Distinct mental illnesses evoke systematic patterns of stereotype content and emotional prejudice among the lay public: an empirical investigation using the Stereotype Content Model and the BIAS Map for Alzheimer and Schizophrenia subgroups

Lauren N. Ryan

Supervised by Dr Anke Görzig April 2015

Distinct Mental Illnesses Evoke Systematic Patterns of Stereotype Content and Emotional Prejudice Among the Lay Public: An Empirical Investigation Using the Stereotype Content Model and the BIAS Map for Alzheimer and Schizophrenia Subgroups

ABSTRACT

The present study aimed to extend upon the current understanding of how intergroup stereotypes of Alzheimer and Schizophrenia sufferers are associated with differing levels of stereotype content; and whether such prejudicial stereotypes support the systematic patterns of emotional prejudice hypothesised by the Stereotype Content Model and the BIAS Map. A survey-based design using a 5-point competence/ warmth/ pity/ contempt scale was employed among 60 participants (20-75years) systematically recruited from the general public. Participants were randomly allocated to complete the survey based on one of three conditions: “Schizophrenia sufferers” (n=20); “Alzheimer sufferers” (n=20); and “average mentally healthy individuals” (n=20). Data was analysed with a MANOVA; accompanied by four follow up one-way between subjects ANOVA’s. It was found that: both mental illnesses were perceived as having less competence in comparison to healthy controls. Alzheimer sufferers cued higher warmth and pity ratings in comparison to Schizophrenia sufferers and healthy controls. Schizophrenia sufferers evoked higher contempt ratings in comparison to the control and the Alzheimer subgroups. These findings suggest there are systematic differences in stereotype content and emotional prejudice amidst the general public in association with distinct mental illness subgroups. Ultimately, advocating a further need to encourage greater social contact between mentally healthy persons and those attributed with a mental illness diagnosis, in order to improve intergroup relations and curtail prejudice.

KEY WORDS:	STIGMA	STEREOTYPE	EMOTIONS	ALZHEIMERS	SCHIZOPHRENIA

Introduction

Mental illness can impel upon an individual's quality of life in a similar fashion to the strike of a knife; whereby either side of the blades edge is as equally penetrating as the other (Corrigan, 2004). One corner bares the sufferer's self-stigma; their internalised perception of their own discrimination (Link, Struening, Cullen, Shrout & Dohrenwend, 1989) which, in turn, can lead to feelings of shame, contractions in self-esteem and, reduced treatment outcomes (Perlick et al., 2001). The opposing side represents social stigma, a profusion of prejudicial attitudes and beliefs that are both extensive and frequently held (Crisp, Gelder, Rix, Meltzer & Rowlands, 2000); further contributing to discriminatory behaviours elicited at those given a psychiatric label (Corrigan, 2004). In particular, public stigmatisation has been acknowledged as a dominant impetus which provokes a series of behavioural, emotional, economical and, political sequelae; impacting upon both the stigmatised individuals and society as a whole (Mak, Chong & Wong, 2014). Through the use of the Stereotype Content Model (SCM) (Fiske, Cuddy, Glick, & Xu, 2002) and the BIAS Map (Cuddy, Fiske & Glick, 2007), the present study aims to understand how intergroup stereotypes of Alzheimer and Schizophrenia sufferers are associated with differing levels of stereotype content. It will further explore whether such prejudicial stereotypes, when expressed by the general public, support the systematic patterns of emotional reactions depicted by Fiske et al. (2002) – something through which prior literature has not yet extended to.

The concept of two distinct dimensions influencing the social acuity of differing societies (Hayes, 1958), persons (Bakan, 1966) and, leadership techniques (Bales, 1950) has recently experienced an extensive resurgence in its theoretical interest, particularly within the domains of individual (Kervyn, Bergsieker & Fiske, 2012) and intergroup perception (Abele, Cuddy, Judd & Yzerbyt, 2008). The Stereotype Content Model (SCM) (Fiske et al., 2002; 2007) in particular, offers a comprehensive theoretical framework when considering intergroup perception; illustrating how socially structural variables can influence stereotypic dimensions, whilst also acknowledging how stereotype content can motivate disparate emotions in individuals when they are faced with differing social groups (Kervyn, Fiske & Yzerbyt, 2013).

Underlying the SCM are the stereotype content dimensions of warmth and competence, whereby Fiske et al. (2002) posit that two distinct variables: status and competition, ultimately anticipate these dimensions of contrasting stereotypes (Fiske et al., 2002). For, upon meeting and interacting with different group members, individuals are said to decipher others intentions in relation to themselves and their in-group as a whole; as well as the capability of another successfully achieving their preconceived goals (Fiske et al., 2002). Thus, both interpersonal and intergroup reactions facilitate these stereotypical dimensions, with differing levels of warmth relating to another's intentions, and levels of competence being attributed with another's ability to perform and achieve these (Fiske et al., 2002). Fiske et al. (2002) have illustrated how both dimensions can effectively organise a society's stereotypes towards contrasting social groups. Out-groups rated highly competitive, with the potential of harming the target group's goals, are attributed with low levels of warmth. Co-operative associations are perceived as possessing higher levels of warmth (Cuddy et al., 2007). Those perceived as having a high status within a particular

society are further acknowledged as possessing an abundance of competency, whereas low-status groups are not (Cuddy et al., 2007).

Contiguous with the SCM, research surrounding social perception has deciphered that analogous dimension pairs *do* govern the perception of various social groups. Abele (2003) argues that the pervasiveness of gender stereotypes is governed by perceptions of agency and communion dimensions within gender-roles (Abele, 2003). Furthermore, the content of stereotypes surrounding nationality and culture are said to reflect both dimensions, whereby each relate to perceived structural (competent) or relational (warmth) characteristics of nation states (Poppe & Linssen, 1999). Although these exemplar pairs of dimensions differ in their names and their definitive definitions, Abele & Wojciszke (2007) illustrated how an array of trait names can be filtered to much broader dimensions (i.e. competence and warmth); explaining approximately eighty percent of the deviation found in social judgement (Wojciszke, Bazinska & Jaworski, 1998). Thus, the constructs of competence and warmth have the ability to explain mass variance (Wojciszke et al., 1998). They also possess substantial accord (Abele & Wojciszke, 2007) as well as clear predictive validity (Cuddy et al., 2007); suggesting both constructs are sufficient in their measurement for use within this study.

However, there has been discussion surrounding a missing morality dimension, which some researchers contend as perhaps being more important than both warmth and competence combined (Kervyn, Fiske, & Yzerbyt, 2015). Leach, Ellemers & Barreto (2007) argue there are three dimensions that underlie intergroup perception: competence, sociability, and morality. Although sociability can be inferred as a derivative of the warmth dimension, relating to in-group co-operation and the formation of relationships (i.e. through affability and kindness) (Kervyn et al., 2015); morality represents a more ethical circumstance, relating to concepts of right and wrong in relation to important social values (i.e. through being sincere and trustworthy) (Leach et al., 2007). Within person perception research, both communion and agency have been depicted as the most fundamental interpersonal perception dimensions (Wojciszke, 1994), whereby communion includes morality as a central facet. Therefore, it could be argued that the concept of warmth in the SCM could be improved by broadening its definition through the inclusion of items that measure the sub-dimensions of warmth, sociability, *and* morality.

In light of this argument, Kervyn et al. (2015) introduced a new warmth measure that comprised of sociability and morality. However, extremely high Cronbach α coefficients were found for these. Briggs & Cheek (1986) argue that high inter-correlations above .9 may indicate that the constructs being measured are too specific. Thus, high internal consistency may work against Kervyn et al.'s (2015) content validity, tarnishing the degree through which their scales tap all features of their sociability and morality constructs. In consideration of this notion, it can be argued that morality items can be seen to exist within early SCM research (Fiske, Xu, Cuddy, & Glick, 1999), whereby items such as "sincere" and tolerant" were used, with succeeding studies restricting warmth measurements to merely "friendly" and "warm" (Cuddy et al., 2007). Thus, it is evident that morality was an original component of the warmth dimension when the ideology of the content of group stereotypes first arose. Yet, the latter definitions used within SCM research have not been found problematic through the use of synonyms such as capability, skill and

talent (Cuddy et al., 2007). Cuddy et al. (2007) have further shown how the warmth construct reliabilities have remained high, and its status-competence links extremely robust, emphasising its suitability for use within this study.

Through the interpersonal social constructs (Smith, 2000) of warmth and competence, and the outcome attributions (Weiner, 2006) generated by these, Fiske et al. (2002) identified four resultant emotions: admiration, contempt, pity, and envy. High status, yet low warmth social groups are argued as being more likely to experience envious prejudice (Fiske et al., 2002). For, high status exemplifies success, and thus, high competence. Yet, when accompanied by a lack of warmth, these individuals can be perceived as fierce competition, cueing envy among the in-group (Fiske et al., 2002). In accordance with Smith (2000), admiration is associated with successful in-groups (Fiske et al., 2002) whose achievements do not impede, nor compete with each other. In contrast, low-status individuals, perceived as neither competent nor warm, are said to receive a contemptuous form of prejudice, whereby antipathy is channeled towards those whose misfortune is perceived as preventable (Weiner, Graham & Chandler, 1982). Lastly, paternalistic prejudice is argued as targeting low-status, uncompetitive subgroups that are seen as lacking in competence, yet eliciting warmth (Fiske et al., 2002). For, when out-groups are perceived as unable to control for the negative outcomes through which they experience, (Weiner et al., 1982), their intent is conceived as deserving of the in-groups pity (Fiske et al., 2002).

Allport (1954) originally deciphered that distinct groups are undeniably discriminated against in various different ways; yet was unable to provide any underlying theoretical rationale for this notion. Through differentiating between disparate, prejudicial behaviours, and systematically attributing these to specific stereotype content and intergroup emotions, the BIAS Map (Cuddy et al., 2007) has provided this notion with a theoretical framework; aiding the identification and the mapping of the intergroup, discriminatory behaviours recognised by Allport (1954). As a consequence, the model classifies four arrangements of discrimination resultant of two oscillating dimensions combined: active/ passive, facilitation or harm (Cuddy et al., 2007).

Assuming cognitions evoke distinct behaviours and emotions stimulate these (Frijda, Kuipers & ter Schure, 1989), Cuddy et al (2007) argue that each emotion assimilated to their respective SCM amalgamations of perceived competence and warmth levels can be used to decipher speculative behavioural tendencies. For example, admiration motivates contact and cooperation between individuals, leading to both active and passive facilitation (Weiner, 2006). In contrast, contempt is usually attributed towards those whose negative outcomes are discerned as being onset controllable (Weiner, 2006), cueing passively adverse actions (Weiner, 2006). On the other hand, envious emotions are resultant of implicitly recognising that a particular subgroup has defeated the in-group, causing individuals to elicit active harm against envied others (Weiner, 2006). Lastly, pity is said to elicit active facilitation through helping (Weiner, 2006), alongside passive harm, as the emotion can also involve sadness, which in turn can lead to inaction or avoidance.

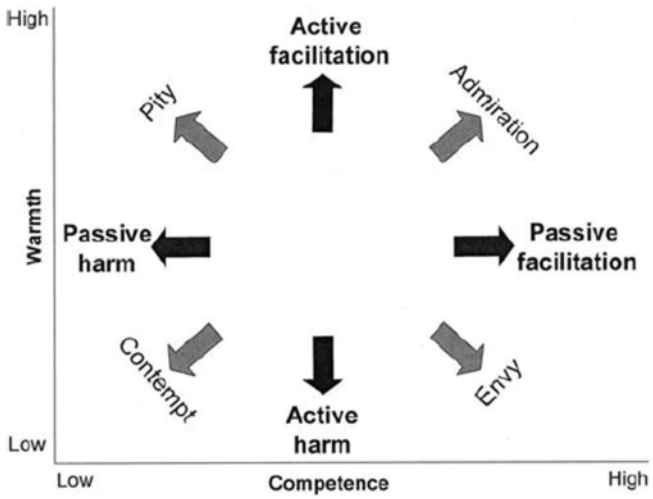

Figure 1: A representation of the stereotype content dimension ratings and their relationships with elicited emotions and behavioural tendencies presented by the BIAS Map (derived from Cuddy et al., 2007)

Although the BIAS Map model has been widely tested (Cuddy et al., 2009), the majority of its studies are of a correlational nature. There have been few attempts to test predictions derived from the model through experimental design. One of the exceptions is Echebarria-Echabe's (2013) study, which was designed to test the causal chain depicted by the model. Through manipulating the power dimension of differing out-groups (i.e. their competence); and the perception of the nature of the in-group/ out-group relations (i.e. their warmth), the attributions of competence and warmth were shown to elicit the systematic patterns of emotional reactions and behavioural tendencies expressed by the BIAS Map (Cuddy et al., 2007), reconfirming its hypotheses. However, it must be acknowledged how neither the initial SCM (Fiske et al., 2002) study, nor the BIAS Map (Cuddy et al., 2007) literature sought the use of control groups. Thus, it could be questioned as to what essentially defines high and low competence; warmth; elicited emotions and behavioural tendencies? This must be taken into consideration when interpreting such results, as there is no obvious basis to compare to.

It has previously been demonstrated how both the SCM (Fiske et al., 2002) and the BIAS Map (Cuddy et al., 2007) have the ability to discriminate between social groups in relation to apparent factors (e.g. nationality affiliation and gender). Yet, they can also further distinguish between stereotypes of subgroups derived from an overarching social group. For example, by taking the notoriously dominant group of 'Whites', Fiske et al. (2002) illustrated how members of this group, when perceived as unsuccessful, could be classified into the low warmth and low competence category, which can denote contempt. In contrast, when associated with economic success, individuals of this overriding category were attributed with a higher competence status, yet their warmth remained low and consequently, cued envy. Thus, it is evident that individuals associated with the singular overriding category of 'Whites' can evoke contemptuous and envious prejudices. Therefore, if 'mental

illness' were an overarching social group, would differing stereotypes exist among its more specific, subgroup derivatives?

Sadler, Meagor & Kaye (2012) examined whether the SCM (Fiske et al., 2002) could extend to distinct subgroups of succinct mental illnesses. Among the lay public, it was found that significantly different perceptions of warmth and competence were associated towards concise clusters of mental disorders (Sadler et al., 2012). For instance, persons suffering from Schizophrenia, multiple personality disorder and addictions were perceived by participants as being both incompetent and hostile, and were placed within the 'Psychotic' stereotype cluster (Sadler et al., 2012). In contrast, those suffering from Alzheimer's disease or mental disabilities in particular, were seen to comprise a stereotype cluster of neuro-cognitive deficiencies, and were perceived by participants as warm, yet lacking in competence (Sadler et al., 2012). As has been previously mentioned, the majority of prior SCM research has remained correlational (e.g. Fiske et al., 2002); yet, Sadler et al. (2012) extended upon this through validating their cluster analyses with t-tests; statistically differentiating stereotype content within and between mental disorder clusters. However, their samples, although recruited online, were of an opportunistic nature (Oppenheim, 1992), and so cannot be representative of the population as a whole, impeding upon the study's external validity. Thus, this should be acknowledged; and caution should be taken when interpreting and generalising their results.

Yet, what can be taken from Sadler et al.'s (2012) study is the theoretical underpinning of how the SCM (Fiske et al., 2002) dimensions of competence and warmth can remain consistent in relation to the stigmatisation directed towards those with specific mental illnesses. For example, perceptions of ineptitude attributed to those suffering with a mental illness such as Alzheimer's; a disease perceived as affecting an individual's intellectual ability; were seen to drive paternalism and benevolence (warmth) among the in-group (Ditchman et al., 2013). Yet, it must be acknowledged that Fiske et al.'s (2002) stereotype content ratings of elderly individuals coincide with those depicted by Sadler et al. (2012) in relation to Alzheimer sufferers. With Alzheimer's disease affecting one out of every six individuals aged 80 years or above within the United Kingdom (NHS Choices, 2014), it could be possible that Sadler et al.'s (2012) findings may have arisen from participants perhaps rating Alzheimer sufferers in relation to their perceived elderly age, as opposed to solely rating the perception of the illness itself. This possibility must therefore be distinguished further.

In contrast, it has also been suggested that the perceived danger posed by those attributed with a psychiatric diagnosis can contribute to the conceptualisation that such individual's are lacking in warmth in accordance to the SCM (Sadler et al., 2012). The warmth dimension originally consisted of "trustworthy" and "well-intentioned" items as representations of possible out-group hostility (Fiske et al., 2002). Pescosolido et al. (2010) demonstrated how such items, when attributed to individuals with psychiatric diagnoses, are rated lowly. This contributed to a correlational trend amongst anticipated danger, and an increase in the preference of maintaining social distance from individuals suffering from mental illnesses. This tendency was shown to remain pervasive over a prolonged period of time, even though knowledge regarding the causes of mental illnesses and their relation to genetic or biological determinants has become much more pronounced (Pescosolido

et al., 2010). Yet, it must be acknowledged that correlation does not denote causation. Additional statistical analyses must take place in order to distinguish the basis of this relationship further.

With reference to this element of perceived danger, numerous studies have suggested that the extent individuals whom possess a mental illness diagnosis are attributed to this bias may fluctuate in relation to the mental disorder through which they are suffering. Crisp et al. (2000) illustrated how individuals experiencing chronic addictions or a Schizophrenia diagnosis in particular, are perceived by the lay population as being more likely to induce violence upon others in comparison to those with affective disorders. The genetic contingency theory posits that genetic attributions accompany an increase in desire to maintain social distance from persons associated with disorders perceived as threatening (Lee et al., 2014). Through this understanding, Lee et al. (2014) have exhibited how genetic attributions may underlie why their sample of Undergraduate students presented a decrease in helping behaviours when exposed to people with Schizophrenia, in comparison to those suffering from affective disorders. Thus, such literature emphasises the extent through which social stigmatisation of mental illnesses can impact upon the in-group's motivation in eliciting acts of altruism and pro-social behaviour.

Fewer studies have however; explored perceived competency of individual's given a psychiatric label across the mental illness spectrum (Sadler et al., 2012). Generally, literature that shows the perceived inability of those suffering from mental illnesses in making appropriate decisions (Angermeyer & Matschinger, 2003), may explain how such individuals are understood as lacking in competence. A particularly damaging consequence of this common response to diagnoses' that are conceived as tarnishing an individuals intellectual ability, are the abject expectations associated with these; whereby adults acquainted with such labels are frequently perceived as incompetent, and unable to make appropriate decisions (Ditchman et al., 2013). Such diminished assumptions can lead to subsequent discrimination, whereby persons may abstain from offering opportunities or life-choices to these stigmatised individuals, through fear they remain too incapable to manage their lives, their social activities and their intimate relationships effectively (Ditchman et al., 2013). This may offer explanation as to why those suffering from mental health problems have significantly lower employment rates in comparison to the average mentally healthy population (Corrigan, Tsang, Shi, Lam & Larson, 2010).

Thus, stigmatisation has the potential to motivate prejudicial attitudes and discriminatory behaviours towards those given a psychiatric label, whereby the social consequences of these can include expulsion, meager social support, and contractions in self-esteem (Livingston & Boyd, 2010). Alongside impacting upon every day life, treatment outcomes can further become hindered, whereby proficient and effective recovery from mental health diagnoses are fewer than expected (Perlick et al., 2001), with mortality and morbidity rates higher for those suffering from serious mental illnesses as a consequence of physical illness (Corrigan et al., 2014). Corrigan et al. (2014) illustrated how healthcare providers advocating stigmatising attitudes towards a Schizophrenia patient were less likely to refer them to see a consultant, or repeat their prescriptions, through the belief they would not adhere to the advice and treatment provided. Thus, it is evident that care providers may make decisions contrary to typical care standards when presented with such

patients, which could explain why mortality rates among individuals with Schizophrenia are approximately 50% above that of the general population (Sickel, Nabors & Seacat, 2014). With around a quarter of British adults acquiring a mental health diagnosis in a year (Singleton, Bumpstead, O'Brien, Lee & Meltzer, 2001), attempts to eradicate mental health stigma must remain prevalent, in order to facilitate social inclusion so effective recovery can competently be achieved.

Through applying the SCM (Fiske et al., 2002) and the BIAS Map (Cuddy et al., 2007) framework to distinct subgroups of mental illnesses, such as Alzheimer's and Schizophrenia, causal relationships between numerous components of the stigmatisation process can be examined: its stereotype content; emotional prejudice and discriminatory behavioural tendencies (Sadler et al., 2012). There has been no known research deciphering whether competence and warmth dimension ratings attributed to the stereotype content of Schizophrenia and Alzheimer sufferers are in reality, greeted by the related hypothesised emotions posited by the SCM (Fiske et al., 2002) and the BIAS Map (Cuddy et al., 2007). This study aims to tackle this aperture that can be found within the current literature by testing for the stereotype content associated with these systematic emotions. Thus, providing the foundation for future exploration as to whether systematic patterns of behavioural tendencies, as presented by the BIAS Map (Cuddy et al., 2007), are associated with these.

Hypotheses

Stereotype Content (Competence)

H_{1a}: The Alzheimer subgroup will elicit lower competence ratings than the control group.

H_{1b}: The Schizophrenia subgroup will elicit lower competence ratings than the control group.

H_{1c}: The Alzheimer subgroup will cue similar competence ratings in comparison to the Schizophrenia subgroup.

Stereotype Content (Warmth)

H_{2a}: The Alzheimer subgroup will elicit higher warmth ratings than the control group

H_{2b}: The Schizophrenia subgroup will elicit lower warmth ratings than the control group.

H_{2c}: The Alzheimer subgroup will cue higher warmth ratings in comparison to the Schizophrenia subgroup.

Emotion (Pity)

H_{3a}: The Alzheimer subgroup will elicit higher pity ratings in comparison to the control.

H_{3b}: The Schizophrenia subgroup will elicit lower pity ratings in comparison to the control.

H_{3c}: The Alzheimer subgroup will cue higher levels of pity than the Schizophrenia subgroup.

Emotion (Contempt)

H_{4a}: The Alzheimer subgroup will elicit lower contempt ratings in comparison to the control.

H_{4b}: The Schizophrenia subgroup will elicit higher contempt ratings in comparison to the control.

H_{4c}: The Alzheimer subgroup will cue lower levels of contempt than the Schizophrenia subgroup.

Method

Design

An independent groups design was employed. Each participant completed a questionnaire derived from Cuddy et al. (2007), and were attributed to one of three conditions of the independent variable: a mental illness subgroup. Its levels were: “people suffering from Schizophrenia”; “people suffering from Alzheimer’s”; and the control group; “the average mentally healthy individual”, which allows for a neutral comparison.

The dependent variables however, were of repeated measures, represented by the questionnaire items derived from Cuddy et al. (2007). There were four dependent variables in total: the first being warmth, the second competence; each acquired from Fiske et al.’s (2002) stereotype dimensions. The third dependent variable measured contempt, the forth pity; each obtained from Fiske et al.’s (2002) emotion dimensions.

Rather than creating a pre-test to determine the subgroups to be used within this study (as has been the case in prior literature [e.g. Sadler et al., 2012; Fiske et al., 2002]), it was decided that *two* mental health illnesses would be chosen, those that would have previously shown to differentiate from one another as an application of both competence and warmth (i.e. Sadler et al., 2012). Alzheimer’s disease, grouped under the neuro-cognitive stereotype, was previously rated as having high warmth but low competence ratings (Sadler et al., 2012). Schizophrenia, a psychotic stereotype, was classified as low in both warmth and competency (Sadler et al., 2012).

Participants

A total of (n=60) participants par-took in this study, whereby twenty participants were attributed to each condition of the independent variable. Participants were systematically recruited from the general public population from a retail environment. The condition of the independent variable in which the participant was exposed to was randomised.

Participants’ were aged between 20-75 years, and accumulated a mean age of 36.48 years, whereby 31 were female, and 29 were male. Regarding their nationality; 56.7% reported as being White British; 16.7% as Black or Black British; 13.3% as Asian or Asian British; 6.7% as White Other; 3.3% as mixed heritage and, 3.3% as Chinese. Each participant was screened prior to his or her participation to ensure both researcher and participant safety (please see Appendix C); whereby those that eventually engaged with the questionnaire reported as having no personal, nor familial history of any mental health illnesses.

Prior to, and during participation, participants remained ignorant towards the aims of the research at hand. No relations were held between any participant and the primary researcher. Each individual was instructed in congruence with the BPS Code of Ethics and Conduct (The British Psychological Society, 2009). Ethical approval was also gained through the University of West London’s School of Psychology

Ethics Committee (please see Appendix B). Participants were thus informed of the voluntary nature of their participation; that any data provided would remain confidential; and that they would remain in control of their withdrawal, and should they wish to do so, they could abandon the study at any point. Each participant also gave written consent depicting his or her understanding of the above ethical procedure (please see Appendix D).

Materials

The questionnaire items and the instructions used were extracted from Cuddy et al.'s (2007) study and consisted of twenty-four items in total. There were three versions of the questionnaire; each one tailored to a particular subgroup (e.g. Alzheimer sufferers/ Control/ Schizophrenia sufferers) (please see Appendix A). Twelve two-item scales lie within each questionnaire. The scales measure perceived stereotype trait; social structure; emotional reactions and, behavioural tendencies. The corresponding items to these scales are: competence and warmth (stereotypes); competitiveness and status (social structure); admiration, contempt, pity, and envy (emotions); and, active/passive facilitation/ harm (behavioural tendencies) (Cuddy et al., 2007). Although only select sub-scales and its data were used for this analysis, it was decided that collecting data for all sub-scales would prove beneficial for future analyses.

Participants completed the questionnaire items via 5-point likert scales (1= Not at all, 5= Extremely), rating how their allocated subgroup (Alzheimer sufferers/ Control/ Schizophrenia sufferers) are "perceived by society" in relation to the above scale items (e.g. "As viewed by society, how [e.g., competent] are [subgroup]?"). Such instruction aimed to assess individual's perceived societal reactions as opposed to any personal opinions.

Due to the lack of counterbalancing of the scale items in the research from which they derive (Cuddy et al., 2007), the items were not counterbalanced in this study in order to maintain the questionnaire's internal validity.

Procedure

A systematic sampling method (Cochran, 1951) was used to recruit participants. Similar to random sampling, systematic sampling is argued to hypothetically provide each individual with an equal chance of selection (Opsomer, Francisco-Fernández & Li, 2012). An online randomisation programme (Urbaniak & Plous, 2008) was used to decipher a random starting point, which in this instance, was the first 14th person willing to participate. Through conversing with store management teams based within the retail centre, an estimated hourly footfall estimate of 360 individuals was attained for the area through which the researchers were positioned. This allowed for a sampling interval integer of 6 to be achieved. Thus, every 6th individual thereafter the first initial participant, was to be approached and asked whether they would like to participate in a short study. It was made known to each participant that a free chocolate bar would be given as a reward for their contribution at the end of their assistance.

In accordance to the ethical guidelines through which this study's approval was given; each potential participant was screened prior to being exposed to the actual questionnaire. A screening sheet (please see Appendix C) was given, yet was presented as a short demographic survey to the willing participants. Those affirming as having a historical background, or any personal experience of mental illness(es) through this process were made none the wiser of the 'true' questionnaire. They were thanked for their participation, and given their chocolate bar as a reward upon the screening sheets completion.

Participants who successfully passed the screening process were given a consent form (please see Appendix D), which reiterated their ethical rights, and allowed them to confirm their understanding of these.

Through further use of the online randomisation programme (Urbaniak & Plous, 2008), the three questionnaires were organised in a random order correspondingly, ensuring the particular condition of the independent variable through which the participant was exposed to, was of a randomised nature, aiding the elimination of any order effects.

Conforming to this process, the 'true' questionnaire (please see Appendix A) with its randomised subgroup condition was then presented to the participants for them to complete accordingly.

Upon its completion, participants were presented with a de-brief form which highlighted the aims of the study (please see Appendix E). Two information leaflets based on Schizophrenia and Alzheimer's disease accompanied the de-brief form, and provided participants with useful contacts should they have needed these (please see Appendix F & G). They were also given their chocolate reward.

This process repeated itself upon the approach of every 6th person. Of those who did not wish to take part, the next person within this sequence was then politely asked; and so forth.

A piloting process, which duplicated the procedure above, was administered at the very beginning of the data collection process. For, as the measurement instrument being used had been developed previously, and had therefore been validated through past research, it was fundamental to assess how well it integrated into the procedure in which this study had constructed, to accommodate the adaptation of the subgroups researched. This was to ensure that the recruitment and sampling process, as well as the timing of the questionnaire itself was feasible (Van Teijlingen & Hundley, 2002).

Nine participants were piloted in total, three individuals per subgroup. Feedback allowed for the differing materials to be organised in a more effective, efficient manner, allowing for a faster response from subsequent participants; making it a more convenient study to par-take in. Due to such organisational tweaks being made, it was decided that the pilot data set would not be used for analyses. For, such adjustments could have potentially benefitted successive participants through alleviating stressors that may have been present during the study's teething process, which in turn, could have potentially infringed upon the pilot responses.

Results

The raw questionnaire data was entered into SPSS22; and the scale questions were scored and computed into a single variable of mean score. Its descriptive statistics are shown below:

Table 1: Descriptive Statistics for perceived competence, warmth, pity, and contempt ratings by mental illness subgroup.

n=60	Subgroup	*M*	*SD*
Competence	Alzheimer	2.35	0.97
	Control	3.98	0.83
	Schizophrenia	1.98	0.72
Warmth	Alzheimer	3.85	0.95
	Control	3.03	0.90
	Schizophrenia	2.03	0.83
Pity	Alzheimer	4.10	0.84
	Control	2.98	0.87
	Schizophrenia	2.68	0.89
Contempt	Alzheimer	2.15	0.88
	Control	2.48	0.88
	Schizophrenia	3.88	0.92

On inspection, the descriptive statistics illustrate that the control subgroup of average mentally healthy individuals, scored considerably higher on the scale of perceived competence in comparison to the two mental illness subgroups. Although seen as less competent than average, the Alzheimer condition was identified by the general public as being slightly more competent in comparison to the Schizophrenia condition. The Schizophrenia subgroup however, appears to have the lowest variance of all the conditions, with the Alzheimer subgroup eliciting the greatest spread between scores within the data set.

Regarding the warmth scale, the Schizophrenia subgroup again, scored the lowest in comparison to the two other conditions, with the Alzheimer condition actually scoring marginally higher in warmth in comparison to the control group. Once more, the Alzheimer subgroup showed the greatest amount of variance within its warmth scores.

Table 1 further demonstrates how the greatest difference in means can be seen in terms of the pity scale, with the Alzheimer questionnaire condition eliciting the highest scores in comparison to the Schizophrenia and the control subgroups, whose mean scores were relatively similar. All three conditions elicited scores of similar variance, yet these were all high.

It can also be depicted that the Schizophrenia condition elicited greater scores in relation to perceived contempt in comparison to the Alzheimer and control conditions, which, in turn, evoked similar contempt scores. Variance again, remained

high for each condition, with the Schizophrenia condition in particular demonstrating the largest amount of spread within the contempt data set.

A visual representation illustrating this evaluation can be seen in Figure 2 below:

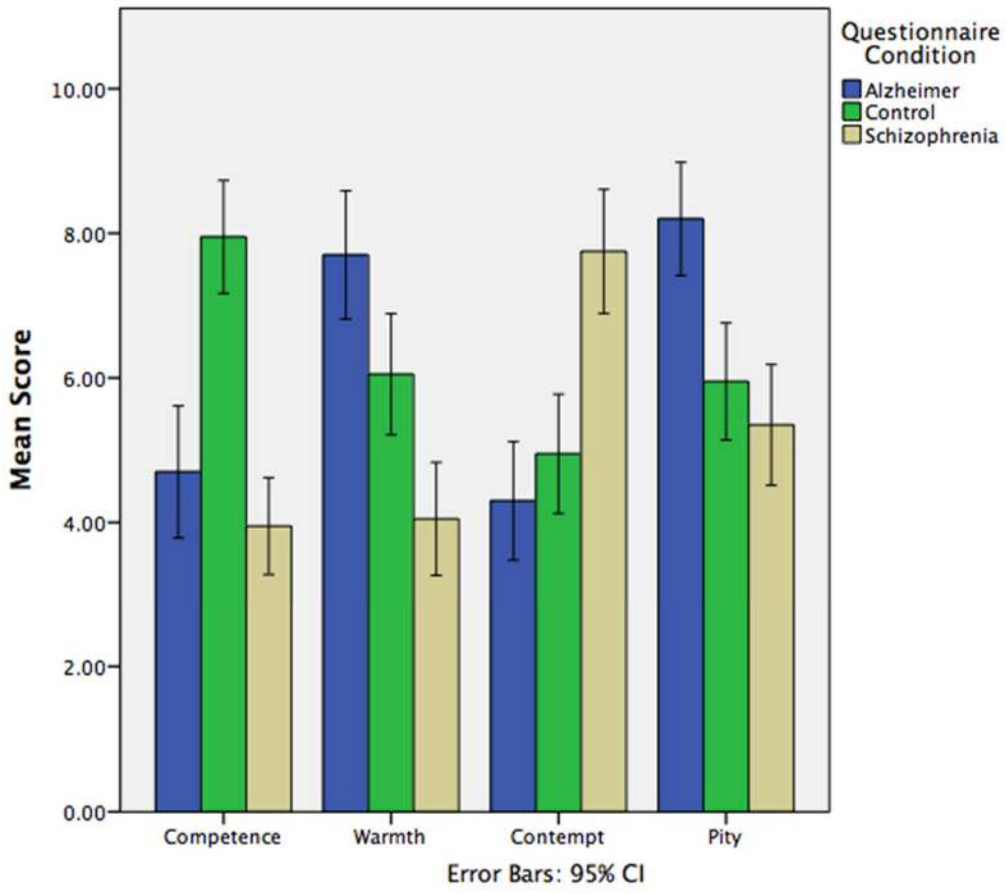

Figure 2: A clustered bar chart showing the mean differences between people suffering from Alzheimer's, Schizophrenia and average mentally healthy individuals on measures of perceived competence, warmth, pity and contempt.

The reliabilities of each two-item scale are as follows: Competence α=0.89; Warmth α=0.86; Pity α=0.79; and Contempt α=0.85.

To decipher whether a Multivariate Analysis of Variance (MANOVA) would be suitable for this data, a Pearson's correlation coefficient was conducted between the dependent variables to determine whether the dependent variables were conceptually related.

Correlational analyses indicated that there was a statistically significant negative correlation between contempt and pity, $r(58)= -0.23$, n=60, $p<0.05$; contempt and warmth, $r(58)= -0.38$, n=60, $p<0.001$; competence and contempt, $r(58)=-0.38$, n=60,

p<0.001; and, a statistically significant positive correlation between warmth and pity, *r*(58)= 0.36, n=60, p<0.01.

Thus, it was demonstrated that there was a moderate relationship between the dependent variables, further insinuating that they are conceptually related. Tabachnick & Fidell (2012) posit that correlative interactions should never rise above *r* = .90. Thus, the risk of multicollinearity is low.

Due to the criticism surrounding Box's M's sensitivity (Warner, 2013), an adjusted alpha level of 0.001 was conducted to assess the homogeneity of variance-covariance matrices assumptions. Box's Test of Equality of Covariance Matrices was not statistically significant, *p*(0.39)> (0.001), and thus, there is no reason to reject the null hypothesis as the homogeneity of variance-covariance matrices are assumed equal.

Confirmation surrounding the assumptions of the equality of variance and the homogeneity of variance-covariance matrices was provided. Conservative correlations were also found to exist between the dependent variables. Thus, it could be concluded that the data was suitable for a multivariate analysis. A one-way between-subjects MANOVA was conducted on the dependent variables to assess whether the perceived competence, warmth, pity, and contempt scores differed significantly between the mental illness subgroups. There was a statistically significant difference in stereotype content and emotional tendency scores based on the mental illness subgroup; whereby Wilks' Lambda=0.15; *F*(8,108)=20.85, p<0.001, partial η^2=0.61.

Each dependent variable was then subjected to a further one-way between-subjects ANOVA to decipher the statistically significant multivariate effects that were found:

The effect of perceived competence was significant overall, with the Alzheimer subgroup scoring notably lower (*M*=2.35) than the control subgroup (*M*=3.98), yet higher than the Schizophrenia subgroup (*M*=1.98); whereby, *F*(2,57)=31.41, p<0.001, partial η^2=0.52. Levene's statistic was not significant, *F*(2,57)= 1.35, p=0.27, and so an equality of variances was assumed. Thus, an equal variance assumed post-hoc test was conducted. A Bonferroni adjusted alpha level of 0.01 planned contrast post-hoc test was performed and revealed that perceived competence scores for either mental illness subgroups, were significantly lower than the control; whereby *t*(57)=7.80, p<0.001. Yet, no significant differences were found in perceived competence between the Alzheimer and the Schizophrenia conditions, *t*(57)=1.40, p=0.17.

The effect of perceived warmth was significant overall, with the Alzheimer subgroup scoring notably higher (*M*=3.85) than the control subgroup (*M*=3.03), and the Schizophrenia subgroup (*M*=2.03); whereby, *F*(2,57)=20.92, p<0.001, partial η^2=0.42. Levene's statistic was not significant, *F*(2,57)= 0.38, p=0.68, and so an equality of variances was assumed. A Bonferroni adjusted alpha level of 0.01 planned contrast post-hoc test was conducted and revealed that perceived warmth ratings were significantly higher in the Alzheimer subgroup, and significantly lower in the Schizophrenia subgroup when compared to the control, *t*(57)= 6.22, p<0.001. The perceived warmth scores were also shown to be significantly different between

the Alzheimer and the Schizophrenia subgroup, whereby the Alzheimer subgroup was shown to score significantly higher on perceived warmth ratings in comparison to the Schizophrenia subgroup $t(57)= 6.46$, $p<0.001$.

The effect of perceived pity was significant overall, with the Alzheimer subgroup scoring notably higher (M=4.10) than the control subgroup (M=2.98), and also higher than the Schizophrenia subgroup (M=2.68); whereby, $F(2,57)=15.08$, $p<0.001$, partial $\eta^2=0.35$. Levene's statistic was not significant, $F(2,57)= 0.80$, $p=0.92$, and so an equality of variances was assumed. A Bonferroni adjusted alpha level of 0.01 planned contrast post-hoc test was conducted and revealed that perceived pity scores were found to significantly differ among the mental illness conditions when compared to the control, whereby Alzheimer's evoked significantly higher pity scores, and Schizophrenia significantly lower, in comparison to the control, $t(57)= 4.35$, $P<0.001$. The perceived pity scores were further shown to significantly differ between the Alzheimer and the Schizophrenia subgroup, whereby the Alzheimer subgroup scored significantly higher than the Schizophrenia, $t(57)= 5.21$, $p<0.001$.

The effect of perceived contempt was significant overall, with the Alzheimer subgroup scoring notably lower (M=2.15) than the control subgroup (M=2.48), and the Schizophrenia subgroup (M=3.88); whereby, $F(2,57)=21.18$, $p<0.001$, partial $\eta^2=0.43$. Levene's statistic was not significant, $F(2,57)= 0.17$, $p=0.85$, and so an equality of variances was assumed. A Bonferroni adjusted alpha level of 0.01 planned contrast post-hoc test was conducted and revealed that perceived contempt scores were significantly different for either mental illness subgroups when compared to the control, with the Alzheimer subgroup scoring significantly lower than the control on this scale, and the Schizophrenia significantly higher than the control, $t(57)= 5.07$, $p<0.001$. Perceived contempt scores were also shown to be significantly different between the Alzheimer and the Schizophrenia subgroup, whereby the Alzheimer subgroup scored significantly lower than the Schizophrenia subgroup, $t(57)= 6.12$, $p<0.001$.

Discussion

The intent of this study was to decipher whether the stereotype content and the systematic patterns of emotional reactions derived from the SCM (Fiske et al., 2002) and the BIAS Map (Cuddy et al., 2007), are elicited by the general public when asked to rate distinct mental illness subgroups. Individuals suffering from Alzheimer's disease and individuals suffering from Schizophrenia were scored on four separate scales measuring competency, warmth, pity and, contempt. It was found that both mental illnesses were perceived as having less competence in comparison to healthy controls; Alzheimer sufferers were found to cue higher warmth and pity ratings in comparison to the Schizophrenia subgroup and healthy controls. Lastly, Schizophrenia sufferers evoked higher contempt ratings in comparison to the control and the Alzheimer condition. It can thus, be inferred that there are systematic differences among stereotype content and emotional prejudice, prevalent amidst the general public in relation to these distinct mental illnesses.

Stereotype Content: Perceived Competence

For the perceived competence scale, it was hypothesised that; the Alzheimer subgroup and the Schizophrenia subgroup would elicit lower competence scores in comparison to the control group; and, that the Alzheimer subgroup would cue similar competence ratings to the Schizophrenia condition. The data was shown to support both $H_{1a,}$ and H_{1b}, whereby a planned comparison distinguished that perceived competence scores were significantly lower for either mental illness subgroups when compared to the control condition.

Literature has shown how individuals suffering from mental illnesses may be attributed with the inability to make suitable choices (Angermeyer & Matschinger, 2003), which in turn, may be perceived as a form of incompetence. This study's findings are comparable to these, through which two distinct mental illness labels have constituted to lower scores of competency in comparison to the average, mentally healthy individual. Through considering that neither Fiske et al. (2002), nor Cuddy et al. (2007), used a comparative control within their correlational research, it is fundamental that this study has deciphered that the competence scale through which has been used, can effectively deduce what constitutes as a low or a high score in competence measures in comparison to a healthy control.

Sadler et al. (2012) found orderly differences in the way individuals are perceived on this particular stereotype dimension when attributed to specific mental illness diagnoses. Perceptions of ineptitude or literal disability of those suffering with a mental illness such as Alzheimer's disease, which can be perceived as affecting an individual's intellectual ability, were shown to elicit the lowest levels of competence in comparison to other clusters of mental disorders, such as the neuro-cognitive cluster which incorporated individuals suffering from Schizophrenia (Sadler et al., 2012). Although the present study found that perceived competence in Alzheimer sufferers was somewhat higher in comparison to the perceived competence attributed to Schizophrenia sufferers, which would negate Sadler et al.'s (2012) findings, both mental illness subgroups failed to achieve statistical significance when compared. Due to this lack of significance, there is an inability to acknowledge which particular mental illness elicited the lowest competency scores altogether. Thus, it is unknown

how competence stereotypes may differ between distinct mental illnesses, through which Sadler et al. (2012) were able to decipher.

Nonetheless, having the significance to demonstrate how Schizophrenia and Alzheimer subgroups are perceived incompetent in comparison to the average, mentally healthy individual may explain why those suffering from mental health diagnoses have a significantly lower employment rate (Corrigan et al., 2010) within society. For, those associated with a Psychiatric label may perhaps become tarnished by the stereotypic perception that they are incompetent, specifically in relation to the managing of their decisions and their lives (Ditchman et al., 2013). This may therefore result in a lack of opportunities being offered to individuals subsequent to a mental health diagnosis, impacting upon not only the stigmatised individuals, but also the society as a whole (Mak et al., 2014).

Stereotype Content: Perceived Warmth

For the perceived warmth scale, it was hypothesised that; the Alzheimer subgroup would elicit higher warmth ratings than the control group; the Schizophrenia subgroup would evoke lower warmth ratings than the control group; and, that the Alzheimer subgroup would cue higher warmth ratings in comparison to the Schizophrenia subgroup. The data was shown to statistically significantly support $H_{2a,}$ H_{2b} and, $H_{2c.}$

The data illustrated how the Alzheimer condition obtained higher warmth ratings in comparison to the control, with the Schizophrenia subgroup demonstrating the lowest. Such findings suggest the existence of systematic differences among stereotype content when ascribed to distinct mental illness subgroups. Sadler et al. (2012) suggest that the perceived danger posed by those attributed with mental illnesses can contribute to the conceptualisation that such individual's are lacking in warmth in accordance to the SCM (Sadler et al., 2012). Such stereotype content may thus be assumed an extension of the general public's discerning perceptions of how individuals associated with specific mental health illnesses are believed to behave, despite evidence compressing such ideology, exemplifying how actual danger is grossly exaggerated in terms of these individuals (Mullen, 1997). For, in reality, Schizophrenia sufferers have been shown to be around ten times more likely to fall victim of a violent crime as opposed to being a perpetrator of one (Brekke, Prindle, Bae & Long, 2001).

Norman, Sorrentino, Windell & Manchanda (2008) argue that certain presumptions surrounding mental illnesses; such as the perceived tendency for a sufferer to elicit unsuitable or dangerous social behaviours, can contribute to explicably strong correlations in relation to a lay persons preferred social distance from mental illness sufferers. For, the trait endorsements associated with Schizophrenia can potentially reflect stereotypical beliefs, whereby delusions may be believed to debilitate an individual's capability to operate and live normatively, whilst also contributing to erratic behaviours within social interactions (Denenny, Bentley & Schiffman, 2014). Thus, social distance may want to be obtained by the in-group when faced with the Schizophrenia out-group. In contrast, those suffering from Alzheimer's disease, whose symptomology is primarily characterised by a decline in cognitive function, may be perceived as incapable of demonstrating acrimony (Sadler et al., 2012). This

suggests they could be thought as lacking the intent to harm others (Sadler et al., 2012), providing explanation as to why they scored higher on the warmth dimension in comparison to the Schizophrenia subgroup.

Thus, as an implication of these findings, it can be suggested that perceived danger, particularly in relation to those suffering from Schizophrenia, may contribute to an increased inclination for the lay public to maintain their social distance. Prior literature has found that consistent with the genetic contingency theory, genetic attributions have lead to a greater desire for social distance in Undergraduate students towards persons whose disorders are perceived as dangerous, such as Schizophrenia sufferers (Lee et al., 2014). Further, genetic attributions have also been shown to decrease the likelihood of altruistic behaviours being elicited towards those known to suffer with Schizophrenia, yet the same was not found towards those suffering from affective disorders (Lee et al., 2014). Whilst the present study did not explore individuals with mood disorders, nor the relation between perceived warmth ratings and perceptions of danger, which in turn could provide a niche for further research, such findings could potentially explain the extent through which social stigmatisation of mental illnesses can impact upon an individual's motivation in eliciting acts of altruism and pro-social behaviour.

Emotions: Perceived Pity

Regarding the perceived pity scale, it was hypothesised that; the Alzheimer subgroup would elicit higher pity ratings in comparison to the control; the Schizophrenia subgroup would elicit lower pity ratings in comparison to the control; and, that the Alzheimer subgroup would cue higher levels of pity than the Schizophrenia subgroup. The data was shown to support $H_{3a,}$ H_{3b} and, $H_{3c,}$ whereby perceived pity scores were shown to be significantly higher when attributed to Alzheimer sufferers in comparison to the control, with the Schizophrenia subgroup evoking the lowest of the pity scores.

With Sadler et al. (2012) determining that individuals suffering with Schizophrenia elicit low warmth and low competency ratings; whilst those with Alzheimer's disease were found to evoke high warmth, yet also low competency ratings; when attributed to the BIAS Map (Cuddy et al., 2007), pity should hypothetically be associated with the Alzheimer subgroup (Cuddy et al., 2007). Thus, through illustrating that the Alzheimer condition statistically significantly cued higher pity scores in comparison to both the control and the Schizophrenia subgroup, this study supported the hypothesised relationships between combinations of competence–warmth stereotypes and a specific, related emotion depicted by Cuddy et al. (2007).

As has been acknowledged, there is a possibility that Sadler et al.'s (2012) findings may have arisen from participants perhaps rating the stereotype content of Alzheimer sufferers in relation to their perceived elderly age, as opposed to solely rating the illness itself. With one out of every sixth individual aged 80 years and over affected by Alzheimer's within the United Kingdom (NHS Choices, 2014), and the average onset age of Schizophrenia being between 18-35 years (National Institute of Mental Health, 2009), the same may be true for this study. For, there may be a possibility that the reason as to why pity was further attributed to the Alzheimer subgroup as opposed to the Schizophrenia, was due to the age of the population

through which either illness is normatively associated with.

Highlighting this point further, O'Connor & McFadden (2012) deciphered that pity SCM (Fiske et al., 2002) ratings were significantly higher for older Alzheimer sufferers, as opposed to those experiencing an early-onset of the disease, suggesting that regardless of the illness itself, age may be the true impetus that evokes pitiful reactions from the in-group. The Terror Management Theory (Greenberg, Solomon, & Pyszczynski, 1997) may lend support to, and explain these findings. It posits that, when related to ageism, elderly individuals may be associated with the concept of impending mortality (O'Connor & McFadden, 2012). As a consequence of this association, and the anxiety through which it may arouse among the in-group (Arndt, Greenberg, Solomon, Pyszczynski, & Simon, 1997), paternalistic prejudices such as pity may prevail towards the out-group (O'Connor & McFadden, 2012). Thus, it is important for further research to decipher whether such ageism underlies the differing stereotype content and emotional reactions elicited at, and between succinct mental illness subgroups. This could help promote paternalistic prejudices towards mental illness subgroups whose age onsets are attributed with a notably younger population.

Emotions: Perceived Contempt

For the perceived contempt scale, it was hypothesised that; the Alzheimer subgroup would elicit lower contempt ratings in comparison to the control; that the Schizophrenia subgroup would elicit higher contempt ratings in comparison to the control; and, that the Alzheimer subgroup would cue lower levels of contempt than the Schizophrenia subgroup. Statistically significant results were found with regards to the perceived contempt scores attributed to either mental illness subgroups in comparison to the control, alongside the perceived contempt scores found between the Alzheimer and the Schizophrenia subgroups. Thus, H_{4a}, H_{4b}, and H_{4c} can be accepted.

Fiske et al. (2002) originally indicated that disadvantaged or unsuccessful members of a notoriously dominant group; for instance, Whites, when subsumed into the low warmth and low competence category, were exposed to exhibitions of contemptuous prejudices. Sadler et al. (2012) determined that individuals suffering with Schizophrenia were found to also elicit low warmth and low competency ratings. Thus, through successfully showing that individuals suffering with Schizophrenia cue higher contempt ratings in comparison to the control group and the Alzheimer condition, support has been lent to Fiske et al.'s (2002) specific stereotype content-emotion association.

In accordance to attribution theory, the belief that a stigmatised individual is held accountable for the circumstances through which they experience can evoke contemptuous emotions within the individual attributing the blame (Werner, 2008). Whereas, those believed unaccountable for their particular negative circumstances can arouse emotions of pity among members of the in-group (Werner, 2008). With Alzheimer sufferers invoking the least contempt, and the most pity among the lay public in comparison to the control and the Schizophrenia subgroup, it can be suggested that the appraisal of a negative outcome as being uncontrollable (Weiner, 2006), in the context of distinct mental illnesses, is more prevalent among Alzheimer

sufferers in comparison to Schizophrenia sufferers. An explanation as to why this may be can be found through empirical studies examining the lay-populations stigmatising responses to those suffering from Alzheimer's disease. Werner & Davidson (2004) have shown that the general public acquaints the disease with biological determinants, something out of the sufferer's immediate control. Thus, a greater proportion of positive emotions (e.g. empathy and concern) are elicited towards these individuals, in comparison to more negative, contemptuous emotions (Werner & Davidson, 2004).

Limitations

As with any empirical research, several factors may limit the interpretation of these results. All two-items subscales used, bar pity, amassed relatively high Cronbach alpha coefficients. Although internal consistency may be assumed high, as has previously been acknowledged, the constructs measured may be too specific and narrow in content, resulting in a reduction in its content validity (Briggs & Cheek, 1986). Moreover, highly redundant measures in a questionnaire have the potential to frustrate respondents, leading to poor measurement (Clark & Watson, 1995), which could have also occurred during the data collection process. Furthermore, through attempting to maintain the scales internal validity, it was decided that the items would not be counterbalanced in line with the methodology from which they derive (Cuddy et al., 2007). By doing so, there is a high chance that response sets were prevalent within the data collected.

Although care was taken to reiterate, and explicably state that participants should answer the questionnaire based on society's perception as a whole, as opposed to individual, personal opinions (please see Appendix A), it is unknown as to what extent these instructions were followed throughout the data collection process. Cuddy et al. (2007) acknowledge that prejudices among society do not necessarily correspond with those held personally. Thus, if questions were answered from a personal perspective, the potential is there for the data set to become skewed (Cuddy et al., 2007), suggesting the results should be interpreted with caution. Fiske et al. (2002) have proposed a way around this limitation, which may prove useful for further analyses. If individuals derived from differing social groups (e.g. gender/ ethnicities) are on average, believed to possess contrasting group stereotypes, when compared, they should digress from each other (Fiske et al., 2002). Thus, by exploring this possibility through the use of the demographic data collected within this study, any trends where personal prejudices are present may become apparent.

The sampling method itself was extremely simplistic and so could be followed meticulously throughout the recruitment process, ensuring even sampling (Valentine, Affleck & Gregoire, 2009). However, the sampling was based upon an hourly estimate of the retail centre's footfall based on knowledge accumulated from conversing with numerous retail store managers, as accurate statistics proved difficult to attain. The estimate itself did not consider the time of the year, nor whether the data collection took place within peak or off-peak seasons. Thus, the accuracy of the systematic interval integer may be disputed, which could have potentially resulted in a prevention of vital responses from being collected.

Nonetheless, this study has differed from prior research through providing a basis for

comparison. Through the use of a control, deciphering what is high or low competence/ warmth/ pity and contempt has been accomplished statistically and significantly, which can further be acknowledged as a notable strength.

Further Implications

Considering that an individuals internalised perception of their own discrimination (Link, et al., 1989) can lead to feelings of shame, contractions in self-esteem and, reduced treatment outcomes (Perlick et al., 2001), it seems imperative to extend this research beyond social stigmatism, and towards better understanding the development of self-stigmatisation. In accordance with the modified labeling theory of mental illness (Link, 1987), a mental health diagnosis can promote demoralisation within an individual, whereby they are argued to repeatedly internalise negative self-concepts (Kroska & Harkness, 2011). As a consequence, defensiveness can arise, which can impair social interactions, as well as contribute to the concealment of any mental health treatment, or history (Kroska & Harkness, 2011). It is notable how damaging self-stigmatisation can therefore be. Thus, if interventions had the ability to provide individuals with the specific knowledge surrounding societal stereotypes, their associated emotions and behavioural tendencies in line with specific mental health diagnoses, there is a possibility that a proportion of self-stigmatisation can be averted from developing.

With systematic differences among stereotype content and emotional prejudice apparent amidst the general public in relation to Schizophrenia and Alzheimer subgroups, research can extend towards the exploration of whether systematic patterns of behavioural tendencies, as presented by the BIAS Map (Cuddy et al., 2007), are associated with correlating emotions surrounding distinct mental illnesses. Campaigns would thus, have the proficiency to educate both patients and the lay population on stereotypical and prejudicial ideologies surrounding distinct mental illnesses (Sadler et al., 2012). The perceived incompetency attributed with Alzheimer's disease could therefore be tackled, alongside the apparent low competency and warmth discernment surrounding Schizophrenia sufferers (Sadler et al., 2012). Sickel et al. (2014) accentuate that mental health stigmatisation can have a pervasive encroachment upon an individual's societal, cognitive, and physical functions. Thus, it is fair to contend that such stigma can encroach upon the health and the efficiency of a society, suggesting tailored interventions could prove invaluable. Such understanding will hopefully advocate the need to encourage greater social contact between mentally healthy persons, and those attributed with mental illness diagnoses' (Brown, 2010, as cited in Davey, 2014) in order to improve intergroup relations, and to curtail prejudice.

References

Abele, A. E. (2003). The dynamics of masculine-agentic and feminine-communal traits: Findings from a prospective study. *Journal Of Personality And Social Psychology*, *85*(4), 768-776. doi:10.1037/0022-3514.85.4.768

Abele, A. E., Cuddy, A. C., Judd, C. M., & Yzerbyt, V. Y. (2008). Fundamental dimensions of social judgment. *European Journal Of Social Psychology*, *38*(7), 1063-1065. doi:10.1002/ejsp.574

Abele, A. E., & Wojciszke, B. (2007). Agency and communion from the perspective of self versus others. *Journal Of Personality And Social Psychology*, *93*(5), 751-763. doi:10.1037/0022-3514.93.5.751

Allport, G. W. (1954). *The Nature of Prejudice.* Massachusetts USA: Addison-Wesley Publishing Company

Angermeyer, M. C., & Matschinger, H. (2003). The stigma of mental illness: Effects of labelling on public attitudes towards people with mental disorder. *Acta Psychiatrica Scandinavica*, *108*(4), 304-309. doi:10.1034/j.1600-0447.2003.00150.x

Arndt, J., Greenberg, J., Solomon, S., Pyszczynski, T., & Simon, L. (1997). Suppression, accessibility of death-related thoughts, and cultural worldview defense: Exploring the psychodynamics of terror management. *Journal Of Personality And Social Psychology*, *73*(1), 5-18. doi:10.1037/0022-3514.73.1.5

Bakan, D. (1966). *The Duality of Human Existence: Isolation and Communion in Western Man.* Chicago USA: Beacon Press.

Bales, R. F. (1950). A set of categories for the analysis of small group interaction.

American Sociological Review, *15*257-263. doi:10.2307/2086790

Bowes, E. (2014). *Understanding Schizophrenia*. Retrieved from, http://www.mind.org.uk/information-support/types-of-mental-health-problems/schizophrenia/about-schizophrenia/#.VFKChr7VvzK

Brekke, J., Prindle, C., Bae, S., & Long, J. (2001). Risks for individuals with schizophrenia who are living in the community. *Psychiatric Services*, *52*(10), 1358-1366. Retrieved from, http://search.ebscohost.com.ezproxy.uwl.ac.uk/login.aspx?direct=true&AuthType=ip,shib&db=cin20&AN=2002032430&site=ehost-live

Briggs, S. R., & Cheek, J. M. (1986). The role of factor analysis in the development and evaluation of personality scales. *Journal Of Personality*, *54*(1), 106. doi:10.1111/1467-6494.ep8970518

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, *7*(3), 309-319. doi:10.1037/1040-3590.7.3.309

Cochran, W. G. (1951). Modern methods in the sampling of human populations; general principles in the selection of a sample. *American Journal Of Public Health*, *41*647-653. doi:10.2105/AJPH.41.6.647

Corrigan, P. W. (2004). Don't call me nuts: An international perspective on the stigma of mental illness. *Acta Psychiatrica Scandinavica*, *109*(6), 403-404. doi:10.1111/j.1600-0047.2004.00316.x

Corrigan, P. W., Mittal, D., Reaves, C. M., Haynes, T. F., Han, X., Morris, S., & Sullivan, G. (2014). Mental health stigma and primary health care decisions. *Psychiatry Research*, *218*(1/2), 35-38. doi:10.1016/j.psychres.2014.04.028

Corrigan, P. W., Tsang, H. H., Shi, K., Lam, C. S., & Larson, J. (2010). Chinese and American employers' perspectives regarding hiring people with behaviorally driven health conditions: The role of stigma. *Social Science & Medicine*, *71*(12), 2162-2169. doi:10.1016/j.socscimed.2010.08.025

Crisp, A. H., Gelder, M. G., Rix, S., Meltzer, H. I., & Rowlands, O. J. (2000). Stigmatisation
of people with mental illnesses. *The British Journal Of Psychiatry*, *177*4-7. doi:10.1192/bjp.177.1.4

Cuddy, A. C., Fiske, S. T., & Glick, P. (2007). The BIAS map: Behaviors from intergroup affect and stereotypes. *Journal Of Personality And Social Psychology*, *92*(4), 631-648. doi:10.1037/0022-3514.92.4.631

Cuddy, A. C., Fiske, S. T., Kwan, V. Y., Glick, P., Demoulin, S., Leyens, J., & ... Palacios, M. (2009). Stereotype content model across cultures: Towards universal similarities and some differences. *British Journal Of Social Psychology*, *48*(1), 1-33. doi:10.1348/014466608X314935

Davey, G. (2014). *Psychopathology. Research, Assessment and Treatment in Clinical Psychology.* West Sussex United Kingdom: The British Psychological Society & John Wiley & Sons Ltd.

Denenny, D., Bentley, E., & Schiffman, J. (2014). Validation of a brief implicit association test of stigma: schizophrenia and dangerousness. *Journal Of Mental Health*, *23*(5), 246-250. doi:10.3109/09638237.2014.951482

Ditchman, N., Werner, S., Kosyluk, K., Jones, N., Elg, B., & Corrigan, P. W. (2013). Stigma and intellectual disability: Potential application of mental illness research. *Rehabilitation Psychology*, *58*(2), 206-216. doi:10.1037/a0032466

Echebarria-Echabe, A. (2013). Testing the BIAS map model: The positive effects of perceiving weakness and harmony in powerful out-groups. *The Journal Of Social Psychology*, *153*(6), 720-735. doi:10.1080/00224545.2013.826618

Fiske, S. T., Cuddy, A. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal Of Personality And Social Psychology*, *82*(6), 878-902. doi:10.1037/0022-3514.82.6.878

Fiske, S. T., Xu, J., Cuddy, A. C., & Glick, P. (1999). (Dis)respecting versus (Dis)liking: Status and Interdependence Predict Ambivalent Stereotypes of Competence and Warmth. *Journal Of Social Issues*, *55*(3), 473. Retrieved from, http://search.ebscohost.com.ezproxy.uwl.ac.uk/login.aspx?direct=true&AuthType=ip,shib&db=afh&AN=2627449&site=ehost-live

Frijda, N. H., Kuipers, P., & ter Schure, E. (1989). Relations among emotion, appraisal, and emotional action readiness. *Journal Of Personality And Social Psychology*, *57*(2), 212-228. doi:10.1037/0022-3514.57.2.212

Greenberg, J., Solomon, S., & Pyszczynski, T. (1997). Terror management theory of self-esteem and cultural worldviews: Empirical assessments and conceptual refinements. In M. P. Zanna, M. P. Zanna (Eds.), *Advances in experimental social psychology, Vol. 29* (pp. 61-139). San Diego USA: Academic Press. doi:10.1016/S0065-2601(08)60016-7

Hayes, W. (1958). An Approach to the Study of Trait Implication and Trait Similarity. In R. Tagiuri, & L. Petrullo (Eds.), *Personal Perception and Interpersonal Behavior.* (pp. 289-299). London England: Oxford University Press.

Kervyn, N., Bergsieker, H. B., & Fiske, S. T. (2012). The innuendo effect: Hearing the positive but inferring the negative. *Journal Of Experimental Social Psychology*, *48*(1), 77-85. doi:10.1016/j.jesp.2011.08.001

Kervyn, N., Fiske, S. T., & Yzerbyt, V. Y. (2013). Integrating the stereotype content model (warmth and competence) and the Osgood semantic differential (evaluation, potency, and activity). *European Journal Of Social Psychology*, *43*(7), 673-681. doi:10.1002/ejsp.1978

Kervyn, N., Fiske, S., & Yzerbyt, V. (2015, January 9). Forecasting the Primary Dimension of Social Perception: Symbolic and Realistic Threats Together Predict Warmth in the Stereotype Content Model. Social Psychology. Advance online publication. doi: 10.1027/1864-9335/a000219

Kroska, A., & Harkness, S. K. (2011). Coping with the Stigma of Mental Illness: Empirically-Grounded Hypotheses from Computer Simulations. *Social Forces*, *89*(4), 1315-1339. Retrieved from, http://search.ebscohost.com.ezproxy.uwl.ac.uk/login.aspx?direct=true&AuthType=ip,shib&db=afh&AN=60914645&site=ehost-live

Leach, C. W., Ellemers, N., & Barreto, M. (2007). Group virtue: The importance of morality (vs. competence and sociability) in the positive evaluation of in-groups. *Journal Of Personality And Social Psychology*, *93*(2), 234-249. doi:10.1037/0022-3514.93.2.234

Lee, A. A., Laurent, S. M., Wykes, T. L., Kitchen Andren, K. A., Bourassa, K. A., & McKibbin, C. L. (2014). Genetic attributions and mental illness diagnosis: effects on perceptions of danger, social distance, and real helping decisions. *Social Psychiatry And Psychiatric Epidemiology*, *49*(5), 781-789. doi:10.1007/s00127-013-0764-1

Link, B. G. (1987). Understanding Labeling Effects in the Area of Mental Disorders: An Assessment of the Effects of Expectations of Rejection. *American Sociological Review*, *52*(1), 96-112. Retrieved from, http://search.ebscohost.com.ezproxy.uwl.ac.uk/login.aspx?direct=true&AuthType=ip,shib&db=afh&AN=14773630&site=ehost-live

Link, B. G., Struening, E., Cullen, F. T., Shrout, P. E., & Dohrenwend, B. P. (1989). A Modified Labeling Theory Approach to Mental Disorders: An Empirical Assessment. *American Sociological Review*, *54*(3), 400-423. Retrieved from, http://search.ebscohost.com.ezproxy.uwl.ac.uk/login.aspx?direct=true&AuthType=ip,shib&db=afh&AN=15471632&site=ehost-live

Livingston, J. D., & Boyd, J. E. (2010). Correlates and consequences of internalized stigma for people living with mental illness: A systematic review and meta-analysis. *Social Science & Medicine*, *71*(12), 2150-2161.doi:10.1016/j.socscimed.2010.09.030

Mak, W. S., Chong, E. K., & Wong, C. Y. (2014). Beyond attributions: Understanding public stigma of mental illness with the common sense model. *American Journal Of Orthopsychiatry*, *84*(2), 173-181. doi:10.1037/h0099373

Mullen, P. E. (1997). A reassessment of the link between mental disorder and violent behaviour, and its implications for clinical practice. *Australian And New Zealand Journal Of Psychiatry*, *31*(1), 3-11. doi:10.3109/00048679709073793

National Institute of Mental Health. (2009). *What is schizophrenia?* Retrieved from, http://www.nimh.nih.gov/health/publications/schizophrenia/index.shtml

NHS Choices. (2014, March 26). *Alzheimer's disease.* Retrieved from, http://www.nhs.uk/conditions/Alzheimers-disease/Pages/Introduction.aspx

Norman, R. G., Sorrentino, R., Windell, D., & Manchanda, R. (2008). Are Personal Values of Importance in the Stigmatization of People With Mental Illness?. *Canadian Journal Of Psychiatry*, *53*(12), 848-856. Retrieved from, http://search.ebscohost.com.ezproxy.uwl.ac.uk/login.aspx?direct=true&AuthType=ip,shib&db=afh&AN=36065732&site=ehost-live

O'Connor, M. L., & McFadden, S. H. (2012). A Terror Management Perspective on Young Adults' Ageism and Attitudes Toward Dementia. *Educational Gerontology*, *38*(9), 627-643. doi:10.1080/03601277.2011.595335

Oppenheim, A. N. (1992). *Questionnaire design, interviewing and attitude measurement (new ed.)*. New York USA: Pinter Publishers.

Opsomer, J. D., Francisco-Fernández, M., & Li, X. (2012). Model-Based Non-parametric Variance Estimation for Systematic Sampling. *Scandinavian Journal Of Statistics*, *39*(3), 528-542. doi:10.1111/j.1467-9469.2011.00773.x

Perlick, D. A., Rosenheck, R. A., Clarkin, J. F., Sirey, J. A., Salahi, J., Struening, E. L., & Link, B. G. (2001). Stigma as a barrier to recovery: Adverse effects of perceived stigma on social adaptation of persons diagnosed with bipolar affective disorder. *Psychiatric Services*, *52*(12), 1627-1632. doi:10.1176/appi.ps.52.12.1627

Pescosolido, B., Martin, J., Long, J., Medina, T., Phelan, J., & Link, B. (2010). "A disease like any other"? A decade of change in public reactions to schizophrenia, depression, and alcohol dependence. *American Journal Of Psychiatry*, *167*(11), 1321-1330. doi:10.1176/appi.ajp.2010.09121743

Poppe, E., & Linssen, H. (1999). In-group favouritism and the reflection of realistic dimensions of difference between national states in Central and Eastern European nationality stereotypes. *British Journal Of Social Psychology*, *38*(1), 85-102. doi:10.1348/014466699164059

Sadler, M. S., Meagor, E. L., & Kaye, K. E. (2012). Stereotypes of mental disorders differ in competence and warmth. *Social Science & Medicine*, *74*(6), 915-922. doi:10.1016/j.socscimed.2011.12.019

Sickel, A. E., Nabors, N. A., & Seacat, J. D. (2014). Mental health stigma update: A review of consequences. *Advances In Mental Health*, *12*(3), 202-215. doi:10.5172/jamh.2014.12.3.202

Singleton, N., Bumpstead, R., O-Brien, M., Lee, A., & Meltzer, H. (2001). Psychiatric morbidity among adults living in private household, 2000. London England: The Stationery Office.

Smith, R. H. (2000). Assimilative and contrastive emotional reactions to upward and downward social comparisons. In J. Suls, L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp. 173-200). Dordrecht, Netherlands: Kluwer Academic Publishers. doi:10.1007/978-1-4615-4237-7_10

Tabachnick, B. G., & Fidell L. S. (2012). *Using Multivariate Statistics.* Essex England: Pearson Education.

The British Psychological Society (2009, August). *Code of Ethics and Conduct. Guidance published by the Ethics Committee of the British Pyscological Society.* Retrieved from, http://www.bps.org.uk/system/files/documents/code_of_ethics_and_conduct.pdf

Unidentified author. (2014). *Fact sheet: What is Alzheimer's disease*? Retrieved from, http://alzheimers.org.uk/site/scripts/download_info.php?fileID=2415

Urbaniak, G. C., & Plous, S. (2008). *Research Randomizer.* Retrieved from, http://www.randomizer.org/form.htm

Valentine, H. T., Affleck, D. R., & Gregoire, T. G. (2009). Systematic sampling of discrete and continuous populations: sample selection and the choice of estimator. *Canadian Journal Of Forest Research*, *39*(6), 1061-1068. doi:10.1139/X09-019

Van Teijlingen, E., & Hundley, V. (2002). The importance of pilot studies... this article is reproduced with permission from Social Research Update. *Nursing Standard*, *16*(40), 33-36. Retrieved from, http://search.ebscohost.com.ezproxy.uwl.ac.uk/login.aspx?direct=true&AuthType=ip,shib&db=cin20&AN=2002133774&site=ehost-live

Warner, R., M. (2013). *Applied Statisitcs from Bivariate through to Multivariate Techniques.* California USA: Sage Publications, Inc.

Weiner, B. (2006). *Social motivation, justice, and the moral emotions: An attributional approach*. New Jersey USA: Lawrence Erlbaum Associates Publishers.

Weiner, B., Graham, S., & Chandler, C. (1982). Pity, anger, and guilt: An attributional analysis. *Personality And Social Psychology Bulletin*, *8*(2), 226-232. doi:10.1177/0146167282082007

Werner, P. (2008). Discriminatory behavior towards a person with Alzheimer's disease: Examining the effects of being in a nursing home. *Aging & Mental Health*, *12*(6), 786-794. doi:10.1080/13607860802380649

Werner, P., & Davidson, M. (2004). Emotional reactions of lay persons to someone with Alzheimer's disease. *International Journal Of Geriatric Psychiatry*, *19*(4), 391-397. Retrieved from, http://search.ebscohost.com.ezproxy.uwl.ac.uk/login.aspx?direct=true&AuthType=ip,shib&db=cmedm&AN=15065234&site=ehost-live

Wojciszke, B. (1994). Multiple meanings of behavior: Construing actions in terms of competence or morality. *Journal Of Personality And Social Psychology*, *67*(2), 222-232. doi:10.1037/0022-3514.67.2.222

Wojciszke, B., Bazinska, R., & Jaworski, M. (1998). On the dominance of moral categories in impression formation. *Personality And Social Psychology Bulletin*, *24*(12), 1251-1263. doi:10.1177/01461672982412001