; for example, via those quantitative studies seeking to demonstrate an increasingly accurate picture of general prevalence. Or those studies that are more methodologically qualitative, that seek to garner a greater understanding of potential risks and harms. As stated, relatively accurate general prevalence data and a greater understanding of risks and harms, are both crucial elements for the development of judicious, effective, and workable, CEDs legislation and policy moving forward (Ragan et al., 2013). That said, discipline specific, theoretical, researcher and indeed cultural bias resulting in the discussed methodological issues, and the Lucke et al. (2011) notion of a 'neuroenhancement bubble', does suggest a lack of broader theoretical insight in the area. Crucially, theoretical insight concerning drug use for the purpose of cognitive enhancement by university students (Mann, 2022a), which will be discussed in the following section.

2.5. Dominant Drug Use Perspectives and Student CED Use

Empirical research around drug use out of the dominant bio-medical sciences over the past number of decades has tended to largely overlook theoretical developments in the area, instead preferring to descriptively report on experiential findings (Pennay & Duff, 2023). Certainly, theory is consistently unheeded in contemporary empirical drugs research on the grounds that it is often seen as mystifying, rather than being a source of significant value in terms of providing analytical insight (Pennay & Duff, 2023). However, Niemeyer et al. (2022) point out that good quality theory is a fundamental aspect of scientific endeavour, that deficiencies in theoretical insight can have a significant negative impact on the validity of

research claims. Good quality theory augments the integrity of research findings, their generalisability and thereby, utility, whilst also enabling for the development of subsequent new concepts and understandings. Likewise, therefore, theoretical developments are crucial for providing renewed insight and understandings in the area of drug use, as drug trends emerge, fluctuate, and evolve over time, such as, CED use by university students.

Pennay and Duff (2023) do state however, that there has been a steady emergence of innovative theoretical developments around drug use developed from work within the social sciences and humanities, over the past few decades (E.g., Measham et al., 1994; Askew, 2016; Hogarth, 2018; Dennis, 2020; Stevens 2020; Alexsandrescu & Spicer, 2022). In reference to sociology for example, Stevens (2011) remarks that the discipline has made important contributions to the area of drugs, and the sociology of drugs continues to grow, as an international field. That said, sociological theory and insight remains largely, at the periphery in terms of dominant drug discourse (Stevens, 2011). Accordingly, in the area CEDs, whilst there is an increasing volume of research and input from other disciplines (Maier et al., 2018), such as the bio-medical sciences, substantial contribution from sociology and the wider social sciences and humanities is lacking (Chatwin et al., 2018).

Certainly, the importance of enquiry from disciplines within the social sciences and humanities in relation to CED use amongst university students, should not be understated. As discussed, it is from within the social sciences and humanities that innovative theoretical developments around drug use more broadly, have tended to recently emerge, as the ways in which drug use is perceived, understood and indeed expressed, in terms of behaviour, is socially embedded (Coveney et al., 2019). The social sciences and humanities indeed recognise, that perceptions, understandings, and behavioural expressions come in part, from an interaction with prevailing social structures and exposure to, pre-established societal expectations and representations of normative definitions around drug use (Mosher & Akins, 2007: 13). Whereas, dominant bio-medical, and indeed legal perspectives, tend to decontextualise, individualise, pathologize and/or criminalise, overlooking the theoretical role of wider social forces in drug use (Mann, 2022a). As a result, normative meanings and objective categories around drugs, drug use, and drug user, rooted in dominant bio-medical and legal perspectives have been established (Tupper, 2012) and these perspectives often neglect to consider the role of wider social forces (Mann, 2022a).

Tupper (2012), identifies and differentiates three meanings of the word 'drug' in contemporary English language: drug₁, drug₂, and drug₃. The meaning of drug₁ is equivalent to medicine and thus denotes both psychoactive and non-psychoactive drugs which hold therapeutic value, that might be subject to forms of regulation (Tupper, 2012). Drug₂ represents, "a chemical substance other than a food that alters consciousness when absorbed into the body" (Tupper, 2012: 466). Hence here, the emphasis concerns psychoactive effects, but the meaning is devoid of reference to the legal status of a drug or substance. Drug₃ on the other hand, is synonymous with consciousness altering, psychoactive drugs and substances that are subject to the strictest mechanisms of control, such as prohibition and criminalisation (Tupper, 2012).

Embedded within these meanings, there are thus three socially constructed, ontological categories of drugs: medicines, non-drugs, and drugs (Tupper, 2012). To clarify therefore, medicines are sanctioned, but perhaps regulated psychoactive and non-psychoactive substances, generally used to treat human ailments. Non-drugs are psychoactive drugs or substances not commonly thought of as drugs, such as caffeine or even alcohol, which are not tightly regulated. Whereas drugs, are those psychoactive drugs or substances deemed as inherently 'bad', having very little by way of utility and are consequently, subject to the strictest control measures; they are in a sense, the prohibited subcategory of drugs.

Tupper (2012) demonstrates that each drug category will consequently carry stereotypes and a-priori assumptions. Drugs, as opposed to non-drugs or medicines, are characterised as drugs of abuse and therefore, legislation and policy regarding drugs reflects a presumption that nonproblematic or responsible use is not viable, with the exception that they might provide partial scientific or medical utility. Nonmedical use, however, is prohibited, it is criminalised and also generally pathologized - it is the manifestation of an illness or disease, E.g., 'addiction' (Tupper, 2012). Hence, Tupper (2012), argues that drugs can be considered a politically charged bio-medical and legal discourse within which, drug binaries flourish, conveying ideological assumptions about drugs and drug users; for instance, 'good' or 'bad' drugs (Tupper, 2012), 'legal' or 'illegal', 'recreational' or 'problematic', 'addiction' or 'recovery' (Askew & Williams, 2021; Decorte, 2001; Moore et al., 2017; Pienaar et al., 2017; Mann, 2022a).

As is evident however, contemporary university student CED use does not precisely fit within these established discursive binaries, rooted in dominant bio-medical and legal perspectives (Mann, 2022a). For example, the discussed wide variety of drugs and substances used by students as CEDs appears therefore, to transcend normative notions of 'good' or 'bad' drugs, whilst at the same time blurring the 'legal' or 'illegal' binary. Indeed, some are controlled pharmaceuticals, others are legally available - vitamin, mineral or caffeine supplements for instance - whilst others are 'traditional' illicit drugs. Nor does student CED use fit the 'recreational' or 'problematic' drug use binary - student CED use is not characterised by fun, or to induce feelings of pleasure (Mann, 2022a). Neither can it be deemed problematic; as the author has documented elsewhere in the literature (Mann, 2022a; Mann, 2022b; Mann, 2025), students who use drugs or substances for the purpose of cognitive enhancement seemingly do so in a strategic, responsible, and risk averse manner (which will be illustrated and discussed further in Chapter Seven).

Moreover, the strategic, responsible, risk averse way in which students use drugs or substances as cognitive enhancers, does not fit within the 'addiction' model. As discussed above, dominant bio-medical and legal perspectives assume that individuals cannot use, particularly 'traditional' illicit drugs, without inevitably developing an addiction and becoming an 'addict', who needs to 'recover' (Tupper, 2012; Hart, 2021). Furthermore, along with not fitting within the binary notion of 'addiction or 'recovery', the discussed general CED use patterns and practices of those students who use particularly, 'traditional' illicit drugs or substances as CEDs, ostensibly disrupts the ontological reality of this binary. In what ways therefore, might student CED use be theoretically understood, given that it cannot seemingly be framed around dominant bio-medical or legal perspectives of drug use and does not fit within subsequent, established drug use binaries?

2.6. Instrumental Drug Use and Functional Drug Use

Focusing on psychoactive drugs, from alcohol to illicit drugs, Müller and Schumann (2011) point out that according to the evidence, the majority of people who use psychoactive drugs do so non-problematically; they are not classified as 'addicts', neither will they go on to develop an addiction. This therefore challenges bio-medical perspectives that, as alluded to above, posit non-problematic drug use as merely a precondition of addiction (Müller &

Schumann, 2011). Certainly, non-problematic drug use should be considered a widespread, constant and distinct behaviour; essentially, it is more the norm (Müller & Schumann, 2011). Müller and Schumann (2011) propose that the majority of individuals who use psychoactive drugs non-problematically, as a regular aspect of their lives, do so because of notions of utility concerning the specific mental states attained via the use of psychoactive effects drugs.

Therefore, Müller and Schumann (2011) comprehend that the effects of psychoactive drugs on a person's mental state can be conceived as an instrument. In that, they can aid in achieving behavioural goals which otherwise might not be achieved or might require an increasing degree of work in the absence of the drug (instrument). Müller and Schumann (2011) argue that once a drug user learns that drugs alter mental states, these altered mental states can then be instrumentalised, in the sense that they might aid in achieving desired behavioural ends. Hence, drugs can be used purposively, in that they can be a consistent means to achieve certain behavioural ends (Pickard, 2011). For example, when considering student CED use, the behavioural goal might be increased cognitive productivity (Coveney et al., 2019), and the ability to work for longer with perhaps less effort than would otherwise be possible, wrought perhaps through the mental states produced by Modafinil, or even cocaine.

The notion of drugs as instruments, also fits within broader functional theories of drug use and ideas around drug use and perceptual benefits that are currently gaining increased traction (E.g., see Boys et al, 1999; Williams & Parker, 2001; Williams, 2013; Askew, 2016; Askew & Williams, 2021; Mann, 2022a). Drug use as functional and indeed beneficial, has a rich history, particularly within the social sciences (Askew & Williams, 2021). It was Becker (1963) for instance, who was one of the first to emphasise the significance of pleasure and reward in terms of cannabis use. More recently, Williams (2013) demonstrated the instrumentality of cannabis, where users reported they consumed cannabis to help them relax, sleep, or to negate negative thoughts, whilst stimulant drugs - cocaine or amphetamines - would be used to increase confidence, energy and as an instrument to help with weight loss. Therefore, from this perspective the general motivation for an individual to use a given drug is again instrumental, rooted in the perception that the drug performs a beneficial function (Askew & Williams, 2021). Functional drug use, as with the concept of instrumentalised drug use discussed above, is thus distinguished and characterised by notions of utility.

Boys et al. (2001) make the important point however, that functional drug use and the concept of instrumentalised drug use, should not be conflated. Although in terms of both respective approaches, drugs are comprehended as being instruments (Hupli, 2023), instrumentalised drug use describes motivations for use that are correlated specifically to the physiological effects, or mental states produced by the consumption of different drugs (Boys et al., 2001). Certainly, Boys et al. (2001) remark that instrumentalised drug use appears to correspond with the exploitation of specific physiological effects of a drug and as such, overlooks use for increasingly subtle psychological or social purposes which might additionally be described by users. Moreover, therefore, the concept of instrumental drug use tends to decontextualise drug use and users, overlooking the role of wider societal, ideological forces as clarified by Müller and Schumann's (2011) 'Instrumental Use Framework,' which focuses on the individual and pharmacological variables (Hupli, 2022; Mann, 2022). Whereas functional drug use, is positioned within the current socio-historical, cultural context, as demonstrated by Aikins (2014) via an historical analysis.

Focusing specifically on functional / enhancement drug use in academia, Aikins (2014) suggests that the concept of drug use as functional, emerged circa 1990. Aikins (2014) indicates that around this time there were myriad societal shifts, which resulted in drugs and drug use being reconceived. For example, Aikins (2014) argues that within academia, 'recreational' drugs came to be reimagined and reconstituted as 'medicine'. This the result of science and technology coalescing, enabling for increasingly solid empirical and clinical examination concerning the potential positive effects and outcomes of drugs and drug use (Aikins, 2014). For instance, positive effects and outcomes in terms of improvements in behaviour, health, and well-being (Askew & Williams, 2021). The notion of functional drug use, therefore, goes further and concerns tangible psychological or social benefits, improvements and advantages that the use of a drug will support (Boys et al., 2001).

Indeed, Boys et al. (2001) stress that the term 'function' refers to and depicts the principal reason or manifold explanations for, or intended purpose of using a specific drug in terms of the palpable, attainable gains perceived by the user. For instance, in terms of student CED use, Cakic (2009) points out that for many, academia now embodies a significant sphere of competition, having the utmost bearing upon a person's future career and therefore, earning capacity. Therefore, the perceived functionality for a student using a CED, might be to

enhance their psychological and social, competitive advantage in line with their peers, whilst in the competitive academic arena; ultimately, in order to achieve tangible gains in terms of grades and academic outcomes (Mann, 2021).

This is exemplified in a qualitative study conducted by Aikins (2019), which examined whether students perceived the use of CEDs to be fair, just and beneficial. Several student participants commented that using CEDs was advantageous, articulating a belief that not using CEDs might put them at a distinct competitive disadvantage (Aikins, 2019). These student participants indeed justified their use of CEDs due to the extremely competitive environment in contemporary higher education (Aikins, 2019). Likewise, a further study by Forlini and Racine (2009) focusing on the perspectives of key stakeholders including university students, concerning notions of autonomy and coercion around using methylphenidate as a CED, also exemplifies the notion higher education is a fiercely competitive arena. As with the Aikins (2019) study discussed above, this study (Forlini & Racine, 2009) found that competition is similarly utilised as a rationale by some students as justification for using, in this instance, methylphenidate as a CED.

Moreover, the Forlini and Racine (2009) study not only demonstrates, as stated, the perceived competitiveness in contemporary higher education, but also, quite explicitly, the notion of functional drug use. The use of methylphenidate as a CED for instance, is further justified by some student participants in the study around perceptions concerning tangible benefits and gains, in terms of augmenting their chances of achieving more favourable grades (Forlini & Racine, 2009). Which further, therefore, might result in supplementary, tangible benefits and gains, such as, enhancing their future career prospects, in what is an increasingly competitive and unequal labour market in contemporary society (Forlini & Racine, 2009).

Tied in with perceptions around the fiercely competitive arena that seemingly characterises contemporary higher education, and the notion of an increasingly competitive and unequal labour market, as being rationales for justification to use CEDs by some students, also thus alludes to a perceived existential pressure to achieve and perform (Maier et al., 2013). For example, with a broad methodological focus concerning the use of psychoactive substances as a way to enhance a person's cognitive function, Wolff et al. (2014) found that students who used CEDs, self-reported a seeming relationship between the use of drugs as CEDs and strain,

i.e., an existential pressure to achieve and perform. Whilst Sattler and Wiegel (2013) via a longitudinal study, established that increased cognitive test anxiety - worrying thoughts and a negative self-narrative concerning academic failure - over time, correlates with an increase in the prevalence of nonmedical prescription drugs used as CEDs.

Furthermore, with a methodological focus on a behavioural, rather than drug or substance-based definition of cognitive enhancement, Wolff and Brand (2013) demonstrated that profuse academic demands, might explain and predict an increase in use of drugs for the purpose of cognitive enhancement, by some students. These findings for Wolff and Brand (2013), support a notion that situational circumstances are evaluated by users as being overwhelming and far beyond their resources in terms of coping with stress. Hence, Wolff and Brand (2013) hypothesise that cognitive enhancement may reflect, at least in part, some sort of wider lifestyle characteristic. Crucially therefore, Wolff and Brand (2013) stress that, the key definitional aspect of cognitive enhancing behaviour is the implicit functionality - the consumption of a drug or substance with the objective to augment cognitive performance. It is a means to an end with numerous functions; for instance, to cope with profuse academic demands and to achieve tangible gains and benefits, such as, a competitive advantage, academic outcomes, and thus, enhanced career prospects (Mann, 2021; Mann, 2022a).

Evidently, the concept of instrumentalised drug use and more importantly, functional drug use, are increasingly effective theoretical lenses through which student CED can be conceptualised, rather than, dominant bio-medical and legal perspectives and subsequent archaic drug binaries. Firstly, the acknowledgement that the majority of drug users, use drugs non-problematically and drugs are perceived as instruments, key to both the concept of instrumentalised and functional drug use, fits with the general way in which students use CEDs, as the author has documented elsewhere in the literature (Mann, 2022a; Mann, 2025) and will further be illustrated and discussed in Chapter Six. Secondly, these perspectives do not discriminate in terms of potential harms or the legal status of different drugs; as discussed previously, this is useful given the broad range of drugs and substances used by students for the purpose of cognitive enhancement (Wolff & Brand, 2013). Thirdly, functional theories in particular, are useful when considering student CED use, given the theoretical notion of perceived tangible benefits, gains and advantages that CED use might purportedly support. Fourthly, unlike dominant bio-medical and legal perspectives, functional theories specifically,

begin to situate drug use and user within the wider contextual environment (Mann, 2022a). For instance, in terms of student CED use, the fiercely competitive arena that characterises higher education and the subsequent overwhelming pressure to succeed (Wolff & Brand, 2013; Mann, 2022a), being a key driver in student CED use and the perceived tangible gains and benefits, that the cognitive effects of CEDs, ostensibly support (Mann, 2022a).

Therefore, locating student CED use within the wider contextual environment - the competitive higher education arena, for example - opens space for a broader socio-contextual, ideological analysis, which is somewhat limited in the literature (Mann, 2022a). Indeed, the hyper-competitive environment that seemingly characterises contemporary higher education, mirrors and reflects the hyper-competitive nature of society under current dominant, neoliberal, ideological arrangements (Davies, 2014; Davies, 2017). The author thus hypothesised a link between the shift to and spread of neoliberalism into higher education, over the past number of decades, and contemporary student CED use (Mann, 2022a). The concept of 'drug, set and setting' (Zinberg, 1984) is consequently important here, as this framework describes that drug use motivations and experiences are contingent upon the interaction of three key factors: the drug, the user's mindset (set), and the environment or context in which the drug is taken (setting) (Zinberg, 1984).

2.7. Drug, Set and Setting

The drug element within the drug, set and setting framework evidently refers to the substance that a person consumes to produce specific physiological and psychological effects, as different drugs have diverse chemical properties and mechanisms of action, which result in a wide variety of effects on the user (Zinberg, 1984). Of increasing importance, however, are the remaining two factors: mindset (set) and setting; these factors are suggested, according to research, as being more important than the pharmacological properties of drugs in terms of effects (Moerman, 2002; Brown, 2012; Hartogsohn, 2017). The notion of mindset (set) denotes the users mental state and expectations, before consuming a drug; encompassing their emotional state, personality, beliefs, prior experiences with the drug, and overall psychological well-being (Zinberg, 1984; Hartogsohn, 2017). Consequently, a user's mindset can significantly influence their response to and effects of a drug (Zinberg, 1984). For example, if expectations concern a desire for cognitive enhancement, the user will in a sense,

perceive effects that align with this expectation. However, these perceived effects will also be contingent upon emotional states - anxiety or a negative emotional state may result in a more challenging experience, while a positive and relaxed mindset may lead to an increasingly enjoyable one (Hartogsohn, 2017).

The concept of setting on the other hand, encompasses the physical, social, and cultural environment in which the drug is taken. This includes the physical location, the presence of other people, the atmosphere, the social context (Zinberg, 1984) and to expand on this here therefore, the ideological environment. The setting, therefore, will be crucial in terms of motivations for use of a drug and moreover, in conjunction with mindset (set), can greatly impact the perceived drug experience (Hartogsohn, 2017). For instance, put simply, using a given drug with expectations of cognitive enhancement, motivated by the pressures wrought via the competitive academic (neoliberal) context, will produce different effects and experiences, to the same drug being used for recreational purposes, in a nightclub.

Rather than experiences associated with recreational drug use, such as pleasure and sociability, Krøll (2019) discusses for example, that a proportion of qualitative research highlights students' acknowledgment of what Krøll (2019: 339) terms the, "temporal effects" of drug use for the purpose of cognitive enhancement. That some students use certain drugs to regulate and experience adaptations to their biological temporal patterns of wakefulness and sleep (Coveney et al., 2013). For example, to increase the duration that they are able to study, in terms of focus and concentration, particularly during exam periods (Hupli et al., 2016; Robitaille & Collin, 2016).

Moreover, the interaction between set and setting, will greatly influence the way in which a person uses a drug, in terms of consumption patterns and practices, which involves internalised contextual and culturally specific values and rules of conduct, associated with different forms of drug use (Zentner, 1985). Coveney et al. (2019) draw on the concept of 'social imaginaries' to understand the way in which contextual and culturally specific values and rules of conduct are shaped in relation to CED use, and by extension, therefore, are internalised by the user. Taylor (2004) defines social imaginaries as the collective set of conventions and beliefs, shared understandings, identifications or expectations that exist temporally or geographically, amongst distinct groups. Further for Steger (2014: 25), social

imaginaries are, “macro-mappings of social and political space through which we perceive, judge, and act in the world.” Therefore, Coveney et al. (2019) stress that social imaginaries establish the guiding framework through which people come to understand themselves, their activities, actions and the sense of how these are collectively legitimised. In relation to contemporary CED use, Coveney et al. (2019) thus illustrate that the ways in which potential users imagine drug effects and motivations and legitimations for use, being largely via dominant discourses rooted in bioethics or neuro-ethics (bio-medical, ethical perspectives).

Of course, contemporary bioethical or neuroethical discourses sit within and are influenced and shaped by wider discursive forces, i.e., neoliberal ideology embedded in discourse, which will thus also have a significant role in imagined drug effects, motivations for use, legitimations and indeed, consumption patterns and practices (Mann, 2022a). Coveney et al. (2019) discuss that motivations and legitimations for the use of CEDs are constructed around ways to benefit or improve workplace performance and productivity in a competitive environment. Demands for increased workplace performance and productivity, are ascendant features within neoliberal discourse (Crowley & Hodson, 2014). Imagined drug effects concerning notions of enhancement to increase workplace performance and productivity, will thus seemingly manifest the discussed strategic, responsible and risk averse CED consumption patterns and practices (Mann, 2022a). Rather than say, increasingly hedonistic consumption patterns and practices, wrought through imagined drug effects centred on pleasure and sociability, associated with recreational drug use.

Therefore, exploring the discussed hypothetical link between contemporary student CED use and neoliberalism is evidently crucial for developing theoretical understandings around student CED use and indeed, drug use more broadly. Initially, given the discussed general non-observance of such features within dominant bio-medical and legal perspectives and subsequent drug use binaries (Mann, 2022a) and the limited contextual, ideological analysis in the CEDs literature (Mann, 2022a)⁸. Certainly, Aikins (2019) alludes to the significance of neoliberal ideology in the contemporary trend in student CED use. Focusing on US students,

⁸ To note, there are previous publications associated with this research, on the topic of student CED use and neoliberalism, within the literature (see, Mann, 2021; Mann, 2022a; Mann, 2022b; Mann, 2025). However, it should be stressed that, a hypothetical relationship between student CED use and neoliberalism was identified as a gap in the literature by the author, prior to the release of those publications, when this research project was in the initial conception stages.

Aikins (2019) suggests that the contemporary student CEDs phenomenon might well be bound up with neoliberalism, particularly, the meritocratic pressure felt by students, to succeed. Furthermore, understanding the way in which neoliberalism has shaped user meanings, in line with Zinberg's (1984) notion of 'drug, set and setting', particularly in terms of drug effects, use patterns and practices, will allow for a greater examination and understanding of potential risks and harms. Thereby, aiding in the development of increasingly practical, judicious, effective and workable, CEDs legislation and policy moving forward.

2.8. Summary and Conclusion

This chapter opened with a discussion around differing CEDs terminology and the apparent lack of formal clarity and consensus in the literature around meanings and what defines a drug as a CED. This was followed by a discussion around further methodological issues concerning CEDs research and subsequent manifest problems. For example, establishing a relatively accurate picture of CEDs prevalence, particularly amongst student cohorts and the current absence of judicious, effective, workable CEDs legislation and policy (Ram et al, 2020). It was therefore discussed that the notion of what constitutes a drug or substance as a CED, is ultimately, contingent upon user constructed meanings. Thus, it is recommended that methodological issues resulting specifically from a lack of clarity and consensus around formal meanings and definitions of CEDs, could be mitigated somewhat, by focusing on user meanings and motivations - i.e., drug use for the purpose of cognitive enhancement - rather than specific drugs. At this point therefore, the following research question emerges:

- In what ways do higher education students construct meanings around their use of drugs as CEDs?

The chapter then went on to discuss that there is limited theoretical insight concerning student CED use and importantly, that student CED use does not neatly fit within dominant bio-medical, legal drug use perspectives and established drug binaries. Therefore, the following section discussed the concepts of instrumentalised and functional drug use and the ways in which these perspectives are increasingly useful for understanding student CED use. Nevertheless, there remains a theoretical gap concerning student CED use in that the role of wider ideological forces, chiefly neoliberalism, is not taken into account by Müller and

Schumann's (2011) notion of instrumentalised drug use, which tends to focus on psychological states. Furthermore, even with current functional theories for instance, the role of neoliberal ideology in student CED use, has largely been overlooked in the literature. Therefore, this research seeks to address these gaps in knowledge, by drawing on neoliberalism (embedded in discourse) to establish a theoretical framework for conceptualising the contemporary trend in CED use amongst higher education students. Hence, the following research question can be established:

- Is neoliberal ideology embedded within the discourses of higher education student participants who are explaining their use of CEDs?

The proceeding section discussing the notion of drug, set and setting (Zinberg, 1984), illustrated the importance of contextual settings to drug use and by extension therefore, the hypothetical significance concerning the role of neoliberalism to the contemporary trend in student CED use. As will be illustrated and discussed further on in this thesis, expanding the concept of 'setting' within the drug, set and setting framework, to include the wider (neoliberal) ideological milieu, represents a further significant theoretical and knowledge development. The second part of this literature review, Chapter Three, will therefore discuss neoliberalism in more detail and the ways in which the contemporary trend in student CED use can hypothetically be situated within the contextual setting of, the "neoliberal version of society" (Mann, 2022a: 8).

3. Literature Review Part Two

Introduction

This chapter, part two of the literature review, will discuss the ways in which the contemporary trend in higher education student CED use is hypothetically bound up with the shift to and spread of neoliberal ideology over the past number of decades. In order to begin conceptualising a hypothetical relationship between contemporary higher education student CED use and neoliberalism, Section 3.1 will provide a brief, but detailed synopsis of neoliberal ideology, its history and its key characteristics; chiefly, competition, individualism, entrepreneurialism and the notion of human capital. Given these key characteristics, Foucault's (1979) concept of neoliberal governmentality and the shift to a knowledge economy, principally in the west, under neoliberalism, are crucial to understanding contemporary CED use and will be set out and discussed in Section 3.2.

Neoliberal governmentality and the shift to a knowledge economy have also had a profound impact upon higher education, specifically in the UK and are significant to understanding the contemporary trend in higher education student CED use, which will be discussed in Section 3.3. Developing from this section, Section 3.4 will detail and discuss the ways in which higher education has become normalised under neoliberalism around the adoption and integration of neoliberal principles and values into the structure, policies, and practices of higher education institutions, which is important for understanding the impact this has had on students.

Continuing the theme of normalisation, Section 3.5 will discuss the concept of drug normalisation and whether CED use has become normalised amongst students due in part, to the discussed particulars of the neoliberal context. This section also includes a discussion around the associated neoliberal governmentality concepts of medicalisation and pharmacueticalisation, which several scholars, including the author, observe as being key contextual drivers of contemporary CED use, including higher education student CED use. This section will also explore wider research and literature that ostensibly demonstrate

neoliberal ideology as a feature in the discursive strategies of student CED users, in terms of motivations and legitimations for use.

Building upon the ways in which students often seemingly legitimise the use of CEDs via neoliberal ideology embedded in discourse, Section 3.6 will explore and discuss several examples of extant research and literature on the topic of student CED use and academic misconduct. Chiefly, whether students in particular, consider the use of CEDs in academia, to be a form of cheating. This will again provide useful insight in terms of motivations and legitimations for use; specifically, in terms of the hypothetical role of neoliberalism and whether students might mitigate notions of cheating, by discursively drawing on key characteristics of neoliberal ideology.

3.1. Neoliberalism

Emerging from the field of economics, neoliberalism is essentially an economic, political approach to organising society. It is the renewal and, in a sense, upgrading of classical liberal economic theory, developed and subsequently implemented in response to the 1930s economic depression, the intensification of fascism and the succeeding alleged flaws in Keynesian economics, which purportedly came to plague western societies in the mid-twentieth century (Davies, 2014, 2017; Harvey, 2007). The 1970s and '80s observed the shift to and comprehensive rolling out of neoliberalism; however, rather than merely an economically informed political approach, Dardot and Laval (2017: 1) stress that since this time, "neoliberalism has generally been interpreted both as an ideology and as an economic policy directly informed by that ideology."

Similar to classical liberal economic theory, and Adam Smith's concept of the 'invisible hand' of the market (Smith, 2008), the core proposition of neoliberal ideology encompasses recognition of the market as ontologically real; as an independent domain of human activity and a naturally materialising reality (Dardot & Laval, 2017). The key tenet of this naturalist ontology is that the market ensures society can attain equilibrium, preserve stability and achieve growth whilst at the same time defending individual liberty and thereby, maintaining a free society and promoting human well-being (Dardot & Laval, 2017; Davies, 2017). Hence, a fundamental objective of neoliberal ideology is to foster economic social mobility (Spohrer et al, 2018), in the belief that an increase in economic social mobility will lead to diminished

societal inequality and an increase in overall human well-being (Blanden, 2009). Therefore, within neoliberal society, understanding the ontological reality of human existence, can be achieved by ongoing analysis of the market economy; for example, human well-being as interpreted as a measure of Gross Domestic Product (GDP) (SgROI, 2015).

In classical and neoliberal economic theory, key to the market being the basis of a free society is competition and importantly for neoliberalism, fairness in competition at the outset (Davies, 2017; Mann, 2021). Early neoliberal thinkers such as Hayek, observed the suppression of competition as being a defining feature of totalitarianism (Hayek, 2001); this being Hayek's utmost critique concerning all forms of socialism and thus, Keynesianism (Hayek, 2001). However, whilst classical liberal theorists such as Smith recognised competition as organically emerging from unregulated markets, early neoliberals such as Hayek⁹ observed that the ultimate outcome of unregulated markets is monopoly (Mann, 2021). Competition is hence terminated, and the notion of a free society is replaced by a form of corporate totalitarianism (Hayek, 2001). Therefore, although both classical liberal economics and neoliberalism maintain that the market should be left pretty much unobstructed by the state, neoliberalism posits that protecting competition, specifically fairness in competition at the outset, is crucial; a role which is the preserve of state and global institutions. For instance, in the UK that would be regulatory organisations such as the Competition and Markets Authority, whilst globally, The World Trade Organisation (WTO).

However, competition under neoliberalism is noticeably contradictory; initial parity and fairness in competition, to result in disparity – the point of any fair and equal competition is ultimately, to produce winners and losers, which also contradicts the notion that neoliberalism can promote economic social mobility for all and result in a reduction in overall societal inequality.¹⁰ Competition therefore, encourages or even demands an increase in 'player' productivity and will motivate them to consistently develop their skill sets, as they seek to intensify their competitive advantage and odds of winning in the 'game'. Moreover,

⁹ Since the 1970s, neoliberalism has commonly been associated with the principles advocated by The Chicago School of Economics (Harvey, 2007; Davies, 2014, 2017).

¹⁰ Under neoliberalism, inequality in both income and wealth distribution experienced a swift resurgence, reversing a 60-year decline and is currently described as being, "extreme" (Heintz, 2018: 27). Certainly, Heintz (2018) points to a 2017 study by Oxfam which demonstrates that the world's eight richest individuals had a combined wealth of \$426 billion, which equals approximately the combined wealth of half of the world's poorest.

the imminent sense of threat around losing, “[...] commands competitors to interpret the rules in a purely self-interested fashion, to [...] maximise advantage over the ‘enemy’, ultimately to survive.” (Davies, 2017: 69).

For classical liberal economists such as Adam Smith, a moralist, this is problematic, as the reality and centrality of the market can only be legitimised around notions of individual virtue which are rooted in universal notions of ethics and morality (Smith, 2006). Evidently however, neoliberalism observes universal notions of ethics and morality, specifically, universal notions wrought through an appeal to the metaphysical, as being an impediment to competition, the market and thus a free society (Davies, 2017). Neoliberal ideology, consequently, seeks to overthrow universal claims to truth forged external to the economic. Political judgement under neoliberalism is thus fundamentally concentrated around economic calculation, rather than for instance, appeals to normative ethical and moral concepts (Davies, 2017).

Therefore, under neoliberalism individuals have ostensibly been disconnected from normative ethical and moral notions which have in a sense, been individualised, as exemplified by former Prime Minister Margaret Thatcher, who was instrumental to the roll out of neoliberalism in the UK, in the late 1970s and 80s, “[...] and who is society? There is no such thing! There are individual men and women and there are families, and no government can do anything [...] people look to themselves first.” (Thatcher, 1987: 29-30). Evidently therefore, neoliberal ideology places a strong emphasis on personal responsibility, when individuals are responsible for their own well-being, they will make more prudent choices; thereby, reducing the burden on social safety nets, such as state benefits (Prechet & Harms, 2007).

Accordingly, collectivist notions as expressed through state welfare provisions are rolled back, in favour of market-oriented approaches (Birch, 2015). Neoliberal ideology maintains that when individuals are given the freedom to make their own economic choices, such as starting businesses, investing, and making consumption decisions, market forces will drive efficiency, resulting in the production of goods and services that satisfy the demands of consumers and the efficient allocation of resources (Harvey, 2007). Rather than state intervention therefore, neoliberal policies such as deregulation and tax cuts, are upheld as being the ostensible

mechanisms to stimulate economic growth, having a positive impact on society by creating jobs, increasing income, and improving living standards (Jones, 2012).

With an emphasis on personal responsibility, individuals are in a sense responsibilised (Garland, 1996) as ethical and moral economic subjects and rendered exclusively responsible for the choices they make (Mann, 2021). Accordingly, individual choices are not to be obstructed as doing so, risks competition and thus liberty. Indeed, the impression that individuals should have the freedom to choose how to live their lives, is as previously discussed, understood as a benefit for individuals and by extension therefore, society (Dardot & Laval, 2017; Davies, 2017). Nevertheless, given consumption choices are determined instrumentally, to increase a person's competitive advantage and chances of winning; consumption choices and indeed patterns of consumption, should thus be 'appropriate' (Pathak, 2013). Consumption in terms of appropriateness ultimately means being strategic, responsible, with considerations given to notions of risk, so as not to undermine an individual's competitiveness, prospects of success and therefore, wellbeing (Hache, 2007). In a sense, this represents another implicit contradiction; on the one hand the importance of the ethical and morally responsible autonomous individual; whilst on the other hand, neoliberal ideology demands that an individual's consumption should be conducted 'appropriately.'

Moreover, the notion of appropriate consumption implies that individuals should be utterly rational when confronted with choices (Aldridge, 1994). Indeed, central to the market-based logic of neoliberalism, is the normative assumption that humans are in essence and fundamentally, rational actors (Hay, 2006). Dominant (neoliberal) rational actor models assume that individuals make choices that will maximise their utility or satisfaction (McMahon, 2015). It is important to note that, utility can be broadly defined and is not necessarily limited to monetary gains; it can encompass various factors such as happiness, well-being, or any other measure of preference (Dardot & Laval, 2017). That said, given the implicit economic reductionism within (neoliberal) rational actor models, individual notions of happiness and wellbeing are essentially tied to economic prosperity (Binkley, 2014).

Rational actor models also assume that individuals have access to all relevant information and can process it accurately and efficiently, in order to make the most advantageous, individual

choices (Munroe & Maher, 1995). This implies that decision-makers are capable of evaluating the potential outcomes of their choices and selecting the option that best aligns with their goals (Munroe & Maher, 1995). Therefore, actors make choices according to individualised “means ends frameworks” (Dardot & Laval, 2017); in that ‘means’ are the methods, actions, or strategies chosen to attain the desired ends (Gutman, 1982). Hence, means are the intermediary steps, or tools, that individuals employ to move from their current state to the desired state (Gutman, 1982).

On the other hand, ‘ends’ represent the ultimate objectives or goals that an individual seeks to achieve and are the desired outcomes that provide motivation and purpose for decision-making (Gutman, 1982). Ends are typically considered valuable or desirable in themselves; thus, means are often evaluated based on their instrumental value, meaning their effectiveness in achieving the desired ends (Gutman, 1982). Hence, the choice of means is guided by the belief that they will contribute to the realisation of an individual’s ultimate goals (Gutman, 1982). From this perspective, an individual’s choice to use CEDs for instance, would be guided by a belief that CEDs will contribute to the realisation of a goal (Mann, 2021); for example, monetary reward via increased productivity, wrought through the ability to focus harder and for longer.

It is important to note that, the means-ends framework assumes a rational decision-making process and may not fully capture the complexity of decision-making in real-world situations, where emotions, incomplete information, and cognitive biases can play significant roles (Munroe & Maher, 1995). In addition, the ascendancy of rational actor models, key to the market-based logic of neoliberalism, assumes that individuals and society operate primarily, according to a rational value system that is intrinsically instrumental (Munroe & Maher, 1995). This is exemplified in Chapter Two, whereby, according to Müller and Schumann (2011), drugs can be primarily conceived as instruments.

However, a key consideration for this study and the development of a theoretical framework for conceptualising higher education student CED use, is that rational actor models assume instrumentality to be the overarching, transcendent dominant value system (Munroe & Maher, 1995). However, as Foucault (1979) reasoned, value systems are bound up with the specifics of a given society, in an historical moment. Therefore, rather than being an

overarching, transcendent, dominant human quality, an overtly rational value system of instrumentality is in a sense, perpetuated by the market-based logic of neoliberalism, specifically, the key characteristic of competition and by extension entrepreneurialism (Mann, 2022a).

Indeed, through competition, neoliberal ideology thus encourages or even demands entrepreneurial activity which is upheld as being the key driver of innovation, the creation of new businesses, and the development of new technologies, for instance, all of which can contribute to economic growth and job creation (Harvey, 2007). Put another way, an entrepreneurial spirit is liberated and further animated through the free-market economy, where individuals consume commodities as a form of self-investment, to augment their likelihood of 'winning' through enhancing their human capital (Davies, 2017). Human capital refers to the skills, knowledge, education, experience, and abilities possessed by individuals and is understood as being an asset that can be developed and exploited to increase productivity, economic growth, and personal well-being (Becker, 1993). Humans are consequently reconceived and considered as a form of capital, that can be developed (Nafukho et al, 2004).

Therefore, in the context of human capital, individuals are principally responsible for investing in themselves to increase their economic value; they are thus required to take the initiative to acquire human capital (Down, 2009). Human capital theory thus posits that the consumption of goods, services, education, training, healthcare, etc., are forms of investment, in that they can enhance an individual's ability to succeed, contributing to the economy and indeed, society (Nafukho, 2004). For Foucault (1979), entrepreneurialism under neoliberalism, wrought through competition and the demands for augmented human capital, has thus developed as a rational method of self-governance and is the hallmark of neoliberal governmentality.

3.2. Neoliberal Governmentality

As discussed, neoliberalism maintains that personal freedom and market competition are essential for societal progress; a perspective forged through a belief in the efficiency of market forces and a preference for limited government intervention in the economy (Harvey, 2007; Davies, 2017). To understand the effects of this total market-based logic, Foucault's

(1979) concept of neoliberal governmentality is a theoretical framework that explores the ways in which neoliberalism has transformed modern forms of governance, power, and thus the conduct of individuals. Foucault (1979) argues that neoliberalism has introduced a new rationality of governance; as discussed, rather than top-down, authoritarian state methods of control, neoliberalism promotes the idea that individuals should be self-regulating (Prechet & Harms, 2007). Individuals are expected to act entrepreneurially and in their own self-interest, to achieve more efficient and productive outcomes (Davies, 2017). Therefore, for Foucault (1979), neoliberal governmentality is the calculated formation of the social environment around a transactional market-logic of self-interest, to produce 'Homo Economicus' - a self-interested, entrepreneurial and autonomous style of subjectivity - the entrepreneurial subject (Hamann, 2009).

Certainly, Foucault (1979) highlights the ways in which neoliberalism commands individuals to adopt entrepreneurial subjectivities, by creating incentives, regulations, and norms that shape individual behaviour. For example, with limited state welfare provision, neoliberal ideology ultimately incentivises individuals to be self-regulating and self-disciplined economic actors, who should continually invest in themselves to maximise their own well-being (Card & Hepburn, 2023). Evidently, the discussed notion of responsibilisation (Garland, 1996) is thus, a key feature of neoliberal governmentality, whereby, in order to flourish in the modern world, individuals are required to take responsibility and entrepreneurially optimise the capacity of their resources, both physical and particularly, mental (Beddington et al., 2008). This is achieved through a deliberate focus on the self as an autonomous subjective being (Rose, 1998) and thus, on a notion of self-improvement, which is an observed discursive norm in contemporary neoliberal society (Card & Hepburn, 2023). The autonomous self is to strive for existential meaning through acts of choice, rooted in a notion of self-improvement (Rose, 1998), via the utilisation of what Foucault (1988) terms, "technologies of the self". Technologies of the self, enable individuals to undertake transformative acts on themselves, independently or with assistance, ultimately, to attain an optimal, or even perfect state of body and mind (Nilson, 1998).

From this perspective, a drug used for the purpose of cognitive enhancement is manifestly, a technology of the self in that, entrepreneurial individuals are seeking to optimise or indeed perfect, their cognitive function, by conquering the natural limits of human cognitive abilities

(Dresler et al., 2019). This is exemplified in a study by Pighi et al. (2018), which explored Italian medical students' propensity to use drugs as cognitive enhancers. The study found that a significant proportion of student participants (56.2%) were concerned about a possible deficit or deterioration in their cognitive abilities. Whilst approximately one fifth of student participants believed their concentration (19.6%), attention (18.2%) memory (17.4%), and intelligence (22%), to be substandard. Moreover, the study demonstrated that these concerns around cognitive function were not only reported as being a motivation to use a drug as a CED, but also, not to use (Pighi et al., 2018). For instance, 83.3% of participants had concerns around safety and side effects (Pighi et al., 2018). In terms of neoliberal governmentality, issues around safety and potential negative side effects would obviously run counter to the discursive norm of self-improvement.

Furthermore, such concerns also illustrate the way in which the notion of risk is a key feature of neoliberal governmentality (Lupton, 2006). For instance, Steward and Pickersgill (2019), in a study exploring UK higher education students' perceptions and understandings of benefits and risks around the use of study drugs (CEDs), found that modafinil was considered a relatively safe drug with low-risk potential. This contrasted with perceptions around Ritalin™ and Adderall™ which were measured by student participants as being high-risk, due to concerns around dependency and addiction. In relation to modafinil, participants did discuss some negative side-effects, such as, flushes, headaches, interrupted sleep patterns, reduced appetite and increased thirst (Steward & Pickersgill, 2019). However, the risk potential of these negative-side effects, were not considered significant enough by student participants, to deter them from using modafinil, as a CED (Steward & Pickersgill, 2019). Indeed, Steward and Pickersgill (2019) found that a large proportion of participants reflected that the benefits of using modafinil, outweighed the risks. The way in which student participants in this study in part legitimise the use of modafinil as a CED, through perceptions of risk minimisation, aligns with findings from elsewhere. For example, in two separate studies, De Santis and Hane (2010), and Cutler (2014), reported that US students often legitimise their use of prescription stimulants as CEDs, via risk minimisation discourses that focus on legally accessible drugs.

De Santis and Hane (2010) for instance, found that a significant proportion of student participants legitimised their use of ADHD pharmaceuticals as CEDs, according to a discursive, "comparison-and-contrast strategy" (De Santis & Hane, 2010: 36), centred on a dichotomic

good or bad drug binary – ‘good’ pharmaceuticals, as opposed to ‘bad’ illicit ‘street’ drugs. That drugs approved and sanctioned by the medical establishment, are perceived as being inherently less risky than illicit ‘street’ drugs (De Santis & Hane, 2010). Indeed, none of the participants in the De Santis and Hane (2010) study, felt that pharmaceutical stimulants posed a significant enough risk to health which would warrant any concern, or even abstention from use. Likewise, Cutler (2014) reported that participants in their study exuded an overall sense of safety, concerning the use of pharmaceutical stimulants, as CEDs. Moreover, aligning with discussions in the previous chapter, De Santis and Hane (2010) found that participants reported moderation in terms of use. They would generally use in a strategic, responsible and risk averse manner, so as to minimise the potential for negative side-effects (De Santis & Hane, 2010); which again demonstrates risk as being a key feature of neoliberal governmentality.

A further important validation for use strategy that came out of the De Santis and Hane (2010) study, concerned moral and ethical justifications. Framed around a, “I’m doing it for the right reasons argument” (De Santis & Hane, 2010: 35), the vast majority of participants asserted that since they are using pharmaceutical stimulants as CEDs for reasons of utility, to achieve positive outcomes and not to get high, then their use is morally justifiable. Furthermore, exemplifying the discussed notion of, technologies of the self (Foucault, 1988), De Santis and Hane (2010: 35) detail that a participant specifically discussed using pharmaceutical stimulants as CEDs ultimately, to “make something of themselves”. De Santis and Hane (2010) additionally point out that, for a proportion of participants it was irrelevant whether the drug used as a CED was medically sanctioned or illicit. The moral justification for use lay in the fact that they were using drugs as CEDs, to aid their progress towards academic and professional goals (De Santis & Hane, 2010). Such ethical and moral justifications additionally, demonstrate another key aspect of neoliberal governmentality - the notion of an individualised ethical and moral framework, which as discussed, is crucial to competition and the creation and perpetuation of the entrepreneurial subject position under neoliberalism.

In addition, ethical and moral justifications framed around academic and professional goals, also highlights the way in which neoliberal governmentality produces a feature of individualised ethics, which are ostensibly rooted in an individual’s demonstrable propensity for “hard work” (Telford & Briggs, 2021). There is certainly, a normative expectation under

neoliberalism, that a person must be productive to participate legitimately, within society. Indeed, Tomažič and Čelofiga (2019), in a neuro-ethics commentary exploring ethical questions and dilemmas around the use of pharmaceutical CEDs, by healthy people, remark that cognitive improvements which result in greater efficiency and performance, etc, are highly regarded in a contemporary society, where productivity is upheld as being a decidedly respected value.

Likewise, Bloomfield and Dale (2020), drawing on cultural artefacts such as, pharmaceutical marketing material, print media articles, film and policy documents, explore the imaginaries that inform and are reproduced by depictions of CEDs and CED use. Bloomfield and Dale (2020) attest that, in contemporary society, cognitive qualities associated with enhancement are principally concerned with an individualised ethics of increased workplace productivity within a competitive environment and are therefore, related to specific cognitive features that are understood in terms of human capital and having economic value. Hence, the use of CEDs in the context of neoliberal governmentality is observed as being not only a brain management technology, but also, a means through which users can augment their human capital via an increased ability to ethically manage their productive selves, in order to better serve the (neoliberal) economy (Bloomfield & Dale, 2020).

However, why does there appear to be an increasing emphasis on the importance of cognitive abilities as key to human capital accumulation in the modern world? An answer to this could perhaps be linked to the shift from an industrial, to knowledge economy, under neoliberalism in the so-called developed world (Powell & Snellman, 2004). A shift which has realised an increasing demand for cognitive skills, such as, problem-solving and an augmented capacity to learn (Peters, 2003). Certainly, the knowledge presented above aligns with a commonly stated observation, that under neoliberalism the so-called developed economies, principally in the west, are increasingly reliant on knowledge and are indeed, often described as knowledge economies (Bloomfield & Dale, 2020).

The shift to a knowledge economy refers to the transition in the so-called developed world, from traditional industrial-based economies to those that prioritise the creation, distribution, and utilisation of knowledge and information (Powell & Snellman, 2004). In the past, economies in the so-called developed world were primarily driven by agriculture and later by

manufacturing (Powell & Snellman, 2004). However, with globalisation, advancements in technology and the rise of the information age, the importance of knowledge, innovation, and intellectual capabilities has grown significantly (Powell & Snellman, 2004). In the neoliberal knowledge economy, the key economic assets are human capital, intellectual property, and innovation; thus, an intensification in cognitive abilities would be seen as providing a competitive advantage, in the fiercely competitive knowledge economies of the neoliberal age (Bloomfield & Dale, 2020). Indeed, companies and individuals in the neoliberal knowledge economy focus on creating and leveraging ideas, expertise, and creativity to gain a competitive advantage (Powell & Snellman, 2004).

Certainly, Foucault (1979) emphasised the importance of knowledge and expertise in the practice of neoliberal governmentality. The connection with neoliberal governmentality and the knowledge economy lies in the way in which governments will utilise knowledge-related policies and strategies to govern and shape societies (Kaščák & Branislav, 2012). For example, governments will establish policies that promote research and innovation, and also provide incentives for research and development, to enhance a country's competitive edge (Nokkala, 2005). Accordingly, governments will often invest heavily in education, to develop a knowledgeable and skilled workforce, as education is seen as a key instrument for producing the expertise necessary for a knowledge-based economy (Kaščák & Branislav, 2012). Put simply, Foucault's (1979) concept of neoliberal governmentality and the knowledge economy are evidently connected via the ways in which governments employ strategies to govern populations in the context of an economy whereby, knowledge is a central commodity and driver of growth (Bloomfield & Dale, 2020). Thus, the establishment of policies related to education, research and innovation, for instance, are crucial aspects of governance (Nokkala, 2005).

The transition to a knowledge economy under neoliberalism, therefore, has several implications, such as an increased demand for intellectually skilled workers, a greater emphasis on education and training, and the need for continuous learning and adaptability (Beddington et al., 2008). Consequently, this has resulted in a perpetual increase in industries such as technology, research, development, training and education services that are generally centred around knowledge-based activities (Powell & Snellman, 2004). The shift to a knowledge economy under neoliberalism, thus reflects the changing nature of economic

value, where intellectual assets and innovation play a crucial role in driving economic growth and development (Powell & Snellman, 2004). Hence, is it a coincidence that the contemporary trend in student CED use and indeed, CED use more broadly, is receiving increasing attention in popular media and within the academic sphere? The shift to a knowledge economy under neoliberalism, intrinsic to neoliberal governmentality might certainly, go some way to explaining the Lucke et al. (2011) notion of a 'neuroenhancement bubble' (discussed in Chapter 2, Section 2.3). The neoliberal knowledge economy's emphasis on cognitive abilities will indeed not only potentially fuel the market (both licit and illicit) for CEDs, but crucially, the discourse around cognitive enhancement.

Furthermore, given the shift to a knowledge economy under neoliberalism with a greater emphasis on education and training, and the need for continuous learning and adaptability, neoliberal governmentality will extend beyond the individual to encompass almost all aspects of social life (Foucault, 1979). Importantly, higher education, which within the neoliberal knowledge economy, is required to be structured and delivered in such a way to improve the individual chiefly, in terms of their intellectual capabilities, to augment their human capital (Down, 2009). Dardot and Laval (2017) therefore, insist that neoliberalism is fundamentally a rationality and as such, intrinsically inclines towards organising and structuring, not only the actions of governments and the conduct of individuals, but equally, societal institutions such as, higher education.

Indeed, Foucault's (1979) notion of neoliberal governmentality can be drawn on to understand the profound influence of neoliberal ideas on contemporary practices within higher education. Highlighting the ways in which economic rationality, individual responsibility, and the elevated expertise of knowledge intersect to shape the structure and dynamics within contemporary higher education institutions (Jankowski & Provezis, 2014). A structure and dynamics which are hypothetically therefore, crucial to the contemporary trend in higher education student CED use, which will be discussed in the following section.

3.3. Student CED Use and Higher Education in the Neoliberal Age

Neoliberalism has had a significant impact on higher education; of course, it should be noted that this impact varies depending on the specific context and policies of individual countries (Cannella & Koro-Ljungberg, 2017). Focusing on the UK as an exemplar, the rise of

neoliberalism and the transition to a knowledge economy have resulted in a significant increase in profit-driven higher education institutions, fuelled by the growing marketisation of the higher education sector (Desierto & De Maio, 2020). These factors have resulted in a huge expansion in the numbers of young people at university in recent decades¹¹ (Lambert, 2019) and higher education mirroring a business in terms of its operations, with an increased involvement of private corporations in universities (Lynch, 2006). Private corporations for instance, may provide financial support to universities through donations, endowments, or sponsorships and might collaborate with universities on research projects and development projects (Lynch, 2006). Furthermore, private-sector professionals may serve on university advisory boards or governance bodies, as their expertise is observed as making a crucial contribution to strategic decision-making and towards helping align academic programs with industry needs (Pusser et al., 2006).

Most importantly however, under the market-based logic of neoliberalism, is that universities now depend heavily on tuition fees to cover general operating costs (Desierto & De Maio, 2020). Consequently, much like any other business, universities need to attract customers (students) to generate income; hence, there is increased competition for students across the sector (Mintz, 2021), reflecting the key neoliberal characteristic of competition. Certainly, in the context of neoliberalism, competition across the higher education sector, it is maintained, will drive efforts to improve educational offerings, facilities, student services, etc, and therefore, educational standards in terms of fostering an environment conducive to innovation and creativity amongst staff and importantly, students, to meet the requirements of the neoliberal (knowledge) economy (Mintz, 2021). Therefore, given this market-based logic, one of the most visible impacts of neoliberalism on UK higher education was the introduction of tuition fees in the 1990s (Desierto & De Maio, 2020).

The introduction of tuition fees not only reflects the profit driven nature of contemporary higher education, but also neoliberal governmentality, specifically, the idea of personal responsibility; that, individuals should bear responsibility for the cost of their education, rather than the state (Mintz, 2021). Certainly, given that higher education in the UK has been

¹¹ In the 1970s and 1980s, the percentage of young British adults pursuing higher education ranged from 8% to 19%, while currently, that figure has risen to 50% (Lambert, 2019).

restructured around the market-based logic of neoliberalism (Adcroft & Willis, 2005; Mann, 2022a), with the introduction of student loans and the responsabilisation (Garland, 1996) of students to bear the cost of their education, neoliberal governmentality thus determines that students are reconstituted as consumers (Adcroft et al., 2010). Moreover, as discussed in the previous section, a university education is in a sense, therefore, re-imagined under neoliberalism as a form of self-investment, which with the reconstitution of students as consumers, establishes the student consumer as an entrepreneur of themselves (Cannella & Koro-Ljungberg, 2017).

Furthermore, given that neoliberal policies have shifted the financial burden of education from the government to individual students via student loans, this has resulted in a significant rise in student debt (Desierto & De Maio, 2020). This has had profound implications for the financial well-being of graduates; not only in terms of graduates often starting their careers with substantial debt¹², but also, an indication that there will be an added financial pressure to succeed academically (Mann, 2022a). A financial pressure which is bound up with a wider existential performance pressure under neoliberalism, to secure increasingly lucrative employment for example, in what is a vastly competitive and unequal job market (Mann, 2021). Certainly, Aikins (2019) argues that higher education student CED use can be directly linked to a meritocratic pressure to succeed, which has been animated considerably under the hyper-competitive nature of neoliberalism. This line of reasoning is supported by Eckhardt et al. (2011), who remark that individuals might use substances for the purpose of enhancement due to performance pressure, whereby, they are fearful of not accomplishing their own performance expectations and those of wider society.

The notion of performance pressure is further exemplified in a study by Maier et al. (2013), which explored the use of pharmaceutical and illicit drugs as CEDs, amongst Swiss university students. Maier et al. (2013) found it was increasingly likely that those students who were experiencing a high sense of performance pressure, would consume pharmaceutical and/or illicit psychoactive substances to enhance their cognition. Moreover, Maier et al. (2013) described a further ostensible link between those students who experience employment and

¹² In 2024, the average student graduating from English universities is expected to carry a student loan debt of £48,470. In contrast, graduates in Wales will owe an average of £37,360, those in Northern Ireland will have about £25,730, and students in Scotland a debt of approximately £16,680 (Clark, 2024).

academic performance pressure simultaneously, and increased prevalence of CED use. Bound up with the sense of performance pressure, Maier et al. (2013) allude to a task-oriented mindset, reporting that, the principal motivation of student participants to use drugs for the purpose of cognitive enhancement, centred on notions of speed and efficiency in terms of learning ability. Student participants indeed, expected that cognitive gains in terms of speed and efficiency, would translate into improved academic performance and thereby, academic outcomes (Maier et al, 2013).

In the context of performance pressure, and the ostensible increased demand for cognitive gains in terms of speed and efficiency, Morein-Zamir and Sahakian (2012: 237) describe the use of CEDs by students, as being a form of coercion. That students are coerced into using CEDs in the sense that, within society, “[...] individuals ascribe better scholastic performance and overall better functioning to better cognition and are pressured to perform better in competitive environments.” (Morein-Zamir & Sahakian, 2012: 237). Although Morein-Zamir and Sahakian (2012), Maier et al. (2013) and Eckhardt et al. (2011) report a link between student CED use and performance pressure, these authors do not explicitly connect this with the wider neoliberal ideological context. Certainly, a sense of performance pressure rooted in the requirement for cognitive gains, firstly, alludes to the hyper competitive shift under neoliberalism and secondly, the neoliberal knowledge economy and the changing nature of economic value. As discussed in the previous section, in the neoliberal knowledge economy intellectual assets play a crucial role in driving economic growth and development.

Moreover, evidently, the demands of neoliberalism have encouraged an observable shift in the goals of higher education, towards employability and a graduate’s success as measured in terms of academic and by extension, economic outcomes (Maisuria & Cole, 2017). In addition, success as measured by academic and economic outcomes, is a key marketing tool for institutions and thus, incentivises universities to be increasingly instrumental in their pedagogic approach. For example, by ensuring students are taught and assessed in such a way so as to make it increasingly difficult for students to fail, for the primary reason that high pass rates, as a demonstrable measure of excellence in the UK’s Teaching Excellence Framework, for instance, can be drawn on to positively market an institution and thereby, attract prospective customers (students) (Maisuria & Cole, 2017). It should be stressed that, although this might appear to undermine the key neoliberal characteristic of competition

(amongst students), competition is already woven into the very fabric of the pedagogic environment in higher education (Mann, 2022a).

For instance, traditional grading systems implicitly foster competition among students, which has been further animated within the hyper-competitive neoliberal environment, where students may perceive their peers as rivals for a limited number of top grades (Tannock, 2017). Additionally, universities often recognise outstanding academic achievement with honours, awards, or even postgraduate scholarships (Tannock, 2017), which students in a sense, compete for. To further fuel a more competitive pedagogic environment, some university academics might also provide informal class rankings, indicating where students stand in comparison to their peers (Gibson et al., 2013). This will undoubtedly intensify competition, as students may focus on outperforming one another, rather than on say, collaborative learning (Tannock, 2017) (the above will be illustrated by data from this study, in Chapter 6). While these incentives can motivate students, they also as stated, create an increasingly competitive atmosphere, especially for instance, given the limited opportunities for more lucrative employment post university, under neoliberalism (Mann, 2022a).

Therefore, the contemporary trend in student CED use can be suppositionally linked to the hyper-competitive pedagogic environment produced in universities, through the market-based logic of neoliberalism (Mann, 2021; Mann, 2022a). Certainly, constituted as entrepreneurial subjects via neoliberal governmentality, an increasing number of students would theoretically be motivated to seek out CEDs, legitimising their use via the neoliberal discourse of competition and by extension, entrepreneurialism, to gain a competitive advantage over their peers (Mann, 2022a). In a study around perceptions of enhancement concerning cognitive and sports performance amongst students in England, Vargo et al. (2014) indeed found that, a significant proportion of student participants perceived that cognitive enhancement might be increasingly essential, due in part, to the challenges graduates face in what is a progressively competitive employment market. Hence, Vargo et al. (2014) also infer that performance enhancement, including cognitive enhancement, via the use of substances may well becoming normalised amongst students.

3.4. The Neoliberal Normalisation of Higher Education

In order to consider the notion of whether CED use is becoming normalised amongst university students, it is important to briefly return to the discussion in the previous section concerning an observable shift under neoliberal governmentality in the goals of higher education, towards employability and a graduate's success as measured in terms of academic and by extension, economic outcomes (Maisuria & Cole, 2017). The shift to emphasising these goals, under neoliberal governmentality is a representative feature of the neoliberal normalisation of higher education (Morley, 2023). Proponents would claim that enhanced competition between universities and indeed students, with a focus on academic results and measures of employability and economic outcomes, will greatly enhance for instance, efficiency, creativity and innovation. However, Morley (2023) argues vehemently that neoliberal normalisation has, substantially weakened education and scholarship within universities and also, academic staff and students, by reducing their value to economic calculations (Morley, 2023). Therefore, from this perspective, the neoliberal normalisation of higher education also refers to a normalised focus on short-term economic outcomes at the expense of broader goals, and a reduction in the pursuit of knowledge for its own sake, i.e., the intrinsic value of education (Wong, 2021).

Certainly, this normalised focus on short-term economic outcomes has resulted in a narrow standardisation in terms of pedagogy (Hil, 2012), rooted in instrumentalism and thus, a devaluation of the broader benefits of education, such as for instance, critical thinking and civic engagement (Balan, 2023; Morley, 2023). Clearly, this is a contradictory outcome and indeed problematic in the context of a neoliberal knowledge economy which underscores the value of intellectual human capital (Nafukho, 2004). As discussed in the previous section, within the neoliberal knowledge economy innovation, creativity and the development of new technologies, for example, are held as being crucial for economic growth, job creation and a country's global competitiveness (Harvey, 2007).

However, given neoliberal normalisation, the very skills and attributes a university education should also encourage, such as civic engagement and critical thinking, necessary for fostering innovation and creativity, have been undermined (Morley, 2023). Certainly, the way in which neoliberal normalisation structures the pedagogic environment within higher education, may

in actuality stifle student creativity (Lynch, 2006), whilst at the same time increase the pressure on them. Given the discussed features concerning the neoliberal normalisation of higher education, it is evidently conceivable to theorise that CED use amongst students would become normalised, as Vargo et al. (2014) infer, which will be discussed in the following section.

3.5. Higher Education Student CED Use and Normalisation

Normalisation in terms of drug use, implies a shift in attitudes and perceptions, where certain forms of drug use become integrated into areas of social life and are no longer viewed as exceptional, deviant, or morally objectionable (Pennay & Measham, 2016). Measham and Shiner (2009: 502) therefore, describe the drug use normalisation process as a “contingent process negotiated by distinct social groups operating in bounded situations.” From this perspective, the normalisation of CED use amongst students would thus be a process negotiated within student networks, contingent on the bounded conditions in higher education, established within the context of neoliberal governmentality and the normalisation of higher education, around for instance, competition, entrepreneurialism and short-term economic outcomes. In addition, it should be stressed that, these bounded neoliberal conditions experienced by students in contemporary higher education, also sit within broader important conditions within neoliberal society, that are perhaps crucial to understanding the potential student CED use normalisation process: medicalisation and crucially, pharmaceuticalisation (Coveney et al., 2011).

Put simply, medicalisation is a sociocultural process by which non-medical issues have come to be defined and treated as medical problems, often with a focus on diagnosis, treatment, and intervention by medical professionals (Bell & Figert, 2012). This concept implies the extension of medical authority and expertise into areas of life that were previously considered outside the realm of medicine (Bell & Figert, 2012). For example, aspects of human behaviour, such as shyness or sadness, may be medicalised and categorised as social anxiety disorder or clinical depression (Wyatt, 2009). Accordingly, medicalisation results in the application of medical interventions to address the identified problems, including medical procedures, or therapeutic interventions aimed at managing or alleviating the perceived

medical issues such as, counselling, psychotherapy, or the prescribing of medications (Bell & Figert, 2012).

Hence, bound up with medicalisation, pharmaceuticalisation refers to the expansion of the scope of medical treatment to include a growing number of conditions (Bell & Figert, 2012). This includes not only traditional medical illnesses but also, aspects of life that were previously considered within the realm of normal variation, such as mood, sleep patterns, and cognitive performance (Coveney et al., 2011). Hence, due to pharmaceuticalisation within the neoliberal context, the CEDs market has experienced significant growth (Coveney et al., 2011). Not only owing to the medicalisation of mental health and an associated rise in cognitive disorders, but crucially, because of a growing interest in enhancing cognitive performance, especially among professionals and of course, students (Ram et al., 2020). Pharmaceuticalisation additionally therefore, implies an expanding pharmaceutical industry, where the development and marketing of drugs aimed at enhancing cognitive function, for instance, even among individuals without diagnosed medical conditions, is highly profitable (Hamilton, 2018). Certainly, given the neoliberal context, as with most other areas of contemporary social life, the pharmaceutical industry is now driven increasingly by financial incentives, rather than say, more humane motivations such as, the alleviation of human suffering¹³ (Williams et al., 2011).

Consequently, it is evident that the wider context of pharmaceuticalisation, will be a significant contingency in the possible process of CED use normalisation amongst higher education students (Dertadian, 2023). Certainly, Bloomfield and Dale (2015) allude to the context of pharmaceuticalisation and the increased normalisation of human enhancement drugs, such as CEDs, as operating alongside the normalisation of extreme working within the neoliberal context. In that, CEDs for instance, can be utilised to enable longer working hours, by enhancing motivation and concentration whilst encouraging individuals to improve themselves, ultimately to become, “extreme workers” (Bloomfield & Dale, 2015: 552). Therefore, from this perspective, in neoliberal society and the context of

¹³ For example, in 1996, Purdue Pharma brought OxyContin to market, it was aggressively promoted and marketed, with its dependency potential minimised. Sales of OxyContin grew to be worth approximately \$1.1 billion by the year 2000. However, the increased accessibility of OxyContin correlated with a huge increase in non-medical use, misuse and indeed, dependency, to the point where by 2004, OxyContin was one of the most significant drugs of misuse in the US and a chief contributor to the ongoing US opioid crisis (Van Zee, 2009).

pharmaceuticalisation, CED use by students might be considered a normal expression of entrepreneurialism (Mann, 2022a). Which is tied to, an individualised ethical discourse of self-improvement centred on the broader neoliberal notion of extreme working, rather than being seen as exceptional, deviant, or morally objectionable behaviour.

However, Bell et al. (2013) in qualitative study of university students in Australia, concerning attitudes around acceptability and regulation of pharmaceuticals used as CEDs to augment academic performance, found that these students generally felt that using drugs for the purpose of cognitive enhancement in the context of study, was unfair. Bell et al. (2013) highlight that these findings reflect those of other studies (E.g., Forlini & Racine, 2009; Forlini & Racine, 2010). That said, there were a small number of student participants in the Bell et al. (2013) study who believed that the use of pharmaceuticals as CEDs, to augment academic performance, was acceptable. Drawing on the findings of De Santis et al (2008) and Forlini and Racine (2009), Bell et al. (2013) make the point that it remains unclear however, if the acceptance of cognitive enhancement by these minority of students, is actually more a justification for their own use of CEDs. Bell et al. (2013) indeed remain cautious about the extent to which the acceptance of cognitive enhancement by some users, echoes the overall perspective of their peers. Hence, Bell et al. (2013) stress that more needs to be known about the attitudes of students towards cognitive enhancement, both in terms of user and non-user and by extension therefore, to understand whether CED use amongst students is normalised.

In a more recent study, focusing on thirty-two students at an 'elite' university in the US, exploring student perceptions around the use of Adderall™ as a CED; whether students believed it to be, beneficial, equitable, and fair, corroborating the findings of Bell et al (2013) above, Aikins (2019) found that perceptions of fairness varied according to participants' frequency of CED use. This thus suggests that CED use is perhaps increasingly normalised amongst more frequent users, but nevertheless might represent exceptional, deviant, or morally objectionable behaviour to the many students who do not (frequently) use CEDs. Aikins (2019) further found that perceptions of fairness were also contingent upon perceived social norms surrounding CEDs and moreover, that social norms do influence university CED use amongst students.

Put simply, social norms are shared expectations and rules that guide behaviour within a particular society or group (university students) and will vary historically and across cultures (Hechter & Opp, 2001). For students therefore, social norms serve as informal guidelines for appropriate and acceptable behaviour, shaping how students interact and function within the specific cultural environment of a given university at a particular moment in time (Scholly et al., 2005). From basic manners and etiquette to more complex institutional specific cultural expectations, which would also vary across student groups within universities (Scholly et al, 2005), such as in this instance, attitudes towards CEDs.

Certainly, Desantis and Hane, (2010) also allude to the importance of social norms in the normalisation of CEDs amongst student user networks and that normalisation is an important factor in terms of providing impetus for some students to use CEDs (De Santis & Hane, 2010). Indeed, disparities in CED use, particularly in terms of specific drugs used as CEDs and frequency of use, are apparent across the demographics - class, sex, race, age. For example, in the US, McCabe et al. (2005) found that the use of Methylphenidate (Ritalin™) and dextroamphetamine salts (Adderall™) was approximately threefold prevalent among white students than black students, whilst male students were twofold more likely than their female counterparts to report using these pharmaceutical stimulants as CEDs.¹⁴

Moreover, social norms associated with university characteristics are key to the subsequent normalisation of CEDs within student networks at specific universities. For instance, Aikins (2019) suggests that in the US 'elite' universities with increasingly competitive admission standards, have higher reported rates of pharmaceutical stimulants used as CEDs, than those with less competitive admission standards. Whilst McCabe et al. (2005), also found higher rates of pharmaceutical stimulants used as CEDs at universities with increasingly judicious admissions profiles. Furthermore, linked to the notion of increased use at 'elite' universities, in two sperate studies of US student groups (DeSantis et al. 2008; McCabe et al. 2006), there is seemingly a higher frequency of pharmaceutical stimulants used as CEDs, among students occupying higher class positions. All of which, therefore, seems to support DeSantis and

¹⁴ It should be noted that, a proportion of the gender difference in terms of the use of pharmaceutical stimulants as CEDs, might reflect a disparity in rates of childhood ADHD diagnoses in the US, where 13.2% of boys have had a diagnosis of ADHD, compared with 5.6% of girls (Visser et al. 2010).

Hane's (2010) allusion, that frequency of use and subsequent normalisation is contingent upon social norms around CED use, within specific student user networks.

The notion of network specific normalisation also fits with the findings of Bell et al. (2013) and Aikins (2019) detailed above, in terms of attitudes around fairness which appear to vary, dependent upon whether a participant was a user, limited user, or non-user. Which is supported by a further finding from the Aikins (2019) study where, for the most part, student CED user participants seldom related their CED use to any sense of personal transgression. Indeed, many viewed using drugs for the purpose of enhancement as akin to merely utilising another resource for personal gains (Aikins, 2019). This not only demonstrates normalisation in terms of non-exceptional, deviant, or morally objectionable behaviour on the part of the user and therefore, within user networks, but also, the notion of normalisation within the bounded contingencies of pharmaceuticalisation, responsabilisation, competition and entrepreneurialism, which as stated, are prominent features of neoliberal governmentality.

However, although the normalisation of CEDs may be apparent amongst (some) student user networks where it is viewed as non-exceptional, deviant, or morally objectionable behaviour, CED use by these students might well be deemed unfair by non-users (Faber et al., 2016). Indeed, for some non-users, the use of CEDs by others may be perceived as producing an uneven playing field in higher education, where they may feel disadvantaged by those students who use CEDs, as they are seemingly gaining a competitive advantage (Mann, 2021). As stated previously, fairness in competition at the outset is a hallmark of neoliberalism. Therefore, if the use of CEDs by some students is seen as subverting competition, this would potentially raise serious ethical concerns, specifically, around academic misconduct and whether the use of CEDs by students is a form of cheating (Mann, 2021).

3.6. Student CED Use: Academic Misconduct and Cheating

At the time of writing, there is a growing volume of literature regarding the topic of student CED use and academic misconduct, centred on a debate around whether the use of CEDs by students constitutes cheating (E.g., Rose, 2002; Farah et al., 2004; Thaler, 2009; Hesse, 2010; Outram, 2011; Sahakian & Morein-Zamir, 2011; Enck, 2012; Linton, 2012; Forlini et al., 2013; Mann, 2021). In terms of this research, this is an important topic as primarily, much of the discussion and themes apparent in the extant literature illustrates the way in which the

debate is seemingly embedded within the neoliberal context (Mann, 2021). In addition, a significant proportion of existing (qualitative) data presented in the literature ostensibly highlights the way in which neoliberal ideology is a seeming discursive feature in the narrative accounts of students (Mann, 2021). Specifically, narrative accounts of students regarding the topic of cheating and associated justifications for use or indeed, non-use, which the author has also documented elsewhere in the literature (Mann, 2021).

To illustrate firstly, the ways in which prominent discussions and themes within the debate around student CED use, academic misconduct and the question of cheating are seemingly embedded within the neoliberal context, the author will draw on and discuss three examples of theoretical literature: Schermer (2008), Goodman (2010) and Cakic (2009). Schermer (2008) focuses on the use of CEDs by students in an exam setting and draws on the ongoing debate in sports, to frame the discussion, concerning the use of performance enhancing drugs (PEDs). Schermer (2008) stresses that simply framing cheating around an idea of rule-breaking and gaining a competitive advantage is extremely narrow. Schermer (2008) indeed calls for an increasingly profound philosophical understanding that is formed via a discussion around education's intrinsic values - how educational excellence is understood and the "internal goods of education" (Schermer, 2008: 88).

Schermer (2008) thus stresses that such a discussion will enable for an improved evaluation of whether CED use by students in the context of exams specifically, could be considered cheating. An evaluation which establishes the purpose and goal of an exam and the cognitive abilities that a student intends to enhance (Schermer, 2008). Schermer (2008) suggests that the outcome of such an evaluation could potentially be that the use of some CEDs would be prohibited, whilst the use of others would be ethically legitimised. Accordingly, for Schermer (2008) two decisive questions arise, "[...] how cognitive enhancers might be embedded in education (understood broadly)? Or how they might pervert it?" (Schermer, 2008: 88). Schermer (2008) accepts therefore, that an evaluation embedded in a comprehensive discussion around education's intrinsic values and goals, its "internal goods" (Schermer, 2008: 88), could very well result in increasingly complex and profound questions, the answers to which, are much less straightforward (Schermer, 2008: 88). Evidently however, the basis of Schermer's (2008) argument seemingly alludes to the way in which the debate around CEDs and cheating is currently, largely rooted in the notion of competition and the prevailing

instrumental value system in higher education, wrought through neoliberal governmentality, which has come to normalise competition and instrumentality.

The intricacies discussed by Schermer (2008) above, are again exemplified by Goodman (2010) who argues that the question of academic misconduct and cheating in relation to student CED use is complex and rests upon considerations given to the specific activity a student is seeking enhancement for, rather than the use of a CED, in and of itself. From this perspective, Goodman (2010) therefore employs Game Theory to propose that, determining whether an incidence of CED use is academic misconduct and cheating, requires an understanding of whether the activity to profit from the use of a CED is zero-sum, or non-zero-sum.¹⁵ Goodman (2010) further proposes that understanding whether the pursuit of academic excellence via the use of CEDs is focused on the process, or outcome, is also key.

Goodman (2010) therefore argues against comprehensive, categorical judgements concerning the question of student CED use, academic misconduct and cheating, concluding that CED use by students should be endured if the activity to benefit from enhancement is non-zero-sum and if the pursuit of academic excellence via the use of CEDs is focused on the process, rather than the outcome (Goodman, 2010). Considered this way, Goodman (2010) also asserts that academic attainments realised under the influence of CEDs are in no way denigrated, but rather, fit with accepted, “[...] conceptions of collaborative authorship, which shift the locus of praise and blame from individual creators to the ultimate products of their efforts” (Goodman, 2010: 145).

It is interesting that Goodman (2010) draws on Game Theory as a means to understand whether incidences of student CED use could be determined as being academic misconduct and constitute cheating. Amadae (2016) maintains that contemporary neoliberal ideas are largely rooted in the fundamentals of Game Theory, predominantly the theoretical prisoner’s dilemma concept, which demonstrates the ways in which the strategies of potential opponents are largely influenced by final rewards or outcomes. During the Cold War, Game Theory was employed by the Soviets and Americans to develop their respective, strategic

¹⁵ Put simply, a zero-sum game is a purely competitive situation where, if a person or group loses, the other person or group wins. A Non-Zero-Sum Game on the other hand, is a less competitive situation where, one person or group’s win does not necessarily result in a loss for the other (Owen, 2013).

nuclear postures (Amadae, 2016). The subsequent spread of neoliberalism, central to which is the discussed notion of the rational actor, who makes rational choices rooted in a narrow self-interest, has since the Cold War, seen Game Theory seep into almost all aspects of life and society (Amadae, 2016), including higher education, as evidenced by Goodman (2010) above. Again, as with Schermer (2008), Goodman's (2010) contentions therefore illustrate the way in which the student CED use, academic misconduct and cheating debate, is ostensibly embedded within the neoliberal context.

Cakic (2009), similar to Schermer (2008), looks to the debate around PEDs in sport as a way to frame the student CED use, academic misconduct and cheating debate. Cakic (2009), suggests that academia, whilst not the same as sport, does represent a significant site of competition for many individuals, as it can play a crucial role in determining career prospects and future income potential. Cakic (2009) remarks that the policy approach to PEDs in sport remains essentially, one of prohibition; that's not to say however, that the use of all substances is prohibited, rather, there is a (ever increasing) list of specific substances which are prohibited (WADA, 2022). Hence, there remains a selective prohibition approach to PEDs in sport, rooted in an ethical notion that PED use results in unfair advantages, fosters inequalities and thus, undermines fairness in competition (WADA, 2022). Cakic (2009) points out however, that biological, socio-economic and environmental determinants also produce ostensible unfair advantages and are profuse, yet these inequalities, however, are somewhat tolerated by society.

Cakic (2009) makes the further point that, the (selective) prohibition approach adopted and maintained in sport, continues to be inadequate in terms of tackling the issue, as many sports people continue to flout, or find ways around the laws and use PEDs (Savulescu et al, 2004). Therefore, Cakic (2008) recommends that education policy makers should look to the apparent failures regarding the PEDs policy approach in sport, where reactionary judgements are a continual hinderance in terms of the capacity to make judicious, responsible and effective legislative policy decisions around PEDs. Cakic (2008) thus urges, as higher education student CED use becomes increasingly prevalent, rather than focusing on notions of academic misconduct and cheating to inform a potential policy response in the form of a prohibitionist approach, institutions and policy makers should focus on safeguarding users

against any possible harms and therefore, promote harm reduction policy initiatives (Cakic, 2009).

Given the arguments and conclusion Cakic (2009) puts forward, it can be inferred that Cakic (2009) favours an increasingly neoliberal approach, whereby, fairness in competition at the outset is fostered and maintained by allowing all students to use CEDs unrestricted, if they so choose. Certainly, this approach is seemingly favoured amongst students, particularly student CED users, as Aikins (2019) found, where student participants in their study seemed to suggest that CED use is “[...] not unfair if everybody’s doing it” (Aikins, 2019: 118). As with Schermer (2008) and Goodman (2009) therefore, it is evident that the neoliberal context seemingly frames and indeed informs, the arguments and conclusion Cakic (2009) puts forward. Interestingly, where Cakic (2008) refers to ostensible unfair advantages in terms of biological, socio-economic and environmental determinants, these are also discussed elsewhere in the CEDs, academic misconduct and cheating literature.

For example, a student participant in Aikins’ (2019) study appears to justify their use of Adderall™ as a CED by discursively drawing on biological disparities in terms of intelligence, which therefore, mitigated any notion of them gaining a competitive advantage and thus, cheating. Indeed, this participant believed the majority of student peers within their specific university to be “extremely smart” (Participant cited in Aikins, 2019: 120) and that the only advantage gained from their own use of Adderall™ as a CED, was a personal one, that would be of no consequence, or disadvantage to others. Hence, rationalising academic attainment as being a personal endeavour ostensibly neutralised any sense of unethical transgression, that might prove detrimental to others, for this student participant (Aikins, 2019). Likewise, as touched upon in the previous section, other participants in the Aikins (2019) study justified their use of Adderall™ as a CED in a similar way, expressing that it could not be considered cheating as they were merely improving their own personal focus, which was in no way wrong or immoral (Aikins, 2019).

This way in which some students justified their CED use in the Aikins (2019) study, seemingly correlates with the findings from a qualitative study out of the UK. Vagwala et al. (2017) undertook a thematic analysis of qualitative data gathered via eight focus groups constituted of UK higher education students. Concerning issues of fairness, Vagwala et al. (2017) reported

that student ethics centred on individual autonomy, which surpassed any apprehensions around unfairness in terms of the use of CEDs by some students. Such lines of reasoning by these student participants and indeed those in the Aikins (2019) study, inferably demonstrates the way in which neoliberal ideology is a dominant feature in the discursive repertoires of student CED users, in terms of justifications for use. Specifically, in these instances, the key neoliberal characteristic of entrepreneurialism, underpinned by the discussed notion of individualised ethical and moral standards (Mann, 2021), wrought through neoliberal responsabilisation (Garland, 1996).

It should also be stressed that, the key features of neoliberalism will of course interact with societal inequalities across demographics such as, class, age, gender and ethnicity, which are already recognised variables between users and non-users of CEDs (Mann, 2021). Certainly, Aikins (2019) discusses that ostensibly US students often consider CED use to be, “the white version of cheating” (Aikins, 2019: 120), due to data seemingly demonstrating that CED use is expressly prevalent amongst white male student cohorts within elite academic institutions in the US (Aikins, 2019). Aikins (2019) proposes that data from their study seemingly supports a premise that the notion of ‘whiteness’ corresponds with an increasingly privileged class of student and that CEDs are more readily available and easily accessible for these students. This is supported by Forlini and Hall (2016), who maintain that socioeconomic factors are decisive in terms of opportunities for individuals to use, or not to use CEDs. It should be reiterated however, as stated in Chapter 2.1, the regulatory status of certain drugs used as CEDs varies across different regions and can also impact market accessibility, which is a crucial point to remember, particularly in the context of the US, where the regulatory status of drugs does vary between states.

That said, Aikins (2019) points out that, possible increased opportunities for privileged students to access and use CEDs, can further augment their pre-existing advantages specifically, in terms of their social, cultural and economic capital. However, Aikins (2019) additionally suggests that students from less privileged background might also use CEDs, due to a mindset in which the use of drugs for the purpose of cognitive enhancement is perceived as essential, to navigate or thrive in an environment where they may otherwise feel excluded or out of place. Aikins (2019) infers therefore, that a significant proportion of US students see

CED use by students as a social concern, part of wider issues around social equality, rather than a singular act of cheating and users being in some way, morally flawed individuals.

This in a sense, points to the neoliberal notion of fairness and equality in competition at the outset as a primary value amongst students and in addition, as also evidenced previously, the idea that individual, ethical and moral autonomy overrides normative ethical and moral standards, in this instance, regarding the issue of CED use, academic misconduct and cheating (Mann, 2021). However, this and the wider discussions in this section, raise an important question. Regarding the matter of cheating, is it possible to reconcile established societal inequalities and neoliberalism's promotion of personalised moral frameworks, with the key neoliberal value of fairness and equality in competition at the outset? This is a question the author has posed elsewhere in the literature (Mann, 2021) and suggested that the answer lies in the development of practical, effective and judicious, CEDs legislation and policy, which will be discussed in Chapter 7.

3.7. Summary and Conclusion

To hypothesise the role of neoliberal ideology in higher education student CED use, the opening section to this chapter set out the fundamentals of neoliberalism and its history. The following section draws on Foucault's (1979) concept of neoliberal governmentality to illustrate the ways in which neoliberal ideology constitutes individuals as entrepreneurial subjects. Chiefly, through the key neoliberal characteristics of competition, responsibilisation (Garland 1996) and the notion of human capital, wrought in part through the shift to a knowledge economy in many western societies, principally the UK.

Section 3.3 highlighted the ways in which neoliberal governmentality and the shift to a knowledge economy have additionally, exerted a substantial influence on higher education, particularly in the UK, and plays a crucial role in comprehending the current trend in the use of CEDs by students in higher education. Expanding on this, Section 3.4 elaborated on the ways in which higher education has embraced normalcy within the framework of neoliberalism, with the incorporation and assimilation of neoliberal principles and values into the fabric, policies, and procedures of higher education institutions. An essential exploration in the context of this study, for comprehending the consequential effects on students.

Extending the discourse on normalisation, Section 3.5 explored the notion of drug normalisation and assessed whether the use of CEDs has become normalised among students, influenced in part by the aforementioned aspects of the neoliberal context. Furthermore, this section also engaged in a dialogue surrounding the associated neoliberal governmentality concepts of medicalisation and pharmaceuticalisation, recognised by several scholars, including the author, as pivotal contextual influences on contemporary CED use, particularly among higher education students. This section thus illustrated and discussed that the normalisation of CEDs, may be apparent amongst some student user networks. Drawing on broader research and literature, this section also ostensibly illustrated the incorporation of neoliberal ideology into the communicative approaches employed by students using CEDs, exploring the motivations and justifications for their CED use, within the context of these discursive strategies.

To further explore the ways in which the contemporary CEDs phenomenon is bound up with neoliberalism, Section 3.6 scrutinised and elaborated on various instances documented in research and literature pertaining to student CED use and academic misconduct. Firstly, this section illustrated the ways in which (academic) debates around this topic are often embedded within neoliberal discourse. Secondly, this section explored the literature and considered whether students themselves, perceive the utilisation of CEDs in academia as a form of cheating. This exploration offered further valuable insights into motivations and justifications for use, particularly concerning the potential role of neoliberalism; that, students ostensibly employ discursive strategies rooted in key characteristics of neoliberal ideology, to mitigate perceptions of cheating.

Therefore, given the discussions in this chapter around neoliberalism and its hypothetical role in contemporary student CED, two further research questions emerge:

- Do higher education students legitimise their use of CEDs, via the discourse of (neoliberal) competition?
- Do higher education students frame their use of CEDs in terms of functionality, as a response to the entrepreneurial subject position, and hence, as a form of self-investment (human capital)?

Considering the knowledge gaps identified in the previous chapters and the emerging research questions - particularly regarding the influence of neoliberal ideology embedded in discourse on students' motivations and justifications for using CEDs - the following chapter will set out and discuss a dialectical relational approach to critical discourse studies (Fairclough, 2010). This approach serves as the foundational framework that not only underpins but also guides the research methods employed in this study. Through this methodological lens, the following chapter aims to elucidate the intricate interplay between language, power dynamics, and ideological underpinnings that shape the discourse surrounding CED use among students.

4. A Dialectical Relational Approach to Critical Discourse Studies

Introduction

Given the hypothetical assumptions concerning the role of the neoliberal ideology and its key characteristics of governmentality - such as, competition, and entrepreneurialism - embedded in discourse, it was decided that a Dialectical Relational Approach (Fairclough, 2009; Fairclough, 2010) to Critical Discourse Studies¹⁶ (Fairclough, 2010, Wodak & Meyer, 2016) would direct the research methodology. Therefore, prior to providing a detailed account of the broader methodology in the proceeding chapter, this chapter will discuss this specific approach to Critical Discourse Studies and why its application was deemed advantageous for this research.

Section 4.1 will provide an overview of Critical Discourse Studies, its philosophical underpinnings and its emphasis on semiosis, before introducing the various approaches to conducting a Critical Discourse Study, including a Dialectical Relational Approach (Fairclough, 2010). Section 4.2 will thus explain a Dialectical Relational Approach in significant detail, illustrating the ways in which this approach was extremely useful for the purposes of this study - exploring the hypothetical role of neoliberalism in contemporary higher education student CED use.

4.1. Critical Discourse Studies

Critical Discourse Studies are rooted in a social constructionist perspective and conceive discourse as being the upshot of co-constructed meanings, implying that language use is a collaborative process, where individuals negotiate and redefine meanings based on their social interactions (Wodak & Meyer, 2016). More specifically, Critical Discourse Studies are grounded in the idea that semiosis - the process of meaning-making in language or literature

¹⁶ Critical Discourse Studies is also commonly referred to as Critical Discourse Analysis; however, Wodak and Meyer (2016: 3) recommend using the term Critical Discourse Studies, as this more accurately encapsulates the rich diversity of, and countless methodological approaches to, Critical Discourse Analysis.

- is a fundamental element of all material social processes. For instance, power structures, cultural values, social relations, institutions, belief systems, are all, to some extent, semiotic (Fairclough, cited in Wodak & Meyer, 2016: 87). Importantly therefore, language use is considered a form of social practice which is tied to specific historical, ideological contexts and is an elemental means by which social relations are confirmed or contested, and the interests of diverse individuals and groups are served (Janks, 2006). From this perspective, power relations, social hierarchies and historical ideological conditions influence discourse, as individuals bring their identities, experiences, and social positions, rooted in a particular ideological environment into their communication (Wodak & Meyer, 2016).

Critical Discourse Studies therefore examine the relationship between discourse, social power and societal structures, focusing on how language and communication practices shape and reflect power dynamics, ideologies, and social inequalities, to reveal layers of meaning in discourse (Wodak & Meyer, 2016). Hence, Critical Discourse Studies require a multidisciplinary approach, as the isolated analysis of language is not the exclusive point of interest per se (Wodak & Meyer, 2016). Of significant interest instead, is the analysis and understanding of complex social phenomena, ultimately through comprehending the underlying meaning of language and how as a social practice, it is bound up with wider societal contextual forces (Janks, 2006). Thus, a critical discourse study includes examining lexical choices, syntactic structures, and rhetorical devices, to understand the ways that these might reflect ideological conditions for instance and how they contribute to the construction of meaning and power relations (Wodak & Meyer, 2006).

By focusing on the nuances of language, critical discourse studies therefore often involve an in-depth analysis of a smaller data set and shorter narrative streams, to gain an increasingly detailed understanding, with the aim of exposing the underlying ideologies that shape communication and, by extension, behaviour (Wodak & Meyer, 2016). Put simply, Critical Discourse Studies thus refer to a methodological framework that focuses on the in-depth, qualitative, linguistic study of written and spoken texts, to uncover and indeed challenge, coercive and oppressive forms of power within discourse (Weninger, 2012). The discourse surrounding drugs serves as a prime example; Critical Discourse Studies can help to enhance understandings of emerging drug trends and challenge prevailing assumptions of power. In addition, they also complement other qualitative approaches in the field and provide a

contrasting perspective to drugs research that is methodologically quantitative (Weninger, 2012).

Moreover, as noted in Chapter Two, the terminology and concepts surrounding what constitutes a drug as a CED vary significantly, therefore, it was illustrated that user constructed meanings are increasingly important to the concept and focusing on these could help to avoid the myriad methodological challenges to conducting CEDs research, detailed elsewhere in the literature (Arria & Wish, 2006). In addition, given the initial hypothesis regarding the role of neoliberal ideology in the discourse surrounding the contemporary student CEDs trend, it was methodologically advantageous for this research to approach CEDs as a discursive phenomenon, adopting a Critical Discourse Studies framework.

Furthermore, since a potential relationship between neoliberalism and contemporary higher education student CED use was hypothesised at the outset, it was determined that other qualitative methodologies, such as Grounded Theory, would not be suitable for guiding this research (Mann, 2022a). For example, Grounded Theory specifically requires researchers to suspend any a-priori theoretical considerations (Delmas & Giles, 2023) such as, those concerning the role of neoliberalism in contemporary student CED use. However, it is important to emphasise that the theoretical framework was not developed prior to data collection, analysis, and interpretation; rather, a plausible association between contemporary higher education student CED use, and neoliberalism was initially hypothesised (Mann, 2022a). In addition, the focus on power, context, and social change makes Critical Discourse Studies a more appropriate approach than other forms of analysis, such as Grounded Theory, which lacks specific emphasis on ideology and discourse, and often overlooks the intricate connections between the structural aspects of social situations and the activities occurring within them (Layder, 1993; Thomas & James, 2006).

Within the Critical Discourse Studies framework, there are various distinct approaches. As detailed by Wodak and Meyer (2012), these are as follows: Discourse Historical Approach, Social Actors Approach, Dispositive Analysis, Sociocognitive Approach, and a Dialectical Relational Approach. It is not necessary here to discuss each of these in turn, merely a Dialectical Relational Approach (Fairclough, 2010), which after exploring all of the above approaches, was considered most suitable for directing this research. A Dialectical Relational

Approach provides the necessary tools to analyse the complex potential relationship between neoliberal ideology and CED use among university students. It facilitates a comprehensive exploration of the ways in which discourse shapes phenomena and is shaped by the ideological, socio-political environment (Wodak & Meyer, 2012). The suitability of a Dialectical Relational Approach for directing this research, will be discussed in more detail in the following section.

4.2. A Dialectical Relational Approach

A Dialectical Relational Approach to Critical Discourse Studies was initially developed by Fairclough (2010) and is largely influenced by the theories of Michel Foucault and Karl Marx (Wodak & Meyer, 2016: 18). Hence, the direct appeal of this Critical Discourse Studies approach, to this research. Certainly, the theories of Foucault and Marx were deemed of significant importance, due to the initial hypothesis concerning the role of neoliberal (political economy) ideology embedded in discourse to the contemporary student CED use trend. Moreover, a Dialectical Relational Approach is particularly suited for exploring the role of neoliberalism in student CED use for several further reasons.

As with Critical Discourse Studies more broadly, Fairclough's (2010) Dialectical Relational Approach (2010) views social life as a web of interconnected social practices, including economic, political and cultural, for instance. Fairclough (2010) emphasises the importance of the concept of social practice, as it allows for a dynamic relationship between social structure and individual agency, rather than a simplistic and deterministic dichotomic binary (Fairclough, 2010). This perspective helps to illustrate the ways in which individual behaviour emerges from the inherent dialectical tensions within and between two overarching elements - structure and agency - both of which are crucial in social research, including this study (Mann, 2022a).

By 'social practice', Fairclough (2010) is referring to relatively stable systems of social activity, such as family rituals, educational institutional practices, typical behaviours in the workplace and medical consultations, for example (Mann, 2022a). Each social practice reflects various social elements within a relatively stable framework that importantly includes discourse (Mann, 2022a). In addition to discourse, other social elements present in social practice comprise activities, subjects and their relationships, tools, objects, historical context and

types of consciousness (Fairclough, 2010; Mann, 2022a). It is essential to emphasise that these social elements are dialectically related; although they are different, they are not separate or isolated (Fairclough, 2010). This creates an interconnectedness among these elements, suggesting that each influences the others, even though they cannot be entirely reduced to one another. Thus, Fairclough's (2010) Dialectical Relational Approach to Critical Discourse Studies focuses on analysing the dialectical relationships between discourse, to garner a deeper understanding of complex tensions, interactions and the behaviours they might produce.

Therefore, in the context of student CED use, by exploring the dynamic and reciprocal relationships between different social factors - such as neoliberal economic policies, neoliberal cultural, neoliberal institutional norms, and individual behaviours - neoliberalism's influence on education and subsequent student CED use can be better understood (Mann, 2022a). More specifically in terms of this research, a Dialectical Relational Approach allows for a consideration of the ways in which broader neoliberal policies shape not only student perceptions of CED use, but also their individual choices and how these perceptions and choices, in turn, might reflect and reinforce neoliberal policies (Mann, 2022a).

Thus, by unpacking the language and narratives surrounding student CED use in educational settings, the underlying discursive assumptions and values promoted by neoliberalism can be revealed. Hence, a Dialectical Relational Approach also enables for a critical analysis of power relations inherent within neoliberal frameworks (Fairclough, 2010). Importantly here therefore, is that it allows for an exploration of the ways in which neoliberal governmentality manifests competitiveness, individualism and entrepreneurialism amongst students, potentially resulting in the normalisation of CEDs for instance, as a means of achieving academic success (Mann, 2022a).

This makes a Dialectical Relational Approach more appropriate for directing this research than say, a Sociocognitive Approach to Critical Discourse Studies (van Dijk, 2008), which often emphasises cognitive processes and individual understandings of language. Consequently, it may well overlook the broader social and ideological contexts that influence behaviour and thus, not adequately address the power relations and systemic issues inherent in neoliberalism, given that subjectivity is central to its analytical framework (Gyollai, 2022). Of

course, exploring power relations and systemic issues in neoliberalism are critical for this research, particularly in understanding the motivations behind CED use by students.

Furthermore, a Dialectical Relational Approach is also concerned with radical shifts that arise in contemporary social life and the role of discourse within these processes of change (Fairclough, 2010) - contemporary student CED use, for instance (Mann, 2022a). Put another way, a Dialectical Relational Approach emphasises the ways in which the evolving dynamics of social life - such as the increasing normalisation of CED use amongst students (De Santis & Hane, 2010) - reflects broader cultural and ideological shifts, illustrating the complex relations between discourse, societal values, and individual behaviour (Wodak & Meyer, 2016). As well as the ways in which these factors collectively shape emerging identities (student CED user) and practices (CED use) in educational contexts (Mann, 2022a).

In addition, a Dialectical Relational Approach is interested in adjustments in the relations between semiosis and other social elements, positioned within the networks of diverse practices (Fairclough, 2010; Mann, 2022a). In the context of student CED use this can highlight for example, the ways in which the discourse surrounding CEDs interacts with various social elements such as, (neoliberal) institutional policies, academic pressure and peer influence. For instance, consider a hypothetical scenario where the narrative around using CEDs is prevalent within a university. This discourse shapes student attitudes, leading some to view CEDs as necessary tools for success in a competitive academic environment and as this discourse evolves, it influences various practices, such as study habits and exam preparation methods, for example (Mann, 2022a). Students might begin to openly discuss their use of these drugs on social media platforms, as can be observed on student CED related forums, creating a community that normalises their consumption (as will be illustrated and discussed in Chapters Six and Seven).

This evolving discourse not only reflects but also reinforces the social pressures that drive students to seek out CEDs, illustrating the complex relationship between language, social practices, and the individual choices students make in response to their academic environment (Mann, 2022a). However, Fairclough (2010) emphasises that one should not automatically assume the extent to which discourse operates within social practices; its role can vary in visibility across different practices. For example, it is reasonable to expect that

neoliberal discourse will be more prominent in the practices related to being a student in modern higher education institutions, than in those tied to familial roles (Mann, 2022a).

Fairclough (2010) also notes that the role of discourse in a specific practice can evolve over time; for instance, the use of CEDs compared to traditional drug use among students in higher education (Mann, 2022a). The contemporary practice of CED use amongst students represents a significant shift from traditional drug use, not only in the motivations behind its use, but also in terms of the settings in which they are used, the methods of consumption, dosages, and dosing schedules (Mann, 2022a). These changes can be attributed to broader shifts in discursive forces, particularly at a structural level; specifically, the structural discursive shift toward neoliberalism, which as discussed, has significantly modified the higher education environment and thus, student practices.

Moreover, Fairclough (2010) identifies three primary ways in which discourse operates within social practices. Firstly, discourse is a component of social activity within a practice. For instance, in a job role, part of the responsibilities involves using language specific to that role, such as the terminology used by an academic, medical professional, builder, or shop assistant (Mann, 2022a). Similarly, specific language use is also integral to the role of a student or a student CED user (Mann, 2022a). Secondly, discourse serves as a dimension in representations; as individuals engage in a practice, they reproduce representations of other practices alongside their own spontaneous representations (Fairclough, 2010). In other words, individuals recontextualise other practices by incorporating them into their own, and the way other practices are represented, can vary depending on the individual's position within the practice (Fairclough, 2010).

There is a final key element to the concept of representation, which Fairclough (2010: 3) terms, "imaginaries". Whilst the previously discussed discursive representations focus on current and past states, imaginaries refer to abstract representations of how things could, might, or should be; in other words, imaginaries are akin to projections (Mann, 2022a). For instance, when viewed in this light, the facts or 'knowledges' associated with neoliberalism or neoliberal society can be seen as imaginaries, representing potential realities or conceivable conditions (Fairclough, 2010; Mann, 2022a). Similarly, in the context of social practice, imaginaries project possible social practices and networks of practices. According

to Fairclough (2010: 3), these imaginaries involve the, “[...] possible syntheses of activities, subjects, social relations, instruments, objects, spacetimes, values, and forms of consciousness”. Moreover, such imaginaries can be enacted (Fairclough, 2010); thus, it is possible to see how the imaginaries of neoliberalism have seemingly interacted with those of drug use, projecting innovative social practices and networks related to drug use - specifically, the use of CEDs amongst contemporary higher education students, which have since been enacted.

A straightforward example of representation in the context of CEDs is that given the diverse range of drugs and substances used as CEDs - illustrated in Chapter Two - CEDs and their use can be seen as the recontextualisation of other drugs and drug use by social actors (Mann, 2022a). For instance, when a student uses a pharmaceutical drug such as Modafinil for cognitive enhancement, this drug's use has been recontextualised from a medicinal purpose to that of a CED. The collective and interconnected discursive representations associated with medicine, the student role, and CED use influence and shape the discourse and practices surrounding Modafinil. Consequently, all forms of representation impact and shape social practices, making them a crucial mechanism in the social construction of practices and the reflexive formation of identity (Fairclough, 2010). Certainly, Fairclough (2010) emphasises that discourse plays a role in identity formation; for example, identities such as ‘student’ or ‘CED user’ can combine to create a new identity - ‘student CED user’ - which represents semiotic ways of being (Mann, 2022a).

Therefore, it is important to reiterate that a CED can be viewed as the discursive recontextualisation of other drugs; theoretically, any drug may be used for cognitive enhancement (as discussed in Chapter Two). Hence, Fairclough’s (2010) notions of representation and importantly, recontextualisation were key aspects of the Dialectical Relational Approach operationalised in this research, which will be illustrated in Chapter Six. Thus, overly focusing on a specific type of drug or substance used as a CED by participants, was not considered fundamentally significant to the methodology of this study. As a result, the research included participants who reported using a diverse array of drugs as CEDs, ranging from traditional illicit drugs, such as cannabis, cocaine, and microdosed psilocybin

(magic mushrooms) to pharmaceuticals such as modafinil, as well as natural supplements and caffeine pills.¹⁷

4.3. Summary and Conclusion

This chapter detailed and discussed Critical Discourse Studies, illustrating why approaching the research from this perspective was beneficial, essentially, given the focus on semiosis - the meanings students construct around their use of CEDs. Section 4.1 provided a broad overview of Critical Discourse Studies, highlighting its philosophical foundations and outlined different methodologies, including a Dialectical Relational Approach as proposed by Fairclough (2010). Following this, Section 4.2 therefore discussed in relative detail a Dialectical Relational Approach, demonstrating its substantial relevance and utility in examining the potential influence of the key aspects of neoliberal ideology embedded in discourse, on the use of CEDs amongst contemporary higher education students. Thus, it was demonstrated the ways in which this approach to Critical Discourse Studies was philosophically and analytically most suited to directing the research methodology than for example, a Sociocognitive Approach. Certainly, there are key operational aspects of a Dialectical Relational Approach that were essential for this research.

Firstly, the emphasis on the concept of social practice facilitates a dynamic relationship between social structure and individual agency. A perspective that moves beyond a simplistic and deterministic binary, allowing for an increasingly nuanced analysis of the ways in which individual behaviour emerges from the dialectical tensions between these two elements. This duality is crucial for understandings of social phenomena, including the focus of this research - the contemporary trend in student CED use.

Secondly, a Dialectical Relational Approach enables for consideration of the ways in which neoliberal policies shape student perceptions of CED use. For example, that these policies not only influence individual choices but also reflect and reinforce the very structures that govern them. Therefore, by examining this relationship through participants' narrative accounts, insights can be gained into how students navigate their contemporary academic

¹⁷ It should be stressed that, the author remains aware that, as the literature review illustrated, many of the drugs popularised as CEDs are stimulant pharmaceuticals such as, Methylphenidate (Ritalin™), Dextroamphetamine Salts (Adderall™) and modafinil (E.g., Provigil™, Modalert™).

environments, within a neoliberal framework. Bound up with this, a Dialectical Relational Approach allows for an exploration of the ways that neoliberal governmentality foster values such as competitiveness, individualism, and entrepreneurialism. Thus, crucial for this research, is the way in which this cultural context may contribute to the normalisation of CEDs as a strategy for achieving academic success, highlighting the pressures students face in an increasingly competitive academic environment.

Finally, as suggested in the literature review - that any drug or substance can be perceived as a CED, contingent upon the motivations and meanings of the user, within a specific context - the notions of representation and specifically, discursive recontextualisation are pivotal in the analysis here. Indeed, these notions provide the theoretical foundation for understanding how discourse shapes and is shaped by social practices and therefore, the way in which any drug or substance can be utilised by students, as a CED. Having detailed these key operational aspects of a Dialectical Relational Approach to Critical Discourse Studies, the following chapter will set out and discuss the broader research methodology developed for this study.

5. Research Methodology

Introduction

This chapter details the methodological approach adopted for the research, which would most effectively align with critically exploring the role of neoliberal ideology embedded in discourse, regarding contemporary higher education student CED use. The opening section restates the research aim and objectives outlined in the introduction, as well as the research questions that emerged from the literature review in Chapters Two and Three. This is followed by a brief discussion concerning the study's philosophical foundations, specifically the epistemological approach, which was necessarily qualitative, given that a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010) directed the research.

Following this, the two qualitative methods selected for data collection are detailed and discussed: netnography and semi-structured interviews, along with the strategy and interview schedule designed for data collection and analysis. In addition, the ethical considerations associated with each method will be addressed, as well as the related limitations of the respective approaches. The chapter aims to demonstrate the ways in which netnography, and semi-structured interviews are advantageous to this study, presenting them as complementary methods that mitigate the limitations of each approach. Moreover, it suggests that combining these distinct, yet complementary methods, may provide an innovative contribution to qualitative research methods.

5.1. Research Aim and Objectives

Drawing on neoliberalism the aim of the research was to develop a theoretical framework of CED use by students in higher education. This theoretical framework will make a significant contribution to understandings of higher education student CED use and indeed, drug use generally. To achieve the overall aim, the research seeks to address the following objectives:

1. Interpret how the term enhancement is understood by higher education student CED users.

2. Critically analyse the narratives of higher education student CED users in terms of how they construct meaning around motivations for use, the benefits, and costs, etc.
3. Ascertain higher education students' ethical positions/perspectives around CEDs and whether these perspectives demonstrate an internalisation of the key neoliberal aspects of competition and the entrepreneurial subject position.
4. Understand the terms in which higher education students frame their experiences with CEDs.

To address these objectives and achieve the overall aim, the research critically analysed the narratives of CED users regarding self-perception, ethics, and motivations for use. Specifically, to understand the extent to which participants support or internalise neoliberal ideology, particularly the key characteristics, competition, and entrepreneurialism and how or if, they challenge or reject it. Hence, the research analyses the ideologies, knowledges and values that are utilised within the narratives of student CED users. Therefore, as presented in the literature review chapters, the following research questions emerged and were developed to achieve the objectives and thus, overall aim of the research:

5.1.2. Research Questions

1. In what ways do higher education students construct meanings around their use of drugs as CEDs?
2. Is neoliberal ideology embedded within the discourses of higher education student participants who are explaining their use of CEDs?
3. Do higher education students legitimise their use of CEDs, via the discourse of (neoliberal) competition?
4. Do higher education students frame their use of CEDs in terms of functionality, as a response to the entrepreneurial subject position, and hence, as a form of self-investment (human capital)?

5.2. Philosophical Foundations: Epistemology

As specified in the previous chapter, a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010) perceives discourse - language use in all its forms, including speech and writing - as a system of social practice. The context of discourse and the dialectical relations between different discourses are crucial to the production, maintenance, and transformation of social phenomena (Fairclough, 2010). This includes for example, the discursive production, maintenance, and transformation of medicines and traditional (illicit) drugs into CEDs, which some students recontextualise and use in the hope of augmenting their academic outcomes within the context of higher education (Mann, 2022a).

However, although aligning with social constructionism, as stated in the previous chapter, it should be stressed that the emphasis on the key role of discourse in the production of social phenomena does not philosophically position a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010) in the realms of radical social constructionism (Wodak & Meyer, 2016), which seemingly seeks to deny objective reality (Hacking, 2000). Rather, Fairclough's (2010) Dialectical Relational Approach to Critical Discourse Studies is an adapted form of Bhaskar's explanatory critique and pursues a middle ground between radical social constructionism and positivism (Fairclough, 2009; Looney, 2019). Certainly, for Fairclough (2010), as language refers partially at least, and with relative accuracy to a material reality, objects and phenomena exist independently of humans. However, objects and phenomena remain passive, the realities of objects and phenomena are constructed in social practice, via the dialectical relations between discourse (Fairclough, 2010).

Accordingly, given that the study analysed the narrative accounts of higher education student CED users, directed by a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010), the research epistemology was necessarily interpretative and hence, qualitative. For as Prescott et al. (2018: 5) point out, "Qualitative research is concerned with participants' own experience of life events. The aim is to interpret what participants have said to gain some insight or understanding of their lived experience or to explore in-depth a topic area of interest."

Therefore, the following will detail the qualitative methods that were used for data collection - netnography and semi-structured face-to-face interviews - and the specific data collection

strategies designed for each approach, to garner a comprehensive, rich data set. These sections will include the ethical considerations concerning each approach, the advantages, and disadvantages of these methods and thus, the ways in which each approach supplemented the other.

5.3. Research Methods

A Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010) posits that a key function of discourse, is as a dimension of social activity and that discourse constitutes what Fairclough terms, genres (Wodak & Meyer, 2016). Genres are different ways of acting semiotically, such as, conversations, business or political meetings, student seminars, or media commentaries, which thus produce, social life (Fairclough, 2010). For example, a genre to consider in terms of CED use by higher education students, would be an online CED related forum, on a student orientated website; or indeed, the face-to-face interview scenario in official research. Therefore, the following qualitative methods were adopted to carry out the research:

1. Netnography – data collection and analysis of online, higher education student CED related public forums.
2. Fifteen semi-structured, face-to-face interviews of higher education student participants who had experiences of using CEDs.

5.3.1. Method One: Netnography

The rapid growth of the internet over recent decades has provided myriad social media platforms, such as public forums, enabling individuals and groups from diverse backgrounds to freely discuss the vast landscape of human experience and its many facets (Naslund et al., 2020). Moreover, the internet has greatly enhanced the capacity for open, public discussion of sensitive topics, such as mental health (Naslund et al., 2020) and indeed, illicit drugs and drug use (Enghoff & Aldridge, 2019). Topics that would have historically, perhaps otherwise been avoided due to concerns around stigma, legal issues and thus, confidentiality, and anonymity (Enghoff & Aldridge, 2019).

Possibly for the first time in modern human history, the internet has positively allowed individuals from all walks of life to openly discuss illicit drugs and drug use safely and honestly, relatively free from the fear of personal ramifications or stigmatisation (Enghoff & Aldridge, 2019). Hence, it is of no surprise that drug researchers are increasingly looking to the internet, seeking to mine the rich depth of established real-world data digitally eternalised in cyberspace (Davey et al., 2012). Therefore, the internet, internet communities and associated drug related forums, have become a key component in drug research strategies (Davey et al., 2012; Enghoff & Aldridge, 2019).

Certainly, a growing number of contemporary drug researchers have recognised the internet's enormous research potential, tapping into and analysing the largely untapped stores of real-world qualitative data available in cyberspace for their studies (E.g., Davey et al., 2012; Chiauuzzi et al., 2013; Anderson & Kjellgren, 2017; McVeigh et al., 2018; Enghoff & Aldridge, 2019). Similarly, there exists a wealth of data on student CED related internet forums to harvest and analyse, which of course, would be of significant value to this research. Furthermore, in terms of a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010), as previously pointed out, (CED) forums can be thought of as genres. They represent semiotic ways of producing social life, constituted by social practices that involve power laden, interconnected, dialectically related discourses, which in turn generate further discourses (i.e., 'the student CED user').

Netnography is an innovative methodological approach developed specifically for analysing the rich depth of online data (Kozinets, 2010) described above. Thus, netnography is a qualitative research method that in essence, adapts ethnographic techniques to study online communities and cultures (Kozinets, 2010). It explores social interactions in digital contexts, seeking to understand behaviours, motivations, and (emerging) cultural phenomena in virtual environments (Kozinets, 2015). According to Kozinets (2015), netnography therefore involves researcher explorations of online platforms, particularly social media, with a fundamental focus on observing and collecting user generated data. Hence, it was apparent that netnography would be an extremely effective approach for this research, enabling a broader scope and a richer data set than could be achieved through face-to-face interviews alone, thereby enhancing the validity of the overall findings when conducted rigorously (Costello et al., 2017).

Importantly, as also noted by Gilchrist and Ravenscroft (2011), it was evident that the pertinent themes and issues emerging from the netnography could be utilised to inform and structure the face-to-face interview schedule. Furthermore, these themes could be clarified and explored in greater detail during the interviews (Gilchrist & Ravenscroft, 2011; Costello et al., 2017). Therefore, the netnography was conducted prior to the semi-structured face-to-face interviews.

5.3.2. Netnography: Data Collection and Analysis Strategy

The methods of conducting netnography vary based on the researchers' level of involvement, ranging from passive (nonparticipatory) to active (participatory) approaches (Costello et al., 2017). This research employed a passive approach, whereby the researcher does not guide the content by participating in the forum threads or by asking direct questions; instead, the researcher passively monitors the forum conversations (Kozinets, 2015; McVeigh, et al., 2016). This approach was deemed beneficial as it minimises researcher input and bias, allowing for the collection and analysis of a, "real-world data set" (Prescott et al., 2018: 8).

Due to ethical considerations, as will be discussed in Section 5.3.3, only public, open forums that did not require registration or have terms and conditions explicitly prohibiting research (Sugiura, 2016) were selected for analysis, to ensure that the forum communications viewed and analysed were in the public domain. Initially, two websites where higher education students had openly discussed CEDs were identified (the names of the websites are omitted here to maintain anonymity and confidentiality, which will be elaborated on in Section 5.3.3). Subsequently, using the Google search engine, various combinations of keywords - such as cognitive enhancers, smart drugs, study drugs, nootropics, higher education, HE, university students, students, and forum - were searched to identify additional websites containing relevant forum threads.

Over approximately fifty hours, netnographic data was collected between January 2019 and August 2021. Screenshots were taken from forum threads related to higher education student CED use, which were established between 2006 and 2021, across five different forum hosting websites. One of the websites was established in the UK and thus, contained CED related forum threads from the UK higher education student community. The remaining four

websites identified were global, allowing students from across the international higher education student community to engage in discussions on CED-related topics in forums.

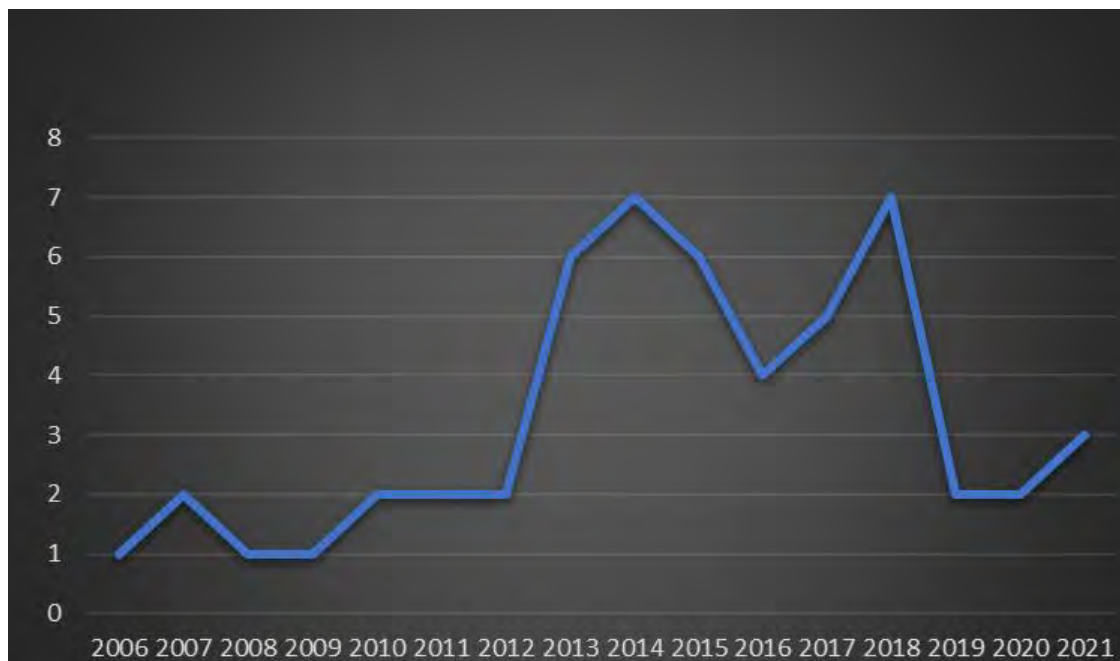
No initial upper limit was set on the number of forum threads to be screened and analysed; this decision depended on several factors, including the quality of data on each thread, the length of the thread, and considerations around data saturation. Data saturation was reached when screenshots had been taken of fifty-three forum threads across the five websites. In line with McVeigh et al. (2016), data saturation occurred when it was deemed that further threads would not yield any new or novel data.

The year forum threads were initiated was also of interest and recorded, as this potentially served as a useful indicator to explore contemporary student CED use and neoliberal discourse within higher education contexts. For instance, there was a notable increase in higher education student CED related forum threads (identified and analysed for this research) initiated since 2006, with a large cluster of the threads initiated between 2013 - 2018. This is exemplified by the table below (Table 1) and subsequent line chart (Fig 1):

Table 1

YEAR	NUMBER OF FORUM THREADS INITIATED
2006	1
2007	2
2008	1
2009	1
2010	2
2011	2
2012	2
2013	6
2014	7
2015	6
2016	4
2017	5
2018	7
2019	2
2020	2
2021	3

Fig 1.



Of course, this represents just the sample of forum threads identified and analysed for this research, therefore, it is important to consider that these figures potentially skew the wider picture. Moreover, there are myriad explanations to account for a possible increase in higher education student CED related forum threads, such as, the expansion of, and increased access to the internet since the turn of the millennium (Hillyer, 2020). Nevertheless, the above figures do potentially provide a useful snapshot of a conceivable wider trend in the initiation of higher education student CED related forums, relating to the contemporary trend in the use of CEDs by higher education students over the past two decades. A trend which has seemingly, coincided with the continued spread of neoliberalism into every aspect of the social world, including higher education (Mann, 2022a).

Each of the forum threads varied in length, ranging from one to six pages. Once suitable threads were identified for analysis, I utilised the NVivo NCapture tool in Google Chrome to screenshot the threads and transfer them into NVivo 12 data analysis software. Before employing a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010) for in-depth analysis (see Chapter 6), an initial thematic analysis was conducted. As noted by Braun and Clarke (2006: 79), "Thematic analysis is a method for identifying, analysing, and

reporting patterns (themes) within data". Therefore, themes that appeared to link student motivations to use CEDs, with the wider neoliberal milieu, specifically, the key characteristics, competition, and entrepreneurialism, were initially identified. As advised by Prescott et al. (2018), forum posts and threads were read and reread thoroughly, to utterly familiarise myself with, and get a feel for the data, before commencing analysis and coding.

In addition, it should be noted that there are two distinct ways to conduct thematic analysis: inductive and deductive (Clarke & Braun, 2016). The former is described as a bottom-up analysis driven by the data, where themes are extracted without reference to pre-established codes or the preconceived ideas of the researcher (Clarke & Braun, 2016). The latter is considered a top-down analysis that is theory-led, driven by the researcher's pre-conceived hypothetical contentions, and is therefore increasingly analyst-driven. Accordingly, the process involves coding for a specific established research question or set of questions (Clarke & Braun, 2016; Prescott et al., 2018). Consequently, given that the research was evidently theory led, that there were pre-conceived hypothetical contentions concerning the role of neoliberal ideology in contemporary higher education student CED use and thus, a set of established research questions, the thematic analysis utilised the deductive approach.

In line with Braun and Clarke's (2006) iterative six step process, the coding of netnographic data acknowledged manifest and latent codes. Manifest codes are derived from cursory level data - those elements that are explicitly stated (Braun & Clarke, 2006; Joffe, 2011) - such as, the forum thread inception date, the date of a given post, the type of CED used / discussed, etc (see Table 2). Manifest codes were crucial when analysed through the lens of a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010); for example, they illustrated how various drugs and substances were recontextualised as CEDs by higher education student participants in the neoliberal academic context, for the purpose of study.

Latent codes on the other hand, go deeper than cursory level semantics, in that they identify and draw out underlying, increasingly profound meanings in the data (Braun & Clarke, 2006; Joffe, 2011; Floodgate, 2017). For example, they reveal neoliberal ideology and its key characteristics - competition and entrepreneurialism - embedded in the discourse. Therefore, guided by a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010), latent codes were crucial for identifying discursive themes in participants' narrative accounts

regarding how language was used. Specifically, this analysis highlighted higher education students' motivations and legitimations for using CEDs, as well as the broader social, cultural, and neoliberal ideological contexts influencing their discourse.

Moreover, a dialectical relational analysis explored the relationships between different discourses - such as drugs, CEDs, students, academic study, and neoliberalism - and the overarching dialectical tension between structure and agency, helping to understand the ways in which these discourses interact, conflict, and produce meaning.

The overall analytic process is exemplified using the data example from the forum user below:

"I believe that cognitive-enhancing drugs like Ritalin and Adderall should be available to everyone [for study]. Here is my logic: The world is better off with smarter people who are better able to perform cognitively difficult tasks. Cognitive-enhancing drugs (CEDs) have been shown to increase cognitive performance on a number of tasks. The health effects of CEDs especially Ritalin and its offshoots have been studied extensively and the scientific consensus is that they do not pose serious health or psychological risks for most subjects who use the drugs in a responsible way. Given the first two points and the absence of any immediately apparent danger of CEDs, it is logical for as many people to take the drugs as possible. Those for whom the negative side effects outweigh the cognitive benefits can choose to not take them." (Forum User, 2014)

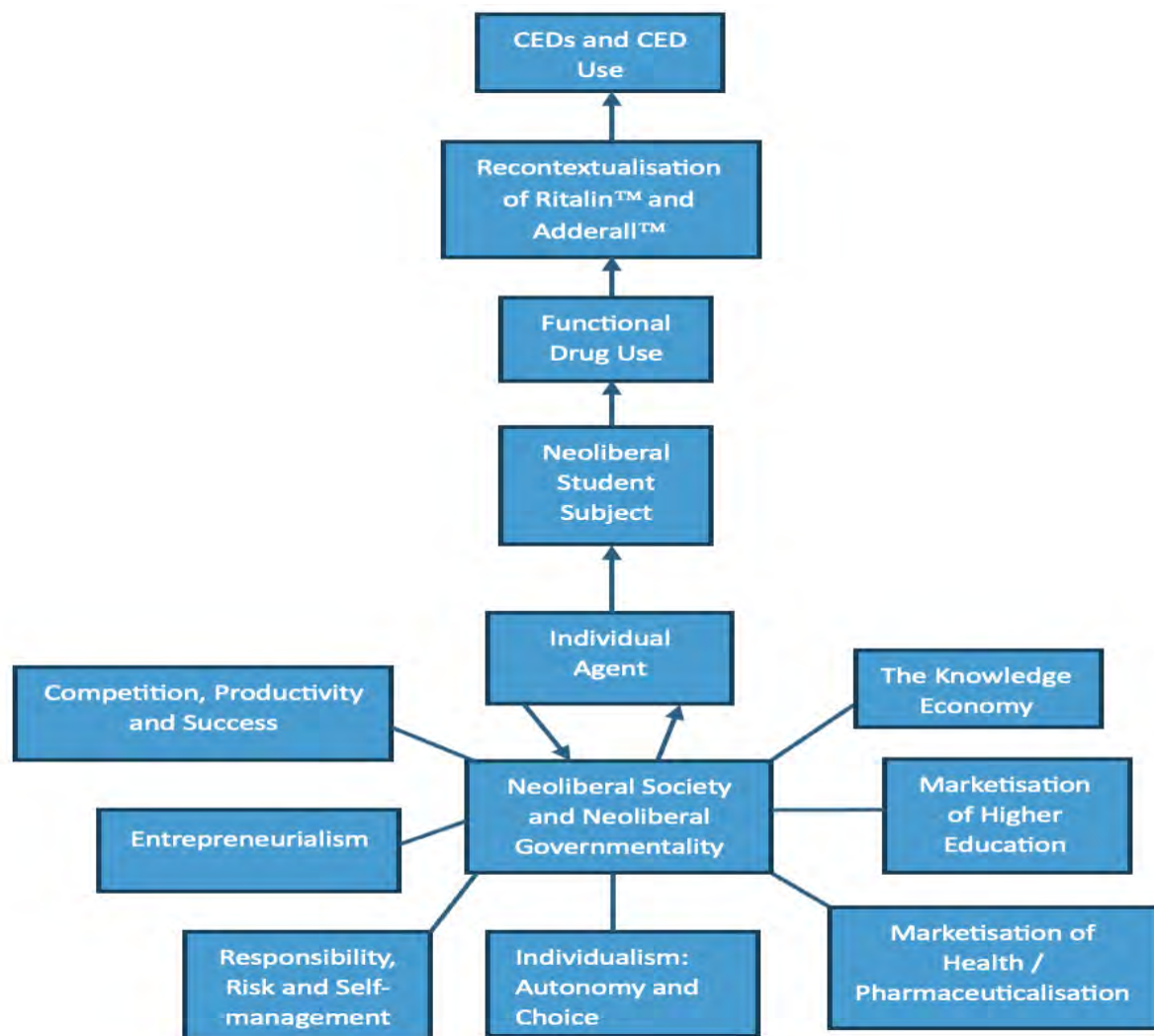
The forum user's statement explicitly addresses the use of Ritalin™ and Adderall™ for cognitive enhancement. A brief thematic analysis reveals latent neoliberal themes associated with neoliberal governmentality:

1. **Individualism:** The statement emphasises (neoliberal) personal choice and autonomy (Davies, 2017), suggesting that access to CEDs should be an individual decision rather than subject to regulation.
2. **Marketisation of Health and Pharmaceuticalisation:** The call for widespread availability aligns with neoliberal principles that promote the commodification of health, framing cognitive enhancement as a marketable good (Coveney et al., 2011).

3. **The Neoliberal Knowledge Economy:** The forum user's focus on "smarter people" and the performance of cognitive tasks.
4. **Competition and Productivity:** The assumption that enhanced cognitive abilities will improve performance reflects a competitive environment where individuals strive to optimise their productivity (Davies, 2017).
5. **Responsibility, Risk and Self-Management:** The implication that individuals are accountable for managing risk and their cognitive capabilities in a functional way, resonates with neoliberal ideas of self-optimisation (Rose, 1998).
6. **Entrepreneurialism:** By advocating for universal access to CEDs as tools for self-enhancement, the forum user embodies neoliberal entrepreneurialism (Dardot & Laval, 2017), within a competitive higher education context.

By employing a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010), a dialectical relationship amongst these discourses can be observed. This relationship produces meanings around CEDs as a functional form of drug use and the recontextualisation of Ritalin™ and Adderall™. Specifically, there exists a dialectical tension between neoliberal structure and agency; the forum user's desire for personal choice and academic enhancement (agency) contrasts with how neoliberal educational frameworks promote competition and performance-driven outcomes (structure) (Mann, 2021). This tension not only highlights the struggle between the pursuit of self-optimisation in a high-pressure academic environment and the systemic forces that commodify cognitive enhancement, but also the way in which such tensions manifest the CEDs phenomenon. The following visual representation (Fig. 2) aims to capture this process:

Fig. 2



The outcome of this analysis could thus be linked to the research questions, ultimately exploring the hypothetical contention concerning an association between higher education student CED use and neoliberalism. In addition, it was evidently crucial for the overall research aim: developing a theoretical framework for conceptualising higher education student CED use. Hence, in terms of data analysis, the following tables detail the set of thematic nodes were developed, in NVivo 12 data analysis software, as themes emerged from the netnographic data. Table 2 details the nodes for manifest codes and Table 3, those for latent codes:

Table 2

	NODE – MANIFEST CODES
1	Thread inception date
2	Date of Post
3	Gender
4	Age
5	University
6	Degree Course
7	Type of Drug Used
8	Frequency of Use and Regime
9	CED Effects: Positive and Negative
10	Other

Table 3

	NODE - LATENT CODES
1	Motivations for Use
2	Definition of Enhancement
3	Definition of Success
4	Functional Drug Use
5	Neoliberalism & Neoliberal Governmentality
6	Competition
7	Entrepreneurialism
8	Ethical Views on CED Use
9	Views on Other Drug use
10	Views on Education
11	Political Opinions
12	Other

Having set out the design strategy for netnography data collection and analysis; the following section will detail and discuss the ethical considerations when conducting netnographic research.

5.3.3. Netnography: Ethical Considerations

The netnography adhered to the ethical guidelines set forth by the British Sociological Association (BSA) in the Statement of Ethical Practice (2004). Additionally, it complied with the Data Protection Act 2018, which implements the General Data Protection Regulation (GDPR) (GOV.UK, 2018). The research also met the ethical requirements outlined in Manchester Metropolitan University's (MMU) ethics frameworks, as evidenced by the ethical approval granted on 26/11/2018 (EthOS Reference Number: 0791, see Appendix 1).

Importantly, as set out by institutional governing guidelines for research, such as the British Sociological Association (BSA) Statement of Ethical Practice (2004), or MMU's Ethics Frameworks and Guidance Documents (2019), research using human participants must consider the following most fundamental ethical matters: informed consent, anonymity, and confidentiality. Therefore, a key ethical principle for Kozinets (2002) in the context of netnography, is that the researcher must ensure the anonymity and confidentiality of participants. However, according to Prescott et al. (2018), one of the major ethical issues when doing netnography, concerns principally, issues around the way in which the material is accessed, in terms of informed participant consent.

Contributors to established online forums have (generally) in no way given prior consent to take part, or for the information they share, to be used in an official study (Tuikka et al., 2017). Indeed, it is uncertain whether they wish their opinions to be associated with academic institutions. However, Liu (1999) argues that the analysis of data on public forums may not require informed consent, as data on public forums, is already in the public domain. Although, as Sugiura (2016: 5) points out, "[...] definitions and expectations of privacy are ambiguous, contested and changing. People may operate in public spaces but maintain strong perceptions or expectations of privacy." Hence, Sugiura (2016) advises researchers to familiarise themselves with the forum(s) they are seeking to study, to gain as much of an understanding as possible, as to whether those who engage with and occupy a given forum, consider it to be public. Therefore, ongoing reflection on the part of the researcher during the research process is of paramount importance (Sugiura, 2016); guidance that I adhered to and followed in this study.

Furthermore, as stated, a key principle in much research including netnography are notions of anonymity and confidentiality (Kozinets, 2002). However, these may also represent potential unique ethical challenges for the researcher undertaking a netnographic study; particularly, netnographic research exploring a potentially legally sensitive topic (Tuikka et al., 2017) such as CEDs. Whilst it may appear that the anonymity and confidentiality of the unknowing participant could be assured, for example, by the researcher omitting references to a given forum or participant, direct participant quotes used in a research report might be traceable, due to the nature of digital footprints (King, 1996).

Certainly, quotes in a research report could lead directly back to the original contributors, potentially compromising their anonymity and confidentiality (Sugiura, 2016). Despite this risk, forum users typically use pseudonyms instead of real names which helps to mitigate concerns regarding anonymity and confidentiality (Sugiura, 2016). Therefore, in line with Kozinets (2002), I ensured that forum users were unidentifiable through pseudonyms before extracting and analysing data.

Sugiura (2016) does stress however, that researchers collecting and analysing data from public forums should take every precaution to ensure that the data is anonymised, so that it is protected from being identifiable to individuals. Sugiura (2016) suggests that where possible, key conversations taken from forums might be summarised in theses, reports, or publications, without losing their character. However, Langer and Beckman (2005) contend that netnography exhibits numerous similarities to analysis of conventional media - television or newspapers, for instance - particularly when discussions occur in public forums that are open to all internet users.

Furthermore, Trivison and Reilly (2014) warn that rewriting or paraphrasing data can pose ethical issues, particularly when research focuses on marginalised or oppressed individuals and groups, as this may distort their voices. Tuikka et al. (2017) reflect that finding the right balance between authenticity and an appropriate level of anonymity is indeed a challenging decision, often dependent on context rather than a one-size-fits-all solution. Given these perspectives, I concluded that the presentation of extracted forum data in this study is ethically justifiable, primarily because the data are in the public domain and I aimed to preserve the voices and experiences of participants.

That said, to minimise ethical risks Sugiura's (2016) advice was considered when writing this thesis and in associated peer review publications. For example, I was able to slightly reword certain aspects of some forum user quotes - by changing or removing unnecessary words - to reduce the risk of them being traced, whilst maintaining their discursive character. Additionally, direct reference to hosting websites, forums and the detailing of contributor names or pseudonyms in the presentation of data, was avoided. For example, throughout this thesis, forum thread contributors are referred to as: Forum User, 2006; Forum User, 2012; etc, which aligns with ethical guidance regarding online research established by King (1996).

Finally, it is worth returning to a previous point and stressing that, in terms of informed consent the distinction between the public and private domain is pivotal (Germain et al, 2018; Prescott et al., 2018; Harris et al., 2020). As Kozinets (2010) makes clear, if the conversation to be analysed is on a private forum, informed consent would be required, but if the conversation appears on a forum in the public domain, this communication would generally be considered obtainable for the purposes of research, so long as the individuals and their communications, are treated with due respect (Kozinets, 2010; Germain et al., 2018; Prescott et al., 2018; Harris et al., 2020; Germain et al., 2021). This approach was crucial for the netnographic aspect of this research, allowing me to analyse publicly available communication without requiring consent. Beyond these ethical issues when conducting netnographic research, there are limitations, specifically concerning data validity that the researcher should also reflect upon (Germain et al., 2018), as the following section will discuss.

5.3.4. Netnography: Limitations

Although, as previously pointed out, the netnographic approach to online research enables the researcher access to a rich depth of real-world data, there could nevertheless be potential issues concerning forum user authenticity and therefore, the validity of such data (Germain et al., 2018). This contrasts with the face-to-face interview scenario, where the researcher is in the direct presence of the participant; hence, they can build rapport, listen to and record their narrative in real-time (Irvine et al., 2012). The researcher can also observe non-verbal cues such as, body language / positioning, eye contact, etc, during the interview / conversational process, enabling them to more effectively gauge the participant in the moment (Irvine et al., 2012). The netnographic researcher on the other hand, must assume to a certain extent, that a forum user is authentic and expressing themselves honestly, openly and unreservedly (Xun & Reynolds, 2010).

Of course, there are no guarantees that participants will express themselves honestly, openly and without reservation during the face-to-face interview scenario (Schmid et al., 2024). For instance, the participant might have concerns about legal issues, feel vulnerable or have experiences of trauma (Schmid et al., 2024). Therefore, as Schmid et al. (2024) highlight, participants who have concerns, or are in vulnerable situations, may have a heightened need

for trust, empathy, and comfort. Researchers can thus address this by building rapport and creating a more comfortable environment for the participant, during the face-to-face interview, enabling for a more open and honest dialogue (Schmid et al., 2024).

In addition, and perhaps most importantly, regarding the issue of participant authenticity is that participants are sampled intentionally (Moser & Korstjens, 2017); hence, as part of the process there is an initial meeting or communication exchange between the researcher and potential participant. This is to gauge the participant's authenticity and appropriateness in terms of experience of the research area, to ensure that they are suitable to take part in the research and the formal interview process (Moser & Korstjens, 2017). Whereas, due to for instance, a lack of moderation on a given forum, the netnographic researcher must generally take at face value the authenticity of forum users and the experiences they express, through their words and statements, posted in conversations (Germain et al., 2018).

Certainly, there is ultimately, no way of knowing absolutely if a forum user has any experience - for instance of CEDs - having claimed to do so; hence, data could be misleading and irrelevant (Enghoff & Aldridge, 2019). As is commonly known, there are myriad reasons why some individuals like to join online communities and forums, claiming they are experienced, or experts on a given topic, when they are neither. As Aldridge and Askew (2017) highlight, online narratives cannot be seen as a straightforward or unambiguous reflection of the actual behaviours or attitudes of individuals. Therefore, I consistently reflected on all statements, particularly those that might be suspect, to eliminate where possible any potentially misleading, irrelevant, or suspicious data. For example, the following quote appeared part way through a student CEDs related forum thread:

*"If you want any smart drugs go to www. [website omitted for ethical reasons].
They sell everything and they all work."*
(Forum User, 2010)

The above quote was removed from the netnographic dataset. Robinson (2001) suggests adopting a constructivist rather than a positivist perspective means that the trustworthiness or truth value of the data, can only be assessed within its specific context. In line with this, I

inferred that the forum user was an interloper who had infiltrated the thread, as firstly, the comment was unrelated to the thread topic (the ethics of using CEDs in higher education).

Secondly, while the poster might have been innocently trying to direct people to a website that genuinely sold CEDs, I was concerned that this forum user could potentially be a “scammer,” directing other users to a potentially harmful website. Although I could not definitively determine whether the forum user was a “scammer” or if the link they provided was fraudulent, I chose not to follow the link due to my concerns. It is important to note that forum moderators often remove posts directing users to sites claiming to sell (illicit) drugs, including CEDs (Gomes & Sultan, 2024). However, as evidenced by the above forum post, some of these posts frequently go unnoticed by moderators, especially if they are not actively managing the thread on a given forum (Xun & Reynolds, 2010) and if the platforms are not overly restrictive (Gomes & Sultan, 2024).

A further limitation regarding the netnography is that the Google search terms relating to student use of CEDs often produced results linking only to forums discussing certain drugs; namely, methylphenidate (Ritalin™), dextroamphetamine salts (Adderall™) and modafinil. Consequently, whilst I did identify some forum discussions where higher education students addressed other, perhaps more traditional drugs, such as cannabis or the micro-dosing of psilocybin (‘magic mushrooms’) for cognitive enhancement, these discussions were limited. Therefore, the face-to-face interview aspect proved invaluable, as several participants discussed using such drugs for cognitive enhancement, during their studies. Indeed, Xun and Reynolds (2010) consider the use of additional techniques, such as interviews, as an extremely effective way to enhance netnography by drawing out further relevant data not immediately apparent in online forums.

Finally, as Robinson (2001) highlights, important contextual details are often missing from internet forums - such as age, gender, socioeconomic demographics, the type of university attended (whether ‘post-92’ or ‘traditional’), and the degree course or subject. However, such details can be gathered through face-to-face interviews, which are useful for verification and comparative analysis (Costello et al., 2017). For example, examining the use of different substances across various age demographics. Additionally, comparing the degree to which participants at different universities or on different courses internalised, challenged, or

rejected neoliberal ideology and how they respond to being constituted as entrepreneurial subjects. Analysis which of course is important to the overall aim of this research.

5.4. Method Two: Semi-Structured Face-to-Face Interviews

The second method of data collection utilised was semi-structured, face-to-face interviews. This technique is commonly used in qualitative research, where a researcher meets with a participant in a one-on-one situation to ask a series of pre-established, open-ended questions or to discuss predetermined themes (Given, 2008). This interview method differs from unstructured interviews, where the researcher has very little control over the themes and topics generated in the discussion. However, semi-structured interviews do remain dynamic and versatile by their nature (Kallio et al., 2016). Moreover, in contrast to structured interviews, where closed questions result in a limited range of responses, semi-structured interviews can elicit a wider variety of responses from participants due to their increased versatility (Given, 2008). This, in turn, can lead to a more theoretically rich data set (Given, 2008).

Hence, Galetta (2012) emphasises that a key benefit of the semi-structured interview method is its effectiveness in fostering a reciprocal relationship between the researcher/interviewer and the participant. This reciprocity allows the researcher/interviewer to adapt follow-up questions based on the participant's responses, whilst also providing room for participants to express themselves verbally in their own unique ways (Kallio et al., 2016). Given the fundamental nature of this research – a critical discourse study – the semi-structured interview approach would be most effective for gathering rich narrative accounts from participants, for in-depth analysis.

Interviews were conducted in 2019, prior to the Covid-19 pandemic. Due to ethical considerations (see Section 5.4.3), fourteen of the interviews were conducted in quiet corners of coffee shops, local to participants, and one was conducted in a public park, which was again, local to the participant. The interviews were recorded using digital recording equipment - an Olympus VN-540PC Dictaphone. Detailed notes were also taken during the interviews (for an example, see Appendix 5). The duration of the interviews was between thirty-five minutes and one hour, depending on how the conversation developed.

5.4.1. Sample Characteristics

In line with Miles and Huberman's (1994) guidance, a small, purposively selected sample consisting of fifteen participants was utilised for the semi-structured interviews. Broadly speaking, purposive sampling is employed to select participants who are most likely to provide relevant and valuable information (Kelly, 2010; Campbell et al., 2020). This approach contrasts with random sampling, as it ensures that participants meet specific criteria for inclusion, aligning with the study's aims and objectives (Campbell et al., 2020). For example, participants must have specific contexts and relevant experiences related to the phenomena being studied (Campbell et al., 2020). Hence, the inclusion criteria for this study were current UK higher education students, or those who completed their degree within the past five years and had experience of using drugs for cognitive enhancement. Initially, I aimed to recruit twenty interview participants; however, I had to reduce this number to fifteen due to the Covid-19 pandemic and the subsequent restrictions.

There was the option to conduct the remaining five interviews online via video call, such as Microsoft Teams. However, after careful consideration and discussions with my supervisory team, it was agreed that slightly reducing the number of participants would not impact the study, particularly as the research included netnography. Moreover, it was decided that conducting interviews online via video calls would not be appropriate as doing so, constitutes a fundamentally different qualitative interview approach, presenting unique challenges (Carter et al., 2021).

For instance, Carter et al. (2021) highlight distinct ethical issues, including privacy risks, as the participant will likely, in a sense, be inviting the researcher into their private space - their home, etc. In addition, some communication platforms necessitate a participant profile that includes details such as name, date of birth, phone number and email address (Carter et al., 2021). However, some individuals may prefer not to create a profile, or they may not be comfortable sharing such information if they do have one. Supporting anonymity can be crucial for certain individual and groups, particularly when research topics might be sensitive (Carter et al., 2021), such as drug use.

Importantly, Davies et al. (2020) emphasise that whilst conducting interviews online may increase the likelihood of obtaining the desired sample and would be assumed to facilitate

similar dialogue as in-person interviews, conversations often end up being shorter and provide less contextual information. Furthermore, participants may feel less connected or satisfied with their interactions, leading to weaker researcher-participant relationships and consequently, less effective collaboration compared to face-to-face interactions (Davies et al., 2020). Given these considerations, the team's decision to avoid using online video call technology for the remaining five face-to-face interviews during the pandemic was justified.

Table 4 on the following page details the fundamental characteristics of each participant, including, their name (pseudonym), gender, age, degree level, course, and the type of university they attend(ed). To note, 'traditional university' refers to, for example: University of Oxford (UOO), University of Cambridge (UOC), University of Manchester (UOM), etc. 'Post 92' universities are those that gained university status post 1992 in the UK, such as: Manchester Metropolitan University (MMU), Birmingham City University (BCU), Nottingham Trent University (NTU), etc. It should be stressed for ethical considerations, that the institutions mentioned here are used as examples to illustrate 'traditional' and 'post-92' universities and should not be assumed to represent the institutions attended by any of the participants.

Table 4

NAME	GENDER	AGE	DEGREE LEVEL	COURSE	UNIVERSITY
Tilly	Female	19	First Year Undergraduate	Medicine	Traditional
Josh	Male	18	First Year Undergraduate	Chemistry	Traditional
Liam	Male	23	Graduate (2018)	Politics, Philosophy & Economics	Traditional
Rachel	Female	22	Third Year Undergraduate	Medicine	Traditional
Harry	Male	19	First Year Undergraduate	Neuroscience	Traditional
Jake	Male	41	First Year PhD	Sociology	Post 92
Jim	Male	35	Fourth Year PhD	Politics	Post 92
Steve	Male	38	Postgraduate	Criminology	Post 92
Lisa	Female	39	Third Year PhD	Psychology	Traditional
Sarah	Female	25	Postgraduate	Criminology	Post 92
Brian	Male	40	Graduate (2017)	Social Work	Post 92
Emily	Female	24	Third Year PhD	Criminology	Post 92
Vicky	Female	19	First Year Undergraduate	Law	Post 92
Claire	Female	20	Second Year Undergraduate	Criminology	Post 92
Joe	Male	21	Second Year Undergraduate	Sociology	Post 92 University

5.4.2. Sampling: Participant Access and Recruitment

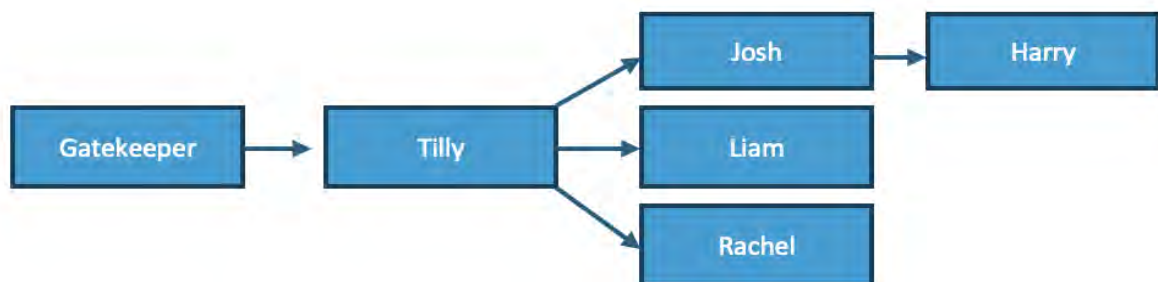
I accessed the first participant through a friend (Gatekeeper - see Fig. 3), who introduced me to a first-year student, Tilly, studying medicine at a traditional university, who used modafinil as a CED, as a 'study aid'. During an initial email correspondence, I provided Tilly with a participant information sheet (see Appendix 2) and a consent form (see Appendix 3). After reading through the participant information sheet, Tilly signed the consent form, demonstrating informed consent to be interviewed as part of the study and returned it to me on the day, prior to interview. Given the potential that willing higher education student CED user participants could be a 'difficult-to-reach-population', due to the nature of the research - drug use (Kirchherr & Charles, 2018) - I had already reflected and planned that a snowball sampling strategy would be most effective moving forward.

As Naderifar et al. (2017: 2) describe, snowball sampling is a "convenience sampling method", used when it is difficult to access individuals with specific purposive target characteristics. In this approach, current participants help to identify and recruit future participants from their peer networks (Naderifar et al., 2017). This allows the researcher to initially communicate more effectively with the participants, as they are acquaintances of the initial sample, who are also connected to the researcher, which helps foster a sense of trust. Establishing this initial trust is particularly important when engaging with individuals who are to discuss sensitive topics, such as CED use (Naderifar et al., 2017).

Therefore, the following three participants were accessed via snowball sampling, whereby the first participant Tilly, contacted seven student peers who would potentially be suitable and willing to be interviewed for the research. Tilly provided them with my academic email address and three expressed an interest in participating in the research: Josh, Liam and Rachel (see Fig. 3). I then engaged via email in a brief correspondence with them, to ascertain their suitability for interview. During this correspondence Josh, Liam, and Rachel were provided with a participant information sheet and a consent form, which they signed having read through the participant information sheet. Subsequently, they provided me with their signed consent forms prior to interview - Josh and Liam via email, and Rachel in person, on the day of the interview, to demonstrate informed consent.

Following the interview with Josh, Josh suggested that he could contact a friend of his, Harry, who he was aware used CEDs as a 'study aid'. I agreed and Josh introduced Harry and I, via email (see Fig. 3). Again, during the initial email correspondence, I provided Harry with a participant information sheet and a consent form, which Harry signed and returned via email prior to interview.

Fig. 3

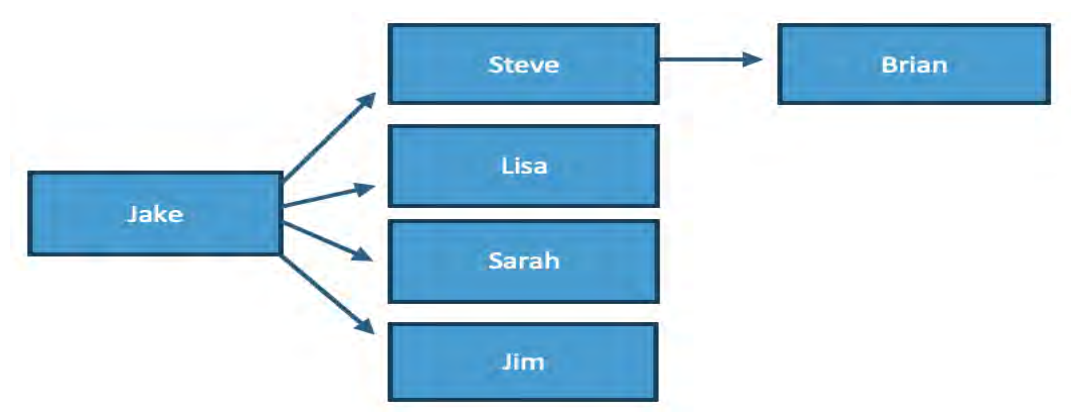


Following the successful recruitment of these four participants, I contacted via telephone a postgraduate student colleague, Jake, with whom I had previously discussed my doctoral research into higher education student CED use. During this discussion, Jake had disclosed that he used a variety of CEDs as a 'study aid'. Therefore, I asked Jake whether he would be willing to be interviewed as part of the research, to which he agreed. I arranged to meet Jake and provided him with a participant information sheet and a consent form, which Jake signed and returned on the day of the interview.

Following the interview with Jake, I again draw upon the snowball sampling technique, whereby, Jake initiated contact with a further six potential suitable participants. Four of these contacts replied to the email introduction - Steve, Lisa, Sarah, and Jim (see Fig. 4) - with whom I again corresponded initially by email to determine whether they would be appropriate to take part in the research. Steve, Lisa, Sarah and Jim met the purposive criteria and were thus, deemed suitable to participate in the study. Therefore, they were provided with a participant information sheet and a consent form, which they subsequently signed and returned via email, or in person on the day of the interview. Steve also initiated contact with a further potential participant, Brian (see Fig. 4), who had experience of using CEDs as a 'study aid'. Again, following an initial email correspondence to gauge suitability, Brian agreed to

participate in the research; hence, I supplied Brian with a participant information sheet and consent form, which Brian signed and returned, prior to interview.

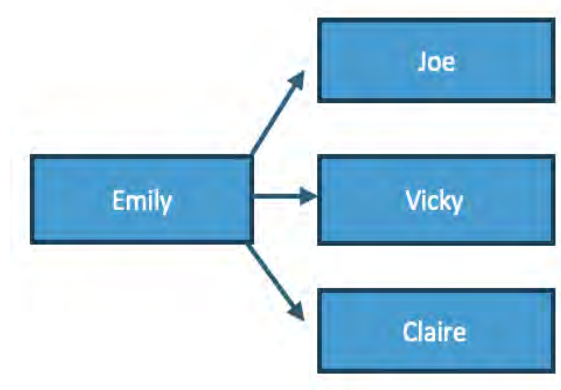
Fig. 4



The next participant would be a former student colleague, Emily, who I knew from my time at a previous university. Emily and I had a shared an interest in CEDs and I remembered that during previous discussions on the topic, Emily had disclosed that she used CEDs as a ‘study aid’. I contacted Emily by telephone to speak with her about my research and asked whether she would be willing to participate. Emily elucidated that she was currently in her third year as Criminology PhD student undertaking research (on the topic of image and performance enhancing drugs), at another ‘post 92’ university and that she would be happy to participate in my research. Following our telephone conversation, I provided Emily, via email, with a participant information sheet and consent form, which Emily subsequently signed and returned.

On conclusion of the interview with Emily, I again utilised the snowball sampling strategy; I asked Emily if she knew of any other potential, suitable participants. Emily contacted another four potential participants on my behalf, three of whom responded and were willing to participate - Joe, Vicky, and Claire (see Fig. 5) - all undergraduate students studying at ‘post 92’ universities. Following an initial correspondence to establish suitability, I provided them with a participant information sheet and consent form, which they each signed and returned to me on the day of the interview.

Fig. 5



Overall, snowball sampling proved to be a successful strategy in terms of participant access and recruitment, for this research. However, it should be stressed that, there are several limitations to snowball sampling which could have potentially impacted the research (Naderifar et al., 2017). These limitations will be discussed in the following section.

5.4.3. Snowball Sampling: Limitations

Although a popular and prevalent strategy for sampling in qualitative research (Parker, et al. 2019), snowball sampling can prove problematic, as has been widely documented elsewhere in the literature (E.g., see Cohen & Arieli, 2011; Waters, 2013; Parker et al., 2019). Firstly, whilst many argue that snowball sampling is effective for recruiting willing participants from hard-to-reach populations (Kirchherr & Charles, 2018), challenges can arise in locating suitable participants, particularly for research on sensitive topics such as illicit drug use (Waters, 2013). Therefore, I developed a participant recruitment backup plan, should snowball sampling prove troublesome for participant recruitment; whereby, I would advertise for suitable and willing participants on social media. A former MSc (drug) research student colleague advised me on this; they suggested I could target students on specific student social media group pages, a sampling strategy which had proved extremely successful for their drug research project (Bloomfield, 2019).

Secondly, as a network-based convenience method (Naderifar et al., 2017; Parker et al., 2019), snowball sampling has been criticised for not producing samples that meet the recognised criteria for random sampling in terms of statistical logic. Consequently, the foundations for establishing representation and therefore, generalisation, are often

questioned (Parker et al., 2019). However, since this research was qualitative guided by a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010), representation and generalisation were not sought. As discussed, this approach focuses on depth of analysis rather than breadth, aiming to understand the complex relationships between discourse, social practices, and power relations (Fairclough, 2010). Thus, it emphasises the importance of context, meaning, and the nuances of individual experiences within specific social frameworks, rather than prioritising representation or generalisability (Wodak & Meyer, 2016).

Another potential limitation of snowball sampling is selection bias (Parker et al., 2019). Since snowball sampling relies on a referral process, selection bias is often considered inevitable, as the sample depends on the researcher's immediate contacts and network. This can lead to distortion early in the process, affecting the development of the research (Parker et al., 2019). However, the impact of researcher bias in sampling was somewhat mitigated by the dual-faceted approach of the research methods - combining netnography with face-to-face interviews (Addeo et al., 2020).

Indeed, combining these methods allows for a more comprehensive understanding of the participants' experiences and perspectives (Xun & Reynolds, 2010). For instance, netnography enables the researcher to observe and analyse online interactions and discussions within relevant communities, providing context that may not be captured through interviews alone (Xun & Reynolds, 2010). This broader view can help counterbalance any selection bias from snowball sampling and associated researcher preconceptions, by revealing diverse viewpoints and experiences (Addeo et al., 2020). Moreover, netnography of course uncovers participants who are not part of the snowball network initially solicited by the researcher, thereby enriching the sample and enhancing the overall validity of the findings (Enghoff & Aldridge, 2019).

5.4.4. Semi-Structured Interview Schedule

To ensure the effective implementation of a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010), the interview schedule (see Appendix 4) was designed using a key topic guide informed by the themes and issues emerging from the ongoing netnography (Xun & Reynolds, 2010). This allowed for the inclusion of specific, open-ended

questions and further conversation-specific questions as the interview developed. The schedule was designed in this way, to elicit a conversational exchange where each participant could express themselves uniquely, in their own way, to provide an increasingly detailed narrative account. Therefore, an informal approach to the interview scenario was adopted, which encouraged participants to be at the centre of the research. According to Hollway and Jefferson (2000), this approach is the exemplar, in terms of in-depth, face-to-face interviewing in qualitative research. The key topics, informed by the netnography, were as follows:

- 1. Experiences with CEDs, including motivations for use and ethics of CEDs**
- 2. Defining enhancement**
- 3. Defining success**
- 4. The contemporary HE student experience**
- 5. Views on other forms of drug use**
- 6. What it means to be human in contemporary society**

Each of the key topics, informed by the netnography, was formulated according to the research objectives and specifically to address the questions and develop the theoretical framework. Topic One addresses research questions 1, 2, and 3. Topic Two addresses questions 1 and 4. Topic Three addresses questions 2, 3, and 4, whilst Topic Four also addresses questions 2, 3, and 4. Topic five was formulated to address research questions 1 and 4, and Topic Six was formulated to address question 2 specifically.

However, given the informal approach and the researcher's ability to ask ad hoc, probing questions based on the conversation's development during interviews (Moser & Korstjens, 2017), all topics were observed as providing relevant data to address all research questions. For example, after participants were asked to clarify their age, gender, the university they attended, and the degree subject they were studying - framed around the first topic - they were then invited to respond to the following open-ended question:

"What are your experiences with cognitive enhancers at university?"

Participants were thus able to interpret and respond to this question in their own unique way, which would lead to a more in-depth conversation around CEDs with individual participants, where I could interject with further appropriate probing questions (Mosher & Korstjens, 2017). For example, Josh disclosed that he initially used modafinil recreationally, aged fifteen, prior to attending university. Hence, I was able to probe further, to elicit greater detail:

“So, you used Modafinil recreationally, before using it to study. Why did you use it recreationally and why do you now just use it as a ‘study aid’?”

In response, Josh disclosed that many in his friendship group, at age fifteen, were using MDMA recreationally; however, Josh was frightened to use MDMA but was introduced to modafinil by one of his friends as an apparently safer alternative. In addition, Josh revealed that upon starting university he became aware that modafinil could be used as a CED, as a ‘study aid’. Therefore, Josh stated that he no longer used modafinil recreationally, but as an academic ‘study aid’, when writing essays or revising for exams. As is evident, as the conversation developed from the first topic, Josh also began to address the other research questions.

Certainly, analysed and interpreted in line with a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010), although Josh had discursively recontextualised modafinil twice, firstly, from a medicine to a recreational drug and secondly, from a recreational drug to a CED, it was the second discursive recontextualisation that was of critical importance here. Josh had discursively recontextualised his use of modafinil from recreational drug use, to functional CED use, upon starting university, which therefore begins to tie in with not only research questions, 1, 2 and 3, but also question 4.

Moreover, this again demonstrates the effectiveness of the informal approach to conducting interviews, where a themed, guided approach enables for a free-flowing conversation to develop, empowering participants to take centre stage (Hollway & Jefferson, 2000; Askew, 2013). Thus, empowered to speak freely, participants often reveal important subtle nuances concerning the topic, which in turn, provides increasingly detailed, narrative accounts (Mosher & Korstjens, 2017). As stated previously, this was crucial for the research, to

effectively apply a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010) for data analysis (which will be discussed in detail, in Chapter Six).

In addition, another advantage of face-to-face interviews as previously pointed out, is that the researcher can observe and document non-verbal signals elicited by the participant during the conversation, such as body position - whether they appear comfortable at that moment (Irvine et al., 2012). The researcher can also pay attention to the participant's speech patterns. Are there significant pauses in their speech? Does their speech pattern change when narrating a particular experience, for instance (Kumar, 2005)?

Indeed, this was observed when interviewing Jim in a public park during the summer of 2019. The conversation was flowing freely; Jim was sharing much about his experiences with CEDs. However, out of my sphere of vision, a family came within our proximity, at which point, Jim paused appearing uncomfortable. I quietly and calmly asked Jim if he was okay, to which he nodded in response, before motioning a subtle nod and glance towards the family, to which I in turn, nodded in response. I paused the interview and after almost five minutes, I asked Jim if he would feel more comfortable continuing the interview in a different location, which he agreed to.

It can be inferred that this incident demonstrated the internalisation of public stigma and negative stereotypes regarding drug use and users (Keane, 2002; Herzog, 2016; Moore et al., 2017) at a subjective level for Jim. He was concerned about the potential significant adverse consequences of being overheard discussing his CED (drug) use. Importantly, this can also be linked to research question 2. Neoliberal ideology constructs drug use, particularly problematic drug use, extremely negatively, as being an adverse choice, on the part of the individual (Seddon et al., 2008; Floodgate, 2017; Askew & Williams, 2021).

Moreover, the above highlights the importance of ethical considerations, such as anonymity and confidentiality, when conducting face-to-face interviews in qualitative research, particularly around a potentially (legally) sensitive topic (Miles & Huberman, 1994) such as CEDs. This, along with the limitations of face-to-face interviews, which are generally bound up with the ethical considerations (Allmark et al, 2009), will be discussed in greater detail in the following section.

5.4.5. Semi-Structured Interviews: Ethics and Limitations

As with the netnography, the semi-structured interview aspect of the research complied fully with B.S.A ethical guidelines, as set out in the Statement of Ethical Practice for the British Sociological Association (2004). Furthermore, the interview aspect of the research complied fully with MMU's ethical guidelines, as set out in the university's ethics frameworks and guidance documents (MMU, 2019), demonstrated by MMU granting ethical approval for the research on, 26/11/2018 (EthOS Reference Number: 0791. - see Appendix 1). Crucially, due to the research being qualitative, involving the semi-structured interviewing of students concerning a potentially (legally) sensitive topic, participant anonymity and confidentiality were of paramount importance (Miles & Huberman, 1994).

As stated previously, suitable participants were emailed a participant information sheet (see Appendix 2), which detailed the nature of the research and significantly, informed participants that they were free to withdraw at any time, following the guidance of Miles and Huberman (1994). Furthermore, given the nature of the topic - substance use - the information sheet included details about drug, alcohol, and mental health services, which participants could access if needed. It is important to stress that, as with all qualitative research involving human subjects, participants were required to give informed consent after reading the information sheet (Miles & Huberman, 1994). They were obliged to sign a consent form (see Appendix 3) prior to the formal interview, as noted in the previous section.

In addition, although interviews were conducted in public spaces due to ethical considerations concerning the safety of both myself as a researcher and the participants (Patterson et al., 1999), I ensured that a reasonable distance was always maintained from the public, to minimise risk around compromising participant anonymity and confidentiality. Interview recordings were uploaded to my PC following interview and imported into NVivo 12 software and password protected, before being permanently deleted from the Dictaphone. Once imported into NVivo 12 software, audio recordings were not saved under the names of participants. Rather, they were saved under pseudonyms (see Table 4), which as according to Gibbs (2018), is standard practice. To note, these pseudonyms are used in place of participant names throughout this thesis.

Another important ethical consideration when conducting face-to-face interviews is an awareness and understanding of the potential impact of the researcher on the participants and vice versa, particularly regarding the discourse that emerges (Edwards & Holland, 2013). There are several problematic dimensions to the researcher-participant relationship in face-to-face interviews that can influence the research and are considered limitations of this method in qualitative research. For example, personal, emotional, ideological, and political convictions can play a significant role (Subreenduth & Rhee, 2010; Bettez, 2015). Tied to this is the inherent power dynamics present in the face-to-face research interview scenario, where notions of formality and perceived officialdom can play a significant role (Dearnley, 2005).

This was evident during an initial practice / pilot interview, with a former student CED user. Malmqvist et al. (2019) stress that a pilot interview should be considered as a key ethical aspect of the research design, as one of its main aims is to enhance the quality of the research, which includes improving the interview technique of the researcher. It was interesting that prior to commencing the pilot interview for this study, the participant and I had been having an in-depth discussion around CEDs; the conversation flowed freely, and several interesting points were raised. However, the moment that I began the formal pilot interview, turning on the recording equipment, etc, the power present resulting from the context and the formality of the official interview scenario, became starkly apparent. I felt a sense of pressure, in terms of guiding the conversation and I noticed a certain “edginess” or “apprehensiveness” on the part of the participant. Consequently, what was previously a free-flowing conversation around CEDs, became a strained and somewhat uncomfortable encounter, the result of a simple, yet powerful contextual shift.

This pilot interview proved to be a valuable experience and was certainly, an extremely useful learning curve, proving an effective practice for enhancing my interview technique and thus, the quality of the research (Malmqvist et al., 2019). The subtle power dynamics, which as many other social researchers have observed as being characteristic of the qualitative research interview scenario (E.g., see Dearnley, 2005; Bettez, 2015), were indeed made explicit and were increasingly apparent to me, as a relatively inexperienced social researcher. Therefore, this pilot interview provided excellent insight and a useful opportunity to reflect upon how I would approach interviews with participants moving forward.

Indeed, I reflected that, for future interviews I should first focus on the ways in which the formal nature and perceived officialdom of the interview scenario impacted upon me as a relatively inexperienced researcher. That the only element I could control to aid in building rapport, ensuring that the interview conversation could flow freely and that participants would feel a relative sense of ease within the interview process, was how I responded to the formal nature and perceived officialdom of the interview scenario. Certainly, Poggenpoel and Myburgh (2003) recommend that researchers always remain reflexive and humble. Doing so can of course, enhance interviews by fostering openness, allowing for flexibility in interaction, and building rapport - each contributing to a more comfortable and engaging dialogue (Poggenpoel & Myburgh, 2003). Therefore, I determined that, prior to commencing interviews, I would focus on developing a calm and relaxed mindset; if I appeared anxious or nervous, this could potentially transmit to participants and lead to an awkward encounter and limited conversation. I also considered other small details, such as, my appearance - dressing in an informal manner - which as suggested by McLeod (2014), can positively affect rapport between interviewer and participant.

Furthermore, I reflected that the environment within which interviews would take place, was also crucial to ensuring that the participants and I, would feel at ease during the interview process (Dearnley, 2005; Edwards & Holland, 2013), particularly, given the potentially sensitive nature of the topic. Therefore, although for ethical reasons, interviews were required to take place in the daytime in public spaces to ensure the safety of both the researcher and the participants (Paterson et al., 1999), I determined that suitable locations could include a quiet corner of a coffee shop or a public park. However, there are no guarantees of a perfect, disturbance-free environment, as illustrated by the discussed interview in the park with Jim. Nonetheless, such settings can generally provide a tranquil atmosphere for conducting interviews, which is important for enabling the participant and indeed researcher, to feel more at ease (Bashir, 2017).

Reflecting on the different ethical considerations and dimensions that could negatively impact the interview scenario, resulted in the ability to implement measures to ensure that the participants and I, were calm and relaxed, resulting in conversations with participants that were for the most part, free flowing, enabling for detailed participant narrative accounts to emerge. This, therefore, gave rise to a rich dataset which could be coded and analysed,

directed by a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010). The strategy for data coding and analysis of semi-structured face-to-face interviews will, accordingly, be discussed in the following section.

5.4.6. Coding and Analysis of Interview Data

As with the Netnography, data gathered via the semi-structured face-to-face interviews, were imported into NVivo 12 data analysis software. Interviews were initially listened to in full, whilst the field notes taken during the interviews were also referred to, to familiarise myself with the data. The field notes were important, as I was able to relate to the verbal data, observations I had recorded in the field notes during the interview (see Appendix 5), concerning specifically, non-verbal signs, such as, participants' body language, for instance. This initial process also involved taking preliminary notes about the data, to begin relating the data to the research questions. Certainly, Willig (2013) stresses that, this is important in terms of influencing the later process of more systematic coding.

Rather than transcribing and then coding from the written form, interviews were coded directly from the audio recordings. In terms of a Dialectical Relational Approach to Critical Discourse Studies, text is considered not only in its written form but also in its spoken form (Fairclough, 2010). Therefore, since the data from the netnography was in written form, I reflected that it would be interesting to maintain and analyse interview data in audio form, for comparative purposes. In addition, I reflected that maintaining interview data in audio form would be advantageous as, given a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010) directed the research methods and subsequent data analysis, much of the discursive character of the interviews would be better preserved in audio form (Bucholtz, 2000). For example, audio recordings allow for the preservation of important changes in speech patterns, tone, and subtle utterances and nuances that could be lost or overlooked during transcription (Bucholtz, 2000; McMullin, 2021).

As will be illustrated and discussed in Chapter Six, I was able to capture Jake's self-depreciating laughter for example, when he described himself as potentially being an "idealist" for believing in notions of equality, when discussing his perceptions of success. This form of laughter for instance, may represent a recognition of the gap between Jake's ideals and the prevailing realities of neoliberalism, which often prioritises individual success over

collective equality (Davies, 2017). Thus, it could reflect a sense of irony regarding Jake's beliefs in a (neoliberal) system that may undermine those ideals.

Moreover, as Bucholtz (2000: 1439) stresses, "A reflexive transcription practice, as part of a reflexive discourse analysis, requires awareness and acknowledgment of the limitations of one's own transcriptional choices." Although Bucholtz refers to reflexive transcription in relation to traditional forms of discourse analysis, Verschueren (2001) and Blommaert (2005) emphasise that reflexivity should also be integral to every aspect of the research process in more recent forms of discourse analysis, such as a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010), including the practice of transcription. Therefore, it was important that by avoiding written transcription, I could maintain a full verbatim account (Bucholtz, 2000) of the discursive character of the interviews.

This approach further allowed for increased reflexivity, enabling for a more complete understanding of my role as the researcher and the discourse that emerged during conversations with participants whilst coding and analysing the data. Certainly, similar to internet forums related to higher education student CED use, the face-to-face interview scenario, in terms of a Dialectical Relational Approach to Critical Discourse Studies can be viewed as a genre - a semiotic way of producing social life that contains social practices constituted of dialectically related discourses and dynamics of power (Fairclough, 2010) (i.e., between the researcher and participant).

To transition from audio to text, I first listened to the entire audio recording, noting the timestamps of what I interpreted as pertinent data. I then revisited each timestamp, pausing the audio to transcribe the data verbatim, in a Microsoft Word document. After completing the transcription, I listened again to ensure accuracy before coding. As with the netnography, the coding of face-to-face interviews first followed Braun and Clarke's (2006) six-step process and involved an initial thematic analysis, where both manifest and, more importantly, latent codes were acknowledged (Braun & Clarke, 2006). Minus the 'Thread inception date' and 'Date of post' nodes (see Table 2 in Section 5.3.2), the coding process for the semi-structured face-to-face interviews utilised the nodes already established in NVivo via the data that emerged from Netnography (see Section 5.4.2). This process was followed by a more specific

analysis guided by a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010).

As with the netnographic data analysis detailed in Section 5.3.2 and visually represented by Fig. 2 in the same section, this Dialectical Relational Approach analysis to the interview data involved immersing myself in the data, reading and re-reading it whilst noting initial impressions to understand the context, themes, and nuances (Wodak & Meyer, 2016). Following this, I sought to identify discursive practices in the narrative accounts of participants, considering the wider social, cultural and neoliberal ideological contexts that appeared to be influencing the discourse, in terms of meanings, motivations and legitimations around the use of CEDs. Crucially, a dialectical relational analysis was conducted to again explore the relationships between different discourses, aiming to understand their dialectical tensions and the ways in which such tensions manifest student CED use.

5.5. Summary and Conclusion

This chapter has detailed and justified the methodological approach utilised for the research. Directed by a Dialectical Relational Approach to Critical Discourse Studies, the research was necessarily qualitative in design. The most effective way to address the research questions and achieve the aim of developing a theoretical framework for conceptualising higher education student CED use, was to combine two qualitative methods: netnography and semi-structured, face-to-face interviews.

Netnographic data was harvested from fifty-three higher education student CED related forum threads across five websites, whilst the semi-structured face-to-face interviews were conducted with fifteen willing participants, who had experiences of using CEDs. Each of the interview participants were provided with a participant information sheet and gave informed consent to be interviewed, by signing a consent form. Indeed, the chapter also detailed the ethical considerations for each approach and their subsequent limitations, illustrating the advantages of combining netnography with semi-structured face-to-face interviews, particularly when researching a potentially sensitive topic such as higher education student CED use.

It was explained that the netnography commenced prior to the face-to-face interviews, as this approach would be increasingly advantageous to the research. Firstly, the themes and issues that emerged from the netnography informed the structure and schedule of the subsequent face-to-face interviews, bringing the global flavour of the netnography into a UK-specific focus. Secondly, the themes and issues identified in the netnography could be clarified and explored in greater depth during the face-to-face interviews, which was crucial for addressing the research questions and establishing the theoretical framework.

In conclusion, combining netnography with semi-structured face-to-face interviews provides a unique methodological contribution to knowledge, representing an innovative qualitative approach to drug research. At the time of writing, it remains somewhat challenging to find studies on substance use that specifically combine these two distinct approaches to qualitative data collection. Within the context of a Dialectical Relational Approach to Critical Discourse Studies, this combination of genres - CED-related forums and semi-structured face-to-face interviews - can reveal subtle nuances that may not be apparent when using a single approach in isolation. For example, the discursive recontextualisation of traditional drugs as CEDs is less evident in online forums but is more prominently discussed in face-to-face interviews, constituting a widening of what are typically considered CEDs, which will be illustrated and discussed further in the following chapter. This widening of what are commonly thought of as CEDs in much general CEDs discourse and literature, also marks a further significant contribution to knowledge of this research.

6. Results Part One: Emerging Neoliberal Themes

Introduction

The results of this study are presented and discussed across two distinct chapters. Directed by a dialectical relational approach to critical discourse studies, the following chapter, Part One, will illustrate and discuss emerging neoliberal themes, which were evident within student participants' discursive repertoires, in terms of their meanings, motivations and legitimations around drug use for cognitive enhancement, in academic settings. Section 6.1 will detail and discuss data concerning the recontextualisation by students, of a diverse array of drugs and substances, as CEDs. These findings serve to support the assertion posited in Chapter Two: that the definition of a CED is not confined to a specific substance or its effects. Instead, it is contingent upon a multitude of factors, including (the neoliberal) context, motivations for use, and the meanings constructed by users. Hence, as the chapter progresses and leads into the subsequent results chapter, the term CED will be largely abandoned, in favour of, drug use for cognitive enhancement. This shift in terminology also begins to highlight the significant role played by neoliberal ideology in shaping student user meanings of drug use for cognitive enhancement, around notions of functionality.

Section 6.2 builds upon the findings of Section 6.1, detailing and discussing data to demonstrate the ways in which neoliberalism and by extension, neoliberal governmentality, are intricately interwoven within the discursive frameworks of student participants, profoundly influencing how they often articulate motivations, legitimations and meanings of their drug use for cognitive enhancement, around notions of functionality and perceived benefits. Therefore, illustrating the inadequacies of dominant medical and legal theoretical perspectives and subsequent drug binaries (E.g., recreational or problematic; legal or illegal), in terms of conceptualising the contemporary trend in drug use for cognitive enhancement, amongst students.

Section 6.3 details and discusses the ways in which responsibilisation (Garland, 1996), as a feature of neoliberal governmentality and the characteristic notions of individual

responsibility and self-reliance, are also crucial to the ways in which students construct meanings around their use of drugs for cognitive enhancement, which are as stated, centred on notions of functionality and perceived benefits. Moreover, this section, by drawing on netnographic data specifically, highlights that there are often conflicted meanings around the perceived functionality of student drug use for cognitive enhancement, particularly amongst users and non-users. However, although there appears to be conflicted meanings, they nevertheless remain rooted in and reflect responsibilisation as a feature of neoliberal governmentality and the associated key neoliberal characteristics of, individual responsibility and self-reliance.

Exploring further student user meanings around notions of functionality and perceived benefits, Section 6.4 details and discusses an interesting finding from the face-to-face interviews, that older participants would often perceive the potential benefits of drug use for cognitive enhancement differently to their younger counterparts. That there was a seeming residue of welfarism, collectivism and notions of social justice within the discursive repertoires of older participants, when discussing perceived benefits. That said, this section as with the preceding sections, begins to demonstrate that students' choices to partake in drug use for cognitive enhancement, appear to be influenced by a complex interplay of factors, ultimately shaped by the considerable impact of neoliberalism. That the choice by students to use drugs for cognitive enhancement in academic settings is in a sense, a functional response to the conditions in higher education, established under neoliberalism.

6.1. Neoliberalism and Student Users' Recontextualisation of Other Drugs as CEDs

Chapter Two explored and conferred the classification of CEDs, establishing that the most commonly acknowledged CEDs primarily fall within the category of pharmacological stimulants, of which notable examples include, methylphenidate (Ritalin™), dextroamphetamine salts (Adderall™), and modafinil. Certainly, these pharmaceuticals were observed to be the most frequently discussed drugs used for cognitive enhancement, in the netnography specifically. On the other hand, in the face-to-face interviews, although occasionally mentioned, none of the participants had used methylphenidate (Ritalin™) or dextroamphetamine salts (Adderall™) for cognitive enhancement, whilst modafinil was most frequently discussed amongst the face-to-face participants. That said, the landscape of CEDs

extends beyond these commonly acknowledged pharmaceuticals, encompassing a diverse range of other synthetic compounds and natural elements which are purported to enhance cognitive function (Coveney et al., 2019). This was corroborated via this research, illustrated by the table below, which details the range of substances discussed by participants:

Table 5

Drug / Substance	Methodology
<i>Pharmaceuticals</i>	<i>Data Source</i>
Methylphenidate (Ritalin)	Netnography
Dextroamphetamine Salts (Adderall)	Netnography
Modafinil	interviews & Interviews
Armodafinil	Netnography
Dihydrocodeine (Paramol)	Interviews
Diazepam	Netnography & Interviews
Gabapentin	Netnography
Pseudoephedrine	Netnography
Vinpocetine	Netnography
DMAE	Netnography
<i>Traditional (illicit) Recreational Drugs</i>	
Cannabis	Netnography & Interviews
Psilocybin ('Magic Mushrooms')	Netnography & Interviews
Cocaine	Interviews
Speed	Netnography
<i>Novel Substances</i>	
Phenibut	Netnography & Interviews
Noopept	Netnography & Interviews
Fasoracetam	Netnography
Piracetam	Netnography
<i>Supplements</i>	
Vitamin B	Netnography & Interviews
Vitamin D	Netnography
Vitamin K2	Netnography
Omega 3	Netnography
Choline Inositol	Netnography
Zinc	Netnography
Magnesium	Netnography
Magnesium L-Threonate	Netnography
L-Tyrosine	Netnography
5-HTP	Netnography
Tryptophan	Netnography
Caffeine	Netnography & Interviews
Uridine	Netnography
Rhodiola	Netnography
Acetylcarnitine (ALCAR)	Netnography
Lions Mane	Netnography & Interviews
Cordyceps	Netnography
Apple Cider Vinegar	Netnography
Shilajit	Netnography

The elusive boundaries around what constitutes a drug or substance as a CED and subsequent intricacies surrounding definitions of CEDs (Keane, 2011; Bell & Figert, 2012; Coveney et al., 2019; Askew & Williams, 2021; Hope et al., 2021; Hupli, 2022; Mann, 2022a), were also illuminated Chapter Two. Hence, the concept of what constitutes a CED is not confined to a specific drug or substance. Instead, the identification of a drug or substance as a CED, is subject to and influenced by factors such as attributed meaning, context, user motivations, consumption patterns, and anticipated outcomes (Hope et al, 2021; Askew & Williams, 2021; Hupli, 2022; Mann, 2022a).

As stated in Chapter Two, this understanding in essence, therefore, challenges the notion that a singular drug, substance or compound inherently possesses cognitive enhancing properties. Rather, it highlights the dynamic interplay of various discursive elements that collectively contribute to the utilisation of myriad drugs or substances as CEDs, in diverse contexts; for instance, within the academic context and the broader neoliberal milieu (Mann, 2022a). In line with a dialectical relational approach to critical discourse studies (Fairclough, 2010), from this perspective, as discussed in Chapter Five, an aspect of this is that the identification of a drug or substance as a CED, has been subject to discursive recontextualisation. To emphasise, recontextualisation refers to the process of taking something from its original context and placing it into a different context, thereby representing it differently according to new meaning or significance (Fairclough, 2010).

Accordingly, the recontextualisation of drugs refers to the phenomenon where substances traditionally considered as, for example, medicines or recreational drugs, are understood and discursively represented differently according to situational context and motivations for use, resulting in varied meanings, interpretations, uses, and outcomes. I.e., drugs used for cognitive enhancement given the academic context under neoliberalism (Mann, 2022a). This discursive recontextualisation of drugs and substances as CEDs, was a significant feature in the data gathered for this study, where neoliberal themes and notions of functional drug use were also seen to emerge. Observe the following narrative account from an original poster (OP) on a student CED use related forum:

"I'm a student and I've got important exams very soon, and still a lot of work and preparation [...] I'd like to get smart drugs and share my experiences with you."

Which smart drugs are useful for concentration and memory? What are the side effects?” (Forum User, OP, 2012)

Initially, note the academic context and that the OP seeks advice on which ‘smart drugs’ could potentially augment their concentration and memory, as they have upcoming exams and much work still to do. Hence, there is a nuanced indication of discursive recontextualisation unfolding as the OP has employed the term ‘smart drugs,’ seeking advice regarding their potential utility in relation to improving concentration and memory. The OP is also therefore, expressing a functional approach to drug use as the question, “which smart drugs are useful for concentration and memory?”, implies a goal-oriented mindset (Boys et al., 1999). In the sense that, they are seeking practical solutions for specific purposes and outcomes - to improve cognitive performance in terms of enhanced memory and concentration, for the purpose of exam preparation.

This also illustrates that concepts of functionality play a crucial role in the recontextualisation and representation of drugs and substances as CEDs. In addition, the role of neoliberal governmentality can also be inferred, as the underlying sentiment of the statement aligns with the neoliberal emphasis on individual responsibility and self-optimisation (Dardot & Laval, 2017). Certainly, the act of seeking cognitive enhancement through the use of drugs as CEDs, can be seen as the OP assuming responsibility for their own performance and success.

The advice seeking statement from the OP above, elicited responses from two different forum users. In response to the OP, the first respondent suggested the following:

“I am in the same situation atm. I get help from a (legit) prescription of Concerta and Ritalin, however I only use them when I need to study for longer periods of time to avoid side effects. [...] This is definitely something you should look into if you want to use pharmaceuticals for off-label use.” (Forum User, Respondent One, 2012)

The first respondent advises using the pharmaceuticals Concerta™ or Ritalin™ - both brand names for methylphenidate. As previously discussed, methylphenidate is officially classified as a pharmaceutical agent within a medical context, where it is prescribed as a therapeutic intervention for ADHD (Sattler et al., 2013). Therefore, Respondent One discursively

recontextualises Concerta™ or Ritalin™ from medicines, representing them as CEDs and a key aspect of this recontextualisation, is a notion of functionality. Certainly, notions of functionality are implicit in the statement, as Respondent One describes using Concerta™ or Ritalin™, specifically, for extended study sessions. Whilst the mention of only using these medications as CEDs when needed, to avoid side effects, suggests a purposeful and strategic approach to enhancing cognitive performance during focused study periods only.

Moreover, the recommendation to explore pharmaceuticals for off-label use, also emphasises the functional aspect of using Concerta™ or Ritalin™ to achieve specific cognitive benefits, beyond their primary medical indications. Importantly, therefore, the way in which notions of functionality are a key discursive feature in Respondent One's process of recontextualisation, also alludes to neoliberal governmentality, as the selective use of Concerta™ or Ritalin™ within an academic context, during extended study sessions only, indicates neoliberalism's emphasis on efficiency and productivity, in the pursuit of success (Davies, 2017).

There are further aspects concerning the first respondent's statement that allude to neoliberal governmentality as being key in the discursive process of recontextualisation. Firstly, taking the initiative to seek out and obtain pharmaceuticals for cognitive enhancement and that they are seemingly actively engaged in managing their own cognitive performance, by obtaining a prescription and deciding when to use the medications, reflects the neoliberal notion of personal responsibility (Dardot & Laval, 2017). Secondly, the mention of a "legit!!" prescription implies adherence to legal and market-driven channels for acquiring pharmaceuticals. As discussed in Chapter Three, neoliberal ideology is rooted in a market-based logic which thus, values market-based solutions (Zuidhof, 2014); therefore, in this context, the legitimacy of the prescription aligns with neoliberal principles concerning market-driven access to goods and services (Zuidhof, 2014). Thirdly and crucially, the suggestion to explore pharmaceuticals for off-label use¹⁸ aligns with the neoliberal notion of an entrepreneurial subject and the associated concept of technologies of the self (Foucault, 1988). Indeed, the suggestion implies an individualistic approach to self-improvement,

¹⁸ 'Off label' use can be, "[...] defined as the use of a drug in a manner that deviates from its approved use defined by the drug's [...] label" (Jung et al., 2014: 1).

whereby, an individual is encouraged to explore and optimise their cognitive performance using available resources, such as, pharmaceuticals (De Santis & Hale, 2010).

Similar to the first respondent, the below second respondent to the OP's forum post detailed above, lists several pharmaceuticals which they suggest can be used as CEDs:

*"Here's some suggestions for you - Prescription-only (or obtain via illegal means)
Amphetamines / Stimulants - Methylphenidate (Ritalin / Concerta), Amphetamine (Adderall), Dexamphetamine (Vyvanse), Methamphetamine (Desoxyn), Modafinil.
(Forum User, Respondent Two, 2012)*

Interestingly, notice that the second respondent suggests obtaining the pharmaceuticals they list, via prescription or "illegal means". This advisory statement again inferably demonstrates the way in which neoliberal ideology is implicit in the discursive recontextualisation of pharmaceutical medicines, as CEDs. Certainly, the mention of pharmaceuticals being obtained via prescription or "illegal means", individualises the responsibility for obtaining these substances and also implies a focus on individual agency and choice. To reiterate, neoliberal ideology emphasises autonomy, individual responsibility and self-regulation, ultimately, that individuals are responsible for their own choices and outcomes (Dardot & Laval, 2017). Moreover, the statement also alludes to a further key aspect of neoliberal governmentality: individualised ethical and moral frameworks, whereby, individuals are free to make choices, even if those choices involve actions that may be considered outside the realm of legal, regulatory authority (Mann, 2021).

Bound up with this, the phrase "illegal means" specifically, also therefore, implies a recognition of alternative, possibly less regulated channels for acquiring pharmaceutical compounds. This in a sense, appears to downplay the role of regulatory oversight or government intervention, further alluding to neoliberal ideology, given its tendency to advocate for reduced government intervention and regulation (Springer et al., 2016). Finally, the reference to obtaining pharmaceuticals legally via prescription or "illegal means", again indicates the neoliberal, market-oriented perspective (Zuidhof, 2014), as this language would seem to suggest a degree of flexibility in the acquisition of pharmaceutical compounds.

Further on in their response to the OP, the second respondent also details the following natural vitamin and mineral supplements which they claim can be used as CEDs.

Vitamins / Supplements - Vitamin B, D, Omega 3 (Oily fish is a good source, as well as supplements), Choline Inositol (Seriously worth researching), Zinc, Magnesium (try to pick a supplement with some copper), L-Tyrosine, 5-HTP, Tryptophan."
(Forum User, Respondent 2, 2012)

A trend in the neoliberal age is that supplements, such as those listed above, have become increasingly popular and are generally taken by individuals for health and wellbeing; chiefly, to address physical deficits in essential vitamins and minerals¹⁹ (Blumberg et al., 2018). Certainly, the World Health Organisation (WHO) estimates that over two billion people globally, experience deficits in terms of essential vitamin and mineral intake (Allen et al., 2006; Blumberg et al., 2018). However, under neoliberalism there tends to be an absence of reference to broader issues such as, systemic inequalities or the social determinants of health, with an inclination to focus on individual-level solutions rather than addressing structural factors (Andreas & Jabakhanji, 2023). In the statement above, the second respondent does not refer to vitamin and mineral deficits and therefore, is not framing supplement use necessarily around health. Nevertheless, they are suggesting an individual-level solution to potential cognitive deficits, with the suggestion that supplements are potentially useful for augmenting concentration and memory, whilst in the practice of study (as per the OP's request for advice).

Thus again, in terms of neoliberal governmentality, there is an allusion to notions of individual responsibility and individual actions related to cognitive enhancement, which can be inferred via the second respondent's advice to actively research and select specific vitamins and supplements. Moreover, there is the evidential neoliberal market-centric approach, with an implied reliance on market-driven solutions, given the detailing of specific supplements, the suggestion to research them and indeed, the recommendation to, "try to pick a supplement with some copper", which illustrates the neoliberal notion of consumer choice (Mann, 2021).

¹⁹ It should be stressed that, there remains a lack of evidence concerning the efficacy of vitamin and mineral supplements (Kamangar & Emadi, 2012).

The second respondent's inclusion of vitamin and mineral supplements that are associated with cognitive function, also aligns with the neoliberal emphasis on optimising human capital, as the implication is that by taking these supplements, individuals can enhance their cognitive abilities for improved performance, including in areas such as study. Therefore, it is again evident that neoliberal ideology is embedded within the second respondent's discursive recontextualisation of natural supplements. They have in a sense, reframed supplements from ideas around health, to notions of cognitive enhancement and functionality, representing them as CEDs, when the motivation is to improve academic performance.

On another forum thread, a student detailed a range of substances that they used as CEDs for an intense study session, further demonstrating the notion of discursive recontextualisation and the significant role of neoliberal governmentality in the process:

"So, I got this class and I need to read A SHIT TON and write a report by Monday at 5pm. So I took 375mgs of armodafinil, around 4000mgs of gabapentin (it revs me up for some reason, I'm bipolar so that might be why it effects me differently), 50mgs of vinpocetine orally, and 520mgs of DMAE at 9:20pm about 4 hrs ago (currently 1:27am) My studying was ok, a little better than average but eh. So I took a break at 12:25am and took 240mgs of pseudoephedrine." (Forum User, 2018)

The first sentence of the forum user's statement above, demonstrates a pressure to perform; inferably, given neoliberalism's emphasises on individual responsibility and indeed, competition, within higher education (Mann, 2021; Mann, 2022a) and by extension, the neoliberal knowledge economy. Certainly, the (neoliberal) pressure to succeed academically and to meet demanding intellectual expectations, has seemingly motivated this student to seek out, recontextualise and consume a range of pharmaceuticals

(Armodafinil²⁰, gabapentin²¹, vinpocetine²², pseudoephedrine²³) and a supplement (DMAE²⁴), for functional purposes, ultimately, to enhance their cognitive capabilities. In addition, the account includes a detailed consumption schedule and mentions a study break, which ostensibly reflects a disciplined approach to consumption and time management, aligning with the aspect of neoliberal governmentality which emphasises temporal discipline and efficient use of time to maximise productivity (Binkley, 2009).

A further interesting observation in the narrative account above, is the mention of being bipolar and the differential effect of gabapentin, which points to a biomedical approach to mental health and thus, medicalisation. As discussed in Chapter Two, neoliberalism has seemingly contributed to the medicalisation and pharmaceuticalisation of mental health, leading individuals to use drugs to manage their mental states, often in the pursuit of productivity (Coveney et al, 2011). The notion of medicalisation, pharmaceuticalisation and using drugs to manage mental states, in order to optimise productivity, was an evident additional discursive feature in the process of recontextualisation by other student forum users, as illustrated below:

“Modafinil absolutely works well to help you study. I'd come in to the library hungover and unfocused and take one, and it would really help me work. Higher retention than without also.” (Forum User, 2021)

The above student forum user describes taking modafinil in a scenario where they are hungover and unfocused, which manifestly indicates an intentional use of the drug to counteract the negative effects of their current mental state, with the functional goal of

²⁰ See Chapter Two for a description of armodafinil.

²¹ Gabapentin was initially utilised as a muscle relaxer and anti-spasmodic, but more recently, has been used as an anticonvulsant and adjunct to stronger anticonvulsants. In addition, its off-label applications include treating neuropathic pain, fibromyalgia, bipolar disorder, postmenopausal hot flashes, essential tremors, and anxiety (Yasaei et al., 2022).

²² Vinpocetine, derived from the alkaloid vincamine, has been employed in clinical practice for over three decades in numerous countries for addressing cerebrovascular conditions such as, stroke and dementia (Zhang et al., 2018).

²³ Pseudoephedrine is commonly used to alleviate symptoms associated with the common cold, flu, sinusitis, asthma, and bronchitis. However, its application extends beyond medical purposes due to its central nervous system stimulant properties and structural resemblance to amphetamine (Głowacka & Hojeńska, 2021).

²⁴ DMAE, a derivative of diethylaminoethanol, serves as a precursor to choline. Choline enables the brain to enhance the synthesis of acetylcholine, a key neurotransmitter crucial for processes related to learning and memory (Malanga et al., 2012).

enhancing cognitive performance, illustrated via the mention of improved retention. All of which, aligns with neoliberal medicalisation and pharmaceuticalisation, where, as stated, substances are increasingly used as a means to regulate mental states, ultimately, to improve productivity (Coveney et al., 2011).

The discursive recontextualisation of other drugs and substances was also evident and clarified in the narrative accounts of participants in face-to-face interviews, as illustrated by the table below, detailing the drugs and substances used for cognitive enhancement by interview participants:

Table 6

NAME	GENDER	AGE	DEGREE LEVEL	COURSE	UNIVERSITY	SUBSTANCES USED
Tilly	Female	19	First Year Undergraduate	Medicine	Traditional	Modafinil
Josh	Male	18	First Year Undergraduate	Chemistry	Traditional	Modafinil
Liam	Male	23	Graduate (2018)	Politics, Philosophy & Economics	Traditional	Modafinil Caffeine Pills
Rachel	Female	22	Third Year Undergraduate	Medicine	Traditional	Modafinil Caffeine Pills
Harry	Male	19	First Year Undergraduate	Neuroscience	Traditional	Modafinil
Jake	Male	41	First Year PhD	Sociology	Post 92	Phenibut Modafinil Magic Mushrooms (Psilocybin) Diazepam Vitamin B
Jim	Male	35	Fourth Year PhD	Politics	Post 92	Cannabis Cocaine
Steve	Male	38	Postgraduate	Criminology	Post 92	Cocaine
Lisa	Female	39	Third Year PhD	Psychology	Traditional	Magic Mushrooms (Psilocybin) Lion's Mane Cannabis (Edibles) Caffeine Pills
Sarah	Female	25	Postgraduate	Criminology	Post 92	Modafinil
Brian	Male	40	Graduate (2017)	Social Work	Post 92	Magic Mushrooms (Psilocybin)
Emily	Female	24	Third Year PhD	Criminology	Post 92	Phenibut Dihydrocodeine (Paramol™) Modafinil
Vicky	Female	19	First Year Undergraduate	Law	Post 92	Modafinil Noocept Caffeine Pills
Claire	Female	20	Second Year Undergraduate	Criminology	Post 92	Caffeine Pills Modafinil
Joe	Male	21	Second Year Undergraduate	Sociology	Post 92 University	Modafinil

Moreover, as with the forum users, the significance of the academic context embedded within the wider neoliberal milieu, was also an evidential key factor in the process of recontextualisation of drugs and substances for cognitive enhancement amongst interview participants. Observe the statement below from Emily, a third year Criminology PhD student at a 'post 92' university:

"I've experimented with a few smart drugs, the best I found was to take half a gram of phenibut with two Paramol pills in the morning before I study. The codeine from the Paramol works really well with phenibut I think, I'm relaxed but more creative and focused." (Emily, 2019).

Notice that Emily represents both phenibut and Paramol™ as 'smart drugs' in the first instance, given the academic context and the motivation to study. Although more popularly considered a novel CED in the West, phenibut was developed in Russia in the 1960s as a medicine and is generally prescribed as a treatment for anxiety²⁵ (Lapin, 2006). Whilst in the UK, Paramol™ is an over-the-counter pharmaceutical painkiller comprised of Paracetamol and the opiate, Dihydrocodeine. However, Emily makes no mention of these official pharmaceutical uses, even though Emily would be aware that Paramol™ in particular, is an over-the-counter pain medication. Therefore, the academic context and what appear to be motivations for use that are centred on notions of functionality, constitute phenibut and Paramol™ as CEDs, for Emily.

A deeper critical discourse analysis of Emily's narrative account also reveals further elements of neoliberal ideology within the discursive recontextualisation of Phenibut and Paramol™. The use of the term "experimented" seemingly suggests a neoliberal, individualistic approach to self-improvement and optimisation (Kristensen, 2022). Whilst the implied search for the "best" 'smart drug' for achieving optimal cognitive function and the combination of specific substances, are illustrative of a market-driven and consumerist approach to (cognitive) well-being (Coveney et al., 2019). Additionally, the focus on being "relaxed but more creative and focused" would seem to point to notions around a performance-based identity (Butler, 2021).

²⁵ Phenibut is similar in molecular structure to the brain chemical gamma-aminobutyric acid (GABA). However, unlike other anxiolytics such as Benzodiazapines, anecdotally, Phenibut does not produce sedative like effects, when taken in low doses (Lapin, 2006).

Certainly, Butler (2021) stresses that within neoliberal society, personal identity is often bound up with an individual's capacity to perform well and be competitive, and Emily's combined use of phenibut and Paramol™ to achieve a particular cognitive state, seemingly aligns with this. Moreover, the way in which Emily details a strict dosing strategy, illustrates neoliberal governmentality and a market-based logic in terms of calculated, rational decision making, ultimately to enhance performance (Mann, 2022a; Card & Hepburn, 2023).

Recontextualisation and the significance of neoliberal governmentality, are increasingly observable in Josh's account below. Josh was a first-year undergraduate student studying medicine at a traditional university:

"The first time I used Modafinil was recreationally when I was 15. Everyone was using harder drugs like MDMA, but I didn't wanna do MDMA cuz of what I'd heard about the dangers, so I would just do Modafinil on a night out to feel energised. It wasn't until I got to uni that I heard it was good for studying, that's when I started taking it to write essays and to revise for exams, to give me an edge and hopefully a better chance." (Josh, 2019)

Interestingly, the statement above from Josh, suggests a two-fold recontextualisation of Modafinil: initially, from a medicine to a recreational drug for social situations, and then later, as a cognitive enhancer for academic purposes, reflecting a shift in the perceived utility and function of Modafinil based on Josh's changing circumstances and needs. Neoliberal governmentality can thus be inferred in Josh's statement, as being a key factor in the two-fold recontextualisation of Modafinil. The use of Modafinil at first, highlights Josh's decision-making process and agency in choosing not to use MDMA, due to perceived dangers, emphasising neoliberal responsibilisation (Garland, 1996), that individuals are personally responsible for their actions and safety. Aligning with findings elsewhere in the literature (E.g., Quintero, 2012), whereby, pharmaceuticals are considered less risky than illicit, 'recreational' drugs, the way in which Josh perceives Modafinil as a safer alternative to MDMA, thus alludes to notions of risk, a risk averse mindset and therefore, risk management. Indeed, neoliberal responsibilisation (Garland, 1996) constitutes individuals in this way, encouraging them to make calculated choices that minimise risks and maximise personal gains (Lupton, 2006) (this will be illustrated and discussed in more detail, in Chapter Seven).

The account from Josh also suggests a motivation to use Modafinil to boost energy levels and enhance performance, both socially and academically, which seemingly aligns with the neoliberal focus on productivity and neoliberal principles that prioritise efficiency, optimisation and individual success in various aspects of life (Davies, 2017). Certainly, this is particularly apparent in terms of the second stage of Josh's discursive recontextualisation of modafinil, from a recreational drug to a CED; as a tool to gain an "edge" in academic pursuits, such as writing essays and revising for exams. The mention of gaining an "edge" through modafinil usage also suggests a meaning around CEDs, which is constructed through a competitive mindset, whereby Josh is seeking to outperform his peers.

This competitive mindset is consistent with neoliberal principles of competitive individualism, which celebrate individual achievement in a competitive, market-driven society (Davies, 2017). Furthermore, this ostensibly also alludes to the commodification and subsequent instrumentalisation of higher education within the neoliberal context, as being a key feature in the process of recontextualisation, as (neoliberal) higher education is often seen as a means to enhance an individual's market value and competitiveness (Aikins, 2019), as discussed in Chapter Three.

As with Josh, Steve also inferred multiple forms of recontextualisation when discussing his use of cocaine, in this instance, a three-fold recontextualisation:

"I started using cocaine when I was quite young, for partying. I probably did have a problem with it for a bit, but I see that as a part of my recovery from trauma I experienced in childhood. I don't use it in that way anymore. A small line is really useful sometimes when I'm doing uni work, it seems to 'open me up' [...]" (Steve, 2019)

Evidently, Steve's statement above suggests a threefold recontextualisation of cocaine, reflecting different stages and purposes in his life. At the outset, Steve used cocaine in social settings primarily for recreational purposes, characteristic of the typical youthful experimentation and socialising often associated with the use of this drug. However, during the next phase, where Steve ostensibly describes problematic use, he recontextualises cocaine as a form of self-medication, to deal with childhood trauma and subsequent

psychological distress. In the present, Steve indicates a further shift in the context of his cocaine use from problematic coping to a functional, productivity-focused approach, as he describes his use within an academic context as more controlled and purposeful, suggesting that it serves as a tool for cognitive enhancement and thus, heightened academic performance.

As with Josh's twofold recontextualisation, Steve's threefold recontextualisation therefore, reflects neoliberal governmentality, where the utility and function of cocaine transform, depending on Steve's shifting contextual circumstances and needs. The third phase of Steve's recontextualisation in particular, the transition from problematic coping to functional use for academic augmentation, suggests responsabilisation, where there is a move towards self-regulation and personal responsibility, which as stated, are key tenets of neoliberal governmentality (Rose, 1998). In addition, this third phase is again explicitly indicative of neoliberal market principles applied to the self, as Steve's shift towards using cocaine for cognitive enhancement in an academic context mirrors neoliberal notions concerning the optimisation of a person's productive capacities, in order to compete (Mann, 2021).

Steve's use of cocaine for cognitive enhancement in the neoliberal academic context, also highlights a subtle nuance between younger and older student users, revealed through face-to-face interviews specifically, evidenced in Table 6 above. Older participants, particularly those in the 35-plus age group, often recontextualised traditional (illicit) recreational drugs as CEDs. This trend is further illustrated by the experiences of Jim and Brian below.

"If I find it difficult to be creative when I'm writing an essay, it can stress me out. I sometimes smoke a tiny bit of weed, just enough to make to make me less stressed and my thoughts more creative, not to feel stoned or off my head though." (Jim, 2019)

"I don't take any synthetic drugs, I used to recreationally, but I don't anymore. On some of the days when I was writing essays, I'd microdose magic mushrooms, I find that this is excellent for enhancing my creativity." (Brian, 2019)

This is a theme reported in wider drugs literature, that older or middle-aged users, tend to gravitate towards or persist with substances they are familiar with (Williams & Askew, 2017),

rather than experimenting with what are considered more novel compounds. Conversely, none of the younger participants in this study recontextualised more traditional (illicit) 'recreational' drugs as CEDs. Rather, they would recontextualise what can be considered the more novel compounds and pharmaceuticals, such as modafinil, using these as CEDs. That said, notions of functionality and key neoliberal themes can, nevertheless, again be observed in the statements from Jim and Brian above, as being key aspects to the process of recontextualisation of traditional (illicit) 'recreational' drugs, as CEDs.

Firstly, the statement from Jim demonstrates functionality, as it suggests a calculated and intentional use of weed to enhance creativity and reduce stress, while maintaining cognitive functioning. Secondly, Brian's statement likewise, implies functionality through the deliberate and controlled use of magic mushrooms (psilocybin), for a specific purpose, with an emphasis on enhancing creativity during the academic task of essay writing. Moreover, Brian in particular, demonstrates a subjective shift in meaning around his drug use, from recreational, to a more purposeful and controlled approach, where he explicitly states that he no longer uses synthetic drugs recreationally. This therefore emphasises a conscious decision on the part of Brian, to use substances functionally, for specific purposes and benefits.

Thus, neoliberal governmentality can also be inferred as being central to the subjective shift from recreational drug use to meanings of functionality and in the process of drug recontextualisation, for both Jim and Brian. Both statements exemplify market-driven solutions and furthermore, the neoliberal notion of responsibilisation (Garland, 1996), whereby Jim and Brian are taking personal responsibility for their drug use for cognitive enhancement. For example, Jim's personal decision to use just a "tiny bit of weed", as a means of self-regulation to manage his stress and creativity, reflects the neoliberal notion that individuals should have the freedom to make personal choices and decisions to address their needs, without excessive external intervention (Kristensen, 2022). Moreover, Jim's self-regulation in terms of stress management, again also alludes to neoliberal medicalisation and in a sense, pharmaceuticalisation, where he is utilising a drug ('weed') to regulate his mental state (Coveney et al., 2011; Bell & Figert, 2012).

Brian's self-regulation is evident where he refers to microdosing magic mushrooms only on days when writing essays, which suggests self-regulation in terms of a task-specific approach to drug use, which aligns with the findings of Maier et al. (2013) discussed in Chapter Three. This parallels neoliberal ideology in the sense that individuals are encouraged to use specific tools or techniques, to enhance their performance in particular areas, contributing to more efficient and productive work practices (Davies, 2017). A further neoliberal inference in Brian's statement is where he ostensibly emphasises positive outcomes. Brian states, that he finds microdosing magic mushrooms "excellent for enhancing creativity", which is consistent with neoliberal values that emphasise personal success, achievement, and well-being, as the results of individual choices and efforts (Dardot & Laval, 2017; Davies, 2017).

Returning to the discussion around older student participants and the recontextualisation of traditional (illicit) 'recreational' drugs, unlike the other four older student participants, Jake (41) had on occasion used pharmaceuticals or more novel compounds as CEDs, as illustrated below:

"I've tried modafinil about three times, I didn't like it though, it gave me a headache. It did make me feel focused, but in a weird way, I just felt wired. I've also tried phenibut a few times, I did feel it enhanced my creativity and concentration when I took a gram, but I think micro-dosing Psilocybin is definitely better as an enhancer in my opinion. Although, if I'm stressed and finding it difficult to concentrate when I'm trying to write, I sometimes take 5mg of Diazepam, which does calm me down, and that helps with my concentration."
(Jake, 2019).

Although Jake had experimented with using modafinil and the novel compound phenibut, for cognitive enhancement, he evidently preferred psilocybin (magic mushrooms) and the pharmaceutical drug diazepam, both of which he described as being more effective for augmenting his studies. That said, evidently Jake had recontextualised all of the drugs he mentions - modafinil, phenibut, psilocybin and diazepam - which, as with much of the previous data presented in this chapter, expands the conventional understandings of these substances. Indeed, the mention of diazepam by Jake is particularly interesting, as diazepam

is traditionally, a pharmaceutical often prescribed to treat anxiety (Dhaliwal et al., 2023) and is not commonly considered a study aid in popular CEDs discourse.

Nevertheless, Jake perceives the anxiolytic effects of diazepam as being useful for aiding his concentration, which aligns with those findings elsewhere in the literature, ostensibly suggesting a broader meaning to cognitive enhancement and thus, the types of drugs that can be considered as CEDs. Certainly, from this perspective, as discussed in Chapter Two, meanings around cognitive enhancement should not be exclusively confined to characteristic notions such as, heightened attention, increased wakefulness or improvements in memory (Garasic & Lavazza, 2016; Dresler et al., 2018), through the use of a limited number of specific pharmaceutical stimulants as CEDs, for instance. Rather, as conferred above by Jake, cognitive enhancement might also mean a relaxed mindset via the recontextualised use of diazepam, which in turn, can augment concentration.

In addition, Jake's mention of achieving a relaxed mindset and thereby, augmented concentration whilst in the practice of academic writing, using diazepam if he is feeling "stressed", again illustrates neoliberal medicalisation and pharmaceuticalisation as being key to the process of recontextualisation. Certainly, the final sentence from Jake suggests medicalisation, as it frames stress and concentration difficulties as medical issues (Bell & Figert, 2012), and pharmaceuticalisation, as the sentence describes the functional use of diazepam to address these concerns, going beyond its conventional medical application (Bell & Figert, 2012). Which also, therefore, further exemplifies notions of functionality as being key to the process of recontextualisation.

Moreover, the entirety of Jake's account above reveals, as with the data discussed previously in this chapter, the way in which neoliberal governmentality is key to the discursive shift towards meanings of enhancement, rooted in notions of functionality and to the process of recontextualisation. For example, Jake's statement again reflects neoliberal responsibilisation - individual responsibility - as Jake discusses making individual choices for cognitive enhancement and stress relief. The mention of using diazepam in particular, for stress relief, connects to the neoliberal notion of managing stress to enhance productivity, as neoliberal discourse emphasises stress management as being crucial for maintaining a productive workforce; hence, individuals are often encouraged to find personal solutions to

cope with stress (Elraz & McCabe, 2023). Moreover therefore, Jake is also alluding to the utilisation of self-technologies for self-improvement, given his ostensible desire for personal optimisation. Accordingly, Jake's utilisation of specific substances as solutions for cognitive enhancement and stress management, once more illustrates the neoliberal emphasis on market-driven solutions and the impression that individuals can improve their performance through the consumption of products (Elraz & McCabe, 2023).

There is also a further interesting dimension in the process of recontextualisation in the way Jake observes stress management and cognitive enhancement to be correlated, which again seemingly suggests a broader meaning around cognitive enhancement, to that which is commonly accepted in a large proportion of the literature (Askew & Williams, 2021; Hope et al, 2021). This ostensible broader meaning around notions of enhancement being implicit in the recontextualisation process, was supported by other face-to-face interview participants, as illustrated by Rachel, a 22-year-old, third year undergraduate student, studying medicine at a traditional university:

“Even though it's bringing you down, although I haven't tried it, I definitely think Diazepam could be an enhancer, a hundred percent, because it could enhance your study experience if your mind is racing.” (Rachel, 2019)

As with Jake above, Rachel evidently considered that the anxiolytic effects of Diazepam (“even though it's bringing you down [...] if your mind is racing”) could definitely enhance a person's cognitive function, enabling them to study at an optimal level. There are key distinctions however, between Jake and Rachel's respective accounts concerning the recontextualisation of Diazepam as a cognitive enhancer that should be acknowledged. Jake had prior experience of using Diazepam for cognitive enhancement whilst in the practice of study, whereas Rachel had not. Rachel chiefly used drugs that produced stimulant effects, generally caffeine pills (E.g., ProPlus™) and on a limited number of occasions, modafinil. Furthermore, Rachel evidently had not reflected on anxiolytic effects being conducive to augmenting cognitive function and thus, the potential framing of Diazepam as a cognitive enhancer, prior to the conversation during the interview. Therefore, Rachel's recontextualisation of Diazepam as a CED, ostensibly emerges discursively through the conversation with the researcher, situated

within the genre (Fairclough, 2010) of a face-to-face interview, focused on the topic of student CED use.

It is also important to note that, other observers might frame the use of Diazepam within the context of neoliberal medicalisation and pharmaceuticalisation, around notions of self-medicating (E.g., see Penderson and Lavik, 1991; Rigg and Ibañez, 2010; Andersson and Kjellgren, 2017; Bloomfield, 2019), rather than enhancement. Given that Jake, for example, was ultimately motivated by a desire to reduce stress and that Rachel mentioned, “bringing you down [...] if your mind is racing”. However, as suggested above and as Askew and Williams (2021) argue, the concept of enhancement does have a wider meaning and application than is currently accepted, which can also be applied to the notion of self-medicating. Indeed, self-medicating to relieve psychological strain, anxiety, or negative mental states, so that a person can function more effectively can in a sense, be considered a form of cognitive enhancement (Askew & Williams, 2021), as suggested above by Jake and Rachel.

Evidently, the concept of drug, set and setting (Zinberg, 1984) is also extremely relevant to Jake and Rachel’s recontextualisation of diazepam and indeed, the recontextualisation of the full range of drugs and substances identified in this study. Certainly, when considering the recontextualisation of drugs as cognitive enhancers, it is crucial to understand the interplay between an individual's mindset (set) and the environment in which the drug is taken (setting) and how this might influence perceptions of cognitive effects. In terms of mindset, expectations and intentions are key factors in terms of the recontextualisation of drugs and substances and perceptions of cognitive effects, as the mindset of an individual consuming a drug for cognitive enhancement, can significantly impact the outcomes.

For instance, Jake’s positive expectations and intentions about the cognitive benefits produced via the anxiolytic effects of recontextualised diazepam, may enhance placebo effects and be a significant factor in Jake’s perceived improvements in cognitive performance. Similarly, Jim, Brian and Jake’s mention of enhanced creativity through, for Jim, his recontextualised use of cannabis and for Brian and Jake, micro-dosing magic mushrooms, might be explained by pre-existing beliefs and attitudes towards these drugs and their effects, which in turn shaped their cognitive experience. These pre-existing beliefs and attitudes

would not only be rooted in their past experiences with these drugs, but would also likely, be significantly influenced by the current, wider discourse, popularising particularly, the potential creative benefits of micro-dosing psychedelics (Polito & Liknaitzky, 2022). Furthermore, Jim, Brian, and Jake, along with participants who, for example, recontextualise modafinil in the belief that it enhances learning and memory, are more likely, as per Zinberg's (1984) concept of drug, set and setting, to perceive such effects, due to the interplay between their beliefs and the academic setting in which these drugs are used.

More broadly, as evidenced throughout this section, the neoliberal ideological context which as demonstrated, is key to the recontextualisation of drugs and substances for cognitive enhancement, will also be crucial in shaping the cognitive experience of student users. Certainly, within the neoliberal knowledge economy, for example, where cognitive enhancement practices are in a sense accepted or even, encouraged (Pustovrh et al., 2018), individuals may well experience more positive outcomes, irrespective of the specific drug or substance used. Which thus, would be another explanatory factor in terms of the diverse range of drugs and substances, that are recontextualised and used for cognitive enhancement by students.

Moreover, therefore, the range of drugs and substances recontextualised for cognitive enhancement by participants in this study, supports the argument presented in Chapter Two, that it is not a specific drug or substance and its associated effects that define a CED. Rather, a CED can be considered a contingency which is dependent upon context, motivations for use and user constructed meanings (Coveney et al., 2019; Askew & Williams, 2021; Mann, 2022a). In addition, what has begun to emerge throughout this section, is the way in which neoliberal ideology is significant to student users' recontextualisation of drugs and substances for cognitive enhancement and thus, their meanings and motivations for use.

Evidently therefore, as discussed in Chapter Two, dominant medical and legal perspectives that often dichotomise drug use into binaries, such as, legal or illegal, recreational or problematic (Booth-Davies, 1997 & 1998; Decorte, 2001; Pienaar et al., 2016; Moore et al., 2017; Askew & Williams, 2021) and seemingly divorce drug use and users from the wider ideological context (Mann, 2022a), are not adequate for conceptualising student drug use for cognitive enhancement. Certainly, as this section has begun to demonstrate, neoliberal

ideology is embedded within the discursive repertoires of student participants and their framing of motivations and meanings, around notions of functionality and perceived benefits (Askew & Williams, 2021; Mann, 2022a), which will be illustrated and discussed further in the following section.

6.2. Neoliberalism and Students' Functional Drug Use for Cognitive Enhancement

As discussed in Chapter Two, functional theories of drug use (E.g., Boys et al., 1999; Williams & Parker, 2001; Williams, 2013; Askew, 2016; Askew & Williams, 2021), primarily rooted in the social sciences, expound upon the overarching notion that individuals are motivated to use a particular drug based on the perception that it will fulfil specific functions in their lives (Askew & Williams, 2021). This conceptualisation posits drugs as instrumental tools for shaping an individual's experiences and outcomes (Hupli, 2022). Therefore, Boys et al. (2001) stress that functional drug use is characterised in terms of utility; that is, the tangible gains that a user perceives a drug will help them to achieve.

Nevertheless, it is crucial to again emphasise that Boys et al. (2001) highlight a clear distinction between functional drug use and the concept of instrumental drug use. Whilst both perspectives acknowledge drugs as instruments (Hupli, 2022), instrumental drug use, as described by Boys et al. (2001), pertains specifically to reasons for drug consumption that are exclusively tied to the drug's physiological effects. In essence, instrumental drug use focuses solely on the individual and the physiological impact of the drug, differentiating it from the broader scope of functional drug use which encapsulates further elements, such as, user context, tangible gains and benefits (Boys et al., 2001).

The notion of student CED use as functional, to achieve tangible gains, rather than to exclusively exploit the physiological effects (Boys et al., 2001) of a drug or substance, was a key discursive theme on forum threads, as illustrated below:

"Basically, students have started to take drugs like Ritalin to boost their brain power so that they can do better in exams." (Forum User, 2012)

“The idea of a relatively cheap pill that improves memory and concentration and allows you to function for longer periods of time seems like a dream come true.”
(Forum User, 2012)

Given the Boys et al. (2001) definition of functional drug use, it is evident that the above forum users frame the use of CEDs by higher education students as a functional, beneficial form of drug use. The first forum user above describes tangible gains in terms of increased “brain power”, which in turn, enables them to perform better in exams, or to function for longer periods of time whilst engaging in the consumption of a drug or substance. Whilst the second forum user mentions enhancements in memory and concentration, resulting in an extended capacity for sustained functioning, which is portrayed as advantageous and beneficial - a realisation akin to a cherished dream - which thus, holds a certain allure for this forum user.

Moreover, it is evident that neoliberal ideology is a crucial discursive element in the above forum users’ notion of functional drug use, where performance augmentation in terms of “brain power” and “memory and concentration” are key. As was documented in Chapter Three, an essential feature of neoliberal ideology is that society is constructed as a society of performance, whereby, there is a pressure on individuals to perform exceptionally, in many spheres simultaneously, to achieve success (Coveney & Bjønness, 2019; Krøll, 2019). In addition, the statements from the forum users above indicate the significance of the neoliberal knowledge economy to the discursive framing of CED use as functional. Indeed, the statements imply the societal acknowledgment of the importance of cognitive abilities, linking them to academic success and productivity, which is consistent with the values and priorities of the neoliberal knowledge economy, where intellectual skills are fundamental to individual success and societal progress (Bloomfield & Dale, 2020). The significance of the neoliberal knowledge economy to the discursive framing of student CED use around functionality, is increasingly evident in the following forum user statement:

One of the most efficient nootropics for brain enhancement is modafinil. Modafinil is regarded as the "Limitless pill" because of its ability to improve cognition [...] modafinil is used by entrepreneurs, students, athletes, scientists, shift workers, and others. It improves alertness, mental capacity, and focus, all of which help you

be more productive. These brain boosting nootropics are especially beneficial for students as well as many professionals. (Forum User, 2021)

The forum user above indeed connects the functional use of modafinil for cognitive enhancement with the neoliberal knowledge economy in several ways. In the first instance, the use of modafinil is described by the forum user as a means of “brain enhancement” and that it can improve a range of cognitive functions; as discussed previously, in the neoliberal knowledge economy intellectual capabilities are highly valued (Kaščák & Branislav, 2012). Moreover therefore, the pursuit and use of tools, such as modafinil, that can improve cognitive functions, highlights the emphasis on exploiting knowledge for productivity and success (Powell & Snellman, 2004). Indeed, the suggestion of improved productivity by the forum user above exemplifies this and moreover, implies efficiency, innovation, and output, which as previously discussed, are observed as being crucial for success within the neoliberal knowledge economy (Bloomfield & Dale, 2020).

Bound up with this, the mention of shift workers highlights the adaptability of functional modafinil use to the demands of a 24/7 knowledge-driven environment in a globalised and interconnected world, organised around competitive neoliberal ideals, where individuals may be required to be alert and focused at unconventional hours for example, to meet the demands of competitive knowledge-based work (Telford & Briggs, 2021). Indeed, the forum user above describes modafinil as being especially beneficial for students and professionals, implying that the functional use of modafinil can provide a competitive edge in academic pursuits and professional careers, which again, aligns with the competitive nature of the neoliberal knowledge economy.

Finally, the forum user above interestingly, describes modafinil as being the “limitless pill”, which echoes contemporary (neoliberal) popular culture; specifically, the film “Limitless” (Burger, 2011), where cognitive enhancement facilitated by the functional use of an innovative substance, is depicted as being a gateway to realising astonishing intellectual abilities and unlimited potential (Burger, 2011). Certainly, by equating modafinil with the “limitless pill” from popular culture, the forum user implicitly emphasises the notion that modafinil has the capacity to transcend conventional cognitive limitations. In the context of the neoliberal knowledge economy, where economic success is often tied to intellectual

capabilities and innovation, notions of a substance that can push cognitive boundaries would be particularly appealing, which also links to the notion of CEDs normalisation, as discussed in Chapter Three (Pennay & Measham, 2016; Bloomfield & Dale, 2015).

In essence, describing modafinil as the “limitless pill” serves as a cultural and symbolic reference point that reflects aspirations and desires within a neoliberal society. Indeed, this characterisation reinforces the belief that modafinil possesses inherent beneficial qualities that individuals within a neoliberal framework aspire to achieve, such as heightened intelligence, increased productivity, and enhanced cognitive abilities (Kaščák & Branislav, 2012). Furthermore, it demonstrates the perception that the functional use of a drug for cognitive enhancement, such as modafinil, can be a transformative force, aligning with the key values and expectations of neoliberal society, such as, individual achievement, innovation, and perpetual self-improvement (Card & Hepburn, 2023).

Moreover, the belief in the transformative potential of functional drug use for cognitive enhancement, as outlined above, finds further resonance in a discursive theme that emerged from the face-to-face interviews. For example, the statements by Steve and Tilly (Tilly, a 19-year-old, female undergraduate student, studying medicine at a traditional university) below, explicitly emphasise the notion that the functional use of drugs for cognitive enhancement constitutes a beneficial form of drug use:

“[...] so yeah, cocaine to do [academic] work, is definitely a cognitive enhancer because it ‘opens you up’. I often do decent work after taking it.” (Steve, 2019)

“I would tend to say that functionality is far more beneficial than drug use for experience.” (Tilly, 2019)

Later in the interview, Tilly also mentioned that her use of modafinil could potentially increase her future earning potential, by augmenting her studies:

“My use of Modafinil could in a way be boosting my future earning potential.”
(Tilly, 2019)

The statements from Steve and Tilly ostensibly substantiate the broader cultural understanding that the use of drugs for the purpose of cognitive enhancement, can serve as

functional, beneficial tools within a neoliberal context that prioritises the pursuit of personal success, and (economic) advancement (Nafukho, 2004). Certainly, Tilly explicitly states that she considers functional drug use as being much more beneficial than drug use for experience and furthermore, that her use of modafinil for cognitive enhancement, could potentially increase her future earning potential. Therefore, echoing the neoliberal notion that individuals should maximise their productivity and economic value, through strategic decision-making via the instrumentalisation of various resources, such as pharmaceuticals, for economic gain (Mann, 2021; Mann, 2022a).

Moreover, the emphasis on functionality in Steve's, and Tilly's first statement in particular, implies the neoliberal notion that individuals have the power to make rational choices that contribute to their own productivity and well-being (Munroe & Maher, 1995). Hence, it is evident that what Steve and Tilly discuss above, aligns with the definition of functional drug use as set out by Boys et al (2001) and importantly, that neoliberal values are implicit within their discursive strategies for legitimisation and meaning construction around their functional use of drugs as CEDs.

Interestingly, Tilly also seeks to establish the legitimacy of her use of modafinil as a CED, by drawing on established notions of drug binaries (Decorte, 2001; Tupper, 2012; Pienaar et al, 2016; Moore et al, 2017; Askew & Williams, 2021; Mann, 2022a), explicitly positioning the functional utilisation of drugs in direct contrast to their use for experiential purposes, such as, 'recreational' use. Tilly seemingly characterises drug use for such reasons as a form of dysfunction, asserting that functional drug use is inherently safer, beneficial, and thus ostensibly, more socially acceptable. Therefore, by employing discursive binaries such as 'dysfunctional' versus 'functional' and 'good' versus 'bad' drug use, (Tupper, 2012; Askew & Williams, 2021; Mann, 2022a), Tilly's articulation appears to serve the dual purpose of legitimising and constructing meaning around her CED use. This discursive strategy for legitimising and constructing meanings around CED use, supports the 'othering' approach identified in Askew and Williams' (2021) critical discourse study on enhancement drug use.

The discursive othering strategy for legitimising and constructing meanings around notions that CED use is functional, socially acceptable, and 'good', as opposed to other 'bad' forms of

drug use, was also alluded to by Sarah, a postgraduate Criminology student at a 'post 92' university:

"In consumer capitalist culture, everyone wants success, and these drugs are seen as an acceptable way to achieve their success, so I think it's [CED use] definitely functional drug use." (Sarah, 2019)

Again, what Sarah narrates supports the Boys et al. (2001) definition of functional drug use and as with Tilly, Sarah evidently argues that CED use is a socially acceptable form of drug use and that it is a functional way to increase a person's chances of achieving success. Furthermore, and of particular significance here, is that Sarah explicitly links this functionality to neoliberal society, where she mentions that, "in consumer capitalist culture, everyone wants success". The mention of "consumer capitalist culture" again indicates a connection to neoliberal economic principles that emphasise the importance of consumer choices and market-driven dynamics, whilst the prevailing desire for individual success, alluded to by Sarah, aligns with the prioritisation of individual, over collective well-being (Birch, 2015; Davies, 2017). Moreover, Sarah's statement is also characteristic of the way in which neoliberalism prioritises economic indicators as measures of individual well-being and success (Sgroi, 2015), as Sarah defines success within the parameters of consumer capitalist culture. Which in addition, again highlights the way in which success under neoliberalism, is often linked to economic achievements, particularly, personal wealth (Binkley, 2014).

The way in which Sarah contextualises CED use and the notion of success in this way, also illustrates the difference between the concepts of instrumental drug use and functional drug use. Whereby, the concept of instrumental drug use tends to isolate drug use and users from their broader context, neglecting the influence of larger societal and ideological factors, as highlighted by Müller and Schumann's (2011) 'Instrumental Use Framework', which places emphasis on individual and pharmacological variables. In contrast, functional drug use is situated within the contemporary (neoliberal) socio-historical and cultural context (Aikins, 2014) and emphasises the broader potential and positive effects of drug use, in terms of behaviour, health, and well-being, for example, as noted by Askew and Williams (2021). This notion is evident below, where Sarah explicitly links the tangible success, a person may achieve from the use of CEDs, to improvements in a person's subjective wellbeing:

"I also think there is er... an escaping negative feelings element in that functionality, because the whole function of it is to improve your chances of success and success improves how a person sees themselves." (Sarah, 2019)

Certainly, an analysis of Sarah's statement provides excellent insight, in terms of the ways in which notions of functionality and improvements in wellbeing are discursively bound up with neoliberalism. Sarah's reference to success improving how a person "sees themselves" reflects the neoliberal emphasis on self-perception and self-worth, tied to personal achievements, particularly, economic success and accomplishment (Butler, 2021).

Moreover, given that Sarah links escaping negative feelings with functionality, this seemingly supports the neoliberal notion that personal fulfilment and well-being are closely tied to achieving success within the competitive neoliberal environment (Davies, 2017). The idea that the "whole function" is geared towards improving chances of personal success implies responsibilisation as a feature of neoliberal governmentality (Garland, 1996), where the responsibility for success is placed on the individual. This resonates with the neoliberal belief that individuals should manage their own destinies, and that success is the result of individual effort and merit (Aikins, 2019).

Hence, Sarah has ostensibly internalised the key virtues of neoliberal ideology - what Davies (2017) describes as the virtues of individualism: individual responsibility, self-management, and the belief that the free market will enable everyone to achieve success, which, in turn, will augment individual well-being. The internalisation by participants, of these key neoliberal virtues, is further exemplified by Lisa, below:

"Weed doesn't serve me well at uni, cuz it just makes me feel like a Zombie. I do have weed brownies to switch my mind off after working and because I've built up a bit of a tolerance [...]. For me, rather than the dosage, its more about the timing. I have brownies cuz I don't want to smoke tobacco cuz it's bad for you." (Lisa, 2019)

Lisa's mindful regulation of her cannabis consumption to balance her academic responsibilities and personal health, indeed illustrates a practical application of those neoliberal principles - a commitment to individual responsibility, self-management, and the

pursuit of well-being - in everyday student life. Certainly, Lisa demonstrates self-regulation and personal responsibility in her cannabis use, as she acknowledges that it affects her academic performance negatively (“weed doesn’t serve me well at uni”). Lisa thus, makes conscious choices about her consumption to mitigate these effects (“For me, rather than the dosage, it’s more about the timing”) and opts for weed brownies instead of smoking, to avoid the health risks associated with tobacco (in spliffs). Hence, Lisa exercises autonomy and self-regulation in her cannabis use, aligning her practices with her well-being goals and health consciousness, indicative of neoliberal governmentality (Rose, 1998).

Importantly, although Lisa’s use of cannabis might not appear directly suggestive of functional drug use for cognitive enhancement, as she does not exploit or benefit from its effects during study, it nevertheless indirectly infers this. For example, through her strategic timing for optimal functioning, Lisa seeks to avoid negative impacts on her academic performance, suggesting an indirect attempt to enhance her cognitive capabilities during study by avoiding impairment. Additionally, the way in which Lisa consumes cannabis to relax after work, to switch off her mind and recover from cognitive fatigue, indirectly supports cognitive enhancement through stress reduction and mental rejuvenation, thereby aiding in increased productivity during study periods. This also, therefore, reveals a further dynamic: that there are different meanings and interpretations around notions of functionality, in terms of student drug use for cognitive enhancement.

6.3. Individual Responsibility, Self-Reliance, and Meanings of Functionality

As a discursive feature of functionality, the theme of responsabilisation and the internalisation of key neoliberal virtues - such as individualism, individual responsibility, and self-management - resulting in improvements in individual well-being, emerged initially, via the netnography, as illustrated below:

“[...] you should come to terms with owning your personal performance and ignoring everyone else’s. I just think it’d make you happier, you know?” (Forum User, 2014)

“People are gonna do what they need to do to ensure they succeed in school. For some people its binging on Adderall and cramming, for others its studying all the

time. Find out what works for you and forget about everyone else. Constantly living your life comparing yourself to other people is mentally exhausting. Just focus on being the best you, you can be and you will be fine.” (Forum User, 2014)

The first forum user evidently highlights neoliberal responsibilisation, where they urge others to own their personal performance and “ignore everyone else’s”. Likewise, the second forum user echoes this sentiment in their statement, with the advice to, “forget about everyone else” and to not constantly compare oneself to others. Thus, demonstrating that personal fulfilment in neoliberal society is achieved through individual pursuits and should not be overly influenced by societal, or collective considerations (Davies, 2017). Certainly, the second forum user individualises (mental) wellbeing and success, stressing the importance of being, “the best you”. However, under neoliberalism, the obvious implication is that those individuals who are unsuccessful, are so because of their own faults, they are in a sense dysfunctional as they are not inclined to perform at their ‘best’, to put in sufficient hard work to achieve successful outcomes (Davies, 2017; Zeira, 2021).

Linked to this, some of the findings from the netnography were intriguing, illuminating a distinct pattern among students who abstain from using CEDs. Notably, that these non-users tended to frame the discourse around students who opt for CEDs, within a narrative of dysfunctionality. According to this perspective, students who seek and consume drugs for cognitive enhancement, were perceived as lacking the willingness or commitment to take personal responsibility for their academic pursuits. The implication is that such students, were presumed to sidestep the inherent neoliberal necessity of putting in genuine hard work, or achieving efficiency through non-substance-based means, as corroborated by the forum users below:

“With great motivation and concentration and good study plan, you can do better than scamming through books in the middle of the night with some Ritalin.”
(Forum User, 2010)

“I am frustrated and surprised that so many students are using these drugs to study. All in all, I really only care about my performance and I feel that I will be able to perform just fine without these drugs.” (Forum User, 2014)

"I don't think I know anyone that got an edge via study drugs. Most people that use them are just dumb and think that drugs will be a bigger help than they actually are. There's so much studying to be done that if you can't study for long periods of time without these drugs you won't be able to get anywhere." (Forum User, 2014)

Evidently, the prevailing sentiment above, among these student forum users who refrain from using drugs as CEDs, is that successful academic outcomes should primarily stem from an individual's ability to assume personal responsibility and dedicate substantial effort. From this perspective, for the forum users above, relying on drugs for cognitive enhancement is viewed as dysfunctional and importantly, as a shortcut that compromises the (neoliberal) principles of hard work and personal commitment (Beddington et al, 2008). Indeed, the first forum user alludes that, using Ritalin™ as a study aid is a suboptimal and dysfunctional approach, compared to a more conscientious and motivated study method. Whilst the second forum user implies dysfunctionality, by expressing frustration and surprise at the prevalence of students using drugs for studying, whilst asserting a personal belief in achieving optimal performance, without resorting to substances.

Notions of dysfunctionality are increasingly overt within the third forum user's discourse, as they express a dismissive view of using drugs to enhance study and suggest that those who use them, may be misguided in their beliefs about the drugs' effectiveness. Moreover, they employ a pejorative term ("dumb"), to describe people who use drugs for cognitive enhancement. A characterisation which implies a negative judgment and also dysfunctionality, concerning the intelligence or decision-making of individuals who turn to using drugs as study aids. Therefore, meanings around functionality for the above forum users, are palpably conveyed via a preference for authentic effort and concentration, over shortcuts or external aids, emphasising that success should be the outcome of taking personal responsibility and diligently putting in the required work. Ultimately, these student forum users are thus legitimising and rationalising their choice not to use, via a discursive binary of functional or dysfunctional behaviour (Askew & Williams, 2021).

Other students opted not to utilise drugs for cognitive enhancement, for reasons that were also clearly legitimised and rationalised through a functional or dysfunctional behavioural

discourse. Certainly, the decision-making process involved considerations beyond the straightforward choice of whether to use drugs for cognitive enhancement, with individuals weighing the potential benefits and drawbacks within the context of this discursive binary. For example, there were fears around drug ‘addiction’, as illustrated by the forum users below:

“These drugs can create serious health issues and addiction.” (Forum User, 2013)

“People fall in the dark pit of addiction when they start thinking of substances as a solution.” (Forum User, 2013)

The comments from the forum users above also highlight a key observation made by Schleim (2020), that addiction is an exemplar condition in terms of limiting an individual’s rationality and freedom. Moreover, therefore, there are considerations of the ‘addict’ subject position (Mann, 2022a); a subject position which in neoliberal societies, “is viewed negatively, associated with a loss of control and autonomy, deemed irrational and irresponsible behaviour [...] ‘drug addicts’ are characterised as flawed citizens and consumers [...]” (Askew & Williams, 2021: 3). Certainly, concerns regarding addiction and the stigmatised perception of drug users, as inherently flawed citizens, with restricted rationality and freedom, was also an observable theme on student CED related forums, as highlighted below:

“If you can't study without drugs, then why are you studying at all? Do they plan to carry their drug use forward into their future work-life? If so, they may be doomed to a lifetime of drug addictions.” (Forum User, 2018)

“Most people that use them are just dumb and think that drugs will be a bigger help than they actually are. If you can't study for long periods of time without these drugs you won't be able to get anywhere without a stimulant addiction.” (Forum User, 2013)

The first forum user above assumes that individuals who use drugs to study lack the ability to study without them, suggesting a perception of flawed rationality, implying that such individuals are incapable of pursuing their academic goals without relying on substances. Moreover, the question about carrying drug use into future work-life infers a presumption

that individuals making such a choice, are not making rational decisions about their long-term well-being. Certainly, it seemingly suggests a lack of foresight and self-control, contributing to the notion of flawed decision-making. The first forum user above goes on to conclude with a strong assertion, that individuals who use CEDs for studying, could be “doomed to a lifetime of drug addictions.” This reflects a pessimistic view of the future for those students who use CEDs and a belief that their current actions, will lead to a lasting and detrimental impact on their lives. Thus, the ostensible assumption here, is that these individuals have limited freedom to break free from potential addictions, again emphasising a lack of self-control.

In a similar way, the second forum user above with the phrase, “most people that use them are just dumb”, directly implies a judgment on the intelligence of individuals who use CEDs for studying. This in addition, alludes to a perception that these individuals lack the cognitive ability to recognise the actual efficacy of drugs, which in a sense, portrays them as being intellectually flawed. Moreover, given that the second forum user above implies that individuals using CEDs, believe they will be more beneficial than they are, suggests a lack of rational decision-making and critical thinking, as it assumes that these individuals are misled or misguided in their understanding of the effects of the drugs. Whilst the assertion that, “if you can't study for long periods of time without these drugs, you won't be able to get anywhere without a stimulant addiction”, indicates a deterministic view of the future. That individuals who rely on drugs for studying, are destined to face negative consequences, which again seemingly emphasises a lack of control and freedom, in terms of the subsequent ability to avoid or break free from potential addiction.

Evidently, therefore, as with the other forum users discussed in this section, who perceived drug use for cognitive enhancement as dysfunctional behaviour, students who choose not to use for fears of addiction, are also in a sense engaging in a deliberate and functional decision-making process. Moreover, those who choose not to use due to fears of addiction, are making a choice that can be viewed through the lens of the perceived drawbacks associated with the stigmatised constructs of “addiction” and the accompanying “addict” subject position (Mann, 2022a). Certainly, as previously stated, the prevailing societal perspective deems addiction as dysfunctional (Askew & Williams, 2021; Mann, 2022a), which of course presents addiction as a hindrance, in terms of augmenting prospects for future success. Therefore, by refraining from embracing drug use for cognitive enhancement due to such apprehensions, these

students are making a functional choice; they are strategically aligning their actions with the goal of optimising their potential for success in the future (Mann, 2022a).

Hence, it can be deduced that the decision to either engage in or abstain from the use of drugs for cognitive enhancement, both represent manifestations of functionality (Askew & Williams, 2021; Mann, 2022a). This inference is drawn from the observation that both choices distinctly resonate with the fundamental tenets of neoliberal ideology, particularly emphasising individualism, personal responsibility, and self-reliance, to ensure future success (Davies, 2017). The assertion is that individuals, whether opting for or against using drugs for cognitive enhancement, are inherently aligning themselves with these core neoliberal values, thereby, shaping their choices within a neoliberal framework that emphasises autonomy and self-determination. Moreover, therefore, the decision of students to either utilise or refrain from using, can both be viewed as expressions of the neoliberal, entrepreneurial subject (Mann, 2022a) (which will be discussed further in Chapter Seven).

It should be noted that, none of the students involved in the face-to-face interviews expressed doubts about the effectiveness of the drugs they were using for cognitive enhancement, as indicated by the data in Section 6.1. Additionally, there was an absence of any mentions regarding concerns about addiction, among the interview participants. This lack of concern could be attributed to the fact that all of the interviewees were either current users or had past experiences of using drugs for cognitive enhancement, specifically for academic purposes. Furthermore, the way they detailed their use of drugs for cognitive enhancement in the interviews, was characterised by a responsible, strategic, and risk-averse approach (as will be elaborated and discussed in Chapter Seven), which may also offer insight into why concerns about addiction, did not surface among the face-to-face interview participants.

That said, there was a further noteworthy aspect that emerged from the face-to-face interviews in particular, concerning the functional use of drugs for cognitive enhancement in the academic context. This involved a variation in the ways in which participants of different ages, perceived potential benefits in terms of future success, which will be illustrated and discussed in the following section.

6.4. Functionality: The Age Demographic and Perceptions of Future Success

As stated above, there were differences in how participants of varying ages perceived benefits and the potential advantages for future success, as a motivating factor in terms of their functional use of drugs, for cognitive enhancement. Younger participants spoke mostly about their own personal future success, which was focused primarily on increased monetary wealth, and the ways in which this wealth would benefit them exclusively. This is illustrated below by Liam, a 23-year-old graduate who studied Politics, Philosophy and Economics at a traditional university, and Harry, 19, who was a first-year undergraduate studying Neuroscience, also at a traditional university:

“Yes, in terms of being motivated to use smart drugs for success, it definitely comes down to my future earning potential, as we live in a capitalist society.”
(Liam, 2019)

“I was saying to my dad before I started uni, I want to go to university and then be a millionaire [laughter]. It’s important it’s a job I enjoy though.” (Harry, 2019)

As evidenced by Liam and Harry above, the way in which neoliberal ideology defines success chiefly, in terms of monetary wealth (Verdouw, 2017), has seemingly been decisive in their motivations to use drugs for cognitive enhancement and shaping their perceptions around the benefits of their future success. Certainly, this is explicitly evident in Liam’s statement, with his recognition and acceptance of capitalist principles, which are a driving force behind his motivation to use smart drugs functionally, for success, which Liam measures in terms of, “future earning potential”. This, therefore, again reflects the neoliberal perspective, whereby individual success and motivation are framed directly around economic accomplishments, within a capitalist framework (Binkley, 2014).

Whilst Harry’s desire to attend university with the goal of becoming a millionaire reflects again, the neoliberal perspective whereby personal success, is often measured in financial terms (Binkley, 2014), which additionally, is closely linked to individual efforts and education. More broadly therefore, Harry’s statement alludes to the influence of neoliberal values, where personal goals, education, and financial success are interconnected, and the pursuit of

happiness in a person's career is considered compatible with achieving economic prosperity (Binkley, 2014; Dardot & Laval, 2017).

Older participants on the other hand, often described how they hoped their own future success, could potentially benefit wider society and that this was a motivating factor in their functional use of drugs for cognitive enhancement, as illustrated by Steve:

"I suppose my drug use for my studies is also functional in the sense that, when I've finished my studies, I want to get a job in academia so that I can pass on my experiences and what I have learned to allow other people to develop themselves in their own way. My ultimate goal in life would be to help alleviate suffering I suppose." (Steve, 2019)

There are myriad explanations which could account for the older participants broader perceptions around the benefits of their potential future success, such as, the way in which previous life experiences can alter and shape an individual's values over time (Regan & Fazio, 1977), as alluded to by Steve. A further factor could be that there remains a residue of collectivist welfarism in the subjectivities of older participants, given that, the post-World War II social democratic, Keynesian ordering in the UK, began to be replaced by neoliberalism circa 1979, spreading throughout the 1980s, up to the present day (Harvey, 2007; Davies, 2017).

Although Steve does not explicitly mention collectivist welfarism, the discourse of collectivist welfarism nevertheless seemingly comes through, in Steve's discursive account. Steve frames his functional use of drugs for cognitive enhancement and subsequent potential benefits, around contributing to academia and society. Certainly, Steve's expressed desire to get a job in academia, to pass on his experiences and knowledge in order to aid in the development of others, in a sense, could be seen as an individual sacrifice for the collective benefit and suggests a collectivist focus on the community or society as a whole (Timmons, 2012). Moreover, Steve mentions that his ultimate goal is to help alleviate suffering. Although this is a seemingly broad and altruistic goal, it does ostensibly align with the collectivist principles of welfarism, that prioritise the overall welfare and happiness of the community (Timmons, 2012).

Hence, Steve's subjectivity and indeed, the subjectivities of the other participants in the 35 plus age range, could ostensibly remain structured at least in part, around notions of welfarism and collectivist, social democratic ideals (Berman & Dettke, 2005) and not exclusively around the individualistic virtues of neoliberalism, as with their younger counterparts. Although speculative, this notion can perhaps be supported by observing the ways in which Scandinavian citizens perceive the tangible gains of success. Scandinavian countries have historically been structured socially and politically, around the collectivist principles of the Nordic social-democratic model (Castles, 2009; Mann, 2021). Given these collectivist principles, Scandinavian citizens tend to view the benefits of individual success primarily through the lens of social justice. (Ofstedal Telhaug et al., 2006). Interestingly, the perception that individual success can help promote social justice was echoed by Jake, when discussing drug use for cognitive enhancement as functional and how he perceived success:

"Although I was probably more selfish when I was younger, I still believed that we are all equal. I honestly think that social inequality is something that should not be an issue in a modern, developed country, so I definitely would hope that my future success can help to make society more equal; maybe I am just an idealist though [self-depreciating laughter]" (Jake, 2019)

Social justice discourse can be observed in Jake's discursive account in several ways. Jake expresses a belief in the equality of all individuals, which suggests a foundational value for social justice, emphasising that everyone should be treated with fairness and equity (Barry, 2005). Moreover, Jake explicitly states that social inequality should not be an issue in a modern, developed country, which demonstrates a concern for social justice, as Jake sees social inequality as something that needs to be addressed and that ultimately, should not exist. Indeed, Jake therefore, expresses a hope that his future success can contribute to making society more equal, aligning with a social justice perspective, as Jake reflects a desire to use his personal achievements for the betterment of society and the reduction of disparities (Timmons, 2012). Importantly, Jake's expressed self-awareness, where he acknowledges the possibility of being an idealist, seemingly signifies an understanding that achieving perfect social equality may be challenging; nevertheless, the aspiration towards it, reflects Jake's commitment to principles associated with social justice.

However, although collectivism, welfarism, and associated principles of social justice appear important to Jake, it is interesting that Jake did seem to joke about being an ‘idealist’, demonstrated by the self-deprecating laughter he expressed. This could be interpreted as illustrating that in neoliberal societies, collectivist values, notions of welfarism and principles of social justice are increasingly derided (Peters, 2021). Hence, while Jake still holds sympathy towards collectivist values, welfarism, and principles of social justice, it might be inferred that he is gradually becoming increasingly compliant with the prevailing individualistic virtues, promoted by neoliberalism (Harvey, 2007; Davies, 2017). This shift, particularly evident among younger participants, appears to significantly influence Jake's interpretation and discursive justification for using drugs for cognitive enhancement, ultimately framing it as a form of individualistic functional drug use, as illustrated below:

“But yeah, society is now totally individualistic, its awful really, but I do have to just focus on my own success to be honest, so I guess in a way that is my ultimate reason for using drugs to study better.” (Jake, 2019)

Certainly, Jake begins here by stating that society is now, “totally individualistic”, expressing a recognition of the prevailing individualistic values in the broader neoliberal societal context (Davies, 2017). Jake then emphasises the need to focus on his own success, indicating that he prioritises his individual achievements over collective well-being, which again, aligns with the individualistic ethos of neoliberalism. Bound up with this, Jake’s acknowledgment of individualism, is also linked with his use of drugs for cognitive enhancement in order to, “study better”. The further implication here is that, as discussed previously, within an individualistic, neoliberal society personal success is a primary goal (Card & Hepburn, 2023) and Jake’s functional use of drugs for cognitive enhancement, to augment academic performance, is framed as a means to that end. Hence, the entirety of the phrase, “so I guess in a way that is my ultimate reason for using drugs to study better”, reflects a neoliberal, utilitarian justification (Dardot & Laval, 2017) for using drugs for cognitive enhancement. Indeed, Jake creates meaning and ostensibly legitimises his use of drugs for cognitive enhancement, around notions of practicality. That they are a functional tool to augment chances for his own personal success, which thus, also infers a utilitarian and individualistic subjectivity, wrought through the subjugating demands of neoliberal ideology.

This sense of being subjugated under the individualistic demands of neoliberal ideology, which produces student drug use for cognitive enhancement as an individualistically focused form of functional drug use, illustrated by Jake's (2019) narrative account above, was also expressed by forum users:

"The education system, and modern culture praises individual grades and performance more than the act of learning [...] so taking brain enhancing drugs seems to be a logical step" (Forum User, 2014)

"The majority of students are not there to learn but rather to get good jobs and they commonly take stuff like Adderall to get by." (Forum User, 2017)

The statement from the first forum user highlights the ways in which the subjugating, individualistic demands of neoliberal ideology, contribute to their justification of drug use for cognitive enhancement as a means to augment academic performance. Moreover, there is an implicit focus on the competitive education system and culture, that prioritises individual achievement, over collective notions (Card & Hepburn, 2023). Likewise, the second forum user above, where they make reference to students using Adderall™, "to get by", suggests that drug use for cognitive enhancement is seen as an individualistic and functional solution to cope with academic stress and workload, rather than seeking collective support.

Crucially, the overall statement from the second forum user, again demonstrates the ways in which the subjugating, individualistic demands of neoliberal ideology, significantly contributes to the functional use of drugs for cognitive enhancement, within higher education settings. They are viewed as a means to achieve economic success, cope with academic pressures, and navigate the competitive landscape of contemporary higher education, which supports the findings of the Maier et al. (2013) study, discussed in Chapter Three. Hence, along with the impression given by the forum users above, that students' use of drugs for cognitive enhancement is the result of being subjugated under the individualistic demands of neoliberal ideology, there is again an allusion to an increasingly instrumental value system in higher education (Saunders, 2007).

Bound up with this therefore, the forum users above infer a further discursive element, also apparent within the data presented throughout the preceding sections - the ostensible

normalisation of functional drug use for cognitive enhancement, in academic settings. The emphasis on individual performance and grades over the process of learning, supposes that in such a competitive environment, where there is an overwhelming pressure to excel at any cost (Mann, 2021; Mann, 2022a), the end goal of education (good grades, success, employment, etc) is valued more than the means (learning). Certainly, as demonstrated above, many students perceive education primarily as a means to secure good jobs, rather than as a pursuit of knowledge, aligning for instance, with the employability narrative consistently pushed in contemporary neoliberal higher education. (Bennett et al., 2019).

From this perspective, under neoliberalism education is in as sense framed as a mere transactional process, whereby the outcome (“getting a good job”), justifies any means necessary to achieve it, including for instance, the use of drugs for cognitive enhancement, to augment performance. Supporting the notion discussed in Chapter Three, this approach to education, whereby instrumental norms seemingly prioritise outcomes over the methods used to achieve them, would evidently therefore, be a significant factor in the normalisation of the functional use of drugs for cognitive enhancement, as they are merely viewed as another available tool. Moreover, from this perspective a notion emerges that, various dialectical tensions, as a key relation between discourse - particularly between the discursive ideological frameworks of neoliberalism and a student's individual autonomy - play a significant role in the manifestation of contemporary student drug use for cognitive enhancement. Ostensibly, through these dialectical tensions, an entrepreneurial adaptive reaction, or more precisely, a functional response (Mann, 2022a), develops in students, influencing their choice to use, or indeed not to use, drugs for cognitive enhancement, which will be illustrated and discussed further, in the following chapter

6.5. Summary and Conclusion

The data and discussions presented within the opening section of this chapter, demonstrated the diversity of drugs and substances recontextualised as CEDs by participants in this study, reaffirming the assertion made in Chapter Two, that a CEDs definition is not tied to a specific substance or its effects. Rather, it is contingent upon various factors including context, motivations for use, the meanings constructed by users and ultimately, the notion of drug, set and setting (Zinberg, 1986). Certainly, this section highlighted the significant role of

neoliberal ideology in shaping meanings and the recontextualisation process of drugs and substances as CEDs, among student users. As demonstrated, neoliberalism is intertwined within the discursive frameworks of student participants, influencing how they often frame motivations and meanings around notions of functionality and perceived benefits. Therefore, emphasising the complex interplay between neoliberalism and individual behaviours, within the context of cognitive enhancement drug use among students.

Hence, the data presented throughout this chapter, have consistently demonstrated that the meanings constructed by student users of drugs for cognitive enhancement and the discursive strategies they employ to justify their use, do not neatly align with dominant medical and legal theories of drug use. Indeed, it is essential to acknowledge that these perspectives can in no way account for the complex dynamics at play, when students resort to using drugs for cognitive enhancement. As discussed in Chapter Two, dominant medical and legal perspectives typically dichotomise drug use into binaries, such as, legal or illegal, recreational or problematic (Booth-Davies, 1997 & 1998; Decorte, 2001; Pienaar et al, 2016; Moore et al, 2017; Askew & Williams, 2021), which are overly simplistic and thus, not adequate for capturing the multifaceted nature of drug use for cognitive enhancement, in academic settings. Indeed, prevailing medical and legal theoretical perspectives ultimately view drug use through a lens of pathology or deviance and fail to significantly appreciate the broader context in which it occurs.

Certainly, the data illustrate that students' decisions to engage in drug use for cognitive enhancement, are not simply driven by hedonistic desires, deviant behaviour, or pathology for instance. Rather, they are seemingly driven by a nuanced interplay of factors wrought through the significant influence of neoliberalism. These factors include the intense pressure to succeed academically, the competitive nature of neoliberal higher education, the pervasive individualistic and instrumental culture that permeates academic environments, and the overarching influence of neoliberal governmentality. In addition, all of these elements have also contributed to the potential normalisation of drug use for cognitive enhancement amongst student user groups.

7. Results Part Two: A Functional Response, Neoliberalism and Dialectical Tensions

Introduction

Directed by a dialectical relational approach to critical discourse studies (Fairclough, 2010), this chapter, part two of the results, explores in increased depth the key themes introduced in the previous chapter, focusing on the multifaceted and complex nature of student drug use for cognitive enhancement, in the neoliberal context. Section 7.1 will analyse dialectical tensions, emphasising the critical relationships between competing discourses and the ways in which these tensions are a key aspect, in normalising drug use for cognitive enhancement and that it is a manifest functional response by students (Mann, 2022a). For example, students are motivated by the demands of neoliberalism to achieve success, however, they also face ethical implications and potential personal consequences of their choices.

Given these implications, Section 7.2 will further explore the ethical considerations surrounding student drug use for cognitive enhancement, particularly whether students perceive it as a form of cheating, specifically in the sense that it might undermine (neoliberal) notions of fairness in competition. This section will highlight the dialectical tension between structure and agency, demonstrating how students are subject to a competitive academic structure that both restricts and enables their choices. Hence, understanding this tension is crucial for comprehending the ethical dilemmas and pressures faced by entrepreneurial students and the way in which drug use for cognitive enhancement thus, again reflects a functional response to the contextual neoliberal environment (Mann, 2022a).

Section 7.3 will therefore, illustrate and discuss how neoliberalism constructs the entrepreneurial student subject as an individual who negotiates these pressures with a responsible, strategic, and risk-averse mindset. Hence, it will be further demonstrated that entrepreneurial students use drugs for cognitive enhancement as a strategic measure to manage demands. A strategic measure that is characterised by personal responsibility,

strategic planning, and risk-averse drug use, resulting in a 'bottom-up' culture of harm reduction (Marlatt, 1996) within student user networks. Accordingly, this will further illustrate the ways in which students respond to and navigate the contemporary academic setting, further demonstrating that drug use for cognitive enhancement is a logical, functional response by entrepreneurial student subjects, to the demands of neoliberalism (Mann, 2022a).

7.1. Student Drug Use for Cognitive Enhancement: Dialectical Tensions and A Functional Response

As discussed in Chapter Three, neoliberal societies, including their institutions such as higher education, are intrinsically ordered around the principles of the free market (Canella & Ljungberg, 2017; Maisuria & Cole, 2017; Becker et al., 2021). Notably, neoliberalism emphasises managed market competition over organic competition and mere exchange, a departure from classical liberalism's economic foundation (Read, 2009). Therefore, as contemporary higher education has undergone neoliberalisation, characterised by the adoption of market-oriented principles (Adcroft & Willis, 2005), a significant shift has occurred regarding the perception and treatment of students. No longer solely seen as student learners seeking knowledge and personal growth, students have been reconceived as consumers, responsible for their own human capital (Adcroft et al., 2010). A reconceptualisation which fundamentally alters the dynamics within higher education institutions.

With students constituted as consumers, responsible for their own human capital, the emphasis shifts towards catering to their preferences and demands, akin to serving customers in a marketplace. Consequently, higher educational institutions increasingly prioritise aspects such as, customer satisfaction, marketability of programs, and return on investment (Brown & Carasso, 2013). This shift in focus via the ostensible commodification of education, where the value of a degree is measured more in terms of its market utility, than its intrinsic intellectual or societal worth, fosters a competitive environment and instrumental value system within higher education (Saunders, 2007). Within this competitive, instrumentalised environment, the traditional goals of higher education - nurturing intellectual curiosity, critical thinking skills, and a sense of social rather than individual responsibility (Balan, 2023) - may face challenges, as institutions prioritise meeting consumer demands and market

imperatives, such as job placement rates and salary outcomes (Brown & Carasso, 2013). The accounts from the face-to-face interview participant Claire and the forum user below, embody these themes:

“More and more people have a uni degree now, that means I have to make sure I put the work in and study harder so that I get good grades and a good job. Some of my older friends who have already graduated, told me how difficult it is to get a decent, well-paid job after uni. Getting a well-paid job is a real motivator for me to do well at uni.” (Claire, 2019)

“I have no issue with people taking drugs to help them study cuz in today's society, people rarely engage in education for the sake of the act itself. Of course, some do, we read for pleasure; gain fulfilment from learning etc. However formal education these days is generally associated with employment opportunity. My career goals are determined very much by my opportunities for further study. And my opportunities for further study are determined competitively. Only those with the best marks get into good post-graduate positions.” (Forum User, 2014)

Evidently, Claire views obtaining a university degree primarily as a pathway to securing a good job, which demonstrates the instrumentalisation of higher education by treating it solely as a means to an end (“getting a good job”), rather than valuing it for its intrinsic benefits, for instance, personal growth, critical thinking skills, or knowledge acquisition. The mention of older friends struggling to find decent, well-paid jobs after graduation, further reinforces this instrumentalisation, as it implies that the value of a university degree is primarily judged by its ability to lead to desirable employment outcomes, rather than by the fulfilment of broader educational goals. Moreover, given that Claire feels pressure to study harder and perform well academically, as she perceives that having a university degree alone may not guarantee a good job, highlights the way in which the instrumentalisation of neoliberal higher education (Morley, 2023) contributes to the competitive neoliberal knowledge economy, where individuals feel compelled to excel academically, augmenting their human capital, to stand out in the job market (Maisuria & Cole, 2017). As discussed in Chapter Three, the notion of human capital places responsibility on individuals to invest in their own education and skills development, to enhance their marketability in the labour force (Down, 2009).

In terms of the forum user above, although they seemingly recognise the intrinsic value of education, where they mention reading for pleasure and gaining fulfilment from learning, the overriding rationale behind accepting the use of drugs for cognitive enhancement in academic settings, is evidently driven by an instrumental perception of education; specifically, in terms of personal success and career advancement. In addition, similar to Claire, the forum user by framing education as merely instrumental, implicitly highlights the neoliberal agenda of commodifying higher education and endorsing the associated concept of education as a personal investment in human capital.

Additionally, reflecting the key neoliberal principles of competition and meritocracy, where success is attributed to individual effort and ability, as with Claire, the above forum user's discourse, illustrates the competitive nature of educational attainment and career advancement, whereby students are competing for limited opportunities based on academic performance (Tannock, 2017). Certainly, the forum user explicitly states that their career aspirations hinge on a select few "good" opportunities for postgraduate education, which are determined through competitive means. Therefore, the forum user infers that it is imperative to achieve the "best marks", via whatever means (i.e., using drugs for cognitive enhancement), in order to secure these opportunities. This aligns with what Aikins (2019) in part concludes from the findings of their study, as discussed in Chapters Two and Three. That the contemporary trend in drug use for cognitive enhancement amongst students, is bound up with neoliberalism's inherent and compelling sense of meritocratic pressure to achieve success (Mann, 2021).

More importantly, the way in which contemporary student drug use for cognitive enhancement is seemingly intertwined with neoliberal meritocratic pressures and the pursuit of success, highlights the cruciality of dialectical tensions as a key relation between discourses, to the phenomenon. These dialectical tensions are certainly apparent within the discourse of much of the previously presented data. For example, the discussed conflicting perspectives on the purpose and nature of education, where there is a dialectical tension between the instrumental and intrinsic value of education. Moreover, the notion of meritocracy for the above forum user, evidently coexists with a seeming acknowledgment of systemic inequalities in access to educational opportunities, as competition for further study may disadvantage certain individuals and groups. Certainly, some individuals and groups

maybe disadvantaged due to inequalities based on socio-economic status, for instance, which have intensified significantly under neoliberalism (Cakic, 2009; Aikins, 2019; Mann, 2022a).

Crucially therefore, within the above forum user's discourse, there is an overarching dialectical tension between notions of individual agency and structural constraints, in terms of determining an individual's career trajectory. For example, whilst they acknowledge that their career goals are determined competitively and by their opportunities for further study, there is also an implicit recognition of broader structural factors. Such as, academic competition, inequalities and also, the association of formal education with employment opportunity within the neoliberal knowledge economy, for instance (Powell & Snellman, 2004). The overarching dialectical tension between structure and agency, within which there are further demonstrable dialectical tensions, is increasingly exemplified within the discourse of the forum users below:

"[...] as we live in a capitalist society where education is directly connected to work and pay, it very much is competitive. I hate that it is like that, but until society changes dramatically, it is competitive." (Forum User, 2017)

"It is true that this [drug use for cognitive enhancement] is very popular in USA, but I think it just tells us something about how crazy the whole school system is and that there is something wrong with the wider social environment to even make the students to consider something like that." (Forum User, 2010)

For example, both forum users above discursively demonstrate a dialectical tension between acceptance and resistance. The first forum user acknowledges the integration between education and the capitalist economy, where education is directly connected to work and pay, inferring an acceptance of the current neoliberal context. Simultaneously however, there is a seeming desire to resist, as indicated by the sentiment of detesting that education is overly competitive within the (neoliberal) capitalist context, reflecting a tension between accepting the status quo and resisting and desiring change. Whilst the second forum user acknowledges the popularity of drug use for cognitive enhancement amongst US students, thereby, indicating acceptance of prevailing cultural norms and trends. However, they then go onto express a desire to resist and for separation from the phenomenon, as they criticise the

educational system and wider social (neoliberal) environment, for ostensibly pushing students into considering using drugs for cognitive enhancement. Therefore, evidentially, an overarching dialectical tension between structure and agency, is crucial within the discourse of the above forum users.

In terms of the first forum user's discourse, the dialectical tension between structure and agency is evident in the acknowledgment of the competitive nature of (neoliberal) education, which is driven by societal structures such as (neoliberal) capitalism. However, there is also an implicit recognition of individual agency in the way they express dislike for this competitive system and desire change. More importantly, given the explicit reference to the use of drugs for cognitive enhancement by students, the second forum user highlights the influence of the education system and wider social (neoliberal) environment on behaviour and student choices to use drugs for cognitive enhancement. Certainly, the mention of the "crazy" school system and the suggestion that, "something is wrong with the wider social environment", points to structural factors and external forces, in terms of shaping the context within which students operate, determining their options and influencing their decisions.

This aligns with an element of the findings from the Coveney et al. (2019) study discussed in the literature review chapters. Coveney et al. (2019) reported that the use of drugs for cognitive enhancement, was often portrayed as a personal remedy for larger structural issues. That the use of pharmaceuticals in particular, as cognitive enhancers, were perceived not only as enhancers, but also as facilitators, as they functioned to allow individuals to participate and to keep up with the demands of competitive environments, within which, there is a constant pressure to perform at a high standard and consistently strive for improvement (Coveney et al., 2019).

That said, despite the influence of structural factors, the second forum user above also implies the agency of students. The phrase, "to even make the students consider something like that", indicates that students have the capacity to make their own choices and decisions around using drugs for cognitive enhancement, recognising their agency in responding to and navigating the influences of the higher education system, within the wider (neoliberal) environment. Therefore, the second forum user's discourse in particular, ostensibly demonstrates the significance of a dialectical tension between the neoliberal structure and

individual agency, to the contemporary trend in student drug use for cognitive enhancement. Indeed, they suggest that while (neoliberal) structural factors may exert significant influence, students still possess a degree of agency in the ways in which they interpret and respond to the neoliberal educational context, in terms of their choice to use, or indeed not to use, drugs for cognitive enhancement. Moreover, therefore, this of course ties in with neoliberal governmentality and concepts concerning health, which emphasise supposed autonomy and increasing individualisation, self-care, and self-regulation in terms of health and performance (Rose, 2009; Coveney et al., 2019).

However, neoliberal governmentality and the emphasis on individual agency is in a sense paradoxical, for as Maisuria and Cole (2017) contend, the intensifying of neoliberalism constructs a perception that there is no alternative, therefore, subjects are necessitated to conform to neoliberal structural norms. Put another way, a paradox arises from the dialectical tension between the promotion of individual freedom and the imposition of conformity to neoliberal structural norms. This dialectical tension between individual freedom and conformity - or in effect, what could be described as acquiescence to neoliberal structural norms - is particularly apparent within the discourse of the following forum user:

"[...] sadly, its 'survival of the fittest' out there and its brutal. [...] Only the smartest can get to the top unis or schools, and then get the best jobs, but what about the people who are just as smart but didn't express themselves well in their personal statement or missed a grade by just one mark? (Forum User, 2015)

The notion of individual autonomy under neoliberalism would, as previously stated, on a fundamental level, seemingly suggest an ultimate freedom and ability for individuals to express themselves and pursue their goals without undue constraint (Colaguori, 2023). However, given that neoliberalism emphasises free-market capitalism, competition, and individual responsibility, individuals are required to conform with these beliefs in order to succeed (Card & Hepburn, 2023). This alignment with the prevailing structural norms and expectations of a market-driven, neoliberal society extends to students, as they must adhere to standardised metrics of success, such as academic grades, degrees, and personal statements for instance, tailored to meet criteria established by neoliberal imperatives (Molesworth et al., 2011).

Hence, within the above forum user's discourse, the dialectical tension between individual freedom and conformity, or indeed acquiescence, to neoliberal structural norms is explicit. As the forum user above ostensibly suggests, individuals are expected to conform to neoliberal norms for success, yet this conformity limits individual freedom and by extension, agency (Azevedo et al., 2019). Certainly, the mention of, "survival of the fittest" and the competitive nature of getting into top universities, or securing the "best jobs", reflects the pressure to conform to these norms. However, this pressure restricts the freedom of individuals who may be equally capable, but disadvantaged by factors such as, their ability to articulate themselves effectively, or by narrowly missing academic benchmarks, for example.

Therefore, students are in a sense constrained by external pressures and limited options, resulting in a perceived diminished sense of agency in making decisions, in terms of ways to pursue their academic and career goals. Consequently, for some students, these pressures, limited options and a diminished sense of agency over their lives, could manifest in an adaptive reaction, or more specifically, as a functional response (Mann, 2022a), in terms of choosing to use drugs for cognitive enhancement, to meet the structural demands of neoliberalism, as alluded to by the forum user below:

"With competition for jobs and graduate placements getting tougher and tougher, students have to do anything to get an edge and study drugs are just part of that."

(Forum User, 2021)

Again, the dialectical tension between structure and agency is overtly apparent within the above forum user's discourse, arising from the interplay between neoliberal structural pressures and individual agency. Certainly, it is evident that whilst the competitive job market and post graduate placements set the stage for intense competition, the forum user above suggests that students are not passive recipients of these competitive pressures; they actively engage in behaviours, such as using drugs for cognitive enhancement, to gain an advantage. However, the forum user's discourse explicitly illustrates that those structural, external forces, such as neoliberal market competition and economic conditions are in a sense, driving students to take drastic measures (Aikins, 2019). That students may feel compelled to resort to such practices as using drugs for cognitive enhancement, due to the intense meritocratic pressure to succeed in a highly competitive environment (Aikins, 2019; Mann, 2021).

Therefore, demonstrating that structural pressures, limited options and a diminished sense of agency over their lives, are manifesting a functional response on the part of students, in terms of the choice to use drugs for cognitive enhancement (Mann, 2022a).

Certainly, the above forum user's statement implies that students perceive using drugs for cognitive enhancement, as one of the few available strategies to gain an advantage in academia and thus also, the competitive job market. This perception of limited options, or perceived alternatives for achieving success provides discursive justification for some students to resort to such methods. More specifically, the phrase, "students have to do anything to get an edge", suggests a sense of desperation, or a lack of control over their circumstances. It implies that students feel compelled to resort to extreme measures - such as using drugs for cognitive enhancement - in order to compete effectively, again highlighting their perceived limited agency in navigating academic pressures and the job market.

Moreover, there is a further important dimension inferred by the forum user above. Their statement ostensibly implies that the use of drugs for cognitive enhancement, is increasingly normalised as a common practice among students seeking a competitive advantage. Certainly, considering the normalisation process of drugs description, discussed in Chapter Two, set out by Measham and Shiner (2009: 502), that it is a "contingent process negotiated by distinct social groups operating in bounded situations", the discourse from the forum user above, seemingly aligns with this description. In that, they are inferring a normalisation process of drug use for cognitive enhancement as a contingency, occurring within student networks, shaped by the specific limitations present in higher education, formed within the competitive framework of neoliberalism. Importantly, however, as the above forum user infers, the normalisation of drug use for cognitive enhancement by students, may further diminish students' sense of agency, by reinforcing the idea that such behaviour is necessary, or indeed inevitable, in order to succeed competitively. This was also apparent within the discourse of face-to-face interview participants, as evidenced below by Tilly:

"I always feel the pressure at university, I was used to always being first or second in my class and at A levels, now I'm competing with people who are smarter than me [...] I like to think it [Modafinil] gives me that extra one percent, to get me ahead of other people." (Tilly, 2019)

Again, Tilly's discourse exemplifies a dialectical tension between structure and agency, highlighting the complex relationship between neoliberal structural factors in shaping the competitive academic environment and an individual's agency, in terms of how they respond to and navigate subsequent pressures. Certainly, Tilly feels compelled to excel in the competitive environment of university but also, seeks ways to assert her agency by utilising modafinil for cognitive enhancement, to gain a competitive advantage over her peers. This perception reinforces the notion that drug use for cognitive enhancement is increasingly normalised amongst student user networks, as it is perceived as being essential for success in the competitive environment, of neoliberal higher education. However, what Tilly also infers within her discourse above, through this perception, is the discussed diminished sense of agency.

By ostensibly normalising drug use for cognitive enhancement, via attributing her success to the use of Modafinil, Tilly's sense of agency is diminished, as rather than her own abilities and efforts, she seemingly relies on modafinil to achieve academic success, undermining her self-efficacy. Indeed, the sense of pressure and competition indicate that she perceives external factors, such as her peers' intelligence and the need for cognitive enhancement (modafinil), as influencing her success. This reliance on external validation - particularly through comparative success - and substances to maintain her academic standing, reflects a dialectical tension between Tilly's desire for achievement and the pressure she faces. Instead of feeling empowered by her abilities, Tilly is compelled to compete, which can diminish her sense of autonomy and self-efficacy.

Moreover, Tilly's agency appears further diminished due to a perceived sense of biological inequality, as implied in her discourse, which may contribute to the normalisation process. She expresses feeling pressure at university because she is now competing with peers whom she perceives as "smarter" than herself, legitimising her use of modafinil; this mirrors findings from broader studies, such as Aikins (2019). This perception of inherent intellectual superiority amongst her peers suggests a belief in biological inequality, implying that some individuals are naturally more intelligent than others. Tilly thus embodies neoliberal conceptions of intelligence, where perceptions of intellectuality are reduced to individual biology (Winston, 2018). Furthermore, she illustrates how a belief in biological inequality

diminishes students' sense of agency and autonomy in navigating the academic environment, leading to feelings of reduced control of their academic outcomes (Yeager & Dweck, 2020).

Thus, they might increasingly be compelled to seek external solutions, such as using drugs for cognitive enhancement, to compensate for perceived intellectual deficiencies that negatively impact their competitiveness (Vagwala et al., 2017). This is certainly evident with Tilly above; her agency is seemingly diminished as she perceives herself as inherently competitively disadvantaged compared to her peers. Hence, rather than relying solely on her own abilities and efforts to succeed, she resorts to using Modafinil for cognitive enhancement, discursively legitimising her use around notions of it being a means to bridge a perceived biological, intelligence gap.

Where Tilly highlighted notions of biological inequalities, other face-to-face participants spoke of wider inequalities, such as, the previously mentioned socio-economic disparities, which are also ostensibly crucial therefore, to the normalisation of drug use for cognitive enhancement amongst student user networks, as illustrated by Josh:

"[...] It's not always a fair competition though [...] in my student house of eight people, I'm one of only two people to have taken a student loan, the rest are from families that are so rich they don't have to take the loan. So, I don't see that there is an issue if someone takes a drug to help them study, particularly if they're already at a disadvantage." (Josh, 2019)

Josh's discourse implicitly highlights socio-economic disparities by referencing differences in access to financial resources for education, acknowledging unfairness in competition, and he justifies the use of drugs for cognitive enhancement as a way to respond, to address socio-economic disadvantages. Certainly, by pointing out that he is one of only two people in his student house who have taken out a student loan, Josh is thus alluding to structural, economic inequalities, which as previously mentioned, have intensified under neoliberalism (Mann, 2021; Mann, 2022a). Indeed, Josh's financial situation is constrained by external factors beyond his control, such as his family's economic status and the rising costs of (neoliberal) higher education. This again illustrates the dialectical tension between structure and agency. Moreover, Josh's sense of agency appears reduced, as he perceives that fewer options and

opportunities are available to students from less privileged socio-economic backgrounds like himself.

Certainly, Josh's acceptance of the situation as "not always a fair competition" suggests a recognition of the existing structural inequalities. This acknowledgment may indicate a diminished sense of agency, as individuals in similar positions might perceive themselves as having limited ability to challenge or change the unfair circumstances they encounter. Indeed, Josh's justification for using drugs for cognitive enhancement, particularly in terms of those already at a disadvantage, infers that external factors such as socioeconomic status, determine academic success more than meritocracy, individual effort or agency (Yan & Gai, 2022). Moreover, by endorsing the use of drugs for cognitive enhancement as a means of countering structural economic disadvantages, Josh implicitly suggests that traditional efforts have limited efficacy in overcoming systemic barriers. However, despite these limitations, Josh indicates that students from less privileged backgrounds do have some agency to make choices. Aligning with findings elsewhere in the literature, such as Aikins (2019), some students may choose to use drugs for cognitive enhancement to "level up" the academic playing field, so to speak. This is increasingly exemplified by Lisa, below:

"The people that do well at university don't have jobs, when you're having to work to earn a living alongside studying, you know, work has to come first, its far more difficult for those who have to work, than those who are funded by their parents. When I was an undergrad, I didn't have a computer in my room, I'd have to go into uni to get stuff done, whereas their parents bought them laptops. There's never a sense of jealousy necessarily, but I feel its unjust. So, if I'm doing nightshifts, although I haven't tried it, I don't think there's anything wrong with taking modafinil to help you study." (Lisa, 2019)

Above, Lisa provides a more vivid account of the ways in which a lower socioeconomic status, directly affects a student's academic experience, explicitly highlighting the external barriers that limit her academic success. She indeed notes the lack of resources, such as not having a computer in her room and the economic necessity to work night shifts, which makes studying more challenging. Given these challenges, Lisa considers the possibility of using modafinil to cope with her demanding schedule, reflecting an exercise of personal agency. Certainly, by

contemplating the use of modafinil for cognitive enhancement, Lisa is exploring ways to manage her workload and improve her academic performance, thereby exerting control over her situation despite the structural constraints that reduce her agency.

Lisa also touches on the ethical dimension of personal agency, expressing that although she has not tried modafinil, she considers it would be acceptable to use it to manage her often challenging circumstances. This therefore indicates a moral reasoning process, whereby Lisa weighs the fairness of her situation against the potential benefits of using modafinil for cognitive enhancement, to improve her academic capabilities. As with Josh, Lisa is thus implying that using drugs for cognitive enhancement could help level the academic playing field for those, as in Lisa's case, who must balance employment and academic study. Hence, this again suggests that drug use for cognitive enhancement is becoming increasingly normalised, partly through a dialectical tension between agency and structure, as a legitimate functional response to coping with, or overcoming, [neoliberal] structural disadvantages that create unfair competition in higher education.

Certainly, by in a sense framing and legitimising it in terms of a functional response to unfair competition due to [neoliberal] structural inequality, both Josh and Lisa imply that it is ostensibly, a rational choice given the circumstances. However, in this context, the normalisation of drug use for cognitive enhancement again suggests reduced agency, in the sense that, it creates an expectation or pressure to resort to drugs, in order to compete on a level playing field. Indeed, in both Josh's and Rachel's statements above, they acknowledge the unequal starting points of individuals, such as financial privilege. However, by suggesting that taking drugs to aid in studying is acceptable, especially for those at a disadvantage, they infer that some students may feel compelled to use drugs for cognitive enhancement, to keep up with their peers who have access to other resources or advantages. This normalisation can, therefore, diminish agency by framing drug use for cognitive enhancement as a necessary means to achieve success, rather than emphasising alternative strategies, or seeking to address systemic inequalities.

This also, therefore, ties in with notions of coercion, discussed elsewhere in the literature (E.g., see Farrah et al., 2004; Cakic, 2009; Morein-Zamir & Sahakian, 2011), that students might feel coerced into using drugs for cognitive enhancement in academic settings, in this

instance, due to perceived normalisation. Indeed, Vagwala et al. (2017) make the point that social groups can also exert influence in promoting drug use for cognitive enhancement through subtle peer influence. This is characterised by an individual's awareness that their peers are participating in drug use for cognitive enhancement and even without direct pressure to join in, they nevertheless feel compelled (Vagwala et al., 2017) due to fears around, for instance, being left behind, or being at a competitive disadvantage (Morein-Zamir & Sahakian, 2011). These were themes that emerged in this study, as explicitly illustrated by the forum users below and by face-to-face interview participant, Vicky:

"If more students use these substances to get ahead, it could create an environment where students are essentially coerced into using these substances even if they don't want to if they want to keep up. [...] One person using nootropics may not be a big deal, but if more people use them then it could create an environment where everyone is coerced in to using them if they don't want to struggle to pass [...]." (Forum User, 2014)

"So, I'm definitely against straight up speed becoming too normalised in academia, because I'd like to compete in those fields without feeling like I'm at a disadvantage because I don't want to risk my health. If speed were legal, you can bet there'd be a lot of people using it even though they'd prefer not to, just to keep up with grade inflation." (Forum User, 2014)

"The reason I started taking them in the first place was because I thought, if they're taking smart drugs, they might beat me." (Vicky, 2019)

In terms of the first forum user above, coercion is explicitly mentioned, and the role of normalisation is implied, as they suggest that as the use of drugs for cognitive enhancement ("nootropics") becomes increasingly prevalent amongst students, it creates a social pressure or expectation for others to use them, to remain competitive and keep up with their peers. Likewise, the second forum user above explicitly discusses the potential outcomes of a hypothetical situation whereby, if legalised, the use of speed (amphetamine sulphate)²⁶ for

²⁶ Amphetamine Sulphate (street name, 'speed') is popularly considered a recreational drug and is a central nervous system stimulant. It represents the sulphate variation of amphetamine, a synthetic compound closely

cognitive enhancement, might become normalised amongst students. They express concerns around feeling pressured or coerced to use speed to compete effectively in academic settings, where grade inflation may incentivise its use. By suggesting that if speed were legal, many people would use it for cognitive enhancement, despite their personal preferences or concerns about health risks, the second forum user above, highlights the potential for normalisation to create a coercive environment where students might feel compelled to conform to the prevailing standard, in order to avoid being at a competitive disadvantage.

Similarly, Vicky ostensibly feels compelled to use drugs for cognitive enhancement not out of a genuine desire or need, but rather out of a sense of pressure, or intimidation, stemming from the perceived increased competitive advantage of others who use. Vicky's fear of being left behind, or competitively disadvantaged, seemingly creates a coercive influence, necessitating Vicky to use drugs for cognitive enhancement, despite her own reservations or concerns. Hence, as with the forum users above, normalisation plays a significant role in Vicky's inferred sense of coercion, as it creates a perceived expectation or social pressure to also participate, in order to remain competitive or on par with others, which aligns with discussions elsewhere in the literature (E.g., Morein-Zamir & Sahakian, 2011).

However, it is important to point out that, Peterson and Peterson (2019) stress, from the findings of their study, that a distinction should be made between coercion and social pressure. That the former would in a sense describe a direct threat and a complete lack of agency, in terms of the choice to use drugs for cognitive enhancement and that this is simply not the case. Rather, there is a more subtle form of social pressure exerted upon contemporary students to use drugs for cognitive enhancement, but that students maintain a degree of agency in their choice to use, or not to use (Peterson & Peterson, 2019).

Therefore, to reiterate, the perception that the use of drugs for cognitive enhancement is increasingly normalised, suggests widespread use and that it is socially accepted within student networks, further intensifies the pressure on students to conform and use, to avoid being at a perceived competitive disadvantage (Morein-Zamir & Sahakian, 2011; Peterson & Peterson, 2019), as illustrated above, by the forum users and by Vicky. Consequently,

associated with naturally occurring sympathomimetic amines (National Centre for Biotechnology Information, 2024).

normalisation contributes to a perceived social pressure to conform by framing the use of drugs for cognitive enhancement as a standard practice for achieving success, or maintaining competitiveness, thereby, subtly compelling students to engage, in order to keep up with their peers.

That being said, in line with Peterson and Peterson's (2019) assertion above, many students do not feel pressured into using drugs for cognitive enhancement due to perceived normalisation. Along with the justifications not to use, such as notions of dysfunctionality, or fears of addiction, outlined and discussed in the previous chapter, a further justification, is rooted in notions of fairness in competition. That the use of drugs for cognitive enhancement in academic settings is unethical, as it undermines competition and could be considered a form of cheating. This also further highlights the dialectical tension between structure and agency as being crucial to manifesting a functional response on the part of contemporary higher education students, not only in terms of the choice to use, but also, not to use drugs for cognitive enhancement. All of which will be illustrated and discussed in the following section.

7.2. Is it Ethical? Is it Cheating?

An element of the previous section illustrated and discussed the way in which certain students justify their use of drugs for cognitive enhancement, by referencing what can in essence be described as established or tolerated inequalities. This highlights a tendency among higher education students to ostensibly prioritise the neoliberal ethical concept of fairness in competition (Davies, 2017), as illustrated further by the forum user below:

"The "Digital Divide" is another example of an existing and widening inequality, there is a gap between students already because of cultural differences and parent's income. If that gap is increased even more because some students don't have access to smart drugs, is that unethical? The gap already existed." (Forum User, 2017).

The above forum user's acknowledgment of the "Digital Divide" and the gap between students due to cultural differences and parental income in the opening sentence, as with Josh and Lisa in the previous section, implies an awareness of unequal starting points. Hence,

within this opening sentence, ethical considerations of fairness in competition are inferred. In the proceeding sentence, contrasted with the notion of a level playing field, where all competitors have equal opportunities, by mentioning the disparity in access to, “smart drugs” and its potential exacerbation of an existing inequality gap, the forum user highlights the way in which certain students may face additional competitive disadvantages, associated with other students’ use of drugs for cognitive enhancement. Bound up with this, the suggestion of unequal access to drugs for cognitive enhancement, also alludes to neoliberal meritocratic ideals; whereby, in a fair competition, success should ideally be determined by merit, rather than external factors such as, access to resources (Davies, 2017).

Crucially, the final question posed by the forum user concerning the ethical implications of increasing the gap further, implies that widening disparities, particularly through factors beyond an individual’s control (access to resources such as, drugs for cognitive enhancement), may violate ethical principles of fairness in competition. However, the way in which the forum user above poses the ethical question and then answers with, “The gap already existed”, seemingly implies a normalisation or acceptance of existing disparities and thus, as an ostensible justification for unequal access to drugs for cognitive enhancement. That being said, the forum user’s ethical implication concerning unequal access to drugs for cognitive enhancement, again aligns with an element of the findings from Aikins’ (2019) study discussed in Chapter Three, that drugs for cognitive enhancement are increasingly accessible for those students from more privileged backgrounds.

Therefore, the above again demonstrates the inclination of contemporary higher education students to seemingly prioritise or indeed internalise, neoliberal ethical notions centred on fairness in competition. Hence, it follows that this would thus evidently, be a key consideration in terms of the debate, specifically amongst students, around whether student drug use for cognitive enhancement is a form academic misconduct and could be considered cheating (Mann, 2021). A debate which in turn, as previously stated, further highlights the dialectical tension between structure and agency in shaping a functional response (Mann, 2022a) on the part of contemporary higher education students, regarding their choice to use, or abstain from using drugs for cognitive enhancement, as the following conversation excerpt taken from a student online forum illustrates:

“They are academic steroids, just like in baseball. I’ve considered taking them since I have access to it but decided otherwise. It’s unethical. I also interviewed my Dean of Students last semester for a speech I was giving in a class. He said if caught you could face academic dishonesty charges.” (Forum User, 2014)

“Ethically it’s up to you, but people should keep in mind that the academic and legal repercussions of being found with illegal prescription drugs by far outweigh the opportunity of having better performance [...]” (Forum User, 2014)

The debate / conversation above is evidently framed around discursive ethical notions ultimately concerning fairness in competition. The first forum user above draws on the analogy utilised elsewhere in the literature (E.g., Schermer, 2008; Cakic, 2009), claiming there is a similarity between using drugs to enhance physical performance in sports and using drugs as, “academic steroids” to enhance cognitive function in academic settings, to boost academic performance. For this forum user, both are considered an artificial means of gaining a competitive advantage, which they consider as being, “unethical”, which thus alludes to concerns around fairness in terms of (neoliberal) competition. Indeed, although they mention having access to drugs for cognitive enhancement and have considered using them (illustrating the temptation many students face), they chose to abstain in part, for ethical reasons.

That said, rather than individualistic ethical concerns around fairness in terms of (neoliberal) competition, the choice of the first forum user above to abstain for ethical reasons, points to an overarching regulatory framework within academia aimed at maintaining overall fairness and integrity, which contrasts with the neoliberal focus on market-driven ethical self-regulation and personal accountability. Certainly, the decision not to use drugs for cognitive enhancement, based on such ethical grounds, could highlight a personal moral stance on the part of the first forum user above, against what is perceived as cheating. A position wrought through an internalisation of more traditional, overarching academic integrity values, which seemingly oppose the neoliberal perspective promoting individual ethics and success, over communal ethical values (McNay, 2007).

However, it is the seeming potential of facing academic dishonesty charges which was also evidently, a decisive factor in discouraging this student forum user from using drugs for cognitive enhancement, ostensibly demonstrating that their decision to abstain was in a sense, a functional response (Mann, 2022a) to a dialectical tension between institutional notions of communal ethics and personal agency. Moreover, the decision to abstain due to potential academic dishonesty charges speaks to the risk versus reward calculation that individuals often engage in, within a neoliberal framework, where potential gains are weighed against the risks (Lupton, 2006).

The notion of risk versus reward is increasingly evident in the discourse of the second forum user, who explicitly compares the potential benefits of, “having better performance” with the costs of, “academic and legal repercussions of being found with illegal prescription drugs,” concluding that the costs far outweigh the benefits. Unlike the first forum user above, this forum user does not at all appeal to communal academic ethical standards or notions of cheating, however. Instead, their statement reflects a purely pragmatic approach, consistent with the neoliberal tendency to prioritise practical outcomes and self-interest, illustrating an element of neoliberal responsibilisation (Garland, 1996), where individuals make decisions based on their own moral compass, rather than communal or institutional ethical standards.

As the above forum conversation continued, the dialectical tension between institutional, communal ethics and personal agency, or responsibilisation, became even more apparent, evidently laying at the heart of the debate around cheating and guiding the direction of the student forum users' functional responses (Mann, 2022a), as illustrated below:

“Knowing that people do bugs me just as if I found someone was cheating on an exam. It sucks to have to work so hard, only to discover that some of your peers are finding less ethical ways to keep up or even outperform you.” (Forum User, 2014)

“Coffee is a performance enhancing drug, but people don't bat an eye [...] drugs or no drugs, there will always be people who are better than you in some ways. This world's too big for that to ever be false. Grow up and deal with it.” (Forum User, 2014)

The first forum user above ostensibly demonstrates a commitment to institutional communal ethics, expressing frustration with peers using, “less ethical ways” to succeed, such as using drugs for cognitive enhancement, comparing it to cheating on an exam. They, therefore, seemingly value the importance of integrity within the academic community and that ethical behaviour which aligns with overarching institutional standards, is crucial for maintaining trust and equity among students. On the other hand, the second forum user above emphasises personal agency and thus, demonstrates responsibilisation as a feature of neoliberal governmentality (Garland, 1996). They elucidate a sort of pragmatic acceptance, where they downplay the ethical debate around cheating by illustrating that coffee, a socially accepted substance (caffeine), is often used for performance enhancement. Hence, they reflect an increasingly neoliberal, individualistic perspective, where personal agency dictates the ways in which an individual navigates the competitive environment (Mann, 2021). This is also evidenced explicitly, with their advice to, “grow up and deal with it”, echoing neoliberal responsibilisation (Garland, 1996) and an ethics of personal responsibility and resilience, rather than addressing the ethical implications of using drugs for cognitive enhancement, in academic settings.

Therefore, there is a seeming conflict of values between the above forum users, whereby, the first forum user represents a perspective that values communal ethics and institutional integrity, perceiving the use of drugs for cognitive enhancement by students, as a form of cheating that undermines fairness. In contrast, the second forum user embodies neoliberal responsibilisation (Garland, 1996), reflecting the individualistic, neoliberal approach that prioritises practical outcomes and personal ethical strategies over, for instance, communal, overarching institutional ethical values (McNay, 2007). However, although on the face of it the first forum user above is ostensibly invested in communal, overarching institutional ethics and regards the use of drugs for cognitive enhancement by students as cheating, they also in a sense, embody neoliberal ideology, as pragmatic notions concerning costs versus benefits are implicit in their discourse.

Indeed, the first forum user above highlights a perceived imbalance between effort (cost) and reward (benefit), central to a cost versus benefit analysis, where they express frustration at working hard (“It sucks to have to work so hard”) while others achieve similar, or better outcomes, through unethical means. This frustration seemingly stems from the upshot of

peers outperforming them through unethical means, such as using drugs for cognitive enhancement, indicating a prevailing concern with results and benefits. To reiterate, this outcome-oriented perspective is characteristic of neoliberal ideology, which prioritises results over normative ethical considerations (Davies, 2017). Moreover, the perception of being undermined by peers who use, “less ethical ways to keep up, or even outperform you”, suggests a dialectical tension between personal investment and the advantages and successes others achieve with less effort.

Importantly therefore, the first forum user above is inferably also questioning the value of maintaining communal, institutional ethical standards, when others benefit from acting autonomously and taking perceived shortcuts, such as using drugs for cognitive enhancement. Indeed, the statement, “knowing that people do bugs me”, indicates that the unethical actions of others have a personal impact on this student forum user, inferring an individualised perspective concerning the cost of adhering to overarching institutional ethical norms, when others do not. Hence, the first forum user’s frustration suggests an implicit calculation of whether observing overarching institutional ethical standards is worth it, weighing the personal cost of such ethical behaviour, against the potential benefits of using drugs for cognitive enhancement.

This cost versus benefit calculation and the seeming potential that the first forum user above might use drugs for cognitive enhancement in the future, are thus evidently, manifest through the dialectical tension between adhering to overarching institutional ethical standards and the individualistic demands of neoliberalism and the pursuit of personal success. Ultimately, this dialectical tension therefore, might eventually lead the first student forum user above to a viewpoint that using drugs for cognitive enhancement is not actually cheating, but rather, is an act of entrepreneurship and a functional response (Mann, 2022a) to maximise their potential within the competitive academic environment.

In the context of this dialectical tension, all of the face-to-face interview participants reflected a perspective that ostensibly rationalised the use of drugs for cognitive enhancement by students, as an autonomous and legitimate functional response, rather than as a form of academic cheating, as illustrated below by Vicky:

"I don't consider it cheating though, if someone doesn't want to take them that's up to them, smart drugs just allow me to work harder and longer. Anyway, just because I take smart drugs doesn't mean I'll automatically go from a 2:1 to a first, I still have to work hard." (Vicky, 2019)

As is evident, Vicky's perspective on the ethical issue of cheating reflects the key aspects of neoliberal ideology. She implies that individuals have the autonomy to make decisions about their own bodies and cognitive function, suggesting that using drugs for cognitive enhancement is a legitimate personal choice rather than an unethical action. More specifically, Vicky's assertion that these drugs allow her to, "work harder and longer", echoes the neoliberal emphasis on maximising personal effort in competitive environments (Davies, 2017). She indeed accentuates that using drugs for cognitive enhancement does not guarantee academic success but rather, facilitates the hard work necessary to achieve it, highlighting the belief that success requires individual effort, regardless of the tools used. Vicky thus employs neoliberal meritocratic discourse, where success is earned through hard work and talent (Young, 2017), in a sense justifying her actions due to the dialectical tension between the competitiveness of the system and the effort required to succeed within it. Hence, for Vicky, using drugs for cognitive enhancement in academic settings is a legitimate functional response within a competitive environment, to maximise her personal potential and achieve success, rather than an act of cheating.

Likewise, Harry (below) also ethically viewed the use of drugs for cognitive enhancement in academic settings through a neoliberal lens. That it is a legitimate means to maximise personal potential and achieve success, rather than an act of cheating, further exemplifying the dominant perspective of face-to-face interview participants:

"I don't think it's cheating, it's not like there's a super drug like steroids in sports [...] cheating is like a very emotive word anyway; really, it's just breaking the rules, right? So, if universities banned it, then I suppose then it would be cheating, but I don't think universities should regulate it. It's more about if there are health risks I think, rather than an unfair advantage. If there were proven health risks associated with using smart drugs, then they should maybe be banned." (Harry, 2019)

Harry's discursive legitimations around the notion of cheating again explicitly embrace the key tenets of neoliberal ideology, including individual autonomy, competition (the comparison to sport), minimal regulation, a focus on personal responsibility, and also, a preference for institutional neutrality (Dardot & Laval, 2017). Certainly, Harry's view that universities should not regulate drug use for cognitive enhancement unless there are significant health risks - thus merely acting as neutral arbiters, rather than active regulators of individual behaviour - downplays the role of collective regulation and oversight, mirroring neoliberal notions of minimal state intervention and reduced regulation. (Harvey, 2007). Hence, Harry indirectly, also seemingly supports a market-based approach whereby, drug use for cognitive enhancement is acceptable if it is not explicitly, institutionally regulated. Evidently for Harry, these neoliberal elements therefore, collectively frame the use of drugs for cognitive enhancement as a personal choice and thus, as a legitimate functional response shaped by dialectical tensions within a market-driven, competitive framework, rather than being an act of cheating or a matter for ethical, collective regulation.

The notion that the use of drugs for cognitive enhancement by students is a legitimate functional response within a market-driven, competitive framework, rather than an act of cheating, as alluded to above by Harry and Vicky, also again ostensibly illustrates the increasing normalisation of drug use for cognitive enhancement among student user groups. Furthermore, this normalisation within the competitive neoliberal environment, again highlights the way in which contemporary higher education students are constituted as entrepreneurial subjects through neoliberal governmentality (Mann, 2022a), as mentioned in Chapter Six. More specifically, the data and discussions presented so far throughout this chapter, begin to illuminate the ways in which dialectical tensions are central to neoliberal governmentality, influencing student drug use for cognitive enhancement as a functional response by responsibilised and strategic, entrepreneurial student subjects.

7.3. The Responsible, Strategic and Risk Averse Entrepreneurial Student Subject

To reiterate, under the tenets of neoliberalism, individuals, including higher education students, understand themselves and are discursively constructed as entrepreneurial subjects (Foucault, 1979; Hamann, 2009; Davies, 2017; Mann, 2021; Mann, 2022a). As discussed in Chapter Three, neoliberal ideology dictates that students are exclusively

responsible for their own academic success, futures, and thus, human capital (Houghton, 2017). Consequently, an entrepreneurial spirit is liberated and expressed through consumption within the free market - education, training, tangible objects, etc. - all consumed for the sole purpose of augmenting human capital. Thus, as with neoliberal citizens more broadly, student consumption is established as an investment in their human capital, targeted towards future economic success and social mobility in a highly competitive and unequal society (Read, 2009; Davies, 2017; Mann, 2022). In the context of drug use for cognitive enhancement by students, this is explicitly emphasised by the forum user below:

"[...] every student in the western world now wants to take smart drugs because of the belief that they will be left behind unless they do so." (Forum User, 2015)

The above forum user's initial comment concerning, "every student in the western world" wanting to use "smart drugs" is interesting, as it is generally western societies that are more commonly associated with neoliberal market-based norms (Dardot & Laval, 2017). Indeed, their perception that all students in the West want to use or must resort to taking drugs for cognitive enhancement to avoid being left behind, indicates an underlying inequality in opportunities and resources under neoliberalism. Hence, individuals must continuously invest in their human capital and thus, be responsible for developing their own skills and abilities, to remain competitive (Mann, 2021).

However, a significant proportion of human capital - such as genetics, intellectual ability, and social class - is predetermined and therefore limited, which can restrict a student's aspirational and competitive abilities (Read, 2009). As highlighted previously, some students who use drugs for cognitive enhancement discursively draw upon these established and tolerated inequalities - limitations in human capital - to legitimise their use. Indeed, as stated in Chapter Three, Foucault (1988) argues that human capital limitations are to be overcome. Hence, responsibilisation as a feature of neoliberal governmentality determines that individuals, including students, are obliged to and responsible for seeking out ways and means via the utilisation of, "technologies of the self" (Foucault, 1988), to consistently transform themselves by effecting, "[...] a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being" (Foucault, 1988: 18).

Evidently therefore, the use of drugs for cognitive enhancement by students, is ostensibly understood by the above forum user through this lens as an investment in human capital, aiming to improve cognitive function and by extension, academic performance and future employability. Moreover, their discourse seemingly embodies the principles of neoliberal entrepreneurialism, where individuals are expected to take entrepreneurial approaches to their education and future success (Mann, 2021; Mann, 2022a). As previously discussed, this includes self-optimisation, personal responsibility, risk management, innovation, and striving for a competitive edge, all within a market-driven framework that emphasises individual success (Davies, 2017).

Hence, some entrepreneurial students have in a sense, performed an operation on themselves by seeking out and using drugs for cognitive enhancement. Consequently, drug use for cognitive enhancement has been imagined and enacted (Fairclough, 2010) as a technology of the self (Coveney et al., 2019; Van de Ven et al., 2019; Pienaar et al., 2020; Mann, 2022a), ultimately to address predetermined limits in a student's human capital. Certainly, for student users of drugs for cognitive enhancement, addressing these predetermined human capital limitations is crucial to achieving favourable academic outcomes and remaining competitive, thereby enhancing their prospects (Mann, 2021; Mann, 2022a). Indeed, the notion of drug use for cognitive enhancement as a technology of the self, utilised by some entrepreneurial students ultimately, for human capital, has been alluded to in much of the data presented previously and is illustrated further below:

"A lot of students might be taking them soon to help boost their brain power because of the pressure to get a good job and get to the top [...] I think this is definitely likely." (Forum User, 2012)

"I can be quite unorganised and unfocused, but when I take modafinil it helps me to organise my day better, to be more focused on study tasks, I know that I will get things done. When I don't take it, I don't think so much about things like deadlines which could mess up my chances if I missed them." (Joe, 2019)

The above forum user's statement certainly encapsulates drug use for cognitive enhancement by students as a technology of the self, where entrepreneurial students seek to optimise their

cognitive abilities to enhance their human capital, driven by neoliberal pressures and the desire for career success (Dresler et al, 2019). Hence, this again reflects the discussed emphasis of neoliberal governmentality on responsabilisation and thus, self-optimisation and the strategic management of one's capabilities, in a competitive environment (Beddington et al, 2008).

Likewise, these notions are increasingly apparent in Joe's account, which highlights his use of Modafinil as a technology of the self, to enhance human capital through improved focus, organisation, and time management. A practice that is driven by perceived pressures to succeed academically and professionally, embodying the entrepreneurial subject's pursuit of self-optimisation and strategic self-management (Beddington et al., 2008). Importantly therefore, Joe's decision to use Modafinil is evidently a strategic functional response, aimed at maximising his potential and ensuring he meets crucial deadlines. Again, this strategic thinking is a hallmark of the neoliberal, entrepreneurial mindset, where individuals continuously seek ways to improve their performance and outcomes (Beddington et al., 2008; Card & Hepburn, 2023).

Student drug use for cognitive enhancement imagined and enacted (Fairclough, 2010) as a technology of the self, by strategic entrepreneurial student subjects shaped by responsabilisation as a feature of neoliberal governmentality, has additionally, resulted in their functional use of drugs for cognitive enhancement as strategic and disciplined (Mann, 2022a). Indeed, student users of drugs for cognitive enhancement are generally disciplined in terms of the way in which they strategically plan and maintain dosages and follow temporal regimes for example, with the aim of optimising a drug's cognitive enhancing potential:

"By far, it is microdosing cannabis for me. I use 1/32g of weed through an edible it provides me the right amount and combination of motivation, relaxation, hyperpriming/creative thinking, and thereby focus to study the more theoretical of my classes." (Forum User, 2015)

"I lately used noopept²⁷ (3 x 10mg per day) + fasoracetam²⁸ (15mg in the morning) and energy drinks to study for an oral exam in theoretical computer science."
(Forum User, 2015)

"I only take a 200mg Modafinil pill or two to three Caffeine pills on days when I know I have a lot of cramming to do. I only take it in the morning cuz otherwise I won't sleep that night if I take it in the afternoon. [...] I think its counterproductive to take these drugs too much." (Liam, 2019)

Notice how the above forum users and Liam detail specific dosages of the drugs they use for cognitive enhancement. Such precision suggests that they have each experimented to find the optimal dose that works best for them, reflecting a disciplined and strategic planning process. In addition, the first forum user above has a preferred method of consumption when using cannabis for cognitive enhancement, highlighting the use of an edible form. Edibles are claimed to provide a controlled and consistent delivery of the drug (Barrus et al., 2016), which suggests the forum user is meticulous about maintaining a stable intake method, that aligns with their cognitive enhancement goals. Indeed, this forum user lists specific cognitive and emotional states they achieve through microdosing cannabis: motivation, relaxation, creative thinking, and focus. This detailed understanding of effects suggests that they strategically monitor and adjust their usage to achieve these states, demonstrating a disciplined approach to managing their cognitive enhancement. The forum user then connects these favourable states to studying increasingly theoretical content, indicating that they have strategically identified and planned for particular academic tasks that will benefit from the enhanced cognitive states, induced by the drug.

Likewise, the second forum user above discusses their recent use of noopept, fasoracetam and energy drinks for cognitive enhancement, in the context of a specific subject - theoretical computer science - to augment their studies for an oral exam. Again, this targeted application demonstrates that this forum user integrates their cognitive enhancement strategy with their

²⁷ Noopept (N-phenyl-acetyl-L-prolylglycine ethyl ester) is a dipeptide analog of Piracetam and is considered a nootropic, as it is reported as being neuroprotective, in that, it has the potential effect of restoring cognition (Ostrovskaya et al., 2014).

²⁸ Fasoracetam monohydrate (NFC-1) is a synthetic molecular compound. It is a metabotropic glutamate receptor activator, which has previously been subjected to significant human clinical trials as a potential treatment for vascular dementia (Elia et al., 2018).

academic goals, reflecting disciplined and goal-oriented planning. In addition, their structured dosing schedule (three times a day for noopept and a specific time for fasoracetam) implies that this forum user follows a consistent temporal regime; a form of strategic regularity that indicates discipline in maintaining a routine to achieve optimal cognitive benefits.

Liam above, also demonstrates a type of temporal strategy whereby, he only takes modafinil or caffeine pills on study days, when he has a lot of “cramming” to do and specifically, in the morning due to concerns around interrupted sleep. This also indicates conditional or selective use, as Liam only resorts to using these drugs for cognitive enhancement, when necessary, rather than indiscriminately or habitually. Moreover, Liam’s emphasis on taking modafinil or caffeine pills “in the morning” to avoid sleep disturbances, demonstrates an awareness of the temporal effects of the drugs. An awareness that establishes a strategic approach to timing, to ensure that the cognitive benefits are maximised, whilst minimising negative side effects. Moreover, this awareness is seemingly informed by personal experience, suggesting that Liam has monitored and adjusted his use patterns based on observed effects, which requires a disciplined and reflective attitude towards consumption.

Bound up with this, Liam uses the adjective “counterproductive” to ostensibly describe excessive or undisciplined use, indicating a disciplined approach to managing his drug intake, in order to balance benefits and risks. In addition, Liam therefore seemingly legitimises his use of drugs for cognitive enhancement through a discursive binary of productive versus unproductive use. Legitimising his use in this way, not only exemplifies neoliberal governmentality, but also, the way in which neoliberal governmentality constructs entrepreneurial subjects by governing individuals to adopt a market-style ethics into their judgements, behaviours, and practices (Deuel, 2020), as previously discussed. This influence is also evident in the practice of ‘stacking’, where users, including students, combine small quantities of different substances to achieve optimal outcomes (Squier, 2013). A practice which indeed mirrors market-based principles, such as, maximising output (cognitive performance) through efficient resource management (selecting and combining specific substances) (Hanlon, 2018), as illustrated by the forum users below:

“Uridine, Omega 3s, Choline and B complex ALCAR Rhodiola. Stack and a half!!”

(Forum User, 2016)

“Omega 3's high in DHA, Lions Mane, Magnesium, L threonate, Cordyceps, ALCAR & ALA, B Vitamin Complex, Vitamin D3 & K2, Primavie, Shilajit, Apple Cider Vinegar. I would suggest all of these. Only take one at a time so you are familiar with effects after you've done that you can try stacking but do it the same way in stages. 2 at a time, then 3 so on and so forth.” (Forum User, 2021)

As is evident in the above forum users' statements, the concept of 'stacking' supplements mirrors the market-logic of offering multiple products to cater to individual preferences and needs. Certainly, the first forum user's notion of a “stack and a half” (i.e., an optimised combination) reflects a market-driven approach to maximising efficiency and benefits (Hanlon, 2018), whilst also implying a superior combination of supplements, that might give the user a competitive edge over others. The detailed 'stack' lists and structured approaches to supplementation for cognitive enhancement, thus illustrate the discussed strategic and disciplined, efficiency-driven mindset, aiming to achieve the maximum possible benefits from each supplement and their combinations. Hence, the above forum users embody the entrepreneurial subject, as they engage in self-experimentation and optimisation, seeking the best 'stack' to enhance their cognitive performance, in the same way an entrepreneur would optimise a product or business process (Davies, 2017).

In addition, akin to cautious investment strategies, notice the way in which the second forum user above advises a conservative approach to 'stacking', gradually increasing combinations only after exploring the effects of each substance in isolation. This illustrates a further aspect of the strategic and disciplined, functional use of drugs for cognitive enhancement by students that emerged in Chapter Six, also inferred from Liam's previous account and indeed, the previously presented data: (neoliberal) risk management, indicating a generally risk-averse form of drug use (Mann, 2022a; Mann, 2025). This notion is evidenced more explicitly by the forum user below:

“All of these drugs work long term if used responsibly [...] Responsible use being defined as using them to increase focus, understanding of complex ideas, and

things along those lines all while maintaining tolerance and reminding themselves to use practically.” (Forum User, 2018)

By advocating for responsible use to ensure long-term effectiveness, the above forum user’s statement indeed aligns with the neoliberal notion that entrepreneurial subjects are accountable for their own well-being and thus, should manage their own risks (Lupton, 2006). Hence, the way in which the forum user defines responsible use - minimising potential harm and promoting long-term benefits - implicitly highlights a risk-averse approach. This, therefore, also echoes those findings elsewhere in the literature, discussed in Chapter Three (E.g., De Santis & Hane, 2010; Cutler, 2014; Steward & Pickersgill, 2019), demonstrating the way in which students in part legitimise their use of drugs for cognitive enhancement, via risk minimisation discourse. An approach that is consistent with risk management, as a discursive feature of neoliberal governmentality, which prioritises minimising exposure to risks through careful and strategic, calculated behaviours (Lupton, 2006).

In addition, Bilgrei (2019) suggests that access to, and the subsequent widespread use of, the internet has transformed individuals’ capabilities to accumulate and disseminate knowledge and information, including that concerning drug use and health, as evidenced by the netnographic data presented here. As a result, expertise is increasingly decentralised, producing (neoliberal) society as progressively self-sufficient in myriad areas, particularly human health (Bilgrei, 2019). Hardey (1999) observes that this has enabled traditional political, scientific, and professional boundaries to be exceeded, creating an arena where new narratives about consumer health and lifestyle are constructed. Subsequently, such changes have enabled for the emergence of supportive drug communities, such as online forums focused on student drug use for cognitive enhancement. In these forums, users gather and disseminate drug-related information and share experiences, partly to minimise harm and help others (Bilgrei, 2019), which is exemplified further by face-to-face interview participants, Brian and Jake:

“I buy my mushroom grow kits from a site called Zamnesia. I also got a lot of useful information from forums on how to cultivate them properly and on the best dosages for microdosing safely for creativity.” (Brian, 2019)

"I first heard about phenibut on an online forum and there was also advice on how to use it safely. Like, not using it more than three days a week to avoid addiction. That its best to start off with a small amount, not to use more than half a gramme at a time and no more than a gramme in one day. This was to reduce the chance of negative side effects." (Jake, 2019)

As is evident from Brian and Jake, online forums serve as a platform for individuals to support one another. Certainly, Brian's and Jake's seeming reliance on forum advice for correct and safe use, demonstrates the role of these online communities in providing peer support and guidance (Bilgrei, 2019). Whereby, there is a collective effort to help others make informed and safe choices, promoting a sense of responsibility and care (Bilgrei, 2019) within, for instance, the student drug use for cognitive enhancement community. Indeed, the detailed instructions and advice shared in forums, as observed in both Brian's and Jake's accounts, reflects a commitment to disseminating practical, experience-based knowledge, which is seen as crucial for minimising harm, as it equips others with the necessary information to make safer decisions (Bilgrei, 2019).

Hence, there is evidently, a culture of 'bottom up' harm reduction (Marlatt, 1996) manifest within student user networks, which thus, can also be seen as a defining feature of student drug use for cognitive enhancement (Mann, 2022b). This has been cultivated not only through technological advancements and the ability to disseminate knowledge more effectively via social media, such as online forums, but also due to the discursive relations between neoliberalism and drug use. In the sense that, how students talk about and engage in drug use for cognitive enhancement, is shaped by neoliberal governmentality and the emphasis on personal responsibility and self-management (Davies, 2017). Therefore, the way in which neoliberal governmentality constructs students as entrepreneurial subjects, responsible for their own safety and success, is particularly pertinent in the context of risk aversion and 'bottom up' harm reduction strategies, as illustrated more explicitly by the forum user below:

"[...] in my final year, I smashed modafinil, amphetamines and then benzos & weed to help me sleep after a long study sesh. In an attempt to do some harm reduction for other students, here are a few pages that are of use: 1. Drugs and me - non-

profit run by neuroscientists who are students, really cool interface. Check out their page on Modafinil! 2. Erowid's page on Ritalin, they have a lot of drugs and their content is awesome. They aren't quite as user friendly though. 3. Nootropic.press - don't know much about nootropics btw, but their site looks well researched & doesn't seem to have any affiliate links.” (Forum User, 2018)

The above forum user is not only sharing their own drug use experiences for cognitive enhancement, but also, actively providing resources and information designed to help others use more safely. This directly supports the notion of harm minimisation and communal assistance within online forums. They share their experience with using modafinil, amphetamines, benzodiazepines, and cannabis, explicitly mentioning their final year of study; a personal disclosure which provides real-life context that others might relate to or learn from, exemplifying 'bottom up' harm reduction (Marlatt, 1996). In addition, the detailed recommendation of specific resources, such as Drugs and Me, Erowid, and Nootropic.press, highlights a practice of sharing vetted, research-based information, to help other students use drugs for cognitive enhancement more safely, further illustrating the notion of 'bottom up' harm reduction (Marlatt, 1996).

Crucially, as with the previously presented data, the forum user's account highlights an entrepreneurial subjectivity through the proactive management of their drug use for cognitive enhancement. Their detailed recommendations for harm reduction resources demonstrate a commitment to informed and safe use, engaging in risk aversion and 'bottom up' harm reduction strategies. This self-directed, resourceful approach to managing and responding to academic challenges, again aligns with the entrepreneurial principles of neoliberalism; principles that are centered on individual responsibility, self-optimisation, and the strategic management of risks and the functional use of resources, to achieve personal success (Lupton, 2006). Hence, this further validates the notion that student drug use for cognitive enhancement can be framed as a functional response within the context of neoliberalism, where students entrepreneurially employ substances in a responsible, strategic and risk averse fashion, to meet the high demands and competitive pressures, of their academic environments (Mann, 2022a).

It is important to point out however, that meeting the high demands and competitive pressures, of neoliberal academic environments, is not the only reason that students use the substances they discuss in this way, as illustrated by Josh's initial recreational use of modafinil for risk aversion in social settings, discussed in Chapter Six. This is further illustrated by Lisa and Emily below:

"I'm interested in all this bio-hacker side of things, like, what can I do about the fact I don't process alcohol very well and I get very sick from alcohol. So, with the [magic] mushrooms, I do little bits when I'm on a night out because I don't want to drink alcohol, but I want to enhance my sociability, and it suppresses my anxiety." (Lisa, 2019)

"I do drink alcohol sometimes, but I don't really like it if I'm honest, especially when I'm out. A lot of people do stupid things when they're drunk, and I hate feeling embarrassed when I wake up the next day and remember a stupid thing I did or something I said [laughter]. I read online that phenibut is good alternative to alcohol when you're out, so I tried it. I had just under a gram before I went out and I did feel more sociable, but not feeling out of control like with alcohol, and I didn't wake up feeling embarrassed [laughter]" (Emily, 2019)

Both Lisa and Emily above, exemplify the entrepreneurial use of their chosen substances in a responsible, strategic, and risk-averse fashion, but this time, in a social context. Lisa recognises that she cannot process alcohol well and experiences adverse health effects ("I don't process alcohol very well and I get very sick from alcohol"). This awareness demonstrates that she is responsible about her health and has thus sought an alternative in magic mushrooms, to avoid these negative effects. Whilst her strategic use of minimal amounts ("little bits") is illustrative of a risk averse approach to dosing, to minimise potential risks and harms associated with higher doses, in order to maintain an optimal effect, in terms of enhanced sociability and reduced anxiety.

Similarly, Emily acknowledges her dislike for alcohol's effects, particularly the potential for doing, "stupid things" and feeling embarrassed the morning afterwards. Hence, by strategically using phenibut as an alternative to alcohol in a social context, Emily avoids losing

control and potential embarrassment, demonstrating a risk-averse approach to minimise or indeed mitigate, the negative consequences of her substance use. Therefore, Lisa and Emily both employ a responsible, strategic and risk averse approach in a social context by substituting alcohol with perceived less harmful substances, to meet their social needs and enhance their social experiences without the negative consequences of alcohol.

As Ayres (2023) remarks, in neoliberal societies substance users are encouraged to minimise harm by choosing the healthiest available options for enjoyment and consuming in a controlled manner. Indeed, to maximise their individual human capital and hence collective economic potential, whilst minimising the social and economic costs associated with substance use, they should demonstrate self-restraint and moderation, to ensure responsible consumption and behaviour, and to remain as risk-free as possible. This enables them to be a functioning part of a healthy, productive workforce and thus, stable social order, essential for sustaining economic growth and minimal public expenditure (Ross et al., 2022).

In addition, what Lisa and Emily discuss in a sense mirrors an element of the findings from the previously discussed Askew and Williams (2021) study. The authors comment that, substances and their use in settings not typically associated with enhancement drug use, is in some instances, discursively framed and legitimised by users around functional notions of enhancement, rather than intoxication. Accordingly, this discursive legitimisation and framing of enhancement drug use in social settings, similar to the use of drugs for cognitive enhancement in academic contexts, reflects the principles of neoliberal governmentality. For instance, Lisa and Emily are taking an informed, proactive, and controlled approach to optimise their social interactions and overall well-being.

Moreover, Lisa also uses specific terminology that further exemplifies neoliberal governmentality where she states in her opening sentence, “I’m interested in all this biohacker side of things”. Embodying the entrepreneurial self, in contemporary (neoliberal) discourse, biohackers are individuals who take proactive steps to enhance their physical and mental performance (Lindfors, 2024), ultimately to augment their chances of success. They not only experiment with various substances, diets, and technologies but also, engage in meticulous self-observation, monitoring their progress and outcomes (Lindfors, 2024). They are proactive and seek specialist knowledge, to make informed decisions and take strategic

actions to optimise their health and performance (Lindfors, 2024). Hence, they autonomously traverse a consumer landscape of products and services for personal enhancement (Lindfors, 2024), highlighting their commitment to self-governance and individual responsibility in managing their well-being. Biohackers are thus, prime exemplars of neoliberal governmentality, acutely reflecting neoliberal entrepreneurial notions of self-optimisation, where individuals continuously strive for self-improvement (Foucault, 2008).

Therefore, by using the term biohacker in the context of her responsible, strategic and risk averse drug use in social settings, Lisa demonstrates the way in which neoliberal governmentality has come to shape substance use more broadly (Mann, 2022a). No longer is drug use primarily about chasing hedonistic pleasures or escaping from reality; under the dictates and ensuing pressures of neoliberalism, it has also become a means by which entrepreneurial subjects can functionally respond to (Mann, 2022a) and transcend, the imperfect self (Ayres, 2023).

7.4. Summary and Conclusion

This chapter explored in more detail, key themes that emerged in the previous chapter; chiefly, that student drug use for cognitive enhancement is a multifaceted and complex phenomenon, intricately bound up with key aspects of neoliberalism and the pursuit of academic success. The analysis of dialectical tensions, as outlined in Section 7.1, highlighted the cruciality of relationships between competing discourses, to the phenomenon. On the one hand, students are driven by neoliberal societal and institutional demands to excel and achieve, whilst on the other, they contend with the ethical implications and personal consequences of their choices. This dichotomy demonstrates the ways in which drug use for cognitive enhancement by students, is not merely a matter of individual decision-making, but rather, can be considered as a functional response that is deeply embedded in the broader neoliberal, socio-economic and cultural contexts, that impact and shape student life.

Section 7.2 explored the ethical considerations surrounding student drug use for cognitive enhancement, particularly whether students believe it undermines the principles of fairness in competition and constitutes a form of cheating. This section emphasised the dialectical tension between structure and agency, highlighting how students are embedded within a competitive academic structure that both restricts and indeed, enables their choices.

Certainly, ethical decisions to use or abstain from drugs for cognitive enhancement, in terms of whether it constitutes cheating, are influenced by the relationship between personal agency and external pressures and again reflect a functional response to their environment. This tension is crucial for understanding the ethical predicaments and decision-making processes, faced by contemporary (neoliberal), higher education students.

Finally, Section 7.3 illustrated and discussed the ways in which neoliberalism constructs the entrepreneurial student subject, as one who navigates these pressures with a responsible, strategic and risk-averse mindset. Certainly, in the neoliberal context, entrepreneurial students use drugs for cognitive enhancement as a strategic and calculated measure, to manage the demands placed upon them. This entrepreneurial approach is characterised by personal responsibility, strategic planning, and risk averse drug use, leading to a 'bottom up' culture of harm reduction, within student user networks. This, therefore, further illustrates how students respond, adapt to and negotiate the contemporary neoliberal academic environment, in terms of the way drug use for cognitive enhancement emerges as a pragmatic, functional response to the relentless pursuit of success, dictated by neoliberal ideology.

In addition, Section 7.3 concluded by illustrating and discussing the ways in which some student participants entrepreneurially use their chosen substances in a responsible, strategic, and risk-averse fashion, not only in an academic context, but also social settings. Hence, this section also highlighted the ways in which neoliberalism has come to reshape drug use more broadly; whereby, entrepreneurial subjects can seek out and use drugs in a responsible, strategic, and risk-averse manner in social settings, to minimise their potential for harm. Ostensibly, this is done to maximise their human capital and remain effective economic subjects by functionally responding to and overcoming, any shortcomings of the imperfect self.

Overall, this chapter has therefore demonstrated that the phenomenon of student drug use for cognitive enhancement is a lens through which, broader socio-cultural and economic dynamics can be examined. Certainly, the chapter has highlighted the pervasive influence of neoliberal ideology on student behaviour, in terms of drug use for cognitive enhancement and the resultant ethical and practical tensions. Understanding these dynamics is, therefore,

essential for addressing the implications of student drug use for cognitive enhancement more broadly; for instance, in terms of developing future policies around the phenomenon that are practical, judicious, fair and effective (Mann, 2025).

8. Discussion & Conclusion

Introduction

This chapter will discuss the implications of this research and its significant contributions to knowledge. Section 8.1 will detail the research's methodological contribution to knowledge, that the combination of netnography with semi-structured face-to-face interviews, directed by a dialectical relational approach to critical discourse studies, embodies a unique approach in the area of student drug use for cognitive enhancement. Furthermore, that this approach enables for a depth of insight that can have significant utility for not only future research, but also potential application in terms policy and practice.

Section 8.2 will discuss the theoretical contributions to knowledge afforded by a Functional Response Framework. Initially, the section will detail the ways in which the framework represents a significant theoretical development in the area of student drug use for cognitive enhancement. Moreover, that it represents a significant theoretical development regarding broader drug use, supplementing wider functional theories that challenge dominant medical and legal perspectives and associated drug binaries. Section 8.2.1 will then set out the ways in which a Functional Response Framework is markedly different from Rational Choice Theory. It is important to clarify this, given that notions of cost / benefit analysis and means / ends frameworks are implicit within both perspectives.

Following this, Section 8.2.2 will detail the implications of a Functional Response Framework to drug normalisation theory and how it can contribute to, and deepen understandings around normalisation processes, through the framework's contextual, ideological analysis. The theoretical contribution to knowledge section closes with Section 8.2.3 and a discussion centred on the implications of a Functional Response Framework for the concept of drug, set and setting (Zinberg, 1984). That the framework again, given its focus on the neoliberal ideological context, can significantly expand the drug, set and setting (Zinberg, 1984) perspective, enabling for increasingly profound insights.

Section 8.3 discusses the implications of a Functional Response Framework and the research more broadly, for policy and practice. Firstly, regarding student drug use for cognitive enhancement, both at the level of the state and educational institutions, with a recommendation that policy and practice should observe and perhaps nurture, the way in which this form of drug use is often strategic, responsible and risk averse, as illustrated through this research. Secondly, Section 8.3.1 discusses the implications for policy and practice regarding wider drug use. Primarily, arguing that by drawing on a Functional Response Framework there can be an increased focus on context and associated motivations for drug use, that might help to challenge and overcome the one-size-fits-all implications of the current dominant prohibitionist approach. In addition, that developing a more nuanced approach centred on context and motivations would aid in challenging stigma and negative stereotypes around drug use and users, which can pose significant issues for individuals.

Section 8.4 identifies and discusses the limitations of the research with an initial focus on a Functional Response Framework in terms of theorising student drug use for cognitive enhancement, wider drug use, and its practical application for policy and practice. Section 8.4.1 then goes onto discussing the limitations of this research more broadly, specifically, in terms of the study's methodological design. Based on these reflective discussions, Section 8.4 accordingly, puts forward and discusses recommendations for future research.

8.1. Methodological Contribution to Knowledge

The combining of netnography with semi-structured face-to-face interviews, directed by a dialectical relational approach to critical discourse studies (Fairclough, 2010), provides several methodological contributions to knowledge. The approach represents an innovative methodological framework that can be applied to various fields, for instance, sociology, criminology, communication studies, and cultural studies, encouraging further research that bridges digital and face-to-face interactions. Importantly, the integration of online interactions via netnography with in-depth face-to-face interviews, evidently allows for a more comprehensive understanding of social phenomena (Costello et al., 2017).

More specifically, as with other forms, this type of triangulation can enhance the validity of the findings by cross-verifying and clarifying insights across different social contexts, thereby, augmenting understandings of social and cultural dynamics (Miles & Huberman, 1994;

Costello et al., 2017). Furthermore, with what can be described as an expanded form of transformative netnography (Kozinets et al., 2024), this innovative approach enables netnography to provide insights into the digital interactions and cultural contexts of an online community (E.g., a student CEDs community), whilst face-to-face interviews reveal personal experiences and subtle nuances that are not apparent online (Costello et al., 2017). Indeed, this is illustrated in this research, where the face-to-face interviews uncovered nuances regarding the different drugs and substances used for cognitive enhancement across the age demographic and the divergent perceptions of success, for instance.

Moreover, this research has highlighted that utilising a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010) in the context of combining netnography with face-to-face interviews, allows researchers to adapt to rapidly changing social norms and digital landscapes, providing insights into the ways in which these changes are reflected in both online discourse and personal narratives (Costello et al., 2017). In addition, given that the semi-structured interviews facilitate the exploration of individual subjectivities, whilst the netnography captures more collective narratives (Kozinets, 2020), from the perspective of a dialectical relational approach to critical discourse studies, this dual focus can thus highlight the relationship between personal and collective experiences in shaping discourse, as illustrated by this research.

In the context of student drug use for cognitive enhancement, this research therefore, provides a unique methodological approach to researching the phenomenon that at the time of writing, is not identified elsewhere in the CED use literature. This is important, not only in terms of future research aimed at garnering a more comprehensive understanding, but also, for its applied relevance in terms of policy and practice. For instance, the findings from this methodological combination can inform policies and practices by revealing how discourses operate in both digital and physical spaces, offering insights into areas such as, the needs of substance users, identity formation, and emerging trends. For example, it was demonstrated in this research that student drug use for cognitive enhancement is largely strategic, responsible and risk averse (Mann, 2022a, Mann, 2022b, Mann, 2025) - an insight which can enable appropriate policy responses that take this into consideration (which will be discussed further in Section 8.3).

Overall, this methodological approach therefore, provides a robust framework for understanding complex social phenomena by accentuating the interconnectedness of online and offline social environments, whilst addressing the nuances of discourse and power. This contributes to not only academic knowledge and the development of innovative theories, such as a Functional Response Framework (Mann, 2022a), but also to practical applications in understanding social dynamics and trends in contemporary society.

8.2. A Functional Response Framework: A Contemporary Theoretical Development

The previous two chapters provided interpretative evidence supporting the hypothesis that neoliberal ideology, particularly through its core governmentality elements of competition and the constituted entrepreneurial self, plays a pivotal role in shaping drug use for cognitive enhancement amongst contemporary higher education students. Netnographic data and the narratives shared by face-to-face interview participants, ostensibly echo the discourse of neoliberalism, highlighting these key elements as central to their motivations and justifications for use. As a result, Chapters Six and Seven illustrate how students' use of drugs for cognitive enhancement can be understood as a functional response to the pressures and competitive conditions within higher education, which are shaped by the demands of neoliberal ideology (Mann, 2022a). This represents an important theoretical development that is often lacking, not only in discussions of the (student) CEDs phenomenon and drug use more broadly (Pennay & Duff, 2023) but also considering the critical role of quality theory in (social) scientific endeavours, which can at times be overlooked (Niemeyer et al., 2022), as discussed in Chapter Two.

It is important to clarify initially that, the way in which a Functional Response Framework positions student drug use for cognitive enhancement within the context of neoliberal political economy, is not meant to imply engagement with the structure versus agency debate (Mann, 2022a). Certainly, this framework does not suggest that structural ideological forces exclusively determine students' drug use for cognitive enhancement, nor is it implying that those who choose not to use are simply exercising or demonstrating a greater capacity for individual agency (Mann, 2022a). Instead, from the perspective of a functional response, students' choices are shaped by the dialectical relations and tensions within discourse (E.g., the tension between structure and agency), as they are constituted as entrepreneurial

subjects who make incentivised and calculated choices (Foucault, 1979; Christiaens, 2020; Mann, 2022a). Therefore, a student's decision to use, or not to use drugs for cognitive enhancement are both functional responses, driven by the neoliberal imperative for responsibilised entrepreneurial student subjects to remain competitive and succeed, in an unequal and competitive society (Mann, 2022a).

The choice some students make to use drugs for cognitive enhancement clearly aligns with the concept of the entrepreneurial subject; however, the decision not to use is less immediately obvious in this context. This choice, nevertheless, can also be viewed through the lens of the entrepreneurial subject and as a functional response, particularly when considering fears around drug addiction and the stigma associated with being an "addict" (Mann, 2022a). As was illustrated and discussed in Chapter Six, in neoliberal societies addiction is perceived negatively, associated with a loss of control and autonomy. The "addict" is thus, one who engages in irrational and irresponsible behaviour, often seen as a flawed citizen and consumer (Askew & Williams, 2021; Mann, 2022a). Moreover, neoliberal subjects are personally responsible for preserving their health and well-being, which is crucial for sustained performance and long-term success (Brown & Baker, 2013). Hence, a student who opts not to use drugs for cognitive enhancement out of a concern for the potential of addiction is making a strategic entrepreneurial decision, recognising that the risk of addiction and becoming an "addict" does not align with their goals of enhancing future success (Mann, 2022a).

It should also be clarified that; a Functional Response Framework is not designed to be a comprehensive theory for all instances of drug use for cognitive enhancement amongst students in higher education. It instead, offers a refined theoretical perspective that complements broader, contemporary functional theories of drug use, which aim to question dominant neoliberal medical and legal views and simplistic drug classifications (E.g., Boys et al., 1999; Williams & Parker, 2001; Williams, 2013; Askew, 2016; Askew & Williams, 2021), within which, student drug use for cognitive enhancement does not neatly fit (Mann, 2022a). Therefore, alongside wider contemporary functional theories, a Functional Response Framework additionally helps to challenge many widely accepted popular beliefs about drug use and users. These beliefs, such as the brain disease model of addiction and the associated notion that all drug use inevitably leads to addiction, often lack robust evidence (Heather et

al., 2018; Hart, 2022) and can result in harmful consequences for individuals (E.g., see Schomerus et al., 2011; Matthews et al., 2017; Witham et al., 2020).

Moreover, whilst a Functional Response Framework shares similarities with Müller and Schumann's (2011) Instrumental Use Framework, particularly in viewing drug use as instrumental, it differs in a key aspect. Unlike the Instrumental Use Framework, which centres primarily on the individual, a Functional Response Framework adopts a broader approach by contextualising the individual and the notion of instrumental drug use within the neoliberal milieu (Mann, 2022a). Thus, a Functional Response Framework that develops understandings of student drug use for cognitive enhancement, can also provide a valuable contribution to broader functional theories of drug use, specifically, those that explore the relationship between the individual and neoliberal society (Mann, 2022a).

Certainly, examining how contemporary drug users respond to the internalisation of subject positions shaped by the core tenets of neoliberal ideology - such as, the entrepreneurial subject position - as reflected in discourse, can help to contest the stigmas and negative stereotypes accompanying drug use. This is especially relevant to the use of state-unsanctioned (illicit) drugs and forms of drug use that neoliberal society deems problematic (Mann, 2022a). As discussed, these stigmas and negative stereotypes are partly generated by the dominance of neoliberal medical and legal perspectives, which frequently decontextualise, individualise and consistently pathologize drug use and drug users (Keane, 2002; Moore et al., 2017; Mann, 2022a), often resulting in harmful outcomes for individuals. Moreover, the focus of a Functional Response Framework on the neoliberal context - particularly how the entrepreneurial subject position influences students' decisions to use or abstain from drugs for cognitive enhancement, seemingly through cost / benefit analysis - also highlights the need to differentiate the framework from Rational Choice Theory (Cornish & Clarke, 1986), which will be explored in the following section.

8.2.1. A Functional Response Framework & Rational Choice Theory

On the surface, a Functional Response Framework (Mann, 2022a), which conceptualises drug use for cognitive enhancement as an instrumental strategic decision by entrepreneurial students grounded in a cost-benefit analysis, may appear similar to rational actor models, such as Rational Choice Theory (Cornish & Clarke, 1986). However, upon closer examination,

important distinctions emerge between the two, particularly in the way they account for the broader societal context and the multifaceted influences on decision-making. Fundamentally, the contextual emphasis of a Functional Response Framework is rooted in its focus on how drug use for cognitive enhancement by students, is a response to the specific societal and economic conditions, established under neoliberalism (Mann, 2022a).

As discussed, a Functional Response Framework thus situates students' choices within the neoliberal milieu, highlighting the ways in which their decisions are influenced and shaped by broader neoliberal forces, such as the pressure to perform, compete and succeed in a highly individualised, market-driven society and culture (Mann, 2022a). Conversely, whilst Rational Choice Theory similarly focuses on notions of cost-benefit analysis, where individuals seek to maximise utility, it is primarily concerned with the internal logic and calculations of the individual, often divorced from the external social and ideological context (Hayward, 2011). Certainly, although Rational Choice Theory does acknowledge, to a limited extent, that external factors influence preferences and choices, it often abstracts these influences away focusing on the decision-making process itself (Hayward, 2011). Consequently, it assumes that individuals have stable preferences and make decisions in a socio-cultural vacuum (Hayward, 2011).

Moreover, whilst Rational Choice Theory can be employed in a neoliberal context, it is ultimately not inherently tied to this, or any other specific ideological framework (Hayward, 2011). It is more of a general theory of decision-making that can be applied across various contexts, without necessarily accounting for the ways in which those contexts might shape preferences and choices (Hayward, 2011). Therefore, since Rational Choice Theory typically represents decision-making as a straightforward process, where individuals calculate costs and benefits within a contextual void - rather than considering the external factors shaping those decisions and whether they are just or appropriate - it tends to be more descriptive than critical or normative (Loughran et al., 2016).

In contrast, a Functional Response Framework is a critical theoretical perspective with normative inferences, as it implicitly critiques neoliberal norms and their ethical implications, particularly in terms of the ways in which these norms create specific challenges or demands on students that then influence their decisions around drug use for cognitive enhancement

(Mann, 2022a). Given these dimensions, a Functional Response Framework can also further contribute to and expand drug normalisation theory (Measham et al., 1994) by introducing an increasingly critical, ethical, and contextually grounded perspective, which will be discussed in the following section.

8.2.2. A Functional Response Framework & Drug Normalisation Theory

As discussed in Chapter Three and illustrated and discussed further in Chapters Six and Seven, drug use for cognitive enhancement can be seen, in line with drug normalisation theory (Measham et al., 1994; Parker et al., 1995; Measham & Shiner, 2009; Pennay & Measham, 2016), as increasingly normalised within student user networks (De Santis & Hane, 2010). Traditionally, drug normalisation theory focuses on the increasing acceptance of illicit drug use within specific social groups, particularly among young people, the reduction of stigma, and the ways in which drug use becomes a part of everyday life (Measham et al., 1994; Parker et al., 1995). Hence, drug normalisation theory tends to focus primarily on recreational drug use, or the normalisation of drugs, within conventional subcultures (Measham et al., 1994). In this context, a Functional Response Framework expands the scope of normalisation theory by exploring non-recreational drug use and why certain drugs become normalised amongst groups within other environments, such as neoliberal academic settings.

For instance, a Functional Response Framework analyses the ways in which the key characteristics of neoliberalism - competition, self-optimisation, individual responsibility, etc - create environments where drug use is not only normalised but also seen as a rational response by entrepreneurial subjects, to these pressures. This approach shifts the focus from drug normalisation as a socio-cultural process (Measham et al., 1994; Parker et al., 1995), to drug normalisation as a process that is bound up with broader structural and ideological forces. By shifting the focus in this way, a Functional Response Framework can also consider how drug normalisation might serve as a coping mechanism for individuals who are navigating the demands and stresses of modern life, particularly within the neoliberal context (Mann, 2022a). From this perspective, drug normalisation is observed as not only being about acceptance (Measham et al., 1994) but also, as a reflection of the functional roles that drugs might play in helping individuals to manage the demands placed on them, under

neoliberalism (Mann, 2022a). Thus, viewing drug normalisation in this way, positions it as a product of wider structural forces that interact with, shape and constrain individual agency.

Given these elements, a Functional Response Framework also adds a further critical dimension by questioning the ethics of drug normalisation, particularly regarding the pressures exerted by neoliberal norms and drug use for cognitive enhancement by students. Indeed, the framework encourages a deeper examination of whether the normalisation of drug use - especially by students for cognitive enhancement - is ethically justifiable, raising concerns about the morality of a society that establishes conditions where individuals feel compelled to use drugs, to meet external demands (Mann, 2021). A Functional Response Framework (Mann, 2022a) can therefore, also expand drug normalisation theory by incorporating an ethical critique of the power dynamics that drive normalisation. Accordingly, it explores how powerful actors in neoliberal society - such as educational institutions, employers, and policymakers - may implicitly or explicitly encourage drug use for cognitive enhancement to maintain productivity and competitiveness (Mann, 2022a), thereby perpetuating social inequalities.

In addition, as previously discussed, a Functional Response Framework captures how some entrepreneurial students resist using drugs for cognitive enhancement, also framing this resistance as a functional response to neoliberal demands (Mann, 2022a). This perspective introduces a further critical and dynamic element to drug normalisation theory, by demonstrating that normalisation is not an inevitable process, but one that can be contested and challenged. This approach, therefore, enables for a more nuanced understanding of drug normalisation by allowing for an increasingly comprehensive and critical view of the phenomenon. Building on this critical perspective, a Functional Response Framework by examining the complex dynamics of drug use in specific contexts, particularly the neoliberal ideological context, can also provide valuable insights in terms of the concepts of 'drug, set, and setting' (Zinberg, 1984).

8.2.3. A Functional Response Framework & Drug, Set and Setting

As discussed in Chapter Three, drug, set and setting (Zinberg, 1984) is a theoretical concept for understanding the effects of psychoactive substances on an individual, emphasising that the experience and outcomes of drug use are not solely determined by the drug, but are also

shaped by the interaction between a given drug, the user's mindset and the context in which the drug is used. To reiterate, 'drug' refers to the specific substance being used, including its pharmacological properties, dosage, and potential effects and thus, how it interacts with the brain, impacting on the body and mind (Zinberg, 1984). 'Set' denotes the individual's mindset, including their expectations, mood, personality, and psychological state before and during drug use; thus, a person's beliefs, previous experiences, and mental health can significantly influence how they experience the effects of a drug (Zinberg, 1984). Whilst 'setting' encompasses the immediate physical and social environment in which drug use occurs, whereby, factors such as location, presence of others, cultural norms, and social dynamics will have a substantial role in shaping the user's drug experience and outcomes (Zinberg, 1984).

Given that the neoliberal context is central to a Functional Response Framework for conceptualising student drug use for cognitive enhancement, it can significantly expand the traditional concept of drug, set, and setting (Zinberg, 1984) detailed above. In terms of the 'drug' component, a Functional Response Framework that emphasises the role of neoliberalism in student drug use for cognitive enhancement, expands the concept of drugs from mere chemical substances to commodities in a market-driven society. Whereby, drugs are perceived as essential tools for self-optimisation and enhancement, aimed at augmenting an individual's human capital and subsequent chances of achieving success (Mann, 2022a).

Secondly, the framework expands the concept of 'set' by incorporating neoliberal governmentality and the notion of the strategic entrepreneurial mindset, which emphasises individual responsibility, self-reliance, and the need to maximise productivity and performance to achieve success (Dardot & Laval, 2017; Davies, 2017). For entrepreneurial students using drugs for cognitive enhancement, their expectations and mental states are heavily influenced by internalised neoliberal pressures to consistently perform and excel in a competitive environment, which shapes their perceptions of what a drug should achieve. Moreover, the entrepreneurial mindset's instrumental rationality, marked by a cost/benefit perspective, leads student drug users to justify cognitive enhancement not just as a means to an end, but as a rational investment in their future. This often fosters a strategic, responsible, and risk-averse approach to drug use (Mann, 2022b; Mann, 2025). As illustrated and discussed in Chapter Seven, such an approach includes careful consideration of dosages and

dosage regimes to optimise cognitive and mental benefits, which in turn, will also affect the user's expectations and thus experiences, in terms of the drug's effects.

Thirdly, with its focus on the neoliberal ideological context, a Functional Response Framework of course, broadens the concept of 'setting' to include, not only the immediate physical or social environment, but also the broader political economic, ideological context. As discussed, in the case of student drug use for cognitive enhancement, the neoliberal environment - organised around competition, market forces and individualism - is a crucial part of the wider setting in which this behaviour occurs. Similarly, cultural norms within the setting of academic institutions under neoliberalism, where competition, market forces and individualism, are often deeply woven into the cultural fabric (Lerch et al., 2022), implicitly contribute as demonstrated, to an environment where student drug use for cognitive enhancement is increasingly normalised (Bloomfield & Dale, 2015).

More broadly, institutional policies and practices shaped by the neoliberal market-logic, create an environment where students feel compelled to use drugs for cognitive enhancement. For example, in a neoliberal higher educational system rooted in the profit motive, student numbers increase whilst programme provision and academic staffing decreases (Lynch, 2006). Consequently, with fewer academic staff, those who remain may have larger class sizes and more administrative duties, which can reduce the time and energy they can devote to individual students, which might result in less personalised instruction, guidance and mentorship.

Moreover, due to fewer academic staff, there is a burgeoning of and an increased strain on student support services (Mintz, 2021), including for example, academic support, trained counsellors and mental health professionals. This can lead for students, to longer wait times for appointments, rushed meetings, and less effective academic advice, career guidance and mental health support for those in need, exacerbating stress, anxiety, and other mental health issues (Mintz, 2021). Thus, students face growing pressure to self-manage various aspects of their academic lives and one way they cope with this responsabilisation (Garland, 1996) is by using drugs for cognitive enhancement.

Given the above, it is evident that a Functional Response Framework provides a holistic expansion of the 'drug, set and setting' (Zinberg, 1984) concept and further highlights the interconnectedness of the three components, especially through considerations of the neoliberal ideological environment. Certainly, in the context of student drug use for cognitive enhancement, the framework demonstrates that expectations, effects and outcomes cannot be reduced to the chemical constitution of a given drug. Neither are they solely based on the mindset of the user, influenced by the user's immediate physical and social environment, but are also deeply embedded in the competitive, market-driven academic environment, within the neoliberal context (Mann, 2022a).

Hence, expanding the concept of 'drug, set and setting' (Zinberg, 1984) via a Functional Response Framework, suggests that drug use, mindset, and the ideological environment are also part of a dynamic system, where each element continually influences and reinforces the others. For example, in terms of student drug use for cognitive enhancement, the neoliberal setting encourages a mindset focused on entrepreneurial optimisation, which in turn, drives this form of (student) drug use, reinforcing the neoliberal setting's competitive nature. This expanded understanding of drug, set and setting (Zinberg, 1984), along with the wider theoretical developments detailed in the previous sections of this chapter, thus highlights the ways in which a Functional Response Framework and this research more broadly, can also offer critical insights for policy and practice. Not only in addressing the challenges posed by drug use for cognitive enhancement amongst students within neoliberal academic environments, but also, drug use more broadly, which will be discussed in the following section.

8.3. Implications for CEDs Policy and Practice

Aligning with the notion identified in the literature discussed in Chapter Two (E.g., Askew & Williams, 2021; Hope et al., 2021), the data presented in Chapter Six illustrated that no single drug, or group of drugs, inherently qualifies as a CED. Instead, a CED is ultimately defined within discourse, based on the context of its use (such as in academic settings), the motivations behind its use, the desired effects (E.g., stress reduction, increased alertness, or enhanced creativity), and the resulting ('beneficial') outcomes. Importantly, a CED is primarily shaped by the meaning users attribute to it (Askew & Williams, 2021; Mann, 2022a). Given

the range of drugs and substances that are therefore used for cognitive enhancement - some of which are regulated by legislation, whilst others are not - it is unsurprising that developing judicious, effective and workable policy has been challenging (Ram et al., 2020). Thus, as with the recommendations detailed in Chapter Two for wider research into the CEDs phenomenon, it may be advantageous for policymakers to focus on motivations for use, centring on the notion of drug use for cognitive enhancement, rather than specific drugs.

This approach not only helps mitigate issues related to the diverse legislative framing of different drugs and substances, allowing for a more comprehensive regulatory framework, but also offers numerous additional policy advantages. Most importantly, focusing on the motivation behind drug use - specifically cognitive enhancement - offers a strategic advantage in finally moving away from the failed model of drug prohibition (Taylor et al., 2016). Certainly, this approach provides a more nuanced understanding, acknowledging that not all drug use is inherently harmful (Hart, 2021). It would also allow for the development of policies that consider the expanded version of Zinberg's (1984) 'drug, set, and setting' model, which accounts for the substance itself, the user's mindset, and both their immediate and wider environment. By adopting this motivation-based contextual approach, policymakers can develop more tailored and effective strategies for addressing (student) drug use for cognitive enhancement. This could involve identifying and regulating substances that are both effective and safe when used responsibly in workplace settings (academic), including traditionally illicit drugs, thus balancing public safety with responsible drug use and innovation, as advocated by Hart (2021).

Additionally, since different jurisdictions often have varying lists of controlled substances, focusing on cognitive enhancement rather than specific drugs, could help harmonise policies across regions, which as Chatwin (2010) remarks, remains at a stalemate. Such an approach might address this impasse, creating a more consistent regulatory framework, leading to more flexible, ethical regulations that address the complexities of this issue and are easier to enforce internationally. This could also be advantageous in regulating the marketing of certain pharmaceuticals for off-label use by social media vendors and other seemingly legitimate online retailers - an issue that is becoming increasingly prevalent (Hirst & Turnock, 2024) - as well as diminishing unscrupulous or illicit drug markets, thereby enabling the establishment of a properly regulated market. Reducing the need for users to turn to less

regulated or illicit sources to acquire drugs for cognitive enhancement would mitigate the broader harms associated with such markets, such as the risk of adulterated or counterfeit substances (Lewis et al., 2021). Moreover, engaging with these markets increases the likelihood that otherwise law-abiding citizens will face criminalisation, stigmatisation, and potential exposure to dangerous criminals and drug gangs (Lewis et al., 2021).

Importantly, a motivation-based context specific approach encourages the development of evidence-based policies that consider the actual effects, motivations and practices of drug use, rather than relying on moralistic or ideological grounds (Stevens & Zampini, 2018). As this research has demonstrated, student drug use for cognitive enhancement is, for the most part, strategic, responsible, and risk-averse (Mann, 2022a), operating within a 'bottom-up' culture of harm reduction (Marlatt, 1996; Mann, 2022b; Mann, 2025). Therefore, (student) drug use for cognitive enhancement should not warrant moralistic or ideological punitive legislative action at the state level. Instead, there should be a presumption that mentally capable, responsible adults have the autonomy to make informed decisions, as advocated by Greely et al. (2008), which is also consistent with the principles of individual choice and personal responsibility, favoured by neoliberal governments (Davies, 2017).

Policymakers should thus focus on developing policies that reflect, nurture, and support the strategic, responsible, and risk-averse nature of this type of drug use, as well as the inherent 'bottom-up' culture of harm reduction (Mann, 2025). For example, policies could in part be informed by user input, to align with and support the 'bottom up' culture of harm reduction. Askew and Bone (2019) argue that there is, indeed, a growing movement advocating for the inclusion of the voices of people who use drugs, in discussions about drug policy reform. This movement aims not only to make the policy-making process more inclusive, but also, to enhance the legitimacy and effectiveness of the policies developed (Askew & Bone, 2019). By involving those with lived experience, policymakers would gain valuable insights into the realities of drug use for cognitive enhancement, particularly amongst students, including their motivations for use, the wider neoliberal context, and the challenges they face, as illustrated by this research.

Hence, this inclusive approach not only ensures that policies are better informed but, importantly, enables for the potential incorporation of educational components rooted in

user-based evidence, as encouraged by Coveney et al. (2019). Such evidence might inform current and potential users about the risks and benefits of drug use for cognitive enhancement, permitting them to make more informed decisions - something that becomes more difficult when policies focus narrowly on prohibiting specific drugs or substances - which Greely et al. (2008) argue, is crucial moving forward. Additionally, user-informed educational initiatives could raise awareness of the ethical and social implications of student drug use for cognitive enhancement, such as fairness in competitive (neoliberal) academic environments (Mann, 2021) and indirect coercion to use (Greely et al., 2008; De Santis & Hane, 2010).

As discussed, fairness in competition (Mann, 2021; Mann, 2022a) and indirect coercion - for example, through the increasing normalisation of drug use for cognitive enhancement amongst students (De Santis & Hane, 2010) - pose significant ethical challenges. Greely et al. (2008) argue that appropriate policy should seek to discourage indirect coercion, a goal that is made more achievable by the motivational, context-based approach to policy advocated here, which allows policymakers to better understand the role of structural pressures, to enhance academic performance. As Coveney et al. (2019: 326) report, enhancement drug use is often positioned by users as, “an individual solution to structural problems.” This understanding is important not only for state-level policy, but also for higher education institutions, particularly in determining whether the use of drugs for cognitive enhancement constitutes academic misconduct or might be considered cheating.

Such an understanding can indeed help higher education institutions in determining whether drug use for cognitive enhancement is academic misconduct and cheating, or a response to systemic neoliberal demands, as others (E.g., Aikins, 2019), including the author (Mann, 2021; Mann, 2022a), have argued in the literature. This nuanced perspective may lead institutions to develop more balanced policy approaches that account for these broader pressures, rather than focusing solely on punitive measures (Mann, 2021). Such policies could avoid automatically penalising students for academic misconduct, whilst also addressing the underlying stressors that drive this behaviour (Greely et al., 2008). In doing so, institutions can create environments that foster academic integrity, without inadvertently encouraging harmful coping mechanisms.

Certainly, building on these insights for policy, initiatives within higher education institutions could draw on the contextual focus of a Functional Response Framework to address the neoliberal structural challenges, students face. One such approach might involve critical awareness programs that educate students about the influence of neoliberal governmentality on their behaviour and self-perception. By helping students recognise the dialectical tensions and pressures of being 'entrepreneurial subjects', these interventions not only strengthen their ability to make informed choices but may also empower them to resist the urge to use drugs for cognitive enhancement.

Alongside this, institutions can develop more targeted support systems that promote balancing the pursuit of self-optimisation with well-being - especially important in the (neoliberal) academic world, where the drive for increased performance often compromises well-being (Newton et al., 2016). These support systems might advance alternative forms of self-optimisation that prioritise mental and physical health, reducing the perceived need for students to use drugs for cognitive enhancement. As argued by Barker et al. (2012), programs such as mindfulness training, stress management workshops and academic support focused on holistic development, rather than performance alone, are essential well-being initiatives, particularly in contemporary (neoliberal) higher education, given the increasingly pressurised environment.

Although challenging, given the neoliberal normalisation of higher education centred on an instrumental value system, where academic outcomes and success are measured narrowly by employability metrics and earning potential (Mintz, 2021), institutions could also draw on a Functional Response Framework to expand notions of success. As illustrated in Chapter Six, where perceptions of success for older students appeared to be informed in-part, by a residue of subjective welfarism, institutions could broaden discursive definitions of success in order to alleviate neoliberal structural pressures. By developing a more collectivist pedagogical environment (Mann, 2022a) and encouraging students to embrace a broader definition of success - one that includes personal well-being, critical awareness, ethical integrity, and community engagement - institutions could help shift the focus away from instrumentalism and competitive individualistic, academic and career outcomes (Mintz, 2021). This increasingly humanistic and inclusive academic approach in turn, may diminish the perceived need to use drugs for cognitive enhancement as a means of achieving success, according to

narrowly defined and often detrimental, neoliberal standards. As the influential exponent of critical pedagogic philosophy Paulo Freire (2005: 26) remarks:

“We need to say no to the neoliberal fatalism that we are witnessing [...] informed by the ethics of the market, an ethics in which a minority makes most profits against the lives of the majority. In other words, those who cannot compete, die. This is a perverse ethics that, in fact, lacks ethics. I insist on saying that I continue to be human.”

8.4. Implications for Wider Drug Policy and Practice

The implications of a Functional Response Framework and focusing on the motivations and context behind drug use, such as cognitive enhancement, for wider drug policy and practice are significant. By recognising that drug use varies in its purpose and effects depending on motivations and the wider context, UK drug policy for example, could shift from a one-size-fits-all prohibition model to a more nuanced, evidence-based regulatory approach. Certainly, by prioritising policies grounded in research and data, rather than moral or ideological reasoning (Stevens & Zampini, 2018), this approach could lead to more effective and rational drug regulation, paving the way for broader legal reforms which ultimately, could reduce drug related harms (Holland, 2020).

These reforms could include decriminalisation, regulation, or even legalisation of drug use in specific settings, allowing for regulation based on the specific functions, risks, and benefits of various forms of drug use - therapeutic, enhancement, or recreational - even when the same drugs or substances are involved. This regulatory approach, rather than focusing on particular drugs or category of substances, ensures that the response to drug use is tailored to its context. For example, the emerging trend in the therapeutic use of substances such as MDMA, cannabis, or psychedelics (Bradberry et al., 2022) could be regulated to ensure safe medical supervision, whilst recreational use might be restricted to certain settings where harm can be minimised. For instance, licensed venues where education and support services are integrated, ensuring drug users have access to harm reduction resources, whereby users are better informed about safe consumption practices, potential risks, and ways to mitigate them (Pratschke, 2024).

Moreover, such reforms evidently align more closely with neoliberal health objectives and broader policy frameworks that are organised around the dominant neoliberal principles of personal responsibility and increased individual autonomy in consumption choices (Davies, 2017; Askew et al., 2022). Importantly, by emphasising personal responsibility in drug policy, neoliberal principles can actively promote harm reduction strategies (Moore & Fraser, 2006), as typified by a Functional Response Framework. As illustrated and discussed, neoliberal governmentality ostensibly produces student drug use for cognitive enhancement as strategic, responsible and risk averse, which could also aid in cultivating safer use practices more broadly. As Thaler (2009) explains, the use of cognitive enhancing drugs can exemplify how individuals, by cultivating sensitivity to smaller doses, make harm less probable.

In addition, a motivation-based, context specific approach would be more effective in addressing the dynamic nature of drug use and the diversity of its forms under neoliberalism (Ayres, 2023), such as those detailed previously (therapeutic, enhancement, recreational). Certainly, it would allow for greater flexibility to adapt to new substances and emerging drug trends, reducing the need for frequent prohibitive legislative revisions which perpetuate harms, including the criminalisation and punishment of users of certain illicit substances (Taylor et al., 2016). Hence, this form of regulation can reduce the economic and social costs associated with the drug prohibition paradigm, such as mass incarceration, policing and the black market (Pratschke, 2024). Resources could thus be redirected towards practice in terms of education, health and harm reduction initiatives, ultimately benefiting society, as observed through the approach to decriminalisation in Portugal (Greenwald, 2009).

A further positive effect of this would potentially be a reduction in societal stigma around drug use, which currently acts as a major barrier to addressing drug-related harms (Luoma, 2010). By shifting dominant drug discourse away from criminalisation and punishment towards an evidence-based understanding and harm reduction, society might begin to view drug use through a more compassionate and pragmatic lens (Luoma, 2010). This discursive shift would in the long term, also foster more open conversations about drug use, encouraging individuals to discuss their experiences without fear of judgment or legal consequences. In turn, this could help to create healthier public perceptions, breaking down negative stereotypes and misconceptions that often isolate drug users (Simmonds & Coomber, 2009).

Furthermore, reducing societal stigma also enables for better education and support systems - such as, counselling services, peer support networks, and harm reduction programs - to flourish (Marlatt, 1996). Such support services would become increasingly accessible and effective, as drug users more readily engage with such resources when the fear of being persecuted, stigmatised or prosecuted is removed (Marlatt, 1996). Accordingly, reduced stigma and criminalisation aids in diminishing the negative social and economic impacts of criminal records for individuals, such as barriers to employment or housing (Collett, 2023).

Askew and Williams (2021) also support functional understandings of drug use and advocate for a motivation-based approach to policy rooted in an understanding of context, whereby all forms of drug use - therapeutic, recreational, problematic, etc - could be viewed through a lens of enhancement. They argue that all drug use can be framed as enhancement, as enhancement refers to the use of substances to improve or modify aspects of human experience (Askew & Williams, 2021). Importantly, framing all drug use as enhancement would help to shift the focus away from consumption frequency alone, which is a significant aspect in the perpetuation of stigma and negative stereotypes under neoliberalism (Askew & Williams, 2021).

For example, problematic drug use is associated with consumption patterns that are frequent and intense, which are heavily stigmatised within neoliberal societies that place emphasis and value on the self-control of rational actors (Askew & Williams, 2021). Whilst recreational drug use is often viewed as over-indulging in pleasure in ways that conflict with notions of being a “good citizen” under neoliberalism, with a work ethic centred on productivity and efficiency (Askew & Williams, 2021; Keane, 2011). Therefore, reframing recreational and problematic drug use as enhancement under neoliberalism, would aid in reducing stigma by realigning these forms of drug use with key neoliberal values such as autonomy, personal responsibility, and rationality (Askew & Williams, 2021). This shift in perspective thus moves away from viewing drug users as morally or socially deviant, instead framing them as individuals making choices - albeit sometimes risky ones - in pursuit of self-optimisation or coping (Askew & Williams, 2021). Consequently, this might encourage drug users to engage more openly with harm reduction services for instance, as they are no longer viewed solely through a punitive gaze (Marlatt, 1996).

Hence, by drawing on a context-based, motivational perspective such as a Functional Response Framework, which adopts a critical standpoint, policymakers can gain a better understanding of the ways in which neoliberal ideologies contribute to this stigma and the way in which neoliberal governmentality might be operationalised, to help mitigate associated harms. Addressing this issue is crucial for improving drug education and harm reduction strategies, given the discussed problems that stigma creates - barriers to seeking help, perpetuation of misinformation and undermining efforts to address drug-related harms effectively (Louma, 2010). As demonstrated by the Portuguese model of decriminalisation, prioritising harm reduction and public health over criminalisation through prohibition, could significantly improve health outcomes and be effective in reducing the stigma associated with drug use (Hughes & Stevens, 2010).

The critical application of a Functional Response Framework can not only inform drug legislation and policy reform, but also has significant implications for treatment practice, offering substantial benefits for individual therapy. One of the framework's core strengths in the context of treatment and therapy, would be its ability to help individuals explore the ways in which dialectical relations between discourse, subsequent tensions and subject positions, shape their experiences of drug use, such as identifying as a 'drug user', 'addict', or 'alcoholic'. Understanding, in particular, dialectical tensions and these subject positions, can be instrumental in enhancing an individual's awareness of how they are subjectively constituted through discourse, which in turn influences their behaviour and experiences, leading to significantly positive outcomes (Moore & Fraser, 2006)

For example, a deeper awareness developed through a Functional Response Framework, can significantly enhance an individual's agency around their drug use. By exploring dialectical tensions and subject positions - such as the labels of 'drug user', 'addict' or 'alcoholic' - individuals can gain insight into the ways in which societal discourses and identities have shaped their self-perception and behaviours (Moore & Fraser, 2006). This increased awareness can then empower them to critically reflect on subjective tensions and also potentially reject limiting or harmful labels, which often contribute to internalised stigma and feelings of powerlessness (Simmonds & Coomber, 2009).

For instance, for some individuals, labels such as 'addict' or 'alcoholic' may initially provide a sense of clarity, explaining their struggles by framing problematic substance use as an individual illness (Hammer et al., 2013). However, this comfort is often short-lived, as these labels frequently carry damaging social and psychological consequences that can erode an individual's self-concept and reinforce negative behaviours (Schomerus et al., 2011). Certainly, the negative stereotypes associated with these labels - such as being morally weak, lacking willpower or self-control, untrustworthy and prone to criminal behaviour - further contribute to this harm (Schomerus et al., 2011). Moreover, as discussed previously, in neoliberal societies in particular, individuals labelled as 'addicts' or 'alcoholics' are often seen as irresponsible, with their behaviour clashing with core neoliberal values such as competitiveness, efficiency, and productivity (Askew & Williams, 2021).

Hence, there is a disconnect between the individual's behaviour and societal expectations which establishes a dialectical tension. On the one hand, neoliberal culture encourages consumption, such as drinking alcohol, if it is done responsibly and does not compromise an individual's personal efficiency or productivity (Moore & Fraser, 2006). On the other hand, for those struggling with overconsumption, this conflict between responsible and excessive use can lead to increased feelings of shame (Dearing et al., 2005). This tension, compounded by the stigma associated with labels such as 'addict' or 'alcoholic', can intensify the feelings of shame, which in turn fosters feelings of powerlessness, and social exclusion - emotions which then perpetuate the individual's problematic substance use (Dearing et al., 2005). For example, Schomerus et al. (2011) found that when individuals struggling with alcohol use internalise public stigma, their self-efficacy in controlling their drinking diminishes. As public stigma becomes self-stigma and the 'alcoholic' label is adopted, personal agency weakens, creating a self-fulfilling prophecy that further impairs their ability to manage their drinking behaviour (Schomerus et al., 2011).

However, by drawing on a Functional Response Framework and its critical understanding of dialectical tensions and the entrepreneurial subject position in student drug use for cognitive enhancement, individuals can be encouraged to critically assess the meanings and implications of dialectical tensions and of subject positions constructed through stigmatising labels, such as 'alcoholic'. Through increased understanding and self-awareness, individuals can thus seek to redefine their relationship with these roles, shifting from a fixed identity to

a more empowered and adaptable self-concept (Moore & Fraser, 2006). This transformation can enhance their agency and therefore, promote healthier behavioural patterns, such as improving their relationship with alcohol, or increasing their self-efficacy (Bandura, 1986), enabling them to more easily abstain from drinking, for example.

Moreover, through the critical socio-structural contextual focus of a Functional Response Framework, as individuals come to recognise the dialectical tensions and external forces that have influenced their drug-related behaviour and experiences, they are better positioned to reframe their internal narrative, fostering a greater sense of control over their choices regarding drug use. As Deriu et al. (2024) note, disorganised self-narratives are significantly associated with problematic substance use. Consequently, as individuals become increasingly conscious of the ways in which their subjectivity is shaped by wider contextual forces, this awareness can lead to more active engagement in the therapeutic process. They can begin to make decisions that align more closely with their own substance use goals, rather than societal expectations or stigmatised identities (Dariu et al., 2024) informed by prevalent notions of the 'addict' or 'alcoholic', for example.

Whilst drug and alcohol services, particularly in the UK, generally focus on a collaborative approach between individuals and practitioners (Alderson et al., 2021), increased self-awareness on the part of those in treatment, could further enhance this collaborative relationship and enable the development of more personalised therapeutic plans. Certainly, whilst personalisation is increasingly recognised in modern therapeutic drug models, it is not always consistently applied (Marchand et al., 2019). Hence, rather than passively adhering to standardised models - often rooted in reductionist medical models of 'addiction' that frame it as an illness and focus primarily on symptom management and substances (Merchand et al., 2019) - individuals can take a more active role. They can work alongside practitioners to develop more tailored approaches that resonate with their personal experiences and goals, co-creating holistic strategies that account for the wider social context, their unique circumstances and aspirations (Merchand et al., 2019).

Therefore, this approach would decentre the 'addict' or 'alcoholic' label, enabling individuals to recognise that their behaviour is not innate to their identity (Palm, 2023), but rather a response to various contextual and situational factors. Thus, allowing the therapeutic process

to focus on the dynamic relationship between the individual and their environment, rather than viewing individuals as having an illness per se, or being inherently flawed and destined to fail (Mincin, 2018). Furthermore, by moving away from pathologizing and stigmatising labels such as the 'addict' or 'alcoholic' (Mincin, 2018) and focusing on functional responses, individuals can perhaps better adapt to the challenges posed by new substances or changes in their social and personal environments.

For example, the emergence of new drug trends or changes in drug availability can be met with greater resilience and flexibility, as individuals become more adept at understanding the ways that dialectical tensions and different subject positions can influence their responses to such challenges. Therefore, ultimately, this deeper understanding can transform the individual's relationship to both drug use and the therapeutic process, nurturing long-term resilience, self-determination and a sense of empowerment in navigating their own path forward - whether through abstinence, harm reduction, or other increasingly autonomous approaches - based on informed choice, rather than imposed normative frameworks (Marchand et al., 2019).

Hence, this increased collaborative approach might not only make the therapeutic process more effective, but also nurture the individual's autonomy and decision-making power, crucial for establishing a more positive relationship with drugs (Marchand et al., 2019). As demonstrated by a Functional Response Framework, increased autonomy and decision-making power, shaped by neoliberal governmentality and the construction of the entrepreneurial subject, can result in student users of drugs for cognitive enhancement often approaching their use in an increasingly strategic, responsible and risk averse manner (Mann, 2022a; Mann, 2025).

This increased emphasis on collaborative approaches and personalisation can also be extended beyond problematic substance use therapeutic settings, into more complex healthcare contexts, for instance, end-of-life care. In such settings, the persistence of stigmatising labels, such as 'drug user' or 'addict', can significantly impact treatment decisions (Galvani et al., 2018). For example, individuals receiving end-of-life care who are labelled as 'drug users' or 'addicts' are often viewed as being 'drug seekers', which leads to increased surveillance when for instance, opioid therapy becomes accessible and authorised (Witham

et al., 2019). This heightened scrutiny can make it challenging for caregivers to create supportive, positive narratives that uphold the individual's dignity, thus undermining the goal of a compassionate, person-centred approach to care (Witham et al., 2019).

Moreover, prevailing medical perspectives of drug use and 'addiction' often fail to account for the complex and fragmented personal stories of individuals who have used substances (Witham et al., 2019). In the context of end-of-life care, these narratives are frequently dominated by notions of clinical risk, resulting in the silencing of patients' voices and the under-treatment of pain (Witham et al., 2019). This issue is compounded by the way in which many such individuals' self-identities are deeply invested in recovery narratives (as a discursive feature of dominant medical models) (Witham et al., 2019). Consequently, for healthcare professionals, opioid use for example, might serve as a reminder of a patient's past addiction, reinforcing the perception that they may be engaging in drug-seeking behaviours. As a result, healthcare professionals may be hesitant to fully address the patient's pain management needs (Witham et al., 2019).

Certainly, as Galvani et al. (2018) remark, healthcare professionals such as GPs, may hesitate to prescribe anticipatory end-of-life medications if there is a known history of drug use. This reluctance reflects broader concerns within the medical community about potential risks of misuse but also highlights the necessity for more flexible and personalised care frameworks (Witham, et al., 2019). In the same way that collaborative, holistic therapeutic models allow individuals in treatment for problematic substance use to redefine their relationship with drugs, so too should end-of-life care enable patients to receive appropriate pain management without being defined by and constrained by past labels (Galvani et al., 2018). Indeed, by adopting a more open, patient-centred approach that acknowledges the medical, personal and wider contextual dimensions of substance use - as espoused by a Functional Response Framework - healthcare providers can better meet the needs of their patients, nurturing dignity and agency, even at the most vulnerable stages of life (Galvani et al., 2018).

Having explored and discussed the potential beneficial implications of a Functional Response Framework regarding it being an important theoretical development and its practical application for drug policy and practice, it is important to critically reflect on the inherent

challenges in applying this framework more broadly and other limitations of this research. These will be considered and discussed in the following sections.

8.5. Limitations: A Functional Response Framework

Whilst a Functional Response Framework offers a nuanced perspective on student drug use for cognitive enhancement by situating the phenomenon within the neoliberal ideological context, it is important to reiterate that it is not intended as a grand, universal theory. The framework specifically accounts for student drug use for cognitive enhancement as a functional response by entrepreneurial students to the pressurised, competitive environment of neoliberal higher education (Mann, 2022a). However, as Coveney et al. (2019: 324-325) highlight, there are a range of other motivations and justifications for using drugs for cognitive enhancement including, their role as, “creative tools for personal achievement and wellbeing”²⁹ or “tools for personal and/or public safety.”³⁰

Therefore, the author envisions a Functional Response Framework as a supplementary model that develops understandings of student drug use for cognitive enhancement, whilst also augmenting critical (functional) theories of drug use more broadly (Mann, 2022a). That being said, given the framework’s primary focus on neoliberalism and notions of the entrepreneurial subject to conceptualise student drug use for cognitive enhancement, there could be challenges when applying it to supplement understandings of wider drug use. Hence, researchers for instance, may need to further develop the framework to capture diverse motivations and contexts of drug use beyond neoliberalism.

In terms of the framework’s practical application regarding policy and practice discussed in the previous section, significant barriers may arise. For example, policymakers must navigate a complex landscape where abstract concepts are negotiated and need to be operationalised into specific, actionable regulations (Stevens & Zampini, 2018). This process is often hindered by a lack of clear guidelines or empirical evidence, demonstrating the validity of abstract

²⁹ Unlike viewing the use of drugs for cognitive enhancement as a way to gain a competitive advantage or to address a perceived deficiency or issue, motivations and justifications here, centre on use to improve productivity or cognitive performance in non-competitive settings (Coveney et al., 2019).

³⁰ Motivations and justifications from this perspective, centre on individuals working in specific occupational roles, where use of certain drugs for cognitive enhancement could help ensure the safety of both them and those around them. For instance, military personnel, nurses, doctors, pilots, and lorry drivers (Coveney et al., 2019).

theoretical concepts and the effectiveness of associated proposed measures (Seddon, 2000). Additionally, the bureaucratic nature of policy development can slow down the adoption of innovative theoretical approaches, as extensive consultations and legislative procedures are required (Strand et al., 2012).

The involvement of multiple stakeholders adds another layer of complexity, as different groups - for example, government agencies, charities, community representatives, and private sector actors - often have divergent ideologies, goals and priorities (Stevens & Zampini, 2018). For instance, whilst some stakeholders in drug and alcohol services might advocate for reforms that draw on a Functional Response Framework to enhance service delivery, others may resist changes that threaten existing dominant paradigms, ideologies, or power dynamics, as inferred in the recent government report into service provision, from Dame Carol Black (2021). To overcome these challenges, effective stakeholder engagement strategies are crucial (Black, 2021); however, they require time and resources that are not always available.

Moreover, despite challenging stigma and negative stereotypes through a Functional Response Framework, the persistence of stigma surrounding drugs and drug users can, nevertheless, significantly impede reform efforts (Sumnall et al., 2023). Certainly, prevailing societal attitudes shaped by embedded historical prejudices and misinformation will create barriers to the acceptance and the implementation of new policies. (Stevens & Zampini, 2018). Furthermore, entrenched legal frameworks often reflect outdated norms and may not accommodate the innovative policy and practice that the framework seeks to promote. Indeed, legislative reform typically requires lengthy processes and substantial political will, which can be difficult to garner in the face of resistance expressed by a majority of the public or competing moral and ideological frameworks (Stevens & Zampini, 2018).

8.5.1. Research Limitations

There are wider limitations to the research that also need to be outlined and discussed. Broadly, given the qualitative methodology and the theoretical aim of the research, the findings do not depict general prevalence or prevalence in different countries. Being a qualitative study also dictated a reliance on a relatively small, non-random sample, making it difficult to generalise the results to larger populations (Miles & Huberman, 1994). In addition,

due to the somewhat flexible and interpretative nature of qualitative research, the study could be challenging to replicate, which might affect the reliability of the findings moving forward (Miles & Huberman, 1994).

Similarly, considering the interpretive nature of a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010), data interpretations can be influenced by the researcher's perspectives, potentially leading to unintended biases (Ainsworth & Hardy, 2004). Hence, Ainsworth and Hardy (2004) urge for greater researcher reflexivity when undertaking a critical discourse study. Moreover, the detailed analysis of a smaller number of narrative accounts in a critical discourse study such as this, also poses issues for generalisation, whilst the context-specific findings are problematic regarding generalising results across different settings (Ainsworth & Hardy, 2004). Crucially, regarding a critical discourse study, it is important to recognise that social contexts and discourses are dynamic and in constant flux, which can complicate attempts to capture a complete picture that transcends the historical moment (Ainsworth & Hardy, 2004), again impacting the exact replicability of this research.

Besides these, there are other, more specific limitations to this research. Firstly, the primary focus centred on neoliberal political economy and its role in shaping student drug use for cognitive enhancement. Consequently, other areas were not explored in significant detail, such as, potential subtle nuances between different genders regarding perceptions of student drug use for cognitive enhancement, or a more detailed analysis of differences between the universities that student participants attended ('post 92' and 'traditional') and the courses they studied. In addition, given the methodological nature of the research and the smaller, non-random sample within the neoliberal context, the study lacks voices from students in institutions based in countries that are not necessarily neoliberal - for instance, social democracies such as Finland (Brandal et al., 2013). Hence, based on the limitations outlined in this section, the following section will put forward recommendations for potential future research in the area.

8.6. Recommendations for Future Research

Empirical research aimed at more accurately determining general prevalence and that of use amongst higher education students across different countries would be valuable, in particular, countries in the global south which are largely underrepresented in established research and literature (Sharif, 2022). Again, it is recommended that future research, particularly research targeted towards depicting prevalence, should focus on drug use for cognitive enhancement, rather than precise terminology, or specific substances. Determining prevalence amongst student cohorts in different countries would also facilitate qualitative cross-cultural comparison studies, exploring potential nuances in student attitudes and motivations for use across various political, economic, and ideological contexts (E.g., countries in the global north vs those in the global south and neoliberalism vs. social democracies). Moreover, given the context-specific limitations of this critical discourse study, outlined in the previous section, conducting longitudinal studies within broader contexts could help track changes in trends of student drug use for cognitive enhancement and the impact of evolving ideological contexts, discourses and societal norms.

Methodologically, future research in the area could draw on a Functional Response Framework alongside the innovative methods employed in this study - combining netnography with face-to-face interviews. However, rather than being directed by a Dialectical Relational Approach to Critical Discourse Studies (Fairclough, 2010), data analysis could be guided by a combination of social network analysis and critical discourse analysis (Ryu, 2020). This combined approach focuses on understanding the ways in which discourse shapes and is shaped by social networks, power relations, and sociocultural contexts (Ryu, 2020). It allows researchers to explore not only the relationships and structures in a network, but also, the ways in which discourse operates within those relationships and influences behaviours (Ryu, 2018).

Accordingly, applying this type of analysis to data collected from both online and offline sources, would enhance the researcher's ability to map relationships amongst students, their social circles, and the influences of factors such as peer groups, peer pressure, and various academic environments (Wagner & González-Howard, 2018), as well as the diverse portrayals and perceptions of drug use for cognitive enhancement. This can help identify further key

influences, the flow of information and subtle nuances between different groups (Wagner & González-Howard, 2018), regarding student drug use for cognitive enhancement.

Therefore, future research adopting this methodological approach would be valuable for exploring, for example, subtle nuances between different gender groups (Wagner & González-Howard, 2018) regarding perceptions of student drug use for cognitive enhancement. As discussed in the previous section, this was not a particular focus of this research, but examining potential gender-based differences in future studies might provide a deeper understanding of the ways in which attitudes and motivations vary amongst students. Likewise, employing a combination of social network analysis and critical discourse analysis (Ryu, 2020) through the lens of a Functional Response Framework, could facilitate an increasingly detailed examination of differences between the universities attended by student users and non-users - such as 'post-92' versus 'traditional' institutions - and the specific courses they study. This analysis could reveal more detail regarding the ways in which institutional and academic contexts influence attitudes and behaviours (Wagner & González-Howard, 2018) related to student drug use for cognitive enhancement.

Evidently, research that combines social network analysis with critical discourse analysis (Ryu, 2018) and draws on a Functional Response Framework, would also offer further insights into the extent to which drug use for cognitive enhancement has been normalised amongst student user groups. Based on the findings from such studies, future research could therefore also investigate whether a shift toward a more cooperative, rather than competitive and individualistic educational approach in higher education, might impact trends and perhaps even reduce the prevalence of drug use for cognitive enhancement amongst students (Mann, 2021).

More broadly, in terms of a Functional Response Framework specifically, by employing this theoretical perspective alongside other functional theories in wider substance use research, scholars can identify the various functions that substance use serves for individuals, such as coping with stress, enhancing social interactions, or escaping from reality (Askew, 2016). Furthermore, since the framework emphasises the influence of contextual factors on behaviour, future drug use studies can investigate how social and ideological environments, along with associated sociocultural norms, impact substance use patterns. This approach will

deepen understandings of the ways in which individuals adapt their substance use behaviours in response to changes in circumstances, such as life stressors linked to shifts in societal, ideological environments.

Hence, by applying a Functional Response Framework to broader substance use research, scholars can gain a nuanced understanding of the motivations, contexts, and adaptations associated with drug use. Importantly, the insights gleaned from such research can inform the design of more targeted interventions that address the specific functions of drug use and, more broadly, help society tackle the myriad challenges individuals face due to ideological and contextual conditions, in a given historical moment.

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Appendices

Appendix 1

26/11/2018



Project Title: Exploring the Link: UK HE Students, Cognitive Enhancing Drug Use, Neoliberalism and Human Capital.

EthOS Reference Number: 0791

Ethical Opinion

Dear John Mann,

The above application was reviewed by the Arts and Humanities Research Ethics and Governance Committee and, on the 26/11/2018, was given a favourable ethical opinion. The approval is in place until 01/01/2024 .

Conditions of favourable ethical opinion

Application Documents

Document Type	File Name	Date	Version
Consent Form	Consent-Form	19/06/2018	1
Project Proposal	PhD RD1 Proposal	22/06/2018	1
Recruitment Media	Participant ad	14/10/2018	2
Information Sheet	Participant Information Sheet	06/11/2018	2

The Arts and Humanities Research Ethics and Governance Committee favourable ethical opinion is granted with the following conditions

Adherence to Manchester Metropolitan University's Policies and procedures

This ethical approval is conditional on adherence to Manchester Metropolitan University's Policies, Procedures, guidance and Standard Operating procedures. These can be found on the Manchester Metropolitan University Research Ethics and Governance webpages.

Amendments

If you wish to make a change to this approved application, you will be required to submit an amendment. Please visit the Manchester Metropolitan University Research Ethics and Governance webpages or contact your Faculty research officer for advice around how to do this.

We wish you every success with your project.

Art and Humanities Research Ethics and Governance Committee

Appendix 2



Participant Information Sheet for the Research Project:

An exploration into the relationship between, the use of cognitive enhancing drugs (aka, 'smart drugs') by students in higher education and neoliberalism

Researcher Contact Details:

John Mann, PhD Candidate. Department of Sociology, Manchester Metropolitan University, Geoffrey Manton Building, Rosamond Street West, Manchester, M15 6LL.

Email: John.Mann@mmu.stu.ac.uk

About this research:

The widespread use of cognitive enhancing drugs (CED), also commonly known as 'smart drugs', such as, Modafinil, Ritalin and a number of other compounds, both natural and synthetic, is an emerging drug trend amongst the UK higher education (HE) student population; consequently, it is an under-researched topic, particularly in the UK. Research that does exist, generally focuses on areas such as, prevalence, the substances, their chemical composition and effects, with limited theoretical discussion around the wider socio-economic and ideological context within which CED use is embedded. Therefore, this research will be exploring the link between CED use in UK HE and wider economic, ideological forces, to provide theoretical insight in the area.

Aims of this research:

The primary aim of the research is to, drawing on neoliberalism and human capital, develop a theoretical framework of CED use by students in HE. To achieve this aim, the research will seek to establish the types of CEDs used by students in HE; the motivations, perceived benefits and costs associated with CED use and furthermore, to demonstrate neoliberal subjectification in UK HE students. The outcome of the study will provide valuable insight for education policy makers, UK HE institutions and UK drug treatment services, being extremely useful in terms of aiding in the development of appropriate response strategies to CED use by students in UK HE.

Why do you want me as a participant?

As an undergraduate student with direct experience of CEDs, I am hoping that you will provide insight into the types of substances used, the motivations, perceived benefits and costs, ethical perceptions (E.g. whether you think CED use is a form of cheating) etc, of CED use, to aid in fulfilling the primary aim of the research.

What will this involve?

A face-to-face interview with the researcher, lasting no longer than 60 minutes.

How will the data be recorded?

Interview data will be collected and recorded using digital recording equipment and detailed researcher note taking.

How will the information be used?

Together with the data collected from other participants, the information you provide will form a significant element of the final written thesis, completed by the researcher. Key findings may be presented at conferences and shared with interested parties, including, academic journals, colleagues, HE institutions, education policy makers and associates in UK drug treatment services.

What about confidentiality?

Anything you say will be treated as confidential. The researcher will be the only person allowed to access and view original data and transcripts. All data and transcripts will be anonymised. Therefore, your name will not appear on any record or in any material associated with this research. Furthermore, all data will be stored on password protected software and memory hardware for no longer than one week, before being destroyed.

General Data Protection Regulation

The General Data Protection Regulation (GDPR) is a regulation in EU law concerning data protection and privacy for all individuals within the European Union and European Economic Area. The GDPR sets out the rights of individuals over their own data. See: <https://gdpr-info.eu/chapter-3/>

Can I withdraw?

Yes, your participation in this research is voluntary, you are free to withdraw at any time.

Support Services

If, for any reason, you are emotionally/psychology distressed or you have any concerns during, or after your participation in this study, provided below are the details of agencies you can contact for advice and support.

Student Minds

Student Minds is a student mental health charity.

Tel: 01865 264168 Website: www.studentminds.org.uk

MIND

MIND is a mental health charity.

Tel: 0300 123 3393 Website: www.mind.org.uk Text: 86463

Samaritans

The Samaritans is a charity that provides emotional support to anyone experiencing emotional distress.

Tel: 116 123 Website: www.samaritans.org

Change Grow Live (CGL)

CGL are an organisation delivering drug and alcohol services in the UK. They provide information, advice and support on all issues associated with drugs and alcohol.

Website: <https://www.changegrowlive.org/>

Appendix 3

 Manchester Metropolitan University	Date _____ Name: John Mann Course: PhD Department: Sociology Geoffrey Manton Building Manchester Metropolitan University Tel: _____
Consent Form	

Title of Project: An exploration into the relationship between, the use of cognitive enhancing drugs by students in higher education and neoliberalism.

Name of Researcher: John Mann

Participant Identification Code for this project:

1. I confirm that I have read and understood the information sheet dated _____. For the above project and have had the opportunity to ask questions about the interview procedure.	Initial box
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason to the named researcher.	
3. I understand that my responses will be sound recorded and used for analysis for this research project.	
4. I give/do not give permission for my interview recording to be archived as part of this research project, making it available to future researchers.	
5. I understand that my responses will remain anonymous.	
6. I agree to take part in the above research project.	
7. I understand that at my request a transcript of my interview can be made available to me.	

Name of Participant	Date	Signature
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Researcher	Date	Signature
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To be signed and dated in presence of the participant

Once this has been signed, you will receive a copy of your signed and dated consent form and information sheet by post.

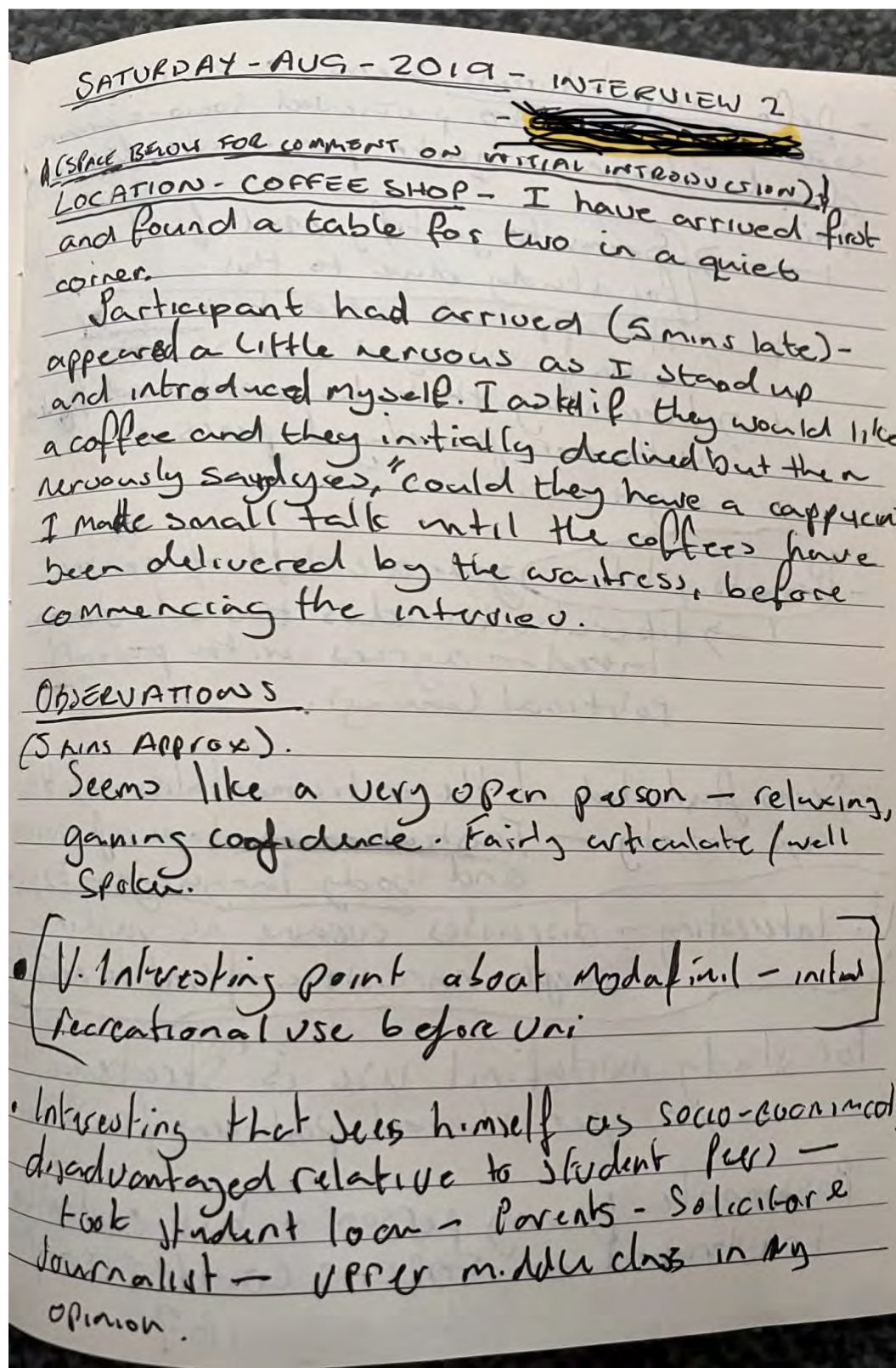
Appendix 4

Interview Schedule

Rather than a series of set questions, the interview schedule concerns a discussion, between the participant and researcher, guided by a series of themes associated with CEDs and neoliberalism. The themes are as follows:

- What subject the participant is/has studied and at what institution.
- A discussion about the participant's HE – subject area, experiences, aspirations, etc. The purpose of education.
- A discussion around the meaning of the term enhancement.
- A discussion concerning the participant's experiences with CEDs – what CEDs they have used, motivations for use, benefits, costs, etc.
- A discussion on the ethics of enhancement – how the participant views the use of CEDs from a moral perspective. (Eg. Ought students use drugs to enhance? – justification / legitimization. CEDs and academic misconduct.
- CEDs in relation to more traditional forms of drug use. Furthermore, a discussion concerning the participant's wider held morals and values.
- A discussion around the topic of 'success' – (Eg. What does success mean to the participant?)
- A discussion around the participant's political position / attitudes (linked in with attitudes towards CEDs and drug use generally) and what factors throughout their life have influenced these. Eg. Family, peers, society.
- A discussion around individualism, rationality, human connection and spirituality.

Appendix 5



- Defo competitiveness seems to be in some way related to perceived socio-economic disadvantage — quite passionate discussing this

↳ Seems to justify modafinil use for study due to this.

↳ An apparent need to keep up with privileged peers.

↳ Interesting that he mentioned fighting with more privileged peers on a night out.

- Parents politics are left of centre.

↳ Liberal attitudes towards drugs started — agrees with parents' political leanings.

Seems frustrated at the instrumentalism of HE and society. — Frustration in tone of voice and body language — Express

V. Interesting — discusses cocaine as making people narcissistic — [Link to neoliberalism?]

For study modafinil use is 'Strategic'.

↳ as per stated patterns / routines

Passionate young person — but evidently Frustrated — FORCED COMPETITION?

↳ NEOLIB?