The Psychopathological Foundations of Conspiracy Theorists

By

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Abstract

The primary aim of this thesis was to understand some of the factors that make an individual more likely to ascribe to conspiracy theories. Ascription to conspiracy theories was conceptualised dimensionally along a continuum labelled Conspiracy Theory Affinity (CTA). Strong CTA reflects both a high level of belief in conspiracy theories *and* a tendency to create conspiracy theories (conspiracy theorising). To gauge this, I measured level of conspiracy belief, conspiracy pattern perception (conspiracy theory creation), as well as various forms of psychopathology. The findings of the psychopathology study (study 4) suggested that high conspiracy theory affinity individuals are more likely to present with high levels of paranoia, delusion, general mental pathology, as well as a high level and range of schizotypal traits.

The conspiracy theory literature has also suggested that a lack of control is germane to development and maintenance of the tendency to believe in conspiracy theories (Abalakina-Paap et al., 1999; Douglas & Sutton, 2008; Groh, 1987; Hofstadter, 1965; Leman, 2007; Newheiser, Farias, & Tausch, 2011; Swami et al., 2013; Sullivan et al., 2010; Whitson & Galinsky, 2008). The literature also suggests that one compensatory strategy commonly used to re-establish a semblance of control is illusory pattern perception. Illusory pattern perception or Apophenia, is when unrelated stimuli (either visual or situational) are perceived to be connected in some meaningful way. Therefore, I also sought to establish if a direct link between illusory pattern perception and CTA actually exists. In studies 1 and 2 I experimentally induced a sense of low control using methods that have proven effective in previous research. The findings of these studies suggested that a lack of control does not necessarily reflect that a person is more likely to engage in conspiracy pattern perception. However, the findings also suggested that when a low level of control is felt by an individual who also has a magical thinking style, they are more likely to demonstrate illusory visual pattern perception. Limitations of these studies and therefore their potential influence on interpretations of the findings were also considered.

Another major research aim of this thesis was to elucidate how society perceives conspiracy theorists and how those with strong CTA perceive the label of conspiracy theorist. The findings of two studies (studies 3b and 5) revealed that the majority of respondents considered conspiracy theorists to be characteristically similar to those with current mental health concerns and also convicted criminals, and dissimilar to targets with resolved mental health issues and no current mental health issues (e.g. the average man). In contrast however, those with strong CTA rated the target *Conspiracy Theorist* significantly more favourably than those with low CTA.

Theoretical and clinical implications of these findings across these 5 studies are discussed, and methodological limitations are also acknowledged.

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Dedicated to Lily Kumareswaran 01/07/2004 – 27/07/2011

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Preface

As a clinical psychologist in training, a particular interest of mine has been understanding the reasoning style of subsets of the wider population, and how this interacts with potential psychopathology. One such interest group is commonly referred to as "conspiracy theorists". In chapter one I reviewed the existing literature on the subject of conspiracy theorists and conspiracy theories. I started this review by discussing why the research of conspiracy theorists is important. According to the literature conspiracy theories can be highly influential and therefore can alter the way people behave and also how they feel towards authority. An important aspect of chapter one is also the specification of conspiracy theory affinity, or the dimensional variation in conspiracy theory belief and conspiracy theory creation. I also considered the various facets of conspiracy theories including their content, structure, and the function they serve for those who believe them. The research has also discussed the responsibilities conspiracy theorists believe they have once they have identified a conspiracy, and this literature is also outlined in chapter one. I also included a brief review of how conspiracy theory affinity has been measured in the past to give some context to the problematic issues around considering conspiracy theory belief and conspiracy theory creation synonymously. Finally, in the first chapter I outlined to the extant literature on the personality variables associated with conspiracy theory belief in past research.

The main basis of most of the conspiracy theory literature has been that those who believe them tend to be those who perceive low personal control. Thus I reviewed the relevant literature on how low control can affect individuals, and what strategies are employed to restore a sense of control. Two key compensatory strategies are outlined: causal explanations, and illusory pattern perception. Illusory pattern perception is a phenomenon whereby the perceiver makes meaningful connections between unrelated stimuli. According to researchers illusory pattern perception can occur in both the visual and situational realms. Therefore, I investigated the attributional style and potential

illusory pattern perception in low and high control conditions, and then examined this in relation to conspiracy theory belief and conspiracy theory creation.

When reviewing the conspiracy theory literature, I stumbled upon some fairly strong and negative sentiments about conspiracy theorists both in academic circles, but also by the public on the world wide web. Thus a key concern for my research became to explore the stereotype people tend to have about conspiracy theorists. I measured stereotypes for conspiracy theorists and twelve other targets using the semantic differential technique, and descriptors used in the conspiracy theory literature, as well as in previous semantic differential research. I expected to find empirical support for what I had anecdotally found on the internet but also found in academic literature, that is, that the label of conspiracy theorist carries significant stigma. In fact, I predicted that people would tend to perceive conspiracy theorists as more similar to those with current mental health issues than those without current mental health issues. The findings of this study provided the foundation for which I could build my next study.

In the fourth chapter I reviewed the literature on delusional thinking and schizotypal traits, as both have been associated with conspiracy theory belief in previous research. Next in the chapter I draw conceptual parallels between these forms of psychopathology and conspiracy belief and make predictions about how psychopathology may be related to various strengths of conspiracy theory affinity. In study four I divided my sample by according to how plausible participants thought the conspiracy theories they were presented with were; and also by their tendency to create conspiracy theories. The findings are then discussed in relation to previous research in this field. I was also really interested in examining how those who think conspiracy theories are plausible, and who also create conspiracy theories stereotype the label of conspiracy theorist.

In the final chapter I present a general discussion of the key findings of my research, but also how theories about conspiracy theory belief and creation can account for my findings. I also considered the theoretical and clinical implications of my findings, as well as acknowledging methodological limitations of this research.

Chapter One

The Facets of Conspiracy Theories

> "Our cause is a secret within a secret, a secret that only another secret can explain, it is a secret about a secret that is veiled by a secret."
>
> -Ja'far as Sadiq (6th Imam)

Introduction

Why Study Conspiracy Theorists?

One of the most polarising issues in our recent history has been who was responsible for the 9/11 collapse of the World Trade Centre twin towers. Twelve years on and we appear to be no closer to consensus about what took place on that fateful day (Keniston & Follansbee Quinn, 2013; Swami, Chamorro-Premuzic & Furnham, 2010). Official reports ascribe responsibility to Al Qaeda, an Islamic terrorist group, however, approximately a third of the American population reject this account as accurate (Hargrove, 2006). In fact, a number of theories suggest that the American Government were actively involved in the attack or did nothing to stop it (Mole, 2006; Swami et al., 2010). Both the rejection of official accounts and also the propagation of alternative explanations suggest a significant level of distrust in Governmental transmission of accurate information to the public (Swami et al., 2013). These unofficial accounts have been largely been deigned conspiracy

theories (CTs) generated by "otherwise intelligent people" (Mole, 2006). Certainly 9/11 is not the only significant event to have sparked CTs: the assassination of John F Kennedy, the death of Princess (of Wales) Diana, Watergate, widespread AIDS in African nations and so on have also elicited CTs. CTs also exist for beliefs where a specific event or situation can not necessarily be identified, for instance, that a New World Order is planning to take over the planet's most precious assets, the existence of the Illuminati/Elders of Zion, the Rothschild family's financing major conflicts across history and so on (Newton, 2006).

History has shown us is that when a firmly held CT remains unverified and is transmitted across a community it can result in rejection of public policy and instilment of fear of health-giving medical discoveries. A prominent example of this was seen in 2001when South African President Thabo Mbeki (with the support of the then South African Health Minister Manto Tshabalala-Msimang) banned the dispensation of anti-retroviral medications to South African public hospitals. President Mbeki claimed that a conspiracy was at play where scientists were in league with the pharmaceutical industry, who he believed were exaggerating the link between Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) in a bid to profit from an increase in anti-retroviral sales. He further suggested that the conspirators were covering up information about the supposed toxic side effects of the anti-retrovirals, which he believed in and of itself could cause the symptoms associated with (AIDS). The result of this Governmental action led to the deaths of thousands of South Africans (Grebe & Nattrass, 2012; Nattrass, 2005; Nattrass, 2012).

African-American resistance to public health policy efforts also illustrates how CT belief can affect public well-being. Many African-Americans believe that contraceptives are a form of genocide against their ethnicity (Bird & Bogart, 2005). Research indicates that African-Americans who believe this and related CTs are

less likely to use birth control, placing themselves at significant risk of sexually transmitted diseases (such as AIDS) and unwanted pregnancies (Bates, 1990; Bird & Bogart, 2003; Bird & Bogart, 2005; Ross, Essien, & Torres, 2006; Thorburn & Bogart, 2005). Related research has also found that in a sample of men who have sex with other men, 86% (comprised of more respondents from ethnic minorities than white respondents) were likely to endorse at least one HIV/AIDS CT, including ones relating to distrust of information about HIV/AIDS provided by public health providers (Hutchison, Begley, Sullivan, Clark, Boyett, & Kellerman, 2007). Therefore, HIV/AIDS prevention programmes run by the Government are less likely to be effective if Government are untrusted as a source of information and are held in ill-faith.

Goertzel (2010) provides other examples of how CTs have affected human wellbeing in the past. For example, in 2002 in the midst of severe famine, southern African Governments (of Zambia, Zimbabwe, Mozambique, and Malawi) refused food relief supplies from the United States which they believed to be genetically modified (Zerbe, 2004). Another CT was that the United States Government was complicit in concealing evidence from the public that mercury in childhood vaccinations (e.g measles-mumps-rubella vaccine) can cause autism (Wallace, 2009). This led to a downtrend in parents vaccinating their children, and a consequent increase in childhood disease (Goertzel, 2010).

What the above examples illustrate is that the consequences of CTs being held with much conviction, but with little evidence to their veracity, can have dire consequences for human wellbeing. This is particularly so when the CTs have gone unverified yet engender distrust of publically elected Government officials, rejection of public health policy, and ultimately places the lives of thousands of people at stake. Deparle (1990) discusses CTs as destructive beliefs that lead people to alienate themselves from society.

Research has investigated belief in a variety of CTs (Bates, 1990; Clarke, 2002; Douglas & Sutton, 2008; Goertzel, 1994; Harrison & Thomas, 1997; McCauley & Jacques, 1979, McHoskey, Miller, 2002; Swami, Chamorro-Premuzic, & Furnham, 2009; Swami, Chamorro-Premuzic, & Furnham, 2010). Early research of this area considered the personality factors and thinking style most commonly associated with CT belief (Abalakina-Paap, Stephen, Craig, & Gregory, 1999; Grzesiak-Feldman & Kaminska-Feldman, 2005). However, there is much debate surrounding the nature of conspiracy theorists, and whether believing in CTs should be considered a form of psychopathology (Groh, 1987; Hofstadter, 1965; Mirowsky & Ross, 1983; Jameson, 1991; Pipes, 1997; Melley, 2000; Bale, 2007; Aupers, 2012; Moritz et al., 2012; Wulff, 1987). Some researchers have proposed that belief in conspiracies can to some extent be considered a *collective delusion* (Groh, 1987), and therefore is a phenomenon seen in groups, whereas other have argued that conspiracy thinking can also be held at the individual level (Freeman, Garety, Bebbington, Smith, Rollinson, Fowler et al., 2005). For instance, Zukier (1987) considers that in essence CTs are intergroup phenomena, whereby they are held by a solidarity, they operate in solidarity, and are against solidarity. That is, according to Zukier (1987), CTs are typically held by a group of people, who believe that conspiracies are perpetrated by another group of people against them. Other researchers have suggested that CTs can be considered a severe threat belief whereby an individual perceives that they are at high risk of being grievously harmed (Freeman et al., 2005). Clarke (2002) presented an integrated view which considers both individual and collective levels, proposing that CTs tend to start with an individual, and are then culturally transmitted until they become a belief held by a collective.

Despite suggestion that psychopathology may be implicated in CT belief (e.g. Hofstadter, 1966) little research has empirically investigated this notion

(Darwin, Neave, & Holmes, 2011; Swami et al., 2013). The present thesis investigates to what extent CT belief can be accounted for by psychopathology; and also the perceptual style implicated in endorsement and generation of CTs. Research attention has also focused on another interpretation which is that CT belief serves a rational function, and is therefore is not necessarily pathological (Pratt, 2003; Raab, Ortlieb, Auer, Guthmann, & Carbon, 2013; Sunstein & Vermeule, 2009; Swami et al., 2013; Waters, 1997; Zonis & Joseph, 1994). For instance, Swami et al. (2013) states that "…CTs offer a coherent explanation for phenomena that is not otherwise forthcoming" (p. 71).

Some authors also contend that CT research is an important way to explore how humans generate and maintain theoretical explanations (Keeley, 1999). Indeed researchers have suggested that CTs operate similarly to other forms of theoretical explanation whereby an event is perceived, and in order to explain the event, hypotheses are generated (Graumann & Moscovici, 1987). Therefore, the present thesis is also intended to shed some light on the factors that make a person more likely to engage in this particular form of theoretical explanation, and under what circumstances.

Another considerable gap in the extant CT literature is any purposeful distinction between CT believers compared to those who *generate* CTs. In this thesis I work towards somewhat distinguishing between these variations, in the hope that readers of this body of work may come to slowly tease apart some of the differentiating factors between various degrees if CT ascription.

Belief in CTs has been researched worldwide (Byford & Billig, 2001; de Zavala & Cichocka, 2012; Douglas & Sutton, 2008; Grebe & Nattrass, 2012; Goertzel, 1994; Grzesiak-Feldman, 2007; Grzesiak-Feldman & Suzek, 2008, Nattrass, 2005; Nattrass, 2012; Swami et al., 2011; Zonis & Joseph, 1994), with the popularity of CTs varying depending on the location of the sample studied. Whilst

the majority of CT research relates to American CTs, research has also been conducted across other cultures including in the Middle East (Zonis & Joseph, 1994), Africa (Grebe & Nattrass, 2012; Nattrass, 2005; Nattrass, 2012), Asia (Swami, 2012), and Europe (Byford & Billig, 2001; de Zavala & Cichocka, 2012; Douglas & Sutton, 2008; Grzesiak-Feldman, 2007; Grzesiak-Feldman & Suzek, 2008; Stieger, Gumhalter, Tran, Voracek, & Swami, 2013; Swami et al., 2011). As an example, Goertzel (1994) found that 21.1% of his American New Jersey sample believed that at least two of the CTs presented to them (mostly about topics relevant to the United States of America in the early 1990's, with two of them having scope outside America also) were true, 19.1% believed at least three CTs, where 6.2% did not believe that any of the CTs were true. This pattern of findings suggests that in Goertzel's (1994) sample, belief in presented CTs was more common than non-belief. Therefore, CT belief is a phenomenon that occurs often enough to warrant attention and research. No research on the presence or popularity of CTs in Aotearoa New Zealand has been published. Therefore the present thesis will be a considerable contribution to the CTs research pool, and how conspiracy theorizing presents in New Zealand.

Having thus far discussed the rationale for CT research, I now seek to clarify the distinction between CT believers and those who create CTs. I then turn my attention to discussion of what distinguishes a CT from other forms of theoretical explanation, what happens after one adopts a CT, how CT belief is measured, and also the personality variables found to correlate with CT belief.

The Dimensionality of Conspiracy Theory Affinity

The literature largely uses the ideas of conspiracy belief and conspiracy theorists interchangeably; when in fact there may some differentiating aspects to consider. I am proposing that CT belief and CT generation could reasonably be conceived as continuous in nature (as opposed to categorical). For instance, it does not appear to make sense to consider someone who believes one CT as synonymous with an individual who believes many CTs and also creates CTs. In this body of work I have conceptualised these two aspects along a continuum (Figure 1) I refer to as Conspiracy Theory Affinity (CTA). CTA refers to the degree of affinity one feels with CTs, whether in relation to belief alone, or belief and CT generation. More specifically, those who believe CTs but do not create them sit lower on the continuum; whereas those who believe in and generate CTs sit higher on the continuum. There are also likely to be shades of variation between these two positions on the continuum.

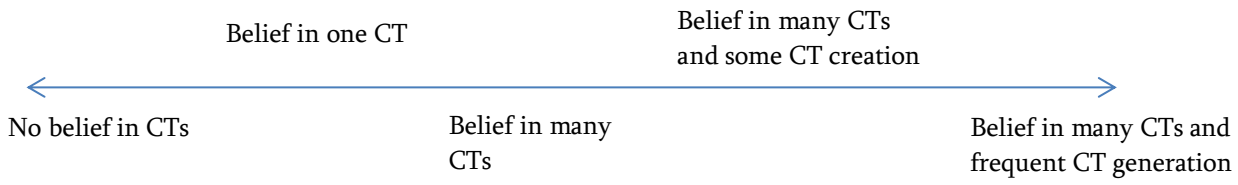

Figure 1. Conspiracy Theory Affinity (CTA) conceptualised along a continuum.

As previous research has never identified the continuous nature of CTA (e.g. Bale, 2007; Banas & Miller, 2013; Clarke, 2002; Douglas & Sutton, 2011; Goertzel, 2010; Goldberg, 2004; Keeley, 1999; Swami et al., 2010), it is hard to discern which pieces of research were intended to account for CT belief versus CT creation. For the purposes of this thesis, I will not seek to change the terminology used when

referring to previous research. However, when regarding the current research I will clearly identify when I am discussing CT *belief* versus CT *creation*.

My next key discussion note is identifying what is actually meant when someone refers to a "conspiracy theorist". As argued above, CT belief and CT creation are not one and the same. I have come to consider conspiracy theorists as those who create CTs, and those who only believe in CTs to be CT believers. My conceptualisation of CTA as continuous in nature, implies that conspiracy theorists are those who have strong CTA, meaning they must first believe CTs before themselves generating CTs. However, those who only believe in CTs are not conspiracy theorists.

In this section I have talked about the variations in CTA. But what actually constitutes a CT? In a colloquial sense, this may seem obvious; however, empirical research has been conducted on the typical content of CTs, how they are structured, and the purpose or function they serve for the believers. Thus, before investigating how psychopathology may be related to conspiracy theorising, it is important to consider three key aspects of CTs. Such consideration will allow more integrated discussion of how psychopathology may develop as the result of or in the context of conspiracy theorising.

Conspiracy Theories as a Construct

Content

Researchers have offered a number of definitions of conspiracies, conspiracy beliefs, and CTs, and have often used these terms interchangeably. A conspiracy has most commonly been described as being composed of multiple elements including a number of agents (be they human or supernatural; *actors*) with covert goals (*intention*; Zonis & Joseph, 1994*)* which are malevolent in nature and which they seek to realise *(behaviour*; Zonis & Joseph, 1994). Other definitions also mirror

the notion of multiple agents, for instance Moscovici (1987) describes the idea of conspiracy as implying that "…members of a confession, party, or ethnicity (Jews, Freemasons, communists, pacifists, etc.) are united by an indissoluble secret bond" (p.154); and according to Pruitt (1987) "CT is the belief that a group of people is plotting to harm one's interests" (p. 191). Further, Keeley (1999) has suggested that when a theory supposes that there is only one 'conspirator' involved, it does not hold up as a CT, but is merely a belief about the actions of one individual. Similarly, Moscovici (1987) has stated that conspiracy theorists will acknowledge a conspirator as an individual, but only to the extent that they have membership to an esoteric conspiratorial group, and their identity may either be overt or covert.

Keeley's (1999) full definition asserts that a CT attempts to *explain* the cause of historical event(s) set into motion by a small group of agents working in secret. Kruglanski (1987) also details that a CT is an "elaborate schema" (p. 219) where there are a number of actors with a common goal to plot against another group, also referred to as *Masada syndrome* (Kruglanski, 1987). CTs have also been thought of as explanations about explanations (meta-explanations), used when one seeks to make sense of a situation (Swami et al., 2013). Synthesis of these definitions has led me to consider CTs as a form of explanation, where multiple agents share a surreptitious intention, bond, or goal to cause harm to another group.

However, according to Douglas and Sutton (2008), CTs can influence an individual's attitudes without conscious awareness. Douglas and Sutton (2008) presented undergraduate students with five statements relating to the death of Princess (of Wales) Diana. Participants were required to rate their current agreement and retrospective (before reading the statements) agreement with each of the statements, as well as what they perceived the current and retrospective agreement with the statements to be for their classmates. Participants were accurate in their approximation of how much their classmates attitudes had

changed, but underestimated how much their own attitudes had changed (between pre-test and post-test agreement). Douglas and Sutton (2008) interpreted this phenomenon to be a consequence of people underestimating how easily they can be persuaded, compared to how easily others can be persuaded. This finding suggests belief in or creation of CTs is not necessarily a conscious strategy.

According to Groh (1987), the content of CTs are generally irrational beliefs about real or paranormal malevolent forces causing harm to others. Thus, believers of CTs will often villanize the conspirators, attributing evil characteristics to their disposition and motives. Although Tobacyk and Milford's (1983) definition of paranormal beliefs was not specific to CTs, theirs is the most commonly referred to definition in research on paranormal CTs. Their definition encompasses beliefs in "…religion, psi…, the occult, witchcraft, superstitions, the supernatural, and extraordinary and extraterrestrial life forms" (Tobacyk & Milford, 1983, p.1029). Jacques-Chaquin (1987) examined one of the earliest examples of conspiracy regarding the paranormal, that is, the witches' conspiracy - an inquisition between the 15th and 17th centuries into allegations of the presence of a sect of witches. The conspirators, or witches, were considered to be those who had the ability to brew poisonous beverages, or cause actual harm to others by uttering a threat accompanied by some bodily gesture judged to be suspicious, which coincided with some undesirable event occurring. For example, stating that one day a particular woman will be sorry for her vanity, touching her cosmetics or hairbrush, and then that woman begins to lose her hair. The aim of the witches was to "ruin the human race, to sow destruction of material good, to murder, and commit all crimes against nature (sodomy, incest, cannibalism) destined to insult the laws of God and man…to the detriment of public interest and to the disadvantage of the honour of God" (Bodin, 1580;1979, p.7, as cited in Jacques-Chaquin, 1987). The motives of the witches were equated with those of demons, who work separately, but always with

the shared goal for the loss of souls (Institoris & Sprenger, 1486; 1973, as cited in Jacques-Chaquin, 1987). Jacques-Chaquin (1987) contends that such a group of witches never existed, and was a "conspiracy myth" (p.84) that he likened to an elaborate collective imagination or delusion that was transmitted over time (across two centuries) through literature. For many years now, CTs relating to unidentified flying objects and aliens have also been popular (Harrison & Thomas, 1997; Keeley, 1999).

Other (non-paranormal) CTs tend to revolve around societal factors such as politics, religion, celebrities, disease and so on. Such CTs number in the hundreds and so an exhaustive list will not be provided here. However, examples of common CTs include that Elvis Presley (Clarke, 2002) and Michael Jackson (Lee & Goh, 2013) are still alive; that Princess Diana's death was a planned attack (Douglas & Sutton, 2008); that the Trans World Airline flight 800 crash was the result of accidental US Navy misfire (Miller, 2002); that John F. Kennedy's death was not the work of a lone assassin (Harrison & Thomas, 1997; McCauley & Jacques, 1979; McHoskey, 1995); that AIDS is a man-made disease created with the intention of Genocide of Africans and Homosexuals (Bates, 1990; Goertzel, 1994); that the US Government is covering up intelligence they have on extra-terrestrial life (Goertzel, 1994; Harrison & Thomas, 1997); as well as numerous CTs relating to the 9/11 downing of the twin towers (Swami, Chamorro-Premuzic, & Furnham, 2009; Swami, Chamorro-Premuzic, & Furnham, 2010). For a more comprehensive list of CTs see Newton (2006).

Structure

Conspiracy theorising has been considered to be similar to other forms of theorising, where an event is observed, and hypotheses are formulated to try and explain the causality and mechanisms operating within it (Graumann & Moscovici,

1987). Melley (2000) notes that CTs have broad explanatory power, with the ability to explain much within one theory. Melley (2000) suggests the explanatory power of CTs makes them highly attractive to those who are faced with some form of anxiety or crisis they need to explain. Researchers also contend that a theory that claims to explain everything, actually explains nothing (Graumann & Moscovici, 1987; Kelley, 1999). Such explanatory breadth is virtually impossible, because the data that such theories are based on are unlikely to be all true (Keeley, 1999). According to researchers, because conspiracy thinking tends to be Manichean in nature (a battle between good and evil; Groh, 1987), so will be the theories espoused from such a thinking style.

Research has discussed how belief in conspiracies may be characterised as a generalised ideological trait, where an individual believing one particular CT is more likely to believe in other CTs (Goertzel, 1994; Leman & Cinnirella, 2007; Swami, et al., 2010). Additionally, personal relevance of the CTs may play a strengthening role in this framework. Goertzel (1994) found that African-American participants who believed in one CT to do with their ethnicity were more likely to believe in other CTs relevant to their particular ethnicity ("The American government deliberately put drugs into the inner city communities" - 62%; "The government deliberately spread the AIDS virus in the black community" - 31%; "The FBI was involved in the assassination of Martin Luther King" – 68%). These findings of Goertzel (1994) and similar studies have been interpreted in terms of monological belief systems (Swami et al., 2011; Swami et al., 2013). Such belief systems are structured in a 'closed' manner, in that they do not interact with their context in a reciprocal manner (except in a very cursory way). As a consequence, this system does not adjust beliefs according to feedback loops or evidence counter to beliefs. This is as opposed to dialogical belief systems, which do actively engage in open and reciprocal style with their environment. Therefore, according to

Goertzel (1993) those who possess monological belief systems will apply the evidence for one CT as affirmation for other related CTs.

Crocker, Luhtanen, Broadnax, and Blaine (1999) offer an alternative explanation for belief in multiple CTs. These researchers suggest that in general the African-American community is more likely to endorse African-American discrimination CTs, whilst white Americans have a tendency to reject such CTs, because each respective racial group has more or less familiarity with such CTs. For instance, it is possible that African-Americans have more access to information about such CTs through storytelling and so on, whereas, non-African-Americans may need to actively exert more effort in order to access the same information (e.g. by looking it up on the internet or getting a book out of the library on the topic). Due to increased familiarity with such CTs, African-Americans may be slower to reject their validity compared to non-African- Americans who are less familiar with the idea of such discrimination (Crocker et al., 1999).

A theme that has received limited empirical attention has been how conspiracy theorists respond to evidence contradictory to their beliefs. For instance, according to Sunstein and Vermeule (2009) CTs "…[are] unusually hard to undermine or dislodge, they have a self-sealing quality, rendering them particularly immune to challenge" (p. 204). Similarly, Groh (1987) contends that the founding principles of CT beliefs are beyond the rationality and logic that can be applied to normal scientific thinking. Therefore, attempting to present scientific disconfirming evidence against paranormal CTs would not be seen as relevant by those who held those beliefs (Groh, 1987). Other research has suggested that conspiracy theorists do contemplate contradictory evidence, but rather than disregarding completely they accommodate for the contradiction by modifying their initial hypotheses, or creating ancillary ones that prevent their theories from being disproved (Clarke, 2002; Leman, 2007). Keeley (1999) furthers this notion,

suggesting that evidence against a CT can also actually serve in favour of the CT; with growing evidence against CTs as being considered evidence of how much authorities want the "official story" to be believed.

Function

Possibly the most important aspect of CTs is the function they serve for the conspiracy theorist. CTs are an attractive option for those faced with uncertainty, complexity, and powerlessness (Swami et al., 2013; Sullivan, Landau, & Rothschild, 2010). These functions can also be conceptualised as perpetuating factors for continued belief in CTs even in the face of disconfirming evidence. According to researchers (Groh, 1987; Melley, 2002; Swami et al., 2013; Uscinski, Parent, & Torres 2011) CTs can serve the purpose of making situations perceived as complex more manageable for the person holding the belief. This is done by reducing the complexity of the situation by using a simplified causal explanation to understand why an event has occurred, thus reducing the associated stress a person experiences, therefore giving one a sense of closure (Leman, 2007; Leman & Cinnirella, 2013). Furthermore, when a person has conflicting perceptions about an event, information they have received, or a behaviour they are considering, CTs can mitigate this internal dissonance and subsequent stress the person experiences (Desantis & Morgan, 2004). Earlier in this chapter I cited research where birth control CTs in African-American samples were found to be a barrier to participants engaging in safe sex practices (Bird & Bogart, 2003; Bird & Bogart, 2005; Ross, Essien, & Torres, 2006; Thorburn & Bogart, 2005). It is possible to apply cognitive dissonance theory (Festinger, 1957; Festinger, 1972) to this example. Individuals in the samples who prefer to have unprotected sex may also at the same time experience cognitive discomfort having received information about sexually transmitted diseases and unwanted pregnancy. Ascribing to birth control CTs may

alleviate this cognitive discomfort, and these individuals will hence be more likely to engage in risky sexual behaviour (unprotected sex) (Desantis & Morgan, 2004).

Early attributional frameworks (Heider, 1958; Kelley, 1973; Rotter, 1966; Rotter, 1990; Weiner et al., 1971; Weiner, Nierenberg, & Goldstein, 1976) are still prominent theories in psychological and sociological research today (Weiner, 2008). Of particular relevance to our discussion here, attribution theory has been applied to CT research to offer an explanation as to how conspiracy theorists perceive causality for the events which cause them concern (Clarke, 2002; Harvey & Weary, 1984; Kelley & Michela, 1980; Kruglanski, 1987). A key notion underlying why people make attributions is that humans have an innate need to explain (LeBoeuf & Norton, 2012; Heider, 1958; Katz, 1960; Kay, Gaucher, McGregor, & Nash, 2010; McCauley & Jacques, 1979; Salt, 2008). This need is even more pronounced when an individual experiences a sense of powerlessness and develops a motivation to re-establish a sense of control (Clarke, 2002; Melley, 2002). Explanations of causality curtail the aversive nature of low subjective control, because it offers some form of understanding of why or how a situation has come about (Clarke, 2002). Being able to provide some form of explanation, even if at first it seems ridiculous, is a preferred state to feeling powerless (Swami & Coles, 2010). In accordance with this contention, Pittman and Pittman (1980) reported that following an experience of low-control an individual is more likely to try and infer causality. It was concluded that causal inference is a strategy for enhancing sense of personal control.

The extant literature describes two key ways in which one could attribute causality for an event. First, one could explain the cause of an event to lie with the disposition (internal factors) of a person (e.g. personality factors), or situational (external) factors (e.g. economic factors; Heider, 1958; Kelley, 1973; Rotter, 1966; Rotter, 1990). Clarke (2002) suggests that people will usually employ only one of

these attribution types at a time, although there are times when they may incorporate both to explain a situation. A phenomenon known as the fundamental attribution bias is considered a natural and cognitively-wired response to the environment (Harvey & Weary, 1984; Clarke 2002). This bias reflects the tendency that most people will overestimate the influence that dispositional factors have on an event occurring; and at the same time underestimate the influence that situational factors have on that event occurring (social judgement bias). This error has been reliably replicated a number of times (see Harvey & Weary, 1984 for a review). According to Clarke (2002) CTs are inherently theories about the disposition of the conspirators. That is, the conspirators, whoever they may be, have the intention and personality to carry out the conspiratorial action(s). Because the fundamental attribution error is such a reflexive and embedded response, giving up a dispositional explanation (e.g. CTs) for a more situational-based one is very cognitively effortful (Andrews, 2001). Additionally, as previously described, those who believe in conspiracies are not always explicitly aware of their beliefs; therefore, renouncing a CT is not always possible (Clarke, 2002; Douglas & Sutton, 2008).

Other researchers (Abalakina-Paap, 1999; Goertzel, 1994; Nefes, 2012; Volkan, 1985) have come to understand that anomia (feeling alienated from society) can account for the blame attribution seen in conspiracy theorists. In fact, in these studies, the biggest predictors of belief in the CTs presented was found to be (in order) anomie, minority group status, and lack of interpersonal trust. According to Melley (2000) one of the functions of CTs is to protect one's own integrity from the social order/society – to understand one's own position in relation to society. And thus Melley (2000) suggests that the process of conspiracy theorising is synonymous with regarding oneself as in opposition with society. Therefore, anomie can be understood as a general sense of alienation, or distance

between oneself to others, i.e. feeling a low level of integration with society (Srole, 1956). Therefore those who experience anomie will feel discontent towards the system in which they exist, and some will seek a way to restore balance to their world by way of a CT. CTs allow the anomic individual to ascribe blame to a specific entity outside themselves, thereby making them feel less vulnerable to the unknown; thus enhancing or maintaining their perception of one's own integrity. Srole (1956) hypothesised that anomie is a trait that can develop as a result of sociological processes, such as belonging to a disadvantaged societal group (e.g. a minority group of some kind).

Previous research has also aimed to understand the underpinnings and mechanisms of conspiracy theorising by focusing on the heuristics and inferences that conspiracy theorists utilize in order to claim a conspiracy. For instance, studies (Le Boeuf & Norton, 2012; Leman & Cinnirella, 2007; McCauley & Jacques, 1979) have found evidence for the 'major event-major cause' paradigm, where people tend to endorse a major cause for major events, and similarly, minor causes for minor events (e.g. the assassination of a president is more likely to be seen as a result of a CT compared to a scenario where the president is attacked but survives). These researchers suggest that explanations for major events where only minor causes are offered are harder for some people to accept because they require consistency between cause and effect (McCauley & Jacques, 1979). For example, John F. Kennedy's death was officially reported to be the work of a lone assassin, however, conspiracy theorists tend to reject the lone assassin explanation in favour of theories that one or more groups were responsible for his death (e.g. the CIA, FBI, Mafia etc; McHoskey, 1995). That is, a minor explanation that one person murdered John F. Kennedy tends to be rejected (by conspiracy theorists) in favour of a major explanation that the murder was the work of a group.

It is also important to note that whilst there are a number of unverified CTs in circulation, there is also evidence that some conspiracies really have taken place. One example is the Watergate scandal of the 1970's where US President Nixon and his administration were found guilty of organising a series of break-ins of the Democratic Party's headquarters in order to install listening devices. The revelation of President Nixon's involvement led to his later resignation (de Haven-Smith, 2010). Another substantiated CT is known as the Iran-Contra Affair (Keeley, 1999). In the 1980's, claims of conspiracy emerged in Beirut that the Reagan administration sold missiles to Iran in exchange for U.S hostages held in Lebanon. A portion of the proceeds from the sale of these arms were channelled towards financial support of a Nicaraguan rebel group (Banks, 1987; Cavender, Jurik, & Cohen, 1993). The Reagan administration initially denied these events had taken place, vowing that they stood by Governmental pledge to never negotiate with terrorists, and also prohibition of U.S financial aid to the civil war in Nicaragua. Congress investigated the allegations and was able to provide evidence that both counts of wrong-doing by the administration had taken place (Banks, 1987; Cavender et al., 1993).

There is also reason to suggest that some CT belief is founded on historical evidence of maltreatment towards some groups. For instance, a well-established finding is that African-Americans are more likely believe CTs relating to the targeting of their race compared to white Americans (Goertzel, 1994). Belief in CTs by African-Americans may have been predisposed by their awareness of the Tuskegee syphilis study (Thomas & Quinn, 1991). In this study by the Tuskegee Institute (which was conducted with the active support of the U.S Public Health Service) across approximately 40 years, the progression of naturally occurring syphilis in a group of African-American men was tracked (Thomas & Quinn, 1991). The men in the study agreed to participate but were misled about the purpose of

the study, and thus were not given sufficient information to provide informed consent. Participants who were afflicted with syphilis were often not notified of their illness, and treatment of the condition was intentionally withheld from 600 men so as to track the natural progression of the disease (Bates, 1990). Furthermore, incentives for participation were advertised such as free medical exams, free meals, and burial insurance (Thomas & Quinn, 1991). Knowledge of the inequality African-Americans were afflicted by as result of the actions of the Public Health Service in the case of the Tuskegee syphilis study, may serve to undermine trust in the US Government; thus making CTs about the intended genocide of African-American's through AIDS seem more plausible (Thomas & Quinn, 1991).

An important lesson to be taken from the aftermath of the Tuskegee syphilis study and the Watergate scandal is that CTs can make people question the motives of their chosen representatives in Government. Petitioning Governments to be transparent in their processes could lead to a reduction in unethical behaviour, greater accountability to the public (Sasson, 1995), and hence possibly a reduction in mistrust of authority.

In sum, CTs are multifaceted forms of explanation whereby they typically relate to perceived clandestine mal-intentions by one group towards another. They have been conceptualised as generalised ideological traits, where belief in one CT increases the likelihood of belief in other CTs. CT believers can also consider evidence for one CT as evidence for other CTs. CTs are also malleable, where they will accommodate disconfirming evidence in a way that supports the CT. But once a CT has been adopted, what happens then? According to Moscovici (1987), conspiracy theorists will tend to believe that they are privy to certain information, and that with this knowledge come certain responsibilities they must act out.

The Duties of Conspiracy Theorists

Even though the CTs people believe in may not be factually realistic or evidentially substantiated, the conspiracy theorist may still affectively respond to the CT as if it were real, for instance with anxiety (Zukier, 1987). Once a CT belief has been adopted, another response can be a burgeoning sense of responsibility, because of the self-perception that they have unique insight and knowledge about the CTs (Moscovici, 1987).

Moscovici (1987) outlined two key responsibilities of being a conspiracy theorist, the first of which is to make the existence of this conspiracy known to others. The only instance in which this would not be expected would be if outwardly endorsing the CT would interfere with the process of discovering the identity of the conspirators. According to Moscovici (1987), if the masses (who are innocent) unite in their pursuit of the conspirators, the conspirators are more likely to be discovered. Only once the identity of the conspirators has been discovered can they be conquered or attacked. This is an idea that Keeley (1999) also supports. As a consequence, these malevolent beings (the conspirators) end up becoming the minority and thus their power diminishes. The most common form of attack on conspirators is to directly accuse them of the suspected conspiracy, for which they must be persecuted and atone for in some way (Moscovici, 1987). Once the conspirators have been reduced to an identified minority they will be demonised. This process becomes allowable in the minds of conspiracy theorists as a result of heavy focus on the differences between themselves and the conspirators. Thus widening the perceived distance between the two groups, appears to make it acceptable for conspiracy theorists to depart from the typical societal norms and no longer treat conspirators as humans. Thus “to insult them, to rob them, even to exterminate them is not a crime but a merit” (Moscovici, 1987, p. 167).

Following on from this the second responsibility of the conspiracy theorist is to focus on the disposition of the conspirators, and emphasise how much they differ from the masses (Moscovici, 1987). Consideration of social identity theory (SIT; Turner, Brown, & Tajfel, 1979; Mugny & Papastamou, 1982) and intergroup behaviour can explain how self- and other- categorizations may operate to weaken the influence the conspirators have on the masses. That is, people tend to be less effectively influenced by those they do not identify with. People have a tendency to categorize themselves and others, forming ingroups and outgroups (Turner, et al., 1979; Mugny & Papastamou, 1982). In the case of CTs, the ingroup is the category where people will assign themselves and those they feel related to in some way, whereas an outgroup is the dissenting category. When members of an ingroup become aware of how they differ from the outgroup, they can develop a sense of competitiveness with the outgroup. When an outgroup is identified and the psychosocial differences between the two groups are emphasised (Mugny & Papastamou, 1982), resentment for the outgroup can build (although according to Turner et al. this is not *always* the case), and this in itself can attenuate the power the outgroup has in influencing the ingroup's behaviour and actions. The third obligation of the conspiracy theorist is to impel the ingroup to take action against the conspirators, although Moscovici (1987) does not appropriately elaborate on what this might entail; one could infer he was referring to the process of chastising the outgroup as described in the quote mentioned earlier.

Measurement of Conspiracy Theory Affinity

CT belief has most commonly been measured using questionnaires (Abalakina-Paap et al., 1999; Bogart & Thorburn, 2003; Crocker et al., 1999; Goertzel, 1994; Swami et al., 2010). Typically researchers in this field have devised their own measures of CT belief, rarely utilising CT belief tools developed by

others[1]. As a result little attention has been expended on the psychometric properties of these tools (other than internal consistency of items), and this introduces some challenges in drawing comparisons across studies. For instance, different CTs have been selected between the measures, or the similar CTs have been selected but with different wording (Brotherton, French, & Pickering, 2013). However, recently two research articles have published two measures of CT belief: the Conspiracy Mentality Questionnaire (CMQ; Bruder, Haffke, Neave, Nouripanah, & Imhoff, 2013); and the Generic Conspiracist Beliefs Scale (GCBS; Brotherton et al., 2013).

Both measures were designed with the purpose to measure general tendency to endorse CTs. The items of the measures are non-event based, meaning they may be appropriate for administration across a variety of cultures (Brotherton et al., 2013). Both measures employ a Likert-type response scale where participants are required to indicate how likely they think each CT is. The key difference between the two measures is that the GCBS scale is comprised by 15 items, and the CMQ has only 5 items. The CMQ has also previously been used by Darwin et al. (2011), meaning that future use of this measure can allow for comparisons across time and cultures. Ideally, future research will seek to employ one of these measurement tools, where the psychometric properties have been investigated across culture and time.

To my knowledge only one study has considered measurement of CT creation (Whitson & Galinsky, 2008). Their study presented participants with three scenarios outlining events relating to a protagonist, and then in a later study events relating to the responder. Participants were then required to rate how likely they believed the events in each scenario were related to the outcome of the event (for

[1] Swami and colleagues have tended to use the same questionnaire devised by Swami et al. (2010) across later studies led by Swami; thus providing some basis for comparison across their research.

either the protagonist or responder). Whitson and Galinsky (2008) did not report any psychometric properties for their measure.

Characteristics of Conspiracy Theorists

Using purpose-designed tools to measure CT belief, as described above, previous research has suggested that there are a set of personality variables that are correlated with CT belief. These individual differences include traits such as anomie/alienation (Abalakina-Paap, Stephen, Craig, & Gregory, 1999; Goertzel, 1994; Hofstadter, 1954; Nefes, 2012), low interpersonal trust (Goertzel; Abalakina-Paap et al., 1999), authoritarianism (Abalakina-Paap et al., 1999), minority group status (Goertzel, 1994), paranoia (Freeman et al., 2005), low self-esteem (Abalakina-Paap et al., 1999), low sense of personal control (helplessness; Abalakina-Paap et al., 1999; Hofstadter, 1958;), hostility (Abalakina-Paap et al., 1999; Moscovici, 1987), and an external locus of control (Clarke, 2002). In fact, the biggest predictors of belief in the CTs presented was found to be (in order) anomie, minority group status, and lack of interpersonal trust (Abalakina-Paap, 1999; Goertzel, 1994; Nefes, 2012; Volkan, 1985). Anomie was discussed earlier in this chapter, but now we turn to description of the other personality variables common among conspiracy theorists.

According to researchers (Abalakina-Paap et al., 1999; Goertzel, 1994; Moscovici, 1987) hostility and aggression can be useful for conspiracy theorists as it can provide a means for releasing pent-up negative tension. These researchers suggest that conspiracy theorists will channel their hostility toward targets they believe to be responsible for their personal disadvantage, or disadvantage for the group they belong to (e.g. ethnic minorities). Indeed Moscovici (1987) stated that "Resentment fuels the conspiracy mentality" (p. 640), reflecting that hostility could be considered both a contributing and maintaining factor for CT belief. Earlier in this chapter I discussed attributional research whereby CTs can be conceived as

explanations of causality (Clarke, 2002; Harvey & Weary, 1984; Kelley & Michela, 1980; Kruglanski, 1987). According to Weiner (2010), a significant influence in the causal explanation process is emotions, further suggesting that anger can be a powerful motivating factor in the process of attributing causality about the actions of others. Therefore, the perception of others behaviour as conspiratorial may be influenced by underlying hostility in some conspiracy theorists.

The findings of at least one study (Abalakina-Paap et al., 1999) suggest that strong CT belief is correlated with high scores on measures of Authoritarianism. Altemeyer (1999; 2004) states that authoritarians are individuals who tend to submit to established authorities (they trust authority), but that they also tend to be highly self-righteous individuals who make incorrect inferences from evidence, are fearful of a dangerous world, and are dogmatic (close-minded). Altemeyer (2004) also suggested that authoritarians can tend to be prejudicial as a result of a combination of both fear and self-righteousness. Abalakina-Paap and collegues (1999) argue that to such individuals, CTs may have particular appeal as CTs can be used as vehicles for ascribing blame to outgroups. In a similar vein, Srole (1956) suggested that those who are highly anomic can have a propensity to develop authoritarian traits over time.

Recent research by Douglas and Sutton (2011) suggested that one individual difference predictive of endorsement of CTs was morality (how much a person conforms to right conduct[2]), and that this relationship could be explained by an individual's personal willingness to themselves be part of the conspiracy. Douglas and Sutton (2011) used projection theory to examine the predictive capacity of morals and willingness to conspire for CT endorsement (agreeing that a conspiracy really took place). Projection is a process whereby an individual applies their own feelings, thoughts, motivations, and actions to others (Douglas & Sutton, 2011). Therefore, an individual may try to understand why another person has behaved as they did, by contemplating how they might have behaved themselves in a similar situation (Douglas & Sutton, 2011).

In the context of conspiracy thinking, Douglas and Sutton (2011) reasoned that a conspiracy theorist would likely project their own subjective moral qualities and apply them to the conspirator. The argument follows that if a conspiracy theorist who does not conform to typical societal norms of "right conduct", they would be more willing to conspire, and consequently also more likely to believe certain CTs to be true. Similarly, if a person's character is one of beneficence, they would be less willing to conspire, and consequently less likely to believe that certain conspiracies actually took place. To test this contention, participants were asked to complete either a Machiavellianism scale or a positive moral prime task,

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[2] A succinct definition of 'morality' is hard to come by, and possibly this is because there is no universal governing body who ultimately decides what is or is not moral. Most literature on morality, even as it pertains to CTs (e.g. Douglas & Sutton, 2011; van Prooijen & Jostman, 2013) does not actually define morality. However, contributors from the fields of law and philosophy have attempted to offer some structure to the concept. Typically, morality refers to right conduct towards self and others (Perry, 2000; Prinz, 2008). A moral deed is one where the majority of others would look upon it with approval, and conversely, an immoral deed is one where the majority of others would judge with disapproval (Prinz, 2008).

and then read 17 statements about a range of CTs. Participants were required to then indicate how willing they would have been to participate in the conspiracies if they had been in the same position as the conspirators, and also to indicate their level of agreement with the statement (about whether the conspiracy took place or not; Douglas & Sutton, 2010).

The Machiavellianism scale was used as a measure of poor morality (low conformity to societal norms of right conduct). According to Christie and Geis (1970), Machiavellianism is a personality trait characterised by behaviour that is self-serving, deceitful, that typically disregards the ethics or needs of others. Therefore, Machiavellianism seems an appropriate measure of low conformity to right conduct. By contrast, in the positive moral prime task, participants were asked to recall (think and write about) a situation where they "behaved in a moral and decent manner, by helping another person" (Douglas & Sutton, 2011, p. 547). In both conditions, personal willingness to conspire fully mediated the relationship between morality and endorsement of CTs. Personal willingness to conspire accounted for 67% of the relationship in the poor morality condition, and 74% in the positive moral prime condition. Therefore, it could be reasoned that a subgroup of conspiracy theorists with an impoverished moral code, may be able to conceive that certain conspiracies took place, because the actions of the conspirators are not so different from how they would act themselves. In contrast, those individuals who are more innocent-minded may be less able to conceive that such conspiracies actually took place, because the actions of the conspirators are far removed from the way they believe they themselves would act. This study could have been substantially strengthened if the experimental design had considered the order-effects of always presenting the Machiavellianism scale before the other two measures, as the poor morality scale may have negatively primed participants. That is, it is possible that the item content of the measure may have artificially inflated

participants' responses regarding their willingness to conspire and endorsement of CTs.

Summary

The current chapter outlines a number of contributions that the present thesis will make to the pool of literature on conspiracy theorists. Belief in CTs have been found to be more common than non-belief in such theories (Goertzel, 1994), suggesting that it is an avenue of research worthy of empirical attention. There have been no CT studies published in Aotearoa New Zealand to date, which is one important gap the current research aims to reduce.

The rationale for understanding what makes a person more likely to believe in a CT is two-fold. First, CTs are generally suggestive of mistrust of authority (Abalakina-Paap et al., 1999). Accordingly history has demonstrated that unverified CTs can in fact interfere with public health policy programmes, to the detriment of human well-being (Bird & Bogart, 2003; Bird & Bogart, 2005; Goertzel, 2010; Grebe & Nattrass, 2012; Hutchison, Begley, Sullivan, Clark, Boyett, & Kellerman, 2007; Nattrass, 2005; Nattrass, 2012; Ross, Essien, & Torres, 2006; Thorburn & Bogart, 2005). Furthermore, there is a dearth of literature on the role psychopathology plays in the development and perpetuation of CTA (Darwin et al., 2011; Swami et al., 2013). Therefore, understanding what influence, if any, psychopathology has on whether a person is more likely to believe CTs has wide implications in terms of acceptance of public policy.

Another key contribution of the current thesis is that it will be the first to conceptualise CTA dimensionally; whereby conspiracy believers and CT creators sit at different positions along the same continuum. This differentiation is referred to throughout this thesis.

A review of the literature on the composition of CTs was also provided in the present chapter. Content, structure, and function are important facets of CTs that require consideration in order to understand the motivations for people to endorse CTs. Once an individual has adopted a CT, they tend to perceive that they are unique in their understanding of the CT, and as such are then burdened with duties and responsibilities. These duties relate to revealing the CT and its conspirators to the rest of the world, and to weaken the power the conspirators hold over the masses.

The personality correlates (anomie, hostility, adherence to right conduct, powerlessness, and self-esteem) commonly found in conspiracy belief research were also touched upon in the current chapter. In chapter three I move on to empirically examine these personality variables. In the current chapter I briefly introduced the function that CTs serve for those who believe them. In the next two chapters I build upon this by more extensively reviewing the literature pertaining to loss of subjective control and the cognitive mechanisms underpinning CTA.

Chapter Two

Causality and Control

> "…when [an] elephant is young and relatively weak it is tied to a small immovable stick. So later no matter how large and strong he becomes he continues to believe that he cannot free himself…Many intelligent people are like the circus elephant; they never question their self-imposed limitations"
>
> - Cold Souls Motion Picture (Carey, 2009)

Introduction

In chapter one, the various facets of CTs were outlined, including their nature, content, and structure; as well as the function that CTs can serve for those who believe them. A number of researchers have postulated that perceived low subjective control can lead people to believe in CTs (Abalakina-Paap et al., 1999; Douglas & Sutton, 2008; Groh, 1987; Hofstadter, 1965; Leman, 2007; Newheiser, Farias, & Tausch, 2011; Swami et al., 2013; Sullivan et al., 2010; Whitson & Galinsky, 2008). CTs have been claimed to be a compensatory strategy (however, not necessarily consciously driven) used to re-establish some semblance of control (Melley, 2002).

In this chapter I review the literature on ways in which people try to explain complex and confusing situations, and their motivations for doing so. Reflecting on previous findings may further our understanding of how conspiracy theorising operates. According to a number of researchers, humans have an innate need to understand and explain their surroundings (LeBoeuf & Norton, 2012; Heider, 1958;

Katz, 1960; Kay et al., 2010; McCauley & Jacques, 1979; Salt, 2008). Heider (1958) furthered this notion by suggesting that those who feel powerless are averse to highly complex situations, and can develop a perceptual style that enables them to re-establish some sense of control:

> "…a region whose properties are not known to the person, can be considered a barrier which makes action and therefore control difficult if not impossible. Perceptions helps to structure the region and to remove this barrier." (Heider, 1958, p. 71).

One theory of cognition that could be argued to assist in the process of re-establishing perceived personal control is attribution theory. Attribution theory describes differential styles of explanation people use to infer the causes for events in their environment (Kelley & Michela, 1980). There are in fact a number of attribution theories however the main premise underlying them all is that the way in which one interprets causation (antecedents of attribution style) will influence their response style to situations (consequences of attribution style) or how they interact with their environment (Kelley & Michela, 1980). Attribution research has been applied to a wide variety of contexts such as, sports psychology (Si, Rethorst & Willimczik, 1995), organisational psychology (DeJoy, 1995; Judge & Bono, 2001), education psychology (Wolleat, Pedro, De Vaney Becker, & Fennema, 1980) religion (Spilka, Shaver & Kirkpatrick, 1985), medicine (Borkowski & Allen, 2003), as well as psychological research on aspects such as emotion and motivation (Schachter, 1964; Weiner, 1985). In chapter one, attribution theory was posited to provide conspiracy theorists with a tool with which they could ascribe the causality of situations, and thus transform a complex and stressful situation into something more simplified and readily explainable, hence re-establishing a sense of control over one's environment (Harvey & Weary, 1984). Another key notion underlying theories of attribution is whether

inferences about causality are attributed to internal or external factors. Rotter (1966; 1990) expands on this idea with what has been termed internal versus external control of reinforcement, locus of control (LOC), or expectancies for outcomes of future events (Kelley & Michela, 1980).

Locus of Control

LOC refers to individual differences in attributional style, and the degree to which individuals perceive whether the likelihood of a particular outcome of a situation can be reinforced by (is under the influence of) their own behaviour and personal characteristics, or outside their personal control and reinforced (influenced) by forces external to person (Rotter, 1990). More simply put, LOC is the reinforcement influence an individual believes they personally have, relative to forces external to them, to elicit a particular outcome of a situation. According to researchers (Mirowsky & Ross, 1983; Pittman & Pittman, 1979), when an individual feels powerless they have a generalised tendency to view their life as not being under their own control, but as largely ascendant to some force outside of themselves (e.g. luck, fate, or others they perceive to be powerful). That is, they believe their life happens to them, rather than by them. This assertion is particularly consistent with CTs where a group of agents (paranormal or otherwise) act out malevolent intentions towards another group (Abalakina-Paap et al., 1999; Melley, 2002; Zonis & Joseph, 1994). Furthermore, in accordance with Mirowsky and Ross (1983) and Pittman and Pittman (1979), CT belief can be conceptualised as a generalised ideological trait, or tendency to believe in CTs.

Glass and Singer (1972) conducted a study to investigate how perceived low personal control operates. In their study participants were allocated into two groups: one which had control over the termination of an aversive noise, and another group which did not. As a manipulation, those in the control group were shown a switch

with which to terminate the noise if they wished, and were made aware of the possibility that they could stop the noise themselves. A manipulation check confirmed that perceived-control was heightened in this group compared to the no-perceived-control group who were not provided with a noise termination switch. When participants rated how much controllability they felt in the task over an aversive stimulus (noise), those who had no control also provided self-ratings of high helplessness compared to those who had control (Glass & Singer, 1972). In contrast, earlier research by Petzel and Gynther (1970) suggested that those who have high internal LOC experience more discomfort when they unexpectedly face a situation where they have no control. Clarity of self-concept (certainty of one's own attributes and traits) has also been shown to be stronger amongst those who have a tendency to make internal attributions over external attributions (Organ, 1973). As earlier described, the fundamental attribution error is when there is a tendency to overestimate dispositional (internal) factors and underestimate situational (external) factors (Clarke, 2002). Clarke (2002) asserted that conspiracy theorists tend to focus on the disposition of conspirators to infer causality for situations or events rather than on situational factors.

Similarly, Abalakina-Paap et al. (1999) suggested that an external attribution style serves an important function for conspiracy theorists. Specifically, if a person possesses an external attribution style, they can then ascribe the responsibility of the powerlessness they feel in their own lives to powerful others, and therefore provide an *explanation* for their lack control. An external attribution style, may also allow conspiracy theorists to feel some psychological comfort that this low control over their own lives is not their own fault. Organ (1976) presents a different perspective by reflecting on the actor-observer hypothesis. The actor-observer hypothesis is a phenomenon where people tend to infer internal factors being causal for their own behaviours, whereas those observing the actors will infer an external LOC for the

actor's behaviour (Sharf & Newman, 1976). Organ (1976) argued that the reason for the actor-observer hypothesis may be that an individual needs to view themselves as having the ability to control the situation they are in, and thus will show a bias to explain the outcome of the situation as being a result of internal factors rather than external factors.

The basic premise of CT research is that conspiracy theorists are individuals who feel a low sense of control (Abalakina-Paap et al., 1999; Douglas & Sutton, 2008; Groh, 1987; Hofstadter, 1965; Leman, 2007; Newheiser, Farias, & Tausch, 2011; Swami et al., 2013; Sullivan et al., 2010; Whitson & Galinsky, 2008). Thus the fundamental attribution error/actor-observer finding may be even stronger in those with strong CTA (compared to those with low CTA) due to their strong control motivation (need to re-establish a sense of control). However, when a conspiracy theorist (or any other individual) is repeatedly exposed to situation where they perceive little personal control of these situations, they have potential to develop a propensity to think, behave, and feel in a helpless manner. This tendency is known as learned helplessness.

Learned Helplessness

Learned helplessness (LH) is a process whereby individuals who have a history of exposure to uncontrollability over an aversive stimuli (e.g. an event), develop beliefs that future events will have negative outcomes such as failure (Kelley & Michela, 1980; Lieder, Goodman, & Huys, 2013), and thus when encountering future exposure to aversive events will demonstrate passivity in their response style (Seligman & Maier, 1967). According to Seligman, Maier, and Solomon (1971), the individual would then have difficulty responding to the aversive situations adaptively (with an appropriate coping style) by exhibiting poor self-control (will not show self-monitoring, self-evaluation, or self-reinforcement; Rozensky, Kravitz & Unger, 1981).

The cornerstone of LH is the sense of *uncontrollability* when faced with a traumatic event (Abramson, Seligman, & Teasdale, 1978), which can lead to the development of the perception of response-reinforcement independence (Klein & Seligman, 1976).

There are three key types of deficits that have been observed in studies of LH both in human and animal populations (Klein & Seligman, 1976). The first type of deficit is *cognitive*. One such cognitive deficit is a form of proactive interference (Prindaville & Stein, 1978) induced by a sense of uncontrollability (and unpredictability), whereby development of the perception of response-reinforcement independence occurs such that an individual believes that their behavioural response to a stimuli or event will have no bearing on success or failure with regard to the stimuli (Klein & Seligman, 1976). That is, they believe that their response is independent to the outcome. The quote at the beginning of this chapter from the movie "Cold Souls" could be considered to illustrate the concept of learned helplessness as seen in circus elephants. In animal studies (Overmier & Seligman, 1967; Seligman & Groves, 1970; Seligman & Maier, 1967) it was observed that dogs failed to learn that their responses could affect the outcome of avoiding an electrical shock. Similarly, in human studies (Klein & Seligman, 1976), it was observed that participants acquired response-reinforcement independence, where they believed that their response would not affect the outcome; therefore their success or failure to escape the undesirable stimulus had no effect on their future expectancies for success or failure. An example that applies this theory to humans might be if a learner driver believes that whether they practice driving or not, it will not affect whether they pass their driving test.

The second type of deficit associated with LH is *motivational*, where an individual displays a lack of response initiation. That is, the individual will display behavioural passivity and may not take action to reduce their trauma induced by a

stimulus, or may be slower to respond than those who have not developed LH (Seligman, 1972).

Another by-product of LH and the abovementioned deficits is an *emotional* expression of the stress and the sense of uncontrollability LH engenders (Overmier, 2002). LH has often been utilised as a model of depression, and a number of researchers assert that the symptoms of depression parallel the deficits produced by LH (Abramson, Seligman & Teasdale, 1978; Forgeard et al., 2011; Teasdale, 1978; Vollmayr & Gass, 2013). For instance, a person experiencing a cognitive deficit may believe that their actions in a situation will have no effect on the outcome, and thus will become passive in their motivation to actually take any action. The result of this is a "negative cognitive set" (Abramson et al., 1978, p. 64) which may lead the individual to possess depressive beliefs and affect. However, a number of researchers assert that the LH model of depression can only account for some aspects of depression and the LH model is not comprehensive enough to be considered as an overarching theory of depression (Abramson et al., 1978; Maier, Henn, Mayberg, Seligman, & Beck, in Forgeard et al. 2011). These researchers suggest that LH is not a comprehensive model of depression as some sources of depression are not situationally-based, and are not reliant on a sense of future uncontrollability. Some such sources include "…physiological states, postpartum conditions, hormonal states, loss of interest in reinforcers, chemical depletions" (Abramson et al., 1978, p. 64). Furthermore, the LH model cannot account for instances where a sense of uncontrollability does not induce depressed affect, or where an individual has not encoded the uncontrollability on a personal level, so as to develop lowered self-esteem. According to a number of researchers (Crocker & Park, 2004; Mor & Winquist, 2002; Tennen & Herzberger, 1987) low self-esteem is considered to be the signature characteristic of depression, so some argue that if LH could be considered a synonymous model with depression, then it should be able to account for low self-

esteem (Abramson et al., 1978). Therefore, there are a number of variables that need to be considered more thoroughly when reasoning a model of depression. However Abramson et al. (1978), also suggest that the LH model can account for a subset of depression, they termed as *helpless depressions*, which encompass the three deficits outlined above (motivational, cognitive, and emotional expression). Furthermore, Abramson et al. (1978), suggest that those individuals who experience depression and attribute their situation to personal shortcomings (internal) are more likely to have low self-esteem. Others have also suggested that when an interaction of internal and global attribution styles interact within the same person, the person is much more likely to experience LH when faced with situations (whether similar or dissimilar to early experiences of uncontrollability) of uncontrollability (Mikulincer, 1986).

Whitson and Galinsky (2008) suggested that pattern perception is one way individuals can self-soothe when they present with LH. When an individual makes meaningful connections between unrelated stimuli (known as illusory pattern perception; be it visual stimuli, or stimuli relating to pieces of information in a situation), this can provide some form of explanation for a situation, thus enhancing the sense of control experienced and thus releasing some of the discomfort or deficits associated with LH. Whitson and Galinsky (2008) were able to demonstrate that when perception of low personal control was experimentally induced (via a recall task introduced later), participants tended to perceive more conspiracy (in ambiguous scenarios) than those in the high-control condition. Furthermore, when participants in the low-control task were given an opportunity to take part in a self-affirmation task, these individuals perceived the same level of conspiracy as those in the high-control condition (Whitson & Galinsky, 2008). This suggests, than when participants were able to re-establish a sense of control prior to the being presented with potential conspiracy scenarios, they were no longer susceptible to illusory pattern perception; and therefore perceived the unrelated pieces of situation information in the scenarios

to indeed be ambiguous. This finding supports earlier findings by Klein and Seligman (1976) that experience of being able to re-establish a sense of control (by being able to solve a problem or escape an aversive situation) can reverse the cognitive deficits associated with LH such as the perception of response-reinforcement independence. Therefore, being able to effectively reverse the effects of powerlessness only by introducing some semblance of controllability to a situation, these researchers provided support for the contention that perceived powerlessness can lead to illusory pattern perception.

Hofstadter (1965) made the earliest suggestion that a low perceived personal control could lead to ascription to CTs. Supporting this notion, a number of other researchers have been able to demonstrate an association between feeling powerless and perception of conspiracy (Abalakina-Paap et al., 1999; Whitson & Galinsky, 2008)

A Reformulated Model of Learned Helplessness (Abramson et al., 1978)

Abramson et al. (1978) criticised the early model of LH as being too general, lacking specificity or detail and therefore only being relevant to a narrow range of situations. In essence Abramson et al. (1978) argue that the first model of LH does not specify the factors that can exacerbate or attenuate the degree of uncontrollability (perceived powerlessness) that one can experience. Their reformulated model remedies four omissions of the early model by integrating the original hypothesis with attribution theory in order to specify detail in four areas. The first key inadequacy of the original LH model is that it ignores whether a person perceives personal or universal helplessness. Personal helplessness is where an individual does not believe that they personally possess the ability to produce a desired outcome compared to relevant others, therefore exhibiting an internal LOC. Universal helplessness is where an individual perceives that they as well as all relevant others are equally unable to produce a desired outcome, therefore exhibiting an external

LOC. Therefore, if a person attributes a desired outcome not eventuating to internal (personal) reasons, they are more prone to lowered self-esteem.

Second, the reformulated model of LH implicates the dimension of the changeability (stability) of circumstances across time. For instance, if an individual failed their drivers' licence test, and attributed this to a lack of peripheral vision, this unchangeable factor could be considered *stable* and chronic over time. However, if the individual attributed their failure to very poor weather conditions, or a malfunction of a particular set of traffic lights, these would be considered situational factors that could change over time, and therefore are *unstable.*

The third aspect of the reformulated model considers whether the cause of an undesired outcome is something that could be expected in most other situations (a *global* cause), regardless of whether they are related to the target undesired outcome or not. This is compared to an attribution that the cause of an unwanted outcome is something that could be expected in only specific (related) situations. The reformulated model would then suppose that if the individual came to the conclusion that the failure or undesired outcome was a result of global-internal factors, they would then formulate expectancies of failure in future similar and dissimilar situations. The emotional reaction would likely be one of low self-esteem and depressed affect.

The last consideration of the reformulated model of LH pertains to the intensity or severity of cognitive, affective, and motivational deficits generated by LH. According to the Abramson et al. (1978), the more certain a person is that a particular unwanted outcome is non-contingent on their response and the more personally relevant the outcome is the more severe or intense the deficits will be.

All four areas of resolution in the reformulated model are open to interaction with any and all of the others. For instance, if an apprentice fire fighter is unable to save a person from a burning house, they may attribute this to be due to them not

being competent or brave enough (internal), and that they will always (stable) be a failure as a fire fighter (a role which encompasses many types of rescue - global), and they are really certain that this is the case, the more severe or intense the cognitive, emotional, and motivational deficits they are likely to suffer will be.

However it is important to consider LH studies (such as Roth & Bootzin, 1974) where in the pre-treatment phase, participants' demonstrated helplessness, but then in the treatment phase did not manifest performance deficits. That is, the initially helpless individuals showed greater response initiation compared with control subjects, which is antithetical to the typical pattern of LH. According to Roth and Bootzin (1974), one potential explanation for such a pattern could be that the helpless individuals boosted their efforts to obtain control over the situation and restore a sense of generalised control. However, with continued repeated exposure to uncontrollable situations, it is quite possible that participants would then develop sustained LH and display one or all three of the described deficits associated with LH. The idea of repeated exposure to feeling low control has undergone substantial research in the LH literature (Friedlander & Chartier, 1981; Maier, 2001; Rosellini & Seligman, 1976; Seligman, 1970), and the general consensus appears to be that the more experience an individual has had with situations of uncontrollability, the more embedded LH becomes as a response style to undesirable events and stimuli. Therefore, a prerequisite of repeated exposure of uncontrollability in situations may be necessary in order for stability of an attributional style to establish.

One consideration that has only received modest attention in the literature is the perception of indirect control over an aversive stimulus. Earlier, a study by Glass and Singer (1972) of perceived control was discussed. In their next study, participants were again exposed to an aversive stimulus (noise). However, in this experiment variation, participants were allocated into four conditions: the perceived-indirect-control group, whereby participants were told they could communicate (by switching

on a light) with another participant to terminate the noise; a no-perceived-indirect control group, whereby participants had the button to terminate the noise, but was not able to be signalled to do so by other participants; and two no-perceived-control groups, where participants had no control over stimulus termination (in one condition there was another participant in the room, and in another condition no one else was in the room). To measure the effects of perceived indirect control and no control, participants were required to complete a post-noise proof-reading task, on which their performance was measured. Compared to the no-perceived-control groups, the indirect-control group on average made fewer performance errors. The researchers interpreted this finding to mean that if a person senses they at least have access to someone who can change the course of events, they show fewer effects of LH. Therefore, if a person does not perceive they have personal control of a situation, as long as they feel they can influence external conditions in some way, they are less likely to demonstrate LH. This finding echoes earlier discussion that the deficits (e.g. illusory pattern perception) associated with perceiving powerlessness can be reversed if an individual has some access to a sense of control being re-established (Abalakina-Paap et al., 1999; Klein & Seligman, 1976; Whitson & Galinsky, 2008).

Another possible explanation for the pattern of results obtained by Roth and Bootzin (1974) is that in their study, the treatment phase activities participants were required to complete were rather dissimilar to the activities presented in the pre-treatment phase, therefore, participants may not have been primed for a global attributional style, but rather a specific attributional style, that would mean LH-associated deficits would only become apparent in activities that were similar to that presented in the pre-treatment phase where participants experienced LH. This logic follows as the concept of globality in attributional style was not suggested in the literature until the early to mid-1980's (e.g. Alloy et al., 1984; Mikulincer, 1986).

Evidence to support the majority of the reformulated LH theory can be gleaned from one study (Metalsky, Abramson, Seligman, Semmel, & Peterson, 1982), where in a classroom setting it was found that when university students received a low midterm grade (negative life event), and if they had the propensity to attribute their low grades to internal and global causes, their subsequent self-rated mood signified higher levels of depression. Further the reformulated model of LH, accounts for why not everyone develops LH and instead build resilience to LH. They suggest that this resilience is likely to develop if a person attributes undesired outcomes to unstable, external and specific causes (Abramson et al., 1978).

The Generalisability of Attributional Style

Global Attribution Style

A *global* attribution style is one where a person systematically attributes the causes of an undesirable outcome to factors that are present across a range of situations (Alloy, Peterson, Abramson, & Seligman, 1984). Hence, when the person is faced with situations that are similar or dissimilar to their early experiences of uncontrollability (LH training), the three deficits of LH are likely to be demonstrated. For instance Alloy et al. (1984) investigated global attributions in a group of 108 undergraduate university students who were divided into three pre-treatment groups: controllable bursts of noise (meaning participants could control the termination a loud tone that sounded in their earphones), uncontrollable bursts of noise (participants were not able to terminate the loud tone), or no noise. A week previous, participants were asked to fill out the Attributional Style Questionnaire (Seligman, Abramson, Semmel, & von Baeyer, 1979) and Beck Depression Inventory (Beck, 1967). In the two treatment phases of the experiment, participants were put in either a similar or dissimilar situation (respectively) as in the pre-treatment session. The similar situation involved trying to terminate a loud tone again, whereas the

dissimilar situation required participants to unscramble letters in a visual anagram to make a word. The results showed that those with a global attributional style for negative outcomes showed LH whether the subsequent uncontrollable situations were similar or dissimilar.

Specific Attribution Style

The global attribution style is in contrast to a *specific* attribution style, where an individual attributes the causes of an undesirable outcome to factors specific to the situation (Alloy et al., 1984). Therefore when exposed to future instances of uncontrollability, this individual is more likely to display the deficits associated with LH in situations that are similar in some way to their early experiences of uncontrollability, but not in situations that are dissimilar (Alloy et al.,1984; Mikulincer, 1986). In the Alloy et al. (1984) study, participants who possessed a specific attributional style for negative outcomes, only demonstrated LH in the treatment phase which was similar to the pre-treatment phase and where they had also demonstrated LH, therefore they did not generalise LH to all subsequent situations.

The specific attributional style theory has been used to explain the sense of powerlessness experienced by minority groups such as African-Americans as reflected in CTs relevant to them (Crocker, et al., 1999). However, there have been conflicting results regarding the externality of the generalised attributional style of African-Americans. At least one study (Lefcourt & Ladwig, 1965) found African-Americans to be more external in their attributional style in explaining some of the challenges facing the African-American community over the years (unemployment, poverty, racism, rates of criminality, low socioeconomic status). Other studies have not always found a significant difference in the level of externality of attributional style between African-Americans and white Americans (Graham, 1994). A particular form of

specific attributional style known as *system blame* has been referred to in examinations of the CTs African-American's tend to believe (Crocker et al., 1999). To be more precise, system blame does not refer to how African-Americans ascribe causality to undesirable events within their individual lives, but rather to how they explain why African-Americans as a racial group have encountered particular difficulties like those listed above. Further, Crocker et al. (1999) suggest that system blame serves a particular function for the psyche of African-Americans. That is, attributing the causes of aversive events that afflict their community on an individual level could be rather detrimental to their "personal and/or collective self-esteem" (Crocker et al., 1999, p. 943). However, interpreting these events as a result of wider societal issues such as discrimination or prejudice allows them to somewhat deflect the effect of the potential diminished self-esteem, although this may not be done at a conscious level of awareness.

Personal Need for Structure

Conspiracy theorists have a tendency to prefer closure and simple causal explanations for events and situations (Groh, 1987; Leman, 2007). CTs serve the function of providing predictable and clear explanatory conclusions about event occurrence and people, therefore conspiracy theorists who display high levels of response initiation rather than LH, may also have concomitantly high levels of Personal Need for Structure (PNS).

As mentioned earlier in this chapter, Roth and Bootzin (1974) suggested that when some individuals are predisposed to think in a helpless manner and then are later exposed to unsolvable problems, they do not always demonstrate performance deficits. Roth and Bootzin (1974) interpreted this finding as evidence that these individuals engaged in high levels of response initiation in order to establish their own sense of control over the situation. But as has already been discussed, some

individuals do not show this heightened level of response initiation and develop LH. A possible explanation for this paradigm could be that those who boost their efforts to re-establish control over their situation could also possess high PNS. According to Whitson and Galinsky (2008), the experience of perceived low subjective control can motivate one to look for structure and order in their environment. It is therefore possible that CTs provide one means of organising chaos into structured and meaningful explanations for causality (van Prooijen, 2012). According to Salt (2008), humans also have an innate need for certainty. Researchers have suggested that through CTs humans are able to achieve a sense of certainty in uncertain times (Miller, 2002; Swami & Coles, 2010).

According to the extant literature heightened PNS also has multiple relationships with a Need for Closure (desire for things to conclude tidily), Dogmatism (close-mindedness), and an Intolerance of Ambiguity (preference for clarity; Leone, Wallace, & Modglin, 1999). The basis for PNS is that due an intrinsic need to satisfy these requirements, those who display amplified response initiation also possess the motivation to resolve the problematic situation in the most simplistic manner possible for them to alleviate their distress. The chosen method of restoring sense of control in such a problematic situation may not be the most adaptive strategy because the goal is to reduce distress in the easiest way possible (Leone et al., 1999).

There are a number of definitions for PNS, but each depicts that those who have a high need for PNS have a preference for simplicity, predictability, and clarity in contextual situations (Meiser & Machunsky, 2008; Moskowitz, 1993). Therefore, those who have a high PNS have a chronic information-processing motive to avoid complexity, unpredictability, and ambiguity in their environment. This notion is very much in line with the ideas put forward in chapter one describing the function of CTs.

Consequences of Elevated Personal Need for Structure

Schemas

A consequence of elevated PNS identified in the literature is that it can cause an individual to make biased judgements as a result of not following the reasoning process through to completion and not considering all competing explanations (Schaller, Boyde, Yohannes, & O'Brien, 1995). Another consequence is that how such an individual with high PNS operates in and interprets social situations can be primed by the stereotypes they hold (Thompson, Roman, Moskowitz, Chaiken, & Bargh, 1994). Accordingly, Moskowitz (1993) states that in terms of social categorization, when a high PNS individual attempts to makes a social judgement, they engage in a process of hypothesis generation to justify their judgements. As there are numerous intrinsic guidelines that could be used to judge social situations, in order to prevent the hypothesising process from continuing endlessly, a high PNS individual's strong need for closure and simplicity as well as cognitive accessibility of a relevant group stereotype, will allow them to settle on the most convenient judgement; therefore the chosen stereotype as a schematic social category is egocentrically perpetuated and strengthened.

In the literature (as in this thesis), the terms stereotype, schema, and script are generally used interchangeably to refer to cognitive knowledge structures, whereby a person categorises information and experiences (either social or non-social, previous or current) into pre-set groups. This grouping process occurs with the conscious or unconscious aim of using the least amount of cognitive energy in order to understand ones world (Neuberg & Newsom, 1993). According to Neuberg and Newsom (1993) efficient schemas are those that are simple with clear parameters, as these allow for fast interpretation of one's context. In contrast, schemata that are less well-defined allow confusion and less efficient interpretation. A resonating theme throughout this body of work is that for those with a high PNS, simplicity is a key concern. Indeed

Moskowitz (1993) suggested that those high in PNS are more likely to socially categorise people based on trait or dispositional inferences, a cognitive process referred to as spontaneous trait inferences (STI).

STIs can operate at either a conscious or unconscious level, whereby "trait labels are used to categorise behaviour during the encoding stage of information processing" (Moskowitz, 1993, p. 132). Eventually, the tendency to generate STIs can become so overdeveloped (D'Agostino, 1991) that it can progress to the point of being a fundamental attribution error (Moskowitz, 1993). This is because the target trait used to make inferences about a person may not be sufficient to encapsulate the essence of the person as a whole, and the reasons for their behaviour. For example, if a prejudiced person perceives an act they believe to be negative by an individual of another race, they may attribute this to dispositional characteristics they believe are innate to a person of that race (stereotype), at the expense of considering potential causal situational factors (Pettigrew, 1979).

Avoidance

Neuberg and Newsom (1993) suggest that stereotyping is a heuristic social information processing strategy that reduces cognitive burden. One way of simplifying information-processing is to avoid/limit the amount of information one takes in. In extreme cases this may lead to avoidance of the house (agoraphobia), but more commonly such individuals are likely to keep social interactions to a minimum, and may avoid social media. I suggest that it is altogether possible that those with strong CTA may use avoidance strategies to prevent their exposure to evidence that may refute their beliefs; therefore, rather than having a tendency towards only one cognitive burden reduction strategy, such individuals may switch between strategies (stereotyping, incomplete reasoning processing, avoidance) depending on which proves to be most effective for the situation they find themselves in. If however, an

individual finds themselves in a situation where they cannot avoid exposure to new information, stereotyping is likely to come into play again (Neuberg & Newsom, 1993). In such instances an individual is more likely to have an attentional bias to information that is consistent with their existing knowledge structures, and to also interpret ambiguous information in a way that favours these knowledge scripts rather than considering alternative competing explanations. Such information processing biases therefore serve to preserve these knowledge structures, allowing the individual to consider their beliefs as reliable and valid, and consequently they are unlikely to abandon these beliefs. This may be yet another explanation as to why conspiracy theorists can display resistance in accepting explanations and evidence which contradict their theories. This propensity to discount contradictory evidence has been empirically supported by research where shared statistical variance was established between PNS, dogmatism, and intolerance for ambiguity (Leone, et al., 1999); meaning that these are related concepts.

In summary, PNS is a chronic information-processing motive which can vary in extremity from person to person (Neuberg & Newsom, 1993). For example, social categorisation is theorised to be a form of information-processing largely attendant on the motivation to control or make sense of one's environment (Moskowitz, 1993). More specifically, Moskowitz (1993) asserts that the degree of an individual's PNS will govern the extent to which they feel driven to socially categorise. That is, the more elevated one's PNS, the greater the extent to which one is likely to generate spontaneous trait inferences.

Correlates of High Personal Need for Structure

In one of the earliest accounts of dogmatism, Rokeach (1954) conceptualised it as an ideological belief system (as opposed to single beliefs represented by rigidity; Rokeach & Fruchter, 1956) that, while highly structured is also closed and intolerant

of diversions from the central belief system. A related concept is that of intolerance of ambiguity, where those possessing this trait have a tendency to perceive their surroundings in very categorical terms. That is, such individuals have a tendency to perceive things in a very black-and-white manner with no shades of grey, attending to information and processing it in a polarised manner (Leone et al., 1999). In her seminal work, Frenkel-Brunswick (1949) based the tolerance of ambiguity model on the following parameters:

> "resistance to reversal of apparent fluctuating stimuli, the early selection and maintenance of one solution in a perceptually ambiguous situation, inability to allow for the possibility of good and bad traits in the same person, acceptance of attitude statements representing a rigid, black-white view of life, seeking for certainty, a rigid dichotomizing into fixed categories, premature closure, and remaining closed except to familiar characteristics of stimuli." Frenkel-Brunswick, 1949, as cited in Furnham, 1994, p. 403 – 404).

Need for cognitive closure (NCC) is another personality construct related to PNS, characterised by an aversion to confusion and ambiguity, and a strong preference to arrive at a conclusion quickly. NCC can be either non-specific, where any conclusion is considered better than no conclusion; or alternatively the need can be specific, where the conclusion arrived at must be ego-syntonic, or consistent with one's belief system (Webster & Kruglanski, 1994). An individual with a high NCC will conduct a cursory cost-benefit analysis of what relief closure will bring. For instance, Webster and Kruglanski (1994) suggest some of the most common instances where a lack of closure could be costly to the individual to include situations where a time-pressure exists and lack of closure could mean missing important deadlines, the effort that would be required for further information-processing when the a fast conclusion

would suffice, or if the task at hand does not appeal to the individual and appears inherently boring. Fast closure is often contingent upon simple knowledge structures, so again simplicity is a desired commodity for individuals with a high NCC.

In their study, Leone et al. (1999) found PNS to be strongly correlated to dogmatism, intolerance of ambiguity, and NCC. Initial review of these personality constructs imply some shared variance even at the theoretical level (as each implicates a desire for simplicity), meaning that investigation of these structures as factorially distinct from each other could potentially result with strong (inflated) correlations. However, an earlier study conducted by Neuberg and Newsom (1993) found only weak to moderate correlations between these constructs; a finding which was consistent with Webster and Kruglanski (1994). The issue here may be one of measurement, where the psychometric tools used to investigate these constructs encroach on related concepts. Therefore, each of these personality constructs connotes a desire for simplicity, and identification of these constructs as completely separate from each other may not be an authentic representation of their nature.

Summary

In sum, a personal sense of control is a psychological need underpinning a range of cognitive and behavioural styles. Feeling a lack of subjective control is in itself an aversive state and has consequences for how people respond to their environment (Friedland et al., 1992). In many cases, attempts to re-establish control can be an adaptive task-focused endeavour, however, in other cases, maladaptive responses to a lack of control can have a deleterious impact on affective states (Abramson et al., 1978; Forgeard et al., 2011; Overmier, 2002; Teasdale, 1978) as well as how we respond to future situations anticipated to be characterised by uncertainty. When a person has been faced with repeated exposure to a lack of control, a trait of LH can ensue, where the person begins to believe that their responses bear no effect on eventual outcomes (Abramson et

al., 1978; Klein & Seligman, 1976; Mikulincer, 1986). Consequently cognitive, affective, and motivational deficits characterising how one interacts with their environment cand develop (Klein & Seligman, 1976; Overmier & Seligman, 1967; Prindaville & Stein, 1978; Seligman & Maier, 1967; Seligman & Groves, 1970). A sense of low subjective control can also impact on the way contextual information is processed, and in particular can influence how ascriptions of causality are made (Harvey & Weary, 1984; Kelley & Michela, 1980; Klein & Seligman, 1976). In addition, if an individual has a strong PNS and they find themselves facing uncertainty; chronic information-processing motives can result in degradation of normal information processing (D'Agostino, 1991; Frenkel-Brunswick, 1949, as cited in Furnham, 1994; Leone et al., 1999; Moskowitz, 1993; Neuberg & Newsome, 1993; Pettigrew, 1979; Schaller et al., 1995; Thompson et al., 1994; Webster & Kruglanski, 1994).

The literature contends that people commonly referred to as conspiracy theorists also experience a lack of subjective control as a very aversive state, and in a bid to re-establish a sense of control (compensatory mechanism) present with a tendency to perceive meaningful relationships between ambiguous or unrelated stimuli. Perception of conspiracy in ambiguous situations is also considered a form of illusory pattern perception, and thus a compensatory mechanism to restore some semblance of subjective control (Abalakina-Paap et al., 1999; Douglas & Sutton, 2008; Groh, 1987; Hofstadter, 1965; Leman, 2007; Newheiser et al., 2011; Sullivan et al., 2010; Swami et al., 2013; Whitson & Galinsky, 2008). The concept of illusory pattern perception is elaborated upon in the next chapter. Experimental investigation of illusory pattern perception as it relates to conspiracy theorists is also presented.

Restoration of Subjective Control: Illusory Pattern Perception

Previous research has suggested that those who feel low subjective control are more likely to perceive patterns between unrelated stimuli, or make meaningful connections between ambiguous pieces of information (Whitson & Galinsky, 2008). This phenomenon is known as illusory pattern perception. Conspiracy theorising has been argued to be a form of illusory pattern perception (Whitson & Galinsky, 2008; Kay et al., 2009). So far this chapter has discussed the idea of perceived low subjective control, its associated deficits, and also the motivation to restore a sense of control over a situation. One such method for control restoration was argued to be illusory pattern perception as suggested by Whitson and Galinsky (2008) and Kay et al. (2009). In the remainder of this chapter I review the literature on illusory pattern perception and then experimentally investigate illusory conspiracy pattern perception with two studies intended to replicate portions of the study by Whitson and Galinsky (2008).

Most research articles in the field of pattern perception have had a tendency (intentionally or unintentionally) to omit defining what patterns are or what pattern perception actually is. Exceptions are Elliman (2006), and Dixon (2012). Dixon refers to patterns as "…common structural forms that emerge from…natural and non-natural, evolutionary complexity…they are shapes that repeat themselves" (p. 3). And, whilst not specifically aimed at psychology, Elliman's definition of pattern *recognition* broadly suggests that pattern recognition is about discovering similarities and regularities present in raw data" (Elliman, 2006, p. 102). This definition appears applicable to pattern perception in psychology. Also relevant to the study of pattern perception in psychology is Elliman's observations that "Pattern recognition [perception] is the discovery of a set of relationships that are satisfied by observations of a system or a collection of systems" (Elliman, 2006, p. 102), and also that "Pattern

recognition [perception] is the identification of emergent properties of a system, where a pattern is a property the system as a whole, but is not a property of small parts of the system" (Elliman, 2006, p. 102). When pattern recognition is considered synonymous (for the purposes of psychology) with pattern perception, then Elliman's (2006) two latter observations suggest that perception of a pattern gives an overall impression or conclusion about the nature of the system as a whole rather than its comprising parts.

According to Elliman (2006), part of the challenge facing those engaged in pattern perception is to conquer any randomness in the dataset. The randomness or "noise" in the dataset can sometimes distract from perception of actual patterns residing within the dataset. Such a contention is consistent with ideas of Dixon (2012) and Cramer (2006) who note the important role that feedback or reinforcement contingencies play in evaluating the accuracy of one's own pattern perception. If an individual does not have a reciprocal relationship with their environment, they do not become attuned to the fact they were inaccurate in their perception, and thus this uni-directional relationship can become a maintaining factor in illusory pattern perception. This idea is consistent with the closed belief systems Goertzel (1994) suggested where characteristic of CT beliefs. These monological belief systems do not interact with their environment and thus do not feature feedback loops (Goertzel, 1994). In the previous chapter, it was also discussed that those with a high PNS who experience low subjective control as an aversive state are likely to present with deficit information-processing tendencies in order to reduce the associated level of distress and cognitive burden. One such information processing tendency could be argued to be illusory pattern perception, which relates to both visual stimuli, but also how one perceives situational information.

Conspiracy theorists are one subset of the population who have been found to experience low subjective control as a very aversive state. Degraded information-

processing tendencies such as PNS, dogmatism, intolerance or ambiguity, need for closure (NCC), and illusory pattern perception have been also demonstrated by conspiracy theorists (Abalakina-Paap et al., 1999; Whitson & Galinsky, 2008). In this chapter, on the basis that conspiracy theorising may be considered a form of illusory pattern perception (Whitson & Galinsky, 2008; Kay, Whitson, Gaucher, & Galinsky, 2009), I sought to replicate the study by Whitson and Galinksy (2008), where they found illusory pattern perception in a group of conspiracy theorists.

Apophenia

Reaching as far back as 1958, a concept known as Apophenia has been used to describe a phenomenon whereby a person will perceive a set of random and unrelated stimuli as being meaningfully related in some way. The term was first introduced by Klaus Conrad (1958) in his work focusing on the delusional patterns of behaviour and perception that emerge during the onset of schizophrenia. The term Apophenia initially referred to a state of delusional perception where normal stimuli are perceived with abnormal significance to the perceiver (Fish, 1960). Matussek (1958, as cited in Fish, 1960) further elaborated the concept of Apophania describing it as a state where connections between the qualities of a particular stimulus become loosened and less coherent, and take on a special significance to an individual afflicted with the early stages of psychosis. In more recent times, however, Apophenia as a term has been used to describe illusory pattern perception, whereby an individual will make meaningful connections between unrelated and random stimuli (e.g. Brugger, 2001; Whitson & Galinsky, 2008). Apophenia is also very commonly referred to as a type one error, which differs from a type two error, where patterns that do actually exist are missed (Brugger, 2001; Elliman, 2008).

Since its original coining by Conrad (1958), the term Apophenia has been similarly defined by other researchers (Brugger, 2001; Petchkovsky, 2007; Fyfe,

Williams, Mason, & Pickup, 2008) who suggest that Apophenia is an unmotivated phenomena (not intentionally conceived), whereby an individual will ascribe specific meaning to the perceived connection between random stimuli. When Apophania occurs in the realm of visual perception, it is termed *pareidolia* (Dansey, 2008; Elliman, 2006). Vannucci, Mazzoni, and Cartocci (2011) simply define pareidolia as inaccurate detection of visual patterns. However, when illusory pattern perception is more situationally-based (as opposed to visual), it is most commonly referred to as Apophenia. Non-visual Apophenia (where unrelated, random, accidental, or coincidental events are perceived to have a meaningful link) has been researched in a number of areas including conspiracy theorising (Whitson & Galinsky, 2008; Kay et al., 2009), paranormal beliefs (Brugger, 2001; Kay et al., 2001; Wang, Whitson, & Menon, 2012), and psychopathology (Fyfe, Williams, Mason & Pickup, 2008).

Why Does Apophenia Occur?

According to the literature, the purpose of Apophenia (whether it be visually- or situationally-based) is to re-establish a sense of control (Whitson & Galinsky, 2008; Kay et al., 2009; Vannucci et al., 2011; Wang et al., 2012). Whitson and Galinsky (2008) and Kay et al. (2009) hypothesised that when individuals experience a lack of subjective control, and feel they cannot objectively improve their situation, they will try and re-establish a sense of control perceptually as a compensatory mechanism. The premise of the studies conducted by these researchers was that any instance where normal pattern perception can take place, abnormal pattern perception can also take root depending on the level of subjective control experienced at the time.

Friedland, Keinan, and Regev (1992) researched the way stress influences which compensatory mechanisms (such as illusory pattern perception) are used to regain control. They suggested that when a person is stressed they are likely to engage in emotion-focused strategies rather than task-focused strategies to regain a sense of

control. Thus, the type of illusory pattern perception they may engage in is likely to occur in activities or situations that will improve their overall *perceived* control, but may not necessarily improve *actual* control over the situation. A clinical implication of this finding then is that a subjective feeling of low control can undermine self-esteem, a theory which has conceptual parallels to Abramson et al.'s (1978) reformulated model of learned helplessness (LH). According to the reformulated model of LH, when a person encodes uncontrollability on a personal level, they can develop low self-esteem (Abramson et al., 1978). Thus, as the findings of Friedland et al. (1992) suggest, boosting perceived personal control may to some extent be able to counteract the low self-esteem associated with low sense of control in specific situations.

In a series of six experiments, Whitson and Galinsky (2008) used a range of methods to manipulate the level of control felt by participants, and investigated visual as well as situational illusory pattern perception. In their first experiment, Whitson and Galinsky (2008) investigated if low subjective control induced visual illusory pattern perception. Participants were randomly assigned to either low-control or baseline conditions and were then administered a concept-identification task. In the task participants were presented with two symbols on a computer screen, and were required to choose which of the two symbols best related to a target concept. Participants in the low-control condition were given feedback (told whether their choice was incorrect or correct) about each of their selections, and were instructed to use this feedback in the subsequent series of symbols. The feedback given however, was non-contingent on participants' actual performance; 50% of the time participants were told they were correct and the remaining 50% of the time they were told they were incorrect in their choice, thus creating an atmosphere of uncontrollability. Participants in the baseline condition were told their responses would be used to generate a baseline, and therefore were not given feedback. After the concept

identification task, participants were administered the PNS Scale (Neuberg & Newsome, 1993) to assess whether subjective control influenced the level of structure desired. Participants in the low-control condition were found to have a significantly higher PNS than those in the baseline condition. A limitation of such a methodology is that the PNS scale only measures transient or state level of personal need for structure, rather than a trait need for structure. Participants were then administered a modified version of the Modified Snowy Pictures Task (MSPT; Whitson & Galinsky, 2008).

In the MSPT, participants view 24 pictures of objects, however 12 of these pictures were granulated to the extent that the object detect was still possible albeit more difficult. The remaining 12 pictures had been further granulated until the objects were not possible to identify. Participants were required to respond by indicating if an object was present in the picture and if so, to write down what the object was (dependent variable). When an object was actually present all participants were able to identify what the object was. When an object was heavily obscured, more participants in the lack of control condition compared to the baseline condition responded that they could identify an object (however, this finding did not reach statistical significance at the 5% level), meaning that there was a trend towards those who felt a low sense of control perceiving objects that did not really exist. Whitson and Galinsky (2008) found that regardless of condition, all participants were able to accurately identify objects that did really exist.

In a third experiment, these researchers (Whitson & Galinsky, 2008) employed a different type of control manipulation. Those in the baseline condition were asked to recall a time where they felt they had complete control of a situation, and to then describe what happened and how they felt. Similarly, in the lack of control condition, participants were asked to recall a situation where they felt they had no control, and were asked to describe what happened and how they felt. Whitson and Galinsky

(2008) then asked participants to complete a questionnaire on superstitious beliefs, and found that those in the lack of control condition perceived greater connection between events (e.g. forgetting to stomp one's feet three times before entering an important meeting, and then the personal outcome from this meeting being unfavourable), compared to those in the high control condition. The aim of this third study was to elucidate whether threat perception interacts of lack of control to cause illusory pattern perception (both visual and situational). The findings suggested that perceived low personal control induced illusory pattern perception irrespective of threat perception.

In two of their studies, Whitson and Galinsky (2008) investigated situational illusory pattern perception as it applies to conspiracy theorising. In both studies, perceived low personal control was induced using the same recall task as used in experiment three. Participants were also presented with three scenarios (to measure conspiracy pattern perception) containing ambiguous information that have either a negative or positive outcome. Participants were then asked to decide whether the people other than the protagonist in the scenario were innocent, or part of a conspiracy that caused the outcome. In one study the scenarios were phrased using first-person, and in the other study the scenarios were phrased using third-person. Both studies found that perceived low personal control significantly increased perception of conspiracy. This suggests that perceived low personal control influenced greater perception of conspiracy regardless of whether the conspiracies were self-referential or other-focused. Whitson and Galinsky (2008) extended one of these studies to investigate whether restoration of perceived subjective control can influence illusory pattern perception to return to baseline (normal). Therefore, half of the participants in the low-control group were given a self-affirmation task (the purpose of which was to improve subjective sense of control) to complete after the recall task, but before the conspiracy pattern perception task; whereas the second half

of the low control group were not given an opportunity for self-affirmation. Those who were not given an opportunity for self-affirmation perceived significantly more conspiracy in ambiguous scenarios compared to the self-affirmation group. By experimentally manipulating the level of control participants felt, Whitson and Galinsky (2008) were able to reverse their earlier findings and provided further support for the contention that those who feel a low sense of control have a tendency to perceive patterns that do not actually exist.

Vannucci et al. (2011) also found Apophenia in situations of perceived low subjective control to be associated with a need for closure (NCC). In their study, participants were presented with images of real objects, but the first presented version of the object was extremely degraded. Each subsequent presentation of a version of the object was characterised by increasing levels of clarity. The same concept identification task as used by Whitson and Galinsky (2008) was also used by Vannucci et al. to experimentally manipulate the level of control participants felt. Participants in the low-control group signalled objective identification significantly earlier (at higher levels of visual degradation) than the neutral group.

Apophenia – Not Always a Case of Maladaption

When considered situationally (as opposed to visually), Apophenia can be considered a form of meaning-making, which in settings characterised by uncertainty can allow an individual to re-establish some semblance of order and control (Petchkovsky, 2008). Petchkovsky suggests that Apophany can sometimes have beneficial consequences. In particularly, Petchkovsky argues that Apophenia can sometimes be an important tool for discovery, so while in some circumstances it can reach a psychopathological extreme, in others it can be useful. For example, perception of genetic patterns in the predisposition for cancer, or perception of patterns in weather forecasting to provide severe storm warnings to people in high

risk zones. The sometimes adaptive nature of Apophenia can also be seen in statistical analysis, where eliminating randomness, such as in the law of averaging, allows meaningful patterns to emerge in large data-sets once the noise has been cancelled out by removing outliers (Elliman, 2006).

Vannucci et al. (2011) also suggested that although participants in their low control group made object identifications earlier than the neutral group, there was no significant difference in accuracy between the groups. This finding is important as it supports the contention that those who feel a low level of control cease reasoning processes earlier than those who feel a high level of control, requiring fewer pieces of information before arriving at their decision (Schaller et al., 1995). In addition, the low control group made significantly more attempts to identify degraded visual objects compared to the neutral group. This finding demonstrates that at least in this non-clinical sample, greater response initiation was observed in the low control group, and so could reflect more efficient information-processing. One implication of this finding, however may be that because the experience of a low sense of control was experimentally induced, the low control group may not be representative of individuals who have experienced many occasions of low subjective control, and therefore were less likely to have acquired learned helplessness (chapter two). Therefore, the amplified response initiation seen in this group may also not be representative of those who feel a low sense of control in their everyday lives.

Cross-cultural differences in illusory pattern perception have also implicated lack of control. Wang, Whitson, and Menon (2012) experimentally induced a lack of control in half their participants using the same recall task as employed by Whitson and Galinsky (2008). Wang et al. (2012) found that when a sense of low-control was induced, participants from Western cultures regarded information in horoscopes as self-referential and perceived patterns between horoscopes and their own lives. That is, participants applied the description of themselves in the horoscope to themselves

and considered the description be more true than not. In contrast, participants belonging to Eastern cultures were more likely to perceive patterns between information in horoscopes and the lives of their friends. This self-other cultural difference was said to be reflective of the individualistic versus communal characteristics of each culture.

Study 1: Pattern Perception in Conspiracy Theorists

In this study I sought to replicate the findings of Whitson and Galinsky (2008) regarding illusory pattern perceptions underlying not only visual Apophenia, but also situationally-based Apophenia. Earlier research has also suggested that magical ideation is a form of meaning-making of ambiguous data, and therefore magical ideation could be considered a form of illusory pattern perception (Fyfe et al., 2008).

Magical Ideation

Magical ideation (MI) is a state of belief in one or more magical influences (which are culturally-inconsistent) as being responsible for the outcome of events (Meehl, 1964, as cited in Eckblad & Chapman, 1983). Magical ideation can sometimes revolve around paranormal beliefs and include (but are not limited to) sensing a non-human presence, a *frequent* sense of déjà vu, extrasensory perception (clairvoyance, telepathy, pre-cognition; French, 2001), and out-of-the-body-experiences. MI has also been linked to a tendency towards apophenia (making connections between unrelated stimuli; Bell, Reddy, Halligan, Kirov, & Ellis, 2007). A particularly important clinical consideration is that any magical or odd beliefs an individual may hold must not be consistent with the cultural or religious background of that individual, otherwise it cannot be considered abnormal or schizotypal in nature (Eckblad & Chapman, 1983; DSM-IV-TR). Furthermore, presence of MI has been found to be a strong predictor of development of other schizotypal personality (outlined in chapter four) and

psychotic-like symptoms (Eckblad & Chapman, 1983; Hewitt & Claridge, 1989; Meyer & Hautzinger, 1999).

The key functions of MI have been thought to allow explanations of causality (as hinted at by Meehl's definition; Meehl, 1964, as cited in Eckblad & Chapman, 1983), and as a motivation to increase the perception of control in uncontrollable situations (Pronin Wegner, McCarthy, & Rodriguez, 2006). More specifically, humans have an innate need to explain and understand the events around them (LeBoeuf & Norton, 2012; Heider, 1958; Katz, 1960; Kay et al., 2010; McCauley & Jacques, 1979; Salt, 2008), and as such, when no rational causal explanation is available, MI-prone individuals are more likely to make odd or "magical" connections between unrelated aspects of a situation in order to allow this innate need to be satisfied (Pronin et al., 2006) For instance, one study found that when presented with unrelated word pairs, and asked to produce a word semantically-related to the word pair, paranormal believers were more likely to produce a word, whereas non-paranormal believers were more likely to not produce a word and instead move on to the next item (Giannotti, Mohr, Pizzagalli, Lehman, & Brugger, 2001). This concept seems particularly relevant to apophenia, a form of illusory pattern perception (outlined earlier in this chapter). Heuristically, MI may allow cognitive shortcuts to be made between two similar looking situations, which non-MI individuals would consider as coincidental. That is, if situation A and situation B are similar, it is possible that situation A *caused* situation B. For example, if a person finds a cake they've just iced on the kitchen floor, and later find their cat with icing on their paw, they may assume the cat knocked the cake off the kitchen windowsill whilst eating it (when the cake may have been blown off the windowsill by wind coming through the open window, and the cat having walked through the icing after the cake landed on the floor). An implication is that MI individuals require less information (compared to non-MI individuals) before choosing a causal explanation, and furthermore, will show high

levels of conviction for these causal explanations (Brugger & Graves, 1997). This is consonant with the jumping-to-conclusions information-processing bias seen in delusions (outlined later in chapter four; Fine et al., 2007; Freeman et al., 2008; Garety et al., 1991; Moritz & Woodward, 2005)

Another function MI may serve is to preserve a sense of control for individuals who otherwise feel a lack of control. That is, in situations characterised by uncertainty when a person has a need to feel some directive control of the outcome, that individual may be more motivated to engage in MI (Pronin et al., 2006). For example if a person strongly desires to win the lottery and decides that if they sacrificed food consumption for a week, they would be rewarded with a win.

An aim of this study was to ascertain whether perceived low subjective control was associated with increased levels of magical meaning-making and the way in which individuals ascribe responsibility for negative events (illusory pattern perception). As earlier described, research has found that an external LOC is more likely in those who perceive low subjective control (Glass & Singer, 1972).

Participants in this study were randomly assigned to low and high control conditions. Low and high perceived personal control (the two conditions) were experimentally manipulated using a method used by Whitson and Galinsky (2008). Across two studies Whitson and Galinsky (2008) found significant differences between these two conditions using this method, and given that this was the only differentiating factor between the two conditions it is conceivable that the statistical difference was induced by the experimental manipulation. However, it should also be noted that Whitson and Galinsky (2008) did not report whether a manipulation check was conducted, and thus care must be taken in interpreting their results. All participants were then administered the Magical Ideation (MI) subscale of the Schizotypal Personality Questionnaire (SPQ), the MSPT (Whitson & Galinsky, 2008) to assess visual illusory pattern perception, and then the conspiracy pattern

perception scenario task developed by Whitson and Galinsky (2008) to assess situational illusory pattern perception. Patterns of responding were then compared across the two conditions. Furthermore, in the present study MI was considered a proxy for Apophenia, which has been argued to occur in response to perceived low personal control (Bell et al., 2007; Whitson & Galinsky, 2008; Kay et al., 2009; Vannucci et al., 2011; Wang et al., 2012).

Hypotheses

Based on the findings of Whitson and Galinsky (2008) as well as the discussion article by Kay et al. (2009), the following hypotheses for the current study were generated. The first hypothesis was that consistent with Whitson and Galinsky (2008), participants in the low-control group would demonstrate higher scores on the conspiracy pattern perception (scenario) measure compared to participants in the high-control group. The second hypothesis of the current study was that participants in the low-control condition would produce more incorrect responses (low scores) on the object absent dimension of the MSPT than participants in the high-control group. Third, it was expected that in the current study there would be no statistical difference in performance on the object present dimension of the MSPT between the low- and high-control groups. Fourth, participants in the low-control condition were hypothesized to score higher on a measure of MI compared to those in the high-control condition. Fifth, it was hypothesised that participants who score highly on magical ideation (a proxy of Apophenia), will also score more highly on the Internal/External Locus of Control Questionnaire (reflecting a more external LOC of control), compared to low scorers on magical ideation. The final hypothesis of the current study was that participants in the low-control group would show higher scores on scales measuring anomie, authoritarianism, and hostility, and lower scores on the self-esteem scale compared to participants in the high-control group.

Method

Participants

Eighty-three (44 females) introductory-level psychology students participated in this study and received credit towards a mandatory course research requirement in exchange for their participation. Participants were randomly allocated to either the low control condition (n = 38) or the high control condition (n = 45). The uneven cell sizes are a result of the particular procedure used, whereby alternating testing sessions were administered either the low or high experimental manipulation. In one of the high control condition testing sessions more participants had signed up resulting in slightly more high control participants relative to low control participants. Participation in the study was voluntary, and all participants provided informed consent prior to commencement of the experiment. The specific hypotheses of the study were not revealed to participants before the experiment (but were during the debriefing phase of the session), however information on the types of measures used in the study was provided beforehand. All participants had normal or corrected vision and hearing, and none had any reading difficulties. Participants were aged 18 to 70 years (M = 19.55, SD =6.59). The largest ethnic presence within the sample was New Zealand European (79%), followed by Maori (6.2%), and Asian (3.7%). The remainder of the sample was comprised by Anglo-Chinese, Cook Islanders, Eurasians, European-Africans, Indian, New Zealand Indian, New Zealand Samoan, and South Africans, each contributing a proportion of 1.2% to the sample. One participant chose to not report their ethnicity.

Materials/ Manipulation

All of the following measures can be found in Appendix A. See Table 1 for Cronbach alpha's for each measure.

In order to replicate and extend on the study conducted by Whitson and Galinsky (2008), participants were randomly allocated to high and low-control

groups, whereby participants were given either a low-control recall task or a high-control recall task. In the low-control recall task participants were asked to remember a situation in their lives (past or present) where they felt they had no control over the situation. They were then asked to describe the situation, i.e. what happened and how they felt. The high-control recall task differed in that participants had to recall a situation where they felt they had complete control over the situation.

A range of measures were employed in the current study to measure various forms of pattern perception and personality variables. They are as follows:

The *Modified Snowy Pictures Task (MSPT;* Whitson and Galinsky, 2008) was used to assess visual pattern perception. Twenty-four items (plus two practice items) of granulated images (that visually looked similar to a snowy television screen) were presented to participants. In 12 of the items, objects were present, however even though the images were grainy, the objects were still discernible, e.g. chair. In the remaining 12 items there was no object present. Participants were told that some items may not contain an object. Participants were required to write one or two words to describe each item. They were told to simply write 'none if they could not see an object. A further instruction for this measure was to not spend too long on any one item. Consistent with Whitson and Galinsky (2008), scores on this scale are calculated in three ways: total number of correct responses; object present correct responses (saying an object is present in an image when it really is; OP); and object absent correct responses (saying an object is present in an image when it is not; OA).

The *Conspiracy Pattern Perception (CPP*; Whitson & Galinsky, 2008) scale involved the presentation of three scenarios worded in the first person (see Appendix A for items). In each scenario, participants were presented with an ambiguous situation, and then were asked to rate to what extent they believed the events or other actors in the scenario were connected to the outcome for the protagonist. Participants responded using a 7-point Likert scale ranging from "not at all" to "a great

deal". A high score on this measure reflects stronger conspiracy pattern perception or CT creation (creating connections between unrelated situational stimuli).

The previous measures were used to replicate Whitson and Galinksy (2008), however, the following measures were administered to all participants to extend on the findings of Whitson and Galinsky to potentially identify underlying mechanisms.

The *Conspiracy Beliefs Scale (CBS*; Wilson, unpublished) was also administered to participants during a mass testing session (outlined below). Participants were presented with a range of CTs and were asked to rate how likely they thought it was that the conspiracies had actually taken place. E.g. "NASA faked the first moon landings for publicity" and "The All Blacks were deliberately poisoned before the 1995 rugby world cup final". Participants responded to 30 items on a 7-point Likert scale ranging from "Not at all likely" to "Very likely". The greater the score on this scale, the greater the level of conspiracy thinking.

The *Schizotypal Personality Questionnaire (SPQ*; Raine, 1994) was administered to all participants during a mass testing session (is outlined below); however only the odd beliefs and magical thinking subscale of the SPQ was of relevance to this particular study, as it was used to measure Magical Ideation (MI). An example item from this subscale is "Have you had experiences with astrology, seeing the future, UFO's, ESP, or a sixth sense?" This subscale was comprised of seven items to which participants responded "yes" or "no". The higher the score on this scale, the higher the level of magical thinking.

The *Internal/External Locus of Control Questionnaire* (Rotter, 1966) is comprised of 23 forced-choice questions. Each question is comprised of two statements from which participants must select one of the two choices best reflects how they feel. This questionnaire was used to measure attribution style. E.g. a) "As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control", b) "By taking an active part in political and social affairs

people can control world events". A high score on this measure reflects external locus of control (external attribution style), and a low score reflect internal locus of control (internal attribution style).

As previously discussed, research (Moscovici, 1987; Goertzel, 1994; Abalakina-Paap et al., 1999) has suggested that conspiracy theorists tend to feel more aggression/hostility compared to non-conspiracy theorists. Therefore, Participants were also administered the Hostility subscale of the *Aggression Questionnaire* (Buss & Perry, 1992) to measure the cognitive component of aggression. Participants responded to eight items on a 5-point Likert scale ranging from "Extremely uncharacteristic of me" to "Extremely characteristic of me". An example item is "I wonder why sometimes I feel so bitter about things". The higher the score on this scale, the higher the hostility.

The *Self-Esteem Scale* (Rosenberg, 1965) is comprised of 10 items, to which participants respond on a 4-point Likert scale from "strongly agree" to "strongly disagree". E.g. "I feel that I'm a person of worth, at least on an equal plane with others". A high score on this measure reflects high self-esteem.

Anomia and Authoritarianism were constructs both measured using the corresponding subscales of the *Attitude-Type Scale* (Srole, 1956). Each subscale was comprised by five items, to which participants responded using a 4-point Likert scale ranging from "Strongly agree" to "Strongly disagree". An example Anomie item is "There's little use in writing to public officials because often they aren't really interested in the problems of the average man". An example Authoritarianism item is "Any good leader should be strict with people under him in order to gain their respect". Low scores on these subscales reflect strong anomie and authoritarian attitudes respectively.

The Statistical Package for the Social Sciences (SPSS; version 18) and ModGraph (Jose, 2013) were used to analyse the data.

Procedure

Introductory-level psychology students at Victoria University of Wellington were tested on a range of measures in a mass testing session in exchange for which they received credit towards a mandatory course research requirement in exchange for their participation. The two measures from the mass testing session that are of relevance to this particular study were the CBS, and the SPQ. All participants in this study completed each measure online using an online survey tool (Survey Monkey).

The remainder of the measures in this study were administered in sessions comprised by no more than 10 participants at a time. Participants were able to sign up to participate in the study using an online system operated by the School of Psychology at Victoria University of Wellington. Participants were able to read a short description of the study and what would be expected of them should they wish to participate. At this stage the inclusion criteria for participation was also outlined. The inclusion criteria required English as participants' first language, that they had completed the mass testing session in their first psychology laboratory, that they had normal (or corrected) vision and hearing, and that they had a reasonable level of reading skill. If the students wished to participate in the study they indicated this by ticking a box, at which point a schedule of available sessions appeared on screen. Participants were then able to select which testing session to would like to attend. Five minutes before the session, the principal investigator collected the participants from a previously designated area and led them to a quiet testing room. Once all students who had signed up for the study had arrived, the principal investigator described the study to them. Each student was given an information sheet (see Appendix B) which outlined the purpose of the study and what they would be required to do if they wished to continue, and that they could withdraw their participation any time up to the conclusion of the testing session. Potential participants were given an opportunity to ask questions before the experiment

commenced. Once these questions were answered to their satisfaction, each participant was required to provide signed consent (see appendix B) before they could continue. Each batch of participants (up to 10) were assigned to the high-control or low control conditions in alternating order (i.e. first batch tested was low-control, second batch was high-control, third batch was low-control and so on). Testing sessions were 30 minutes in duration and took place in a quiet room. Participants were given the opportunity to ask questions before the experiment commenced. Participants were then given a package of the all the measures (refer to Appendix A) outlined above. Participants were asked to complete the various measures in the order they were provided (not skipping back and forth) starting with the recall task. This was to ensure that the control level manipulation was effective as a prime.

Once all participants in a batch had completed the experiment, the debrief phase of the session commenced (see Appendix C), in which the purpose and specific hypotheses of the study were explained. Participants were again given the opportunity to have any questions answered, and were provided with a debrief sheet to keep.

Results

An Alpha level of 5% ($\alpha = 0.05$) was used for all statistical analysis reported in this thesis. Three participants were removed from the analysis as they were outliers in the data when conducting regression analysis (reported below); therefore all data analysis was recalculated excluding the outliers.

For each measure used in this study, scores were compared across the two conditions low control and high control (Table 1). However, one-way between-groups analysis of variance (ANOVA) revealed no significant differences between the conditions for any of the measures, with the exception of the MI subscale where the high control condition demonstrated a higher level of magical ideation. However, a number of the measures used in this study were correlated at either the $p < .05$ or p

< .01 level across both conditions (Table 2). For instance, the higher the scores on the CBS, the more magical ideation a participant was likely to experience; the more disconnected a participant felt from society (high scores on Anomie), the less likely they were to make meaningful connections between unrelated situational stimuli (high scores on CPP). High scores on any of the measures (excluding MSPT) also meant a participant was likely to score highly on the measure of hostility. Other significant correlations of note include that an external LOC of control was associated with higher levels of MI, but also lower self-esteem and anomie.

Table 1

Mean Scores and Analysis of Variance on Scales by Condition

Measure	Low Control (n = 37)		High Control (n = 44)		Between-group differences	Internal reliability
	Mean	*SD*	*Mean*	*SD*	$F(1, 79) =$	$\alpha =$
Conspiracy Pattern Perception	11.97	3.31	12.50	3.12	0.03 ns	.46
MSPT	15.32	3.16	15.52	3.59	0.07 ns	.17
Hostility	20.62	4.41	21.43	4.88	0.61 ns	.71
Magical Ideation	7.92	1.14	8.73	1.97	4.71*	.91
LOC	12.68	4.10	11.45	3.63	2.02 ns	.67
Self-Esteem	19.22	3.12	19.07	4.39	0.03 ns	.83
Anomie	5.78	1.73	6.00	2.02	0.26 ns	.50
Authoritarianism	4.32	1.49	4.02	1.98	0.58 ns	.40

Note. ns = not significant. * = $p < 0.05$. MSPT = Modified Snow Pictures Task.

Table 2

Significant Correlations Between Study 1 Measures

	Conspiracy Pattern Perception	Magical Ideation subscale of SPQ	Conspiracy Beliefs Scale	Anomie Subscale of Attitude-Type Scale	Authoritarianism Subscale of Attitude-Type Scale	Self-Esteem Scale	Internal/External Locus of Control Questionnaire	Aggression Questionnaire
Conspiracy Pattern Perception		0.15	0.18	0.26*	0.11	-0.13	0.01	0.29**
Magical Ideation subscale of SPQ			0.32**	0.19	0.19	-0.25	0.25*	0.37**
Conspiracy Beliefs Scale				0.23	0.17	0.09	0.06	0.23*
Anomie Subscale of Attitude-Type Scale					0.32**	-0.26*	0.28*	0.54**
Authoritarianism Subscale of Attitude-Type Scale						-0.22	0.09	0.38**
Self-Esteem Scale							-0.50**	-0.49**
Internal/External Locus of Control Questionnaire								0.27*
Aggression Questionnaire								

Note. * $p < 0.05$. ** $p < 0.01$.

Modified Snowy Pictures Task

The mean total score for the MSPT showed no significant differences across condition. However, in order to replicate Whitson and Galinsky (2008), performance on the MSPT was broken down by object absent correct responses (OA), and object present correct responses (OP), and then compared across condition (level of control).

A one-way between-groups ANOVA revealed there was no significant difference between means (Table 3) across condition for OA, $F(1, 79) = 0.00$, $p = 0.96$. Similarly, there was no significant difference found for OP, $F(1, 79) = 0.13$, $p = 0.73$. Furthermore, multivariate analysis of variance (MANOVA) revealed there was no significant difference between how participants performed across subgroups (OA and OP) in each condition, Wilks' Lambda = .10, $F(3,77) = 0.06$, $p=0.98$; partial eta squared = .002.

Table 3

Mean Performance Scores on Modified Snowy Picture Task for Study 1 Subgroups

	Low Control		High Control	
MSPT Subgroup	*Mean*	*SD*	*Mean*	*SD*
OA	8.00	2.80	8.20	2.42
OP	7.30	2.13	7.27	1.85

Note. OA = object absent correct responses; OP = object present correct responses

Moderation Analysis

Previous research (e.g. Whitson & Galinsky, 2008) has suggested that level of perceived control is associated with illusory pattern perception, however in this study no significant differences were found in Apophenia between different levels of control using MANOVA. Thus it was hypothesised that the strength of the relationship between Apophenia (measured by perception on MSPT) and level of

control might be accounted for in some way by a third variable (a moderator variable), and by not investigating the contribution of this third variable, some of the relationship that may actually exist between level of control and Apophenia may be masked. It was hypothesised that this third variable might be MI. As described earlier, Whitson and Galinsky (2008) found that those who held superstitious beliefs (an aspect of MI) in their low-control condition were more likely to make meaningful connections between unrelated stimuli than those in their high-control condition. Thus it was hypothesised that in the current study, those in the low-control condition who also reported higher levels of MI may be more likely to perceive an object when it does not really exist (on the MSPT). It was considered that it might be possible that there was a joint effect of MI and condition that was over and above that of their separate effects. In order to investigate this hypothesis, multiple linear regression analysis was conducted using the recommendations for moderation analysis by Baron and Kenny (1986). The enter method was used to analyse each potential model.

A moderator variable affects the strength of the relationship of an independent variable on a dependent variable (Baron & Kenny, 1986; Kraemer, Kiernan, Essex, & Kupfer, 2008). Moderation analysis can be conducted when the dependent and independent variables are categorical, continuous, or a combination of the two. In this study both the variables (condition and MI respectively) were continuous in nature. A third variable was constructed which was a composite combining the responses on the MI subscale of the SPQ by condition (low-control versus high-control). As would be expected, use of the composite variable condition by MI generated a very strong positive Pearson's correlation between the composite variable and condition of 0.952, with a tolerance value of 0.022 and variation inflation factor (VIF) of 45.172[3]. To

[3] Leahy (2000) recommends a tolerance cut-off value of 0.20, therefore values below this cut-off indicate multicollinearity. Leah (2000) further suggests that VIF's greater than 4.0 indicate multicollinearity.

account for the multicollinearity the data were centred first (Baron & Kenny, 1986), where the mean MI score was subtracted from each MI data point[4].

For OA, MI scores and condition were entered first, however the model was not significant ($F(2, 74) = 0.80$, $p = 0.45$, $R^2_{\text{adjusted}} = -0.005$). A significant model emerged with the second step of the regression analysis using MI scores, condition, and the composite variable of condition by MI ($F(3, 73) = 2.95$, $p < 0.05$, $R^2_{\text{adjusted}} = 0.07$). When the identical models were analysed for OP, neither was significant ($F(2, 74) = 0.28$, $p = 0.76$, $R^2_{\text{adjusted}} = -0.02$; $F(3, 73) = 0.70$, $p = 0.55$, $R^2_{\text{adjusted}} = -0.01$ respectively). None of the OP beta regression coefficients were significant at the 5% level, similar to the first model for OA. However, in contrast, beta regression coefficient for the second OA model with regard to the moderating variable, MI centred scores was significant ($\beta = -.68$, $p < .05$), as was the third step of the regression analysis which analysed the relationship between and the composite variable condition by Centred MI scores and Apophenia ($\beta = .61$, $p < .05$). Therefore, being in the low-control condition with high MI scores predicted Apophenia (perceiving non-existent objects in the MSPT). As the inclusion of the MI by condition interaction term explained significant additional variance ($\Delta R2 = .09$), this indicates moderation, i.e. MI interacts with condition to affect OA scores (but not OP). To understand the nature of the interaction, Modgraph was used. The interaction is shown in Figure 2.

[4] According to Dalal and Zicker (2011), centering the MI data may alter the size of the correlation of MI with other variables without affecting its significance.

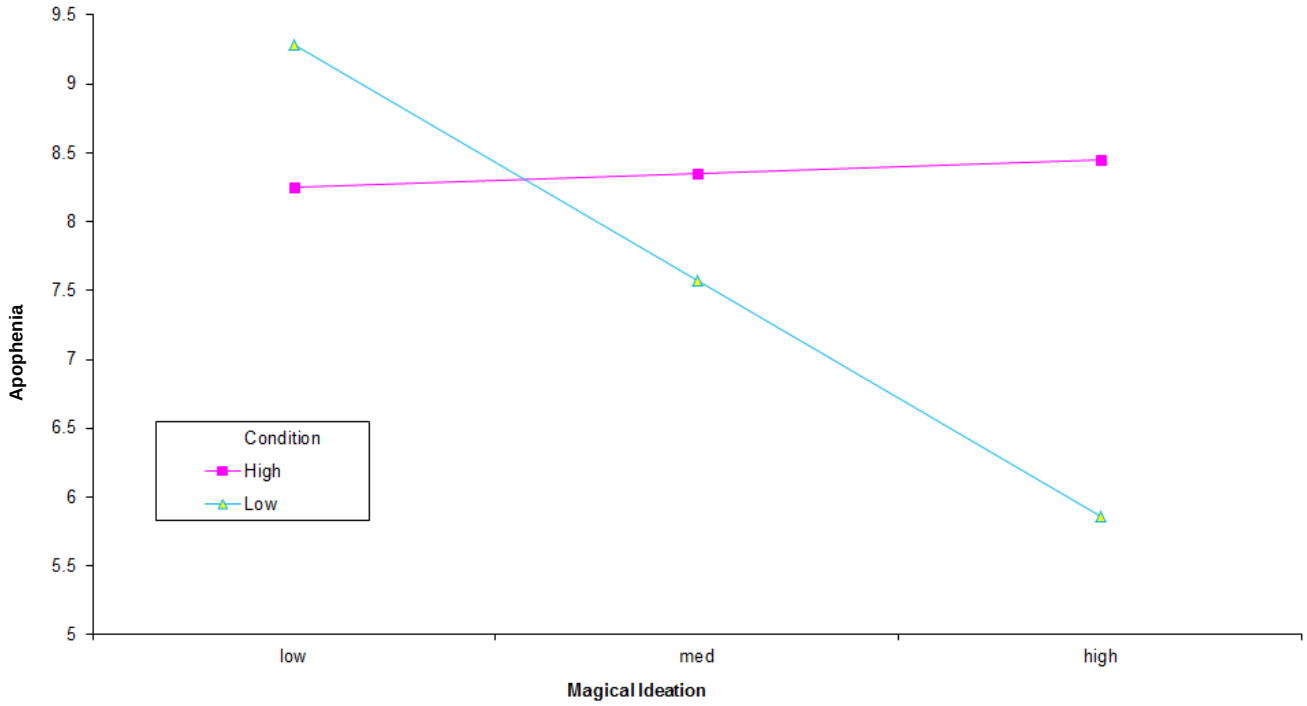

Figure 2. Significant interaction of Magical Ideation by Condition on Apophenia. Low scores on y-axis indicate greater levels of Apophenia (objects that do not actually exist were perceived).

Discussion

The primary aim of this study was to replicate the findings of earlier research (Whitson & Galinksy, 2008) that perceived low personal control induces illusory pattern perception – both visually and situationally. The analyses of the effect of perceived control on Apophenia led to the finding that MI moderates the strength of the relationship between these two variables. We turn now to discussion of the hypotheses (presented in the introduction) and whether support for them was obtained in this study.

In this study it was hypothesised that participants in the low-control group would demonstrate higher scores on the conspiracy pattern perception (scenario) measure compared to participants in the high-control group. However, this hypothesis was not supported in the present study as no significant difference in

conspiracy pattern perception was detected between the low and high control groups. Thus this finding was not consistent with that of Whitson and Galinsky (2008) who found their low-control participants to perceive significantly more conspiracy than participants in their high-control condition.

It was also hypothesized that participants in the low-control condition were expected to produce more incorrect responses (low scores) on the object absent dimension of the MSPT than participants in the high-control group. This hypothesis was not supported by the findings of the current study, which is consistent with the findings of Whitson and Galinsky (2008) who did not find a statistically significant difference. However, using a more relaxed confidence interval Whitson and Galinsky (2008) found that participants in the low-control condition perceived more objects that did not exist than participants in the high-control condition. In the current study, a significant difference between the two groups was not found, even using a more relaxed confidence interval. However, one of the key findings of the present study was that those who perceived low subjective control and who also reported high levels of MI (high belief in paranormal phenomena) were more likely to perceive objects that did not actually exist. Thus those who perceived low personal control experienced one form of Apophenia (specifically, MI - a moderating factor), were more likely to experience another form of Apophenia, specifically, visual illusory pattern perception. Research has suggested those who perceive low subjective control are more likely to experience MI (Pronin et al., 2006, Whitson & Galinsky, 2008). MI as measured by the SPQ is intended to identify a personality trait characterised by a relatively *stable* (as opposed to a state-like) tendency to hold paranormal beliefs (Raine, 1991; Meyer & Hautzinger, 1999); and thus MI could be considered a trait-like consequence of perceived low personal control, rather than state-like perception of low personal control. Thus it is possible that when low subjective control was made salient for participants with trait MI, they responded with illusory pattern perception

as a compensatory mechanism to re-establish a sense of personal control. Participants in the sample who did not demonstrate high levels of MI may be individuals who do not perceive low subjective control in an enduring fashion, and potentially presented with some resilience against the control prime intended to induce a sense of low personal control. As a result, these participants did not demonstrate illusory pattern perception.

Whitson and Galinsky (2008) found that when they presented participants in their low control condition with the opportunity for self-affirmation (increased perceived subjective control), illusory pattern perception decreased to baseline levels. Similarly, in the present study, participants in the high-control condition presented with less illusory pattern perception regardless of level of MI. This suggests that individuals who reported high levels of MI, and who may perceive low subjective control in a trait like fashion, were less susceptible to visual Apophenia when given the opportunity to recall a situation in which they felt in complete control (which may have served a self-affirming function). Thus because another means of re-establishing perceived control was already active, there was no need for illusory pattern perception to occur.

The third hypothesis of this study was that there would be no statistical difference in performance on the object present dimension of the MSPT between the low- and high-control groups. Consistent with the findings of Whitson and Galinsky (2008), the present findings indicated that all participants were able to accurately identify visual objects that actually existed, regardless of the level of personal control they perceived. This suggests that level of perceived control does not affect the ability to detect patterns that actually exist. In addition, a magical thinking style did not affect participants' ability to perceive real visual patterns.

The fourth prediction for the findings was that participants in the low-control condition would score higher on a measure of MI compared to participants in the

high-control condition. In contrast to the findings of Fyfe et al. (2008), the current study found that participants in the high-control condition reported significantly higher levels of MI, as measured by the MI subscale of the SPQ, compared to participants in the low-control condition; therefore this hypothesis was not supported by the findings. The cause of this finding may lie in the methodology employed in the present study. Specifically, the order of presentation of measures may have played a role in the high MI scores in the high-control condition. The order of presentation was the same for all participants, beginning with the recall task, then the MSPT, and then the battery of questionnaires measuring various personality variables, including MI. The participants in the high control condition may have benefited from the self-affirming recall task (recalling a situation in which they had complete control) to the extent that they did not demonstrate illusory pattern perception on the MSPT which was administered immediately after the recall task. However, mean total scores (number of total correct responses) on the MSPT across the two conditions were not significantly different, with participants achieving approximately 64% total accuracy across 24 items. So although both groups were incorrect approximately 36% of the time, the nature of the inaccuracies differed between the groups. When objects were not actually present in the visual stimuli, participants in the low-control condition who also reported high MI tended to perceive objects and even labelled what they saw, whereas participants in the high-control condition in general responded that they did not know if an object was present. Both types of responses were counted as incorrect. It is possible that for participants in the high-control group with high trait MI, the recall task was protective against visual illusory pattern perception. However, the total accuracy score for the high-control group suggests that these participants were exposed to a situation of uncertainty (not knowing if an object existed in some of the pictures or not) and potentially perceived low subjective control. Being subsequently presented with the MI subscale of the SPQ (and other measures of

personality variables), high control participants demonstrated high scores reflecting Apophenia (Giannotti et al., 2001; Pronin et al., 2006; Bell et al., 2007; Whitson & Galinsky, 2008; Kay et al., 2009; Vannucci et al., 2011; Wang et al., 2012). This could mean that high-control group participants with high trait MI no longer benefitted from the buffer of the self-affirmation task (because the MSPT exposed them to a situation of low-control). The high MI scores of the rest of the high-control group participants may reflect state (transient) high MI as a result of being exposed to a situation (the MSPT) of low personal control and high uncertainty. Future research would benefit from counterbalancing the order of presentation of measures in order to provide more clarity as to how level of perceived control affects not just MI but responses on other measures.

The fifth hypothesis of this study was that participants who scored highly on magical ideation, would also score highly on the Internal/External Locus of Control Questionnaire (reflecting a more external LOC of control), compared to low scorers on magical ideation. The findings of the current study supported this hypothesis where the higher participants scored on the magical/odd thinking subscale of the SPQ, the higher they were likely to respond on the I-E Locus of Control Questionnaire. This finding suggests that those who engage in magical thinking are more likely to have an external LOC. Hence, this study lends support for the argument that those who perceive low personal control may present with MI, which could be considered a proxy for Apophenia (Bell et al., 2007; Whitson & Galinsky, 2008; Kay et al., 2009; Vannucci et al., 2011; Wang et al., 2012). Glass and Singer (1972) found that an external LOC was more likely in those who experience low subjective control, and therefore, it could be reasoned that those who demonstrate MI are more likely to have an external LOC. Indeed, other research supports the notion that a key function of MI is to allow explanations of causality (Meehl, 1967, as cited in Eckblad & Chapman, 1983). Essentially, the ability to provide an explanation

enhances the experience of controllability in uncontrollable situations (Giannotti et al., 2001; Pronin et al., 2006).

Finally, it was expected that participants in the low-control group would have higher scores on scales measuring anomie, authoritarianism, and hostility, and lower scores on the self-esteem scale compared to participants in the high-control group. Contrary to expectation, there was no significant difference found between the two conditions on anomie, authoritarianism, hostility, or self-esteem, meaning that both groups responded fairly similarly on measures of these constructs. Similar to what may have occurred to high-control group participants with regard to MI scores, the protective buffer offered by the self-affirmation task may have been cancelled out by the subsequently presented MSPT, which potentially served as exposure to a situation of uncertainty and perceived low-control. Thus participants across both conditions responded fairly similar across the questionnaires measuring personality variables. However, as shown in Table 2, participants who felt higher levels of alienation from society (anomie), self-esteem, magical ideation, more external LOC, and closer alignment with established authorities (authoritarianism), were also more likely to experience more hostility. Additionally, the more external participants' LOC, the lower self-esteem and the more alienation they were likely to present with. However, high scores on the CPP measure were positively correlated with high scores on the Anomie measure and Hostility measure, suggesting that the higher the level of ascription to CTs, the more alienated one is likely to feel from society, and the more hostility they are also likely to present with. These findings relating to anomie and hostility are therefore consistent with the findings of previous research (Moscovici, 1987; Goertzel, 1994; Abalakina-Paap et al., 1999).

High levels of alienation were also associated with higher levels of situational illusory pattern perception (CPP scores). Stronger beliefs in conspiracies (CBS scores) were associated with higher levels of MI. That is, those who believe in paranormal

phenomena were also more likely to concede that a range of conspiracies occurred (thus the two forms of Apophenia were positively associated). However, belief in conspiracies (CBS scores) was not found to be correlated with situational illusory pattern perception (CPP scores). Therefore, it could be reasoned that belief in paranormal phenomena is associated with the tendency to *believe* in conspiracies, but not necessarily the tendency to *form* CTs. This contention is in line with my conceptualisation of CT affinity, which acknowledges that believers of CTs may not necessarily engage in conspiracy theorising, and also acknowledges the continuous nature of conspiracy thinking.

On balance, the findings of this study suggest that when people feel a lack of control and also experience high levels of magical ideation, they are more likely to also perceive illusory visual patterns. There was no support in this study for the contention that these findings can be extended to the situational realm. Furthermore, those who engage in magical ideation are also more likely to have an external attribution style. However, a direct link between perceived low personal control and an external attribution style has not been evidenced here. This suggests that also engaging in magical ideation has a contributing effect over and above that of lack of control on its own, in the development and maintenance of an external attribution style.

I am wary of interpreting these findings too generally as some of the results of this study are not consistent with previous research. Whilst Whitson and Galinsky (2008) did not investigate the contribution of magical ideation and low subjective control in pattern perception, they did find some significant group differences where the current study did not. Of particular note is the finding regarding conspiracy pattern perception (CPP). In both their studies regarding CPP (studies 4 and 6), Whitson and Galinsky (2008) found participants in the low-control group perceived significantly more conspiracy (situational illusory pattern perception) compared to

those in the high-control group. This contradiction in the findings is interesting as the CPP scale used in the current study was identical to that used by Whitson and Galinsky (2008), as was the recall task used to manipulate sense of control in their sixth study. However, it is possible that this control prime was not effective for inducing a subjective sense of low control in our sample. In the current study, perceived level of subjective control was primed by asking participants to recall a situation where they felt they either had complete control over a situation or no control in a situation. However, the findings of this study were not as marked as seen by Whitson and Galinsky (2008). A flaw of both the Whitson and Galinsky (2008) study and the current study was that no manipulation check was undertaken; therefore there is no confirmation that the recall task was able to successfully induce a sense of low subjective control. If this study were to be replicated, a measure such as the powerlessness/mastery scale by Pearlin, Meaghan, Lieberman and Mullan (1981) would be important to ensure that perceived subjective control as an independent variable, has been manipulated to create the intended effect. Therefore, I cannot say with certainty that the recall task was the most effective approach to manipulate perceived personal control.

Review of the past literature as to other methods that have been used to manipulate level of control revealed that inducing mortality salience can be particularly effective. Mortality salience is a state experimentally induced in participants by increasing their access to death-related thoughts (Greenberg, Solomon, & Pyszczynski, 1997). The most common mortality salience methods used in past research has been death essays, fear of death questionnaires, videos or vignettes themed with death (Burke et al., 2010). A review of the mortality salience literature follows, and then a replication of the current study with the control prime amendment is presented. A more thorough discussion that encompasses the findings of Studies 1 and 2 is then presented.

Study 2: Mortality Salience and Illusory Pattern Perception

No living thing is able to live on endlessly and remain untouched by death. Researchers have suggested that contemplation of death drives humans to achieve their goals, because of the awareness of a restricted time frame (e.g. Greenberg et al., 1997; Arnt & Greenber, 1999; Arnt & Solomon, 2003; Fritsche, Jonas, & Fankhanel, 2008; Burke et al., 2010; Juhl & Routledge, 2010; Rogers, 2011). All the world's religions have their own way of regarding death and what happens beyond death. Even secular regions of the world (e.g. the Netherlands) have been shown to demonstrate the same level of contemplation as to what happens after life ceases (Wojtkowiak & Rutjens, 2011). Historians, anthropologists, theologians, and religious scholars have discovered that ancient peoples also spent a considerable amount of attention considering the process of death, the afterlife, and the practices surrounding death, and indeed there is proof of this in eschatological texts such as the Egyptian book of the dead, the Tibetan book of the dead, the Maya book of the dead, the Nahuatl book of the dead, and even the Christian book of the dead (Ars Moriendi; Grof, 1994). For instance, in Egyptian custom, some believed that if they worshipped the sun god Amun Ra, in the afterlife they would journey with him and other deities on what they referred to as a sun barge (a special boat) – an esteemed privilege. According to Bowker (1991), the ancient Egyptians did not fear death, but rather viewed death as life continued in another world. They did however fear chaos in this world or any other, so in order to restore some semblance of control the process of mummification and entombment was in a way intended to streamline the transition between this world and the next so as to not allow chaos to insert itself during the journey.

Grof (1994) argues that Ars Moriendi was produced during a time of great uncertainty because of a substantial portion of the population dying almost en masse as a result of various epidemics, wars, and the holy inquisition. The purpose of the text was to shed some light on the subject of impermanence and provide the living with instruction on how to regard death, and also encourage readers to focus their goals in life and not be distracted by vanity and other harmful behaviours, but instead to live righteously (Grof, 1994). This type of guidance was aimed at reducing anxiety about death by providing auspices under which humans should operate. However, others such as Malinowski (1925, as cited in Bowker, 1991), argue that religion exploits people's fear of death "…to exercise power, control and manipulation over oppressed and helpless humans" (Malinowski, 1991, p. 8). Whatever the case may be, death itself is inescapable, and the concept of death being unavoidable, the uncertainty of the circumstances it may take place can induce foreboding, anxiety, and a sense of no control in many people. Indeed Fritsche et al. (2008) claim that contemplating the certainty that one will die some day (mortality salience) undermines the sense of control one feels.

To describe the effects of acute terror that can be engendered with one's awareness of their own mortality, Greenberg, Pyszczynski, and Solomon (1986) conceptualised terror management theory (TMT). TMT also takes account of the strategies people use to manage this terror, thus increasing the sense of control they experience (control restoration), and are considered to serve a death-denying purpose (refusing to believe that human existence ceases at the time of biological death) by ensuring either symbolic or literal immortality (Deschesne et al., 2003). For instance, symbolic immortality can be achieved in a number of ways. The first is the creation, maintenance, and defence of one's belief systems, that is, their cultural worldview (Arnt & Greenber, 1999; Arnt & Solomon, 2003; Burke et al., 2010; Greenberg et al., 1997; Juhl & Routledge, 2010; Rogers, 2011). The second is how well the person feels

they represent and live up to this belief system, that is, their self-esteem (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989). Strong ascription to a cultural worldview, and the feeling that one represents this worldview well, are said to in combination have an anxiolytic effect for mortality salience as they instil a sense of meaning and order – a state known as death transcendence (Fritsche et al.,2008). Symbolic immortality can also be achieved through the continuation of oneself through their children or monetary investments and so on.

According to a number of researchers (e.g. Deschesne et al., 2003; Greenberg et al., 1997; Vail, Rothschild, Weise, Solomon, Pyszczynski, & Greenberg, 2010), people believe that literal immortality can be secured by attaching oneself to the more spiritual ideas such as the idea of the soul continuing beyond death into the afterlife or reincarnation. If people were not able to manage their terror related to death-awareness, this could severely affect their ability to function on a daily basis, thus increasing the sense of control experienced is an important task. Terror management then, enables continued functioning despite the knowledge of inevitable death.

The methodology of most research investigating TMT, is often to first induce mortality salience and then study how this affects a range of dependent variables (e.g. self-esteem). The mortality salience hypothesis predicts that once people have invested in their belief system / worldview, by increasing their access to death-related thoughts (mortality salience), their allegiance to their worldview will strengthen, which they will then defend strongly as it has implications for their self-esteem and symbolic immortality (Burke, Martens, & Faucher, 2010) and thus the level of perceived control one experiences. In fact, Fritsche et al. (2008) state that the above TMT strategies play a vital role in perceived control restoration. For instance, studies researching worldview defence as a TMT strategy have confirmed that if people are reminded of their mortality, and then exposed to those who disagree with their belief systems or are neutral on the matter, they will evaluate such individuals with more

negativity. However, if people are exposed to people who voice agreement with their belief systems, these individuals would be evaluated more favourably (Arnt & Greenberg, 1999; Arnt & Solomon, 2003; Harmon-Jones, Simon, Greenberg, Pyszczynski, Solomon, & McGregor, 1997). One interpretation (Fritsche et al., 2008) of this finding has been that the level of control an individual perceives their ingroup to possesses is considered an expression of the level of control they also possess at an individual-level. Thus a strong sense of ingroup can lead to a greater sense of control at the individual level. This pattern of findings was not replicated by increasing accessibility to non-death topics (e.g. social rejection or pain), or the idea of self-determined death, thus providing discriminant validity for the mortality salience hypothesis, which relates to unpredictable death (Burke et al., 2010). The current study builds on this suggestion that mortality salience elicits a sense of powerlessness, and utilises the Multidimensional Fear of Death Scale (MFODS; Hoelter, 1979) to induce mortality salience.

Death anxiety has also been investigated specifically in those who believe CTs Newheiser et al. (2011) found that after mortality salience occurred, participants were more likely to endorse CTs (relating to the Da Vinci Code). The researcher reasoned that an enduring belief system such as that characterised by CTs can be considered a form of worldview. Therefore, when faced with an experience of perceived low personal control, people with a belief system consistent with CTs will be more likely to endorse CTs in order to eradicate a sense of meaningless or low control (Newheiser et al., 2011). Endorsement of this particular worldview then provides an individual with a sense of symbolic immortality that would transcend their death (Newheiser et al., 2011). Death-anxiety was measured in their study using a fear of death questionnaire (Collett-Lester Fear of Death Scale; Lester, 1994).

Similarly Sullivan et al. (2010) also argue that endorsement of CTs is an attempt to re-establish perceived personal control. They argue that by ascribing

causality for negative events to perceived powerful others, order is restored to their *system*. Sullivan et al. (2010) found that those presented with a fear of death scale were more likely to ascribe causality for aversive events to enemies or political officials. The researchers concluded that the ability to identify risk in one's environment led to a perception of increased personal control. We can make sense of this finding by reflecting on Swami and Cole's (2010) assertion that CTs strengthens a sense of certainty in uncertain times. The certainty offered by ascribing causality to powerful others provides some certainty, serving to re-establish a sense of perceived personal control.

Mortality salience manipulations have long been used as an independent variable to measure the influence of death awareness on a range of dependent variables compared to control groups (Burke et al., 2010). The dependent variables investigated in the past have included attitudes towards a particular person, a non-person oriented attitude, behaviour, cognition, and affect. Most relevant to the present research, Fritsche et al. (2008) investigated the relationship between mortality salience and the sense of control. According to these researchers, at the core of fear of death is a sense of lack of control, and the behaviours one displays when mortality salience occurs are ultimately to restore a sense of control. In the current study, mortality salience was induced (to create a sense of low personal control), and then illusory pattern perception both in visual and situational realms were measured.

Whitson and Galinsky (2008) found that when they experimentally manipulated perceived personal control, participants in the low control condition demonstrated significantly greater illusory pattern perception: both visually (as measured by the MSPT) and situationally (as measured by the CPP scale) compared to those in the high control condition. In Study 1 I was unable to replicate the findings of Whitson & Galinsky (2008) despite using the same experimental manipulation (a recall task) as they did. The exception to this was when I considered the role a more

stable form of illusory pattern perception (MI) and found that the higher participants in the low control condition scored on the MI subscale of the SPQ the more likely they were to demonstrate visual illusory pattern perception. This was not the case however, with situational illusory pattern perception where no significant difference between the two conditions were found. I considered that the experimental manipulation used in Study 1 was not powerful enough to induce a sense of powerlessness for participants in the low control condition. Therefore, in the current study, an alternative method of experimentally manipulating perceived personal control is trialled. That is, induction of mortality salience. The literature review above suggests that when mortality salience is induced people are more likely to feel powerless and consequently are more likely to utilise compensatory strategies to re-establish a sense of control (Fritsche et al., 2008). As outlined earlier, other research has also investigated the role mortality salience can play in belief in CTs (Newheiser et al., 2011; Sullivan et al., 2010).

In the current study in the Multidimensional Fear of Death Scale (MFODS; Hoelter, 1979) was used to increase access to death-related thoughts (mortality salience). The MFODS has been successfully used in previous research to induce mortality salience (Wilson, 2005). Furthermore, Ochsmann (1984) used a similar 15-20 minute survey (the Thanatos Questionnaire) of death-related questions and was able to successfully induce mortality salience. The premise underlying such questionnaires is that participants are exposed to death-related topics for approximately 20 minutes thus inducing mortality salience. Other methods of this level of exposure also exist such as asking participants to write about dying for a period of time. The MFODS was used in the current study as the finite number of questions imposes some structure to the length of time participants spend on that part of procedure. To my knowledge the MFODS has never before been used specifically to experimentally manipulate perceived personal control.

Hypotheses

Based on the literature discussed, the following hypotheses were generated. The first hypothesis was that participants in the low-control group would have significantly higher scores on the CPP measure (situational illusory pattern perception) compared to participants in the high-control group. The second hypothesis was that participants in the low-control group would demonstrate more visual illusory pattern perception (on the MSPT) compared to those in the high-control group. The third and last hypothesis was that participants in the low-control group would demonstrate higher levels of anomie, authoritarianism, hostility, and lower levels of self-esteem compared to those in the high-control group.

Method

Participants

The sample for this study comprised 256 participants (82 females), aged between 18-55 years ($M = 23.56$, $SD = 6.65$). Participants were university students in undergraduate or postgraduate study. The ethnic breakdown of the sample was as follows. The majority of the sample was New Zealand-European/Pakeha (61.82%), followed by Asians and Europeans (10% of the sample each). Bi-ethnic Pakeha/Maori participants made up 3.64% of the sample, whereas American and Maori made up 2.74 % of the sample each. Bi-ethnic European/Pakeha participants and those who did not wish to disclose their ethnicity each comprised 1.83% of the sample. Each of the following ethnicities comprised 0.91% of the sample: Canadian, Chinese-European, Hispanic, New Zealand-Indian, Pacific Island, and South African-European. Participation was voluntary, and the portion of the sample who were introductory psychology students received credit towards a mandatory course research requirement in exchange for their participation. The exclusion criteria for participation were not being fluent in English, and uncorrected impaired vision.

Materials

Because the focus of this study was to trial an alternative experimental control prime to which was used in the previous study, and investigate its consequent impact on conspiracy pattern perception; the same measures that were administered in Study 1 were also administered in the current study (with the exclusion of the MI subscale of the SPQ, and the CBS). The only additional measure was the Multidimensional Fear of Death Scale (MFODS; Hoelter, 1979).

The MFODS (see Appendix D) is a measure of fear of death consisting of 58 items. Participants are asked to respond by selecting which option ranging from 'strongly disagree' to 'strongly agree' on a 7-point Likert scale represents how they feel about each item. The Cronbach's alpha for this sample was $\alpha = .93$, which reflects excellent internal reliability. The MFODS has had wide usage in a range of studies (e.g. Long, 1985; Holcomb, Neimeyer, & Moore, 1993; Clements, 1998; Roff, Butkeviciene, & Klemmack, 2002; Floyd, Coulon, Yanez, LaSota, 2004; Sowe, Sears, Walker, Kuhl, & Conti, 2007). This measure was used to induce mortality salience (and consequential low perceived personal control).

Procedure

The same procedure as used for study 1 was also employed in the current study with two exceptions. The first difference is that in the information sheet, potential participants were forewarned about one of the questionnaires containing questions regarding death-related topics. If participants were concerned they may be distressed by such questions, they were encouraged not to participate in the study. Potential participants were also told that they could withdraw from the study at any time during the questionnaire if the questions became too distressing for them, or for any other reason. They were also assured they could withdraw their participation at any time during the testing session with no questions asked and no consequences.

The second key difference between study 1 and the current study was that the order of presentation of the measures was counterbalanced to determine whether there was a significant effect of the MFODS (mortality salience). In block 1, the order of presentation began with the MFODS, the purpose of which was to induce a sense of low subjective control. The sequence of presentation for the low control group was as follows: MFODS, MSPT, Anomie Scale, Authoritarianism Scale, Hostility scale, I-E Locus of Control Questionnaire, Self-Esteem scale, and CPP. In block 2, the sequence of presentation ended with the MFODS rather than beginning with it, and this was taken as proxy for the high control group. The order of presentation of measures was as follows: MSPT, Anomie Scale, Authoritarianism Scale, Hostility scale, I-E Locus of Control Questionnaire, Self-Esteem scale, CPP, MFODS. Participants were randomly assigned to either the low or high control condition.

Following the administration of these measures, a debrief sheet appeared onscreen, outlining the full nature of the experiment (see Appendix E). The debrief sheet also emphasised support services available to the participants, should the content of the study have been distressing to them in any way.

Results

Analysis of Variance

For each measure used in this study, means and standard deviations were compared across the two conditions low-control and high-control (see Table 4). One-way between-groups ANOVA revealed significant differences between the conditions (low versus high-control) for Anomie, Conspiracy Pattern Perception, Self-Esteem, and Locus of Control measures; but not for MFODS, Hostility, Authoritarianism, and overall performance on the MSPT. Interestingly, the high-control group demonstrated significantly higher levels of each of the personality variables compared to the low-control group, except for authoritarianism. Pearson's correlation coefficients were also calculated between all the measures used in the present study

(Table 5). Of note, the Hostility subscale correlated significantly with all other measures. Furthermore, CPP was positively associated with each of the personality variables.

Table 4

Mean Scores on Scales and ANOVA's by Condition

	Low Control		High Control		α =	$F(1, 79)$ =	p =
Measure	*Mean*	*SD*	*Mean*	*SD*			
MFODS	4.39	0.75	4.23	0.75	.94	2.66	0.10
Conspiracy Pattern Perception	10.21	4.92	11.36	3.72	.41	4.19	0.04
MSPT	12.55	6.31	12.80	4.66	.81	0.12	0.73
Hostility	19.59	8.84	20.90	5.55	.81	1.89	0.17
LOC	37.54	14.44	42.50	4.80	.12	12.45	< .01
Self-Esteem	20.15	7.85	22.99	3.13	.37	13.30	< .01
Anomia	14.28	5.91	16.45	3.44	.62	12.08	< .01
Authoritarianism	17.39	6.79	18.47	3.70	.67	2.32	0.13

The mean total score for the MSPT showed no significant differences across condition. However, as in Study 1, performance on the MSPT was broken down by object-absent correct responses (OA), and object-present correct responses (OP), and then compared across condition (level of control).

A MANOVA revealed that there was a significant difference between how participants performed across subgroups (OA and OP) within each condition (F(2,

248) = 3.90, p=0.02; Wilks' Lambda = 0.97; partial eta squared = 0.03). Further investigation using between-groups ANOVA found a significant difference between means (see Table 6) across condition for OP ($F(1, 249) = 4.80$, $p = 0.03$), but not OA ($F(1, 249) = 0.69$, $p = 0.41$).

Table 5

Correlations Between Study 2 Measures

Measure	Conspiracy Pattern Perception	MFODS	Anomie	Author	Self-Esteem	Locus of Control	Hostility
Conspiracy Pattern Perception		0.10	0.39**	0.45**	0.61**	0.67**	0.65**
MFODS			-0.12	-0.05	-0.01	0.20	0.23**
Anomie				0.82**	0.72**	0.74**	0.40**
Authoritarianism					0.75**	0.75**	0.48**
Self-Esteem						0.92**	0.61**
Locus of Control							0.71**
Hostility							

Note. $^{**}p < 0.01$

Table 6

Mean Performance Scores on Modified Snowy Picture Task for Study 2 Subgroups

	Low Control		High Control	
MSPT Subgroup	*Mean*	*SD*	*Mean*	*SD*
OA	6.25	4.28	5.81	4.12
OP	6.30	2.91	6.99	1.85

Regression Analysis

Similar to Study 1, multiple linear regression analysis was conducted to explore how much of the variation in performance on each of the MSPT subgroups could be accounted for by scores on the MFODS and condition (level of control). Using a similar methodology to Study 1, the composite variable was added to the second model as an interaction term to investigate whether the joint effect of MFODS scores and condition was over and above that of their separate effects.

As would be expected, use of the composite variable condition by MFODS scores generated a very strong positive Pearson's correlation between the composite variable and condition of 0.97 (tolerance value of 0.03 and variation inflation factor (VIF) of 34.02[5])[6]. To resolve this issue of multicollinearity the data was centred (Baron & Kenny, 1986), where the mean MFODS score was subtracted from each MFODS data point[7].

The enter method was used to analyse each potential model. When the regression analysis was conducted using the centred data, the first model for OA, where MFODS (centred)

[5] Leahy (2000) recommends a tolerance cut-off value of 0.20, therefore values below this cut-off indicate multicollinearity. Leahy further suggests that VIF's greater than 4.0 indicate multicollinearity.

[6] Non-centred data analysis: For OA, MFODS scores and condition were entered first, however the model was not significant, ($F(2, 245) = 0.45$, $p = 0.64$, $R^2_{adjusted} = -0.00$). The second model of MFODS scores, condition, and a composite variable of condition by MFODS scores was also not significant ($F(3, 244) = 0.37$, $p = 0.77$, $R^2_{adjusted} = 0.00$).

[7] According to Dalal & Sicker (2011), centering the MI data may alter the size of the correlation of MI with other variables without affecting its significance.

scores and condition were entered did not reach significance ($F(2, 245) = 0.45$, $p = 0.64$, $R^2_{adjusted} = -0.00$). Similarly, the second model where MFODS (centred) scores, condition, and the composite variable MFODS (centred) by condition were entered, also did not reach significance ($F(3, 244) = 0.37$, $p = 0.77$, $R^2_{adjusted} = -0.00$). When the identical models were analysed for OP using the centred data, neither of the models were significant at the 5% level ($F(2, 245) = 2.39$, $p = 0.0$, $R^2_{adjusted} = 0.01$, and $F(3, 244) = 1.69$, $p = 0.17$, $R^2_{adjusted} = 0.01$ respectively). This means that neither mortality salience, nor mortality salience in combination with condition had any effect on the strength on the relationship between condition (low-control versus high-control) on illusory pattern perception (non-existent patterns on the MSPT).

Discussion

The aim of the present study was to identify whether conspiracy pattern perception, a form of illusory pattern perception (Whitson & Galinsky, 2008) is more likely when perceived low subjective control is experienced. The key difference between the current and the previous study is how perceived personal control was manipulated. In the present study the low-control group was presented with a fear of death scale in order to induce mortality salience. According to the literature, when mortality salience occurs people tend to feel a low sense of subjective control (Fritsche et al., 2008). As a compensatory mechanism, they will then take measures to bolster their perceived control. For instance, people may endorse CTs that are consistent with their worldview/belief system (Newheiser et al., 2011). Each of the hypotheses will now be discussed in turn.

The first hypothesis of the current study was that participants in whom mortality salience was induced prior to administration of other the measures, would demonstrate more conspiracy pattern perception compared to those who were administered the MFODS after the other measures. This hypothesis was not supported by the findings. In fact, those who were administered the MFODS last (considered the high-control group) demonstrated a significantly higher level of conspiracy pattern perception compared to the low control group (those who were administered the MFODS first). This means that in those whom mortality salience had

not yet been induced were more like to create CTs compared to those in who mortality salience had already been induced.

The second hypothesis of the current study was that participants in whom mortality salience was induced prior to administration of the other measures would demonstrate more visual illusory pattern perception compared to those who were administered the MFOFS after the other measures. This hypothesis was not supported by the findings, as no significant differences in visual illusory pattern perception were found between those in whom mortality salience had been induced compared to those who had not mortality salience induced.

The final hypothesis of the current study was that participants in whom mortality salience was induced at the beginning of the experiment were more likely to demonstrate higher levels of anomie, authoritarianism, hostility, and lower self-esteem compared those in who mortality salience was induced after administration of the other measures. Only limited support for this hypothesis was gleaned from the present study. Self-esteem was found to be significantly lower among those with induced mortality salience; however, in contrast to expectation those in whom mortality salience had not been induced scored higher on each of the other personality variable scales. However, only the difference for anomia was significant between the two groups.

Whilst the current findings are by and large quite different to what was expected, there are a number of ways they may be accounted for by referring back to the mortality salience research. Examination of these findings suggests that some mechanism is at play whereby making death-related thoughts salient to participants elicited a buffer against conspiracy theorising. One such mechanism may be a proximal defence response suppressing access to death-related to thoughts. Pyszczynski, Greenberg, and Solomon (1999) asserted a dual-process model of defence against conscious and unconscious death-related thoughts. The dual processes theorised to defend against the typically deleterious effects of eliciting a fear of death. This extension of terror management theory supposes that when the concept of mortality is made salient, the initial response (or proximal defence response) is to actively suppress ones attention to death-related thoughts. One of the ways access to these types of thoughts can be

circumvented is by distracting ones attention elsewhere (Arndt, Greenberg, Solomon, Pyszczynski, & Simon, 1997; Pyszczynski et al., 1999; Arndt, Routledge, & Goldenberg, 2006). Moreover, suppressing access to death-related thoughts immediately following mortality salience induction is typically only possible in conditions where individuals distract themselves with a low cognitive load or simple task. This active suppression would not be possible in conditions where a high cognitive load also burdened an individual (Arndt et al., 1997). A high cognitive load would typically be characterised by tasks that activate working memory (which requires more cognitive effort) such as mathematical processes, or the Stroop task. However, this is a relatively temporary defence mechanism, and eventually access to death-related thoughts is boosted (Arndt et al., 1997). In the current study, the MSPT characterises a low cognitive load as it merely requires participants to view images; therefore, this further supports the assertion that proximal defences may have been mobilized. Similarly, the CPP task may not be cognitively effortful enough to prevent death-thought suppression. Potentially, if the CPP scenarios has been presented using the auditory modality rather than visually, working memory may have been more heavily relied upon, which may have made death-thought suppression difficult. However, it remains unclear how heavy the cognitive load is for the CPP task.

It may be possible that the active death-thought suppression hypothesized by Pyszczynski et al. (1999) is too effortful to sustain over time. After time has elapsed, accessibility to death-related thoughts increases (Arnt et al., 1997). This may be because, after a little time, the mind becomes hypervigilant in trying to detect any weakness in this defence intruding death-related thoughts. As a result of this, attention gets inadvertently drawn to death-related thoughts thus demonstrating increased access to death-related thoughts (Pyszczynski et al., 1999). When delayed death-focus occurs, people then engage in compensatory strategies to restore a sense of personal control.

Another possible explanation for the findings of this study is that contemplation of death inspired a focus on what an individual would miss about the world if they were to die. In other words it is possible that contemplation of death can in fact give way to contemplation of

life, and what makes life meaningful. For instance, a sense of attachment to the world and society may thus temporarily be strengthened, thus softening the level of anomie an individual feels. To this end, Pyszczynski et al. (1999) asserted that by an individual protecting themselves from death-related thoughts they are able to "…construe himself or herself as a valuable participant in a meaningful universe" (p.835).

A limitation of the present study was that a manipulation check was not conducted. A manipulation check at the end of the MFODS would have allowed identification if the measure had successfully induced perceived low personal control. Sullivan et al. (2010) conducted a manipulation check that asked participants to rate how much control in general they felt they had in their lives. It would be important for future research using fear of death as a proxy for low-control to conduct such a manipulation check. Another important consideration is that in the present study I, as many researchers do, hoped to find generalizable results in a convenience sample. That is, in the last two studies, level of control was artificially manipulated rather than using an organic source. The results may differ quite significantly if participants with predispositionally low sense of control were asked to complete different types of pattern perception tasks. Indeed, Pyszczynski et al. (1999) have suggested that some individuals may have a tendency to defend against death-related thoughts through cognitive distortions. It is quite likely that the type of people likely to do so, are people who either have a psychopathological tendency towards cognitive distortions, or those who at a trait-level tend to feel a low sense of control much of the time. Moreover, previous review of the literature in chapter two, strongly suggested that a high PNS was typically implicated in information-processing deficits, such as prematurely arriving at decisions, such as that characterised by illusory pattern perception. Neither in this study nor in the previous one was PNS empirically tested. Therefore, it is quite possible that the type of people (tertiary students) captured by these studies are relatively high functioning, and either do not have a high PNS, or have adaptive coping styles in response to PNS; and thus are less likely to experience significant aberrations of perception.

A final aspect worth due consideration is the level of self-esteem reported in both groups. Whilst, the high-control group demonstrated a significantly higher level of self-esteem, the mean self-esteem score for the low control group (20.15) was still considerably higher than the median possible score (15), and therefore I would not consider this group to have low self-esteem. One of the main tenets of terror management theory is that self-esteem operates as buffer against anxiety or fear induced when faced with mortality salience (Harmon-Jones, Simon, Pyszczynski, Solomon, & McGregor, 1997; Arndt & Greenberg, 1999; Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004). Therefore, on the basis of the work of previous researchers, it is plausible to reason that the strong sense of self-worth demonstrated by the low control group prevented the deleterious effects of mortality salience.

Summary

In this chapter I reviewed the literature on how people explain their surroundings, particularly when faced with situations of low personal control. LH is a phenomenon that occurs when a person is repeatedly exposed to situations of low control (Abramson et al., 1978; Kelley & Michela, 1980; Lieder et al., 2013; Seligman et al., 1971). The consequences of this extreme form of low personal control perception can and elicit cognitive, motivational, and affective deficits (Klein & Seligman, 1976). Those with a high PNS may be resilient against developing LH by seeking out ways to re-establish a sense of control (Roth & Bootzin, 1974).

The basic argument in the literature is that most people experience low subjective control as an aversive state, and thus take measures to restore their sense of control. One way we see this is in the causal explanations people make (their attribution style; Harvey & Weary, 1984). Another form suggested form of control restoration is illusory pattern perception (Whitson & Galinsky, 2008). In my first study, I found that participants in the low-control condition (who were asked to recall a situation where they had no control) who showed high levels of MI demonstrated illusory pattern perception for visual stimuli. However, I did not find conspiracy illusory pattern perception in the low-control condition. In the second study I induced mortality salience as means of experimentally inducing low perceived personal control (Fritsche et al.,

2008). However, in this study participants in the high-control condition demonstrated significantly more conspiracy pattern perception (CT creation) than the low-control condition. The high-control group also reported greater anomie, self-esteem, and an external LOC. It was concluded that active death-thought suppression may have led to significantly less CT creation in the low-control group. The greater CT creation demonstrated by the high-control group is consistent with research that conspiracy theorists have a more external attributional style and higher levels of alienation from society (Abalakina-Paap et al., 1999; Goertzel, 1994). A number of methodological limitations were identified that could be accounted for in future research.

Chapter Three

Public Perception of Conspiracy Theorists

Introduction

Despite evidence that conspiracies have taken place in the past (Keeley, 1999), even within academic communities conspiracy theorists have been sometimes treated dismissively (Clarke, 2002; Miller, 2002) and considered “nutty” (Bale, 2007, p. 47). Similarly, a range of websites make assumptive statements that describe conspiracy theorists as having abnormal or psychopathological traits; including odd, arrogant, nutty, restless, and suspicious people in general. One website (Ferrentes, 2009) has even deemed conspiracy theorists "conspiraloons', 'tinfoil hatters', 'loonspuds', 'fruit'n'nut jobs". Such comments imply attributions of abnormal mental functioning among those who have a tendency to believe in conspiracies, however, very little research examined the psychopathological link to CT belief (Darwin et al., 2011; Swami et al., 2013) and so this assumed link has not been confirmed. Despite the derogatory nature of the comments made about conspiracy theorists in the literature and online material (cited above), it still remains unclear whether negative stereotypes of conspiracy theorists are common among the general population or a mere few given that no research (in New Zealand or internationally) has as yet investigated this. Overall, the current thesis is intended to provide a clearer picture on the *perceived* link between CTA and psychopathology, and the *actual* link between the two areas. The key purpose of this thesis is to examine whether the tendency to believe and theorise about conspiracies (strong CTA) is in fact related to psychopathology (compared to weak CTA), and add to the pool of research aimed at understanding conspiracy theorists, and what if any psychopathology would make an individual more likely to be a conspiracy theorist.

In order to explore these stereotypes, the semantic differential technique first introduced by Osgood (1952) was used. Since its introduction, the semantic differential technique has been used most commonly to identify the meanings individuals attribute to concepts by presenting a visual continuum-type scale anchored at each end by antonymic descriptors (Osgood, 1952). Generally, any descriptor where a polar opposite descriptor (e.g. restless - calm, strong - weak, insincere – sincere) can be generated is suitable to the semantic differential technique.

One area of research that has taken advantage of the semantic differential methodology has been attitudinal research investigating stereotypes about those with mental illness. Judd and Park (1993) define social stereotypes as a set of attributes thought to characterise different groups of people. A particularly stable finding across these studies has been that *Mental Patients* are judged as unpredictable, tense, dangerous, worthless, delicate, slow, weak, and foolish. *Insane People* are judged very similarly to that of a *Mental Patient*, with the additional judgements of cold and dirty (Blizard, 1968; Blizard, 1969; Blizard, 1970; Bryson & Wilson, unpublished; Green, McCormick, Walkey, & Taylor, 1987; Nunnally, 1961; Olmstead & Ordway, 1963; Olmstead & Durham, 1976; Walkey, Green & Taylor, 1981). These studies also found that *Ex-Mental Patients* are judged only a little negatively compared to the *Average Man*, and a lot less negatively than *Mental Patients* and *Insane People*, perhaps reflecting the fact that the public consider *Ex-Mental Patients* as mostly "reformed" but with some residual repugnance still held towards them. Green et al. (1987) also found relative favourable attitudes towards doctors and psychiatrists in relation to *The Average Man*. Furthermore, in their New Zealand study, Green et al. (1987) found that these attitudinal patterns towards mental illness were not strongly associated with demographic variables such as gender, age, or socioeconomic status; therefore, these judgements were found to be fairly stable across social class.

More recently, Bryson and Wilson (unpublished) replicated the findings of earlier research on societal attitudes towards mental illness in New Zealand. Bryson and Wilson (unpublished) conducted their study in 2004, and recruited a non-clinical sample to investigate stereotypes of mental illness in a more detailed manner than earlier studies, by including more

specific targets which participants were asked to describe using the semantic differential technique. Their targets included: *me, the average man, insane people, depressed people, an average woman, ex-mental patient, schizophrenic people, mental patient, most people, bipolar people, multiple personality disordered people,* and *mentally ill people*. The findings revealed that participants judged mental illness targets (e.g. schizophrenic people) significantly more negatively compared to more normative targets (e.g. average man). Participants characterised mental illness targets as being significantly more unpredictable, tense, and dangerous compared to normative targets. Furthermore, they found that attitudes towards 'mental patient' and 'insane people' as targets were largely similar to previous studies in New Zealand of this nature (Olmstead & Durham, 1976; Green et al., 1987; Walkey et al., 1981).

Study 3a: Semantic Differentials of Conspiracy Theorist Descriptors

Previously the semantic differential technique (Osgood, 1952) has been successfully used in the past to measure attitudes towards mental illness; and based on early evidence that conspiracy theorists may be stereotyped to have some form of psychopathology (Darwin et al., 2011; Swami et al., 2013), I considered that the semantic differential technique might be appropriate to explore attitudes about conspiracy theorists. No such established questionnaire exists that assesses attitudes towards conspiracy theorists; thus for the purposes of the present research, construction of such a measure was necessary. The Bryson and Wilson (unpublished) descriptors were to be used as the basis of the questionnaire, however, in order to be relevant to attitudes towards conspiracy theorists, the target of *Conspiracy Theorist* would be added, as would be descriptors presently used in media and literature pertaining to CTs. The ultimate purpose was to compare if people judged conspiracy theorists and the other mental health-related targets similarly.

The first part of the measure construction process required compiling descriptors of conspiracy theorists from different forms of written material. Media publications, peer-

reviewed journal articles, as well as a number of websites were scrutinized for mentions of or references to conspiracy theorists (Abalakina-Paap et al., 1999; Bale, 2007; Feldman & Suzek, 2008; Ferrentes, 2009; Harrison & Thomas, 1997; Ross, Essien, & Torres, 2006; Swami et al., 2010). As a result a large array of derogatory terms and very few positive terms used to describe conspiracy theorists were identified. However, the semantic differential technique presents participants with bipolar extremes of descriptors, thus eliminating the possibility of inadvertently priming participants to only make negative appraisals of conspiracy theorists.

A small sample of participants were presented with the CT-relevant descriptors, and were asked to generate what they considered the extreme opposite (antonym) of each descriptor to be (e.g. sincere – insincere; foolish; wise). The most frequently used antonym for each descriptor was then used in the final semantic differential study (Study 1b) to investigate attitudes towards conspiracy theorists.

Method

Participants

Fifty participants (19 males), were recruited from outside a busy supermarket in Lower Hutt, New Zealand. Participants were only asked to provide their gender, and to tick a box to confirm that they were over the age of 18 years. Participants received a treat-sized chocolate bar in exchange for their time. This research, and all other research reported in this thesis was approved by the School of Psychology Human Ethics Committee.

Materials

A list of 26 characteristics (Table 7) used to refer to conspiracy theorists in relevant literature and websites was compiled (Abalakina-Paap et al., 1999; Bale, 2007; Feldman & Suzek, 2008; Ferrentes, 2009; Harrison & Thomas, 1997; Ross, Essien, & Torres, 2006; Swami et al., 2010). Space was provided on the list for participants to write down what they regarded to be the opposite (antonym) of each descriptor. A clipboard with attached pen was supplied so that participants could write their responses while standing up.

Procedure

Potential participants were approached and asked if they were over the age of 18 years and had five minutes to spare to fill out a very short questionnaire, and that a summary of the results would appear in a doctoral thesis or peer-reviewed journal. They were also told they could withdraw their participation at any time, and would receive a treat-sized chocolate bar in exchange for their time as a token of appreciation. Participants were given an opportunity to have any questions they had about participation answered.

If an individual agreed to participate, they were told that completing the questionnaire would indicate their providing consent for their responses to be used in this research. Participants were then given a clipboard with the quiz and pen attached to it. They were allowed to take as long as they needed to complete the quiz, but were told that participation would most likely not exceed 5 minutes.

Once each participant had completed the quiz, the participant was thanked for their time, and was given a treat-sized chocolate bar as a token of appreciation. If participants had any further questions about the research at this point, their questions were answered.

Results

The results were analysed using Microsoft Excel software. In order to calculate which responses were most commonly given for each characteristic, the more frequent response for each target descriptor was calculated (Table 7).The resulting antonyms had frequencies greater than 30, although two had some missing responses.

Table 7

Mode Responses for Target Descriptors.

Target Descriptor	Most Frequent Response	Frequency
Powerless	Powerful	50
Alienated	Included	43
Untrustworthy	Trustworthy	50
Hostile	Friendly	39
Angry	Calm	42
Distrustful	Trusting	48
Aggressive	Peaceful	48
Malevolent	Benevolent	31*
Arrogant	Humble	49
Restless	Relaxed	38
Agreeable	Argumentative	41
Cynical	Accepting	32
Imaginative	Unimaginative	49
Curious	Uninterested	39
Masculinist	Feminist	49
Discontent	Content	50
Diabolic	Good	41
Egoistic	Humble	46
Narcissistic	Unselfish	37**
Mistrusting	Trusting	50
Suspicious	Trusting	50
Irrational	Rational	50
Emotional	Objective	40
Innocent	Guilty	50
Nutty	Sane	44

Note. * = seven missing responses. ** = nine missing responses.

Table 8

Key for Mapping Current Study Descriptors with Goldberg's (1990) Taxonomy of Traits.

Goldberg Factor Pole	Goldberg Categories Valence Positive	Negative	Current Study Descriptors
1: Surgency	Spirit, Talkativeness, Sociability, Spontaneity, Boistrousness, Adventure, Energy, Conceit, Vanity, Indiscretion, Sensuality	Lethargy, Aloofness, Silence, Modesty, Pessimism, Unfriendliness	Connected/Alienated Friendly/Hostile Humble/Arrogant Avoids Attention/Attention-seeking Content/Discontent
2: Agreeableness	Trust, Amiability, Generosity, Agreeableness, Tolerance, Courtesy, Altruism, Warmth, Honest	Vindictiveness, Ill humour, Criticism, Disdain, Antagonism, Aggressiveness, Dogmatism, Temper, Distrust, Greed, Dishonesty	Simple/Complicated Relaxed/Tense Delicate/Rugged Warm/Cold Sincere/Insincere Trustworthy/Untrustworthy Peaceful/Aggressive Relaxed/Restless Accepting/Cynical Trusting/Suspicious Agreeable/Argumentative Innocent/Guilty Not manipulative/Manipulative
3: Conscientiousness	Industry, Order, Self-discipline, Evangelism, Consistency, Grace, Reliability, Sophistication, Formality, Foresight, Religiosity, Maturity, Passionless, Thrift	Negligence, Inconsistency, Rebelliousness, Irreverence, Provinciality, Intemperance	Predictable/Unpredictable Fast/Slow Rational/Irrational Compliant/Rebelliousness
4: Emotional Stability	Durability, Poise, Self-reliance, Callousness, Candor	Self-pity, Anxiety, Insecurity, Timidity, Passivity, Immaturity	Strong/Weak Valuable/Worthless Objective/Emotional Sane/Nutty Mentally Healthy/Mentally Ill Normal/Abnormal
5: Intellect	Wisdom, Originality, Objectivity, Knowledge, Reflection, Art	Imperceptivity	Imaginative/Unimaginative Curious/Uninterested

Note. For an exhaustive list of examples of each category, see Goldberg (1990).

Discussion

In this study the semantic differential technique was used in the design of a questionnaire to be used in the next study. The descriptors included in the measure were gleaned from previous studies on attitudes towards mental health, as well as terminology used to describe conspiracy theorists in academic circles but also online. The complete list of descriptors map well onto Goldberg's (1990) taxonomy of personality traits. Goldberg proposed five personality trait factor poles which include surgency, agreeableness, conscientiousness, emotional stability, and intelligence. Each factor pole describes both the positive and negative aspects of the incumbent traits. Table 8 provides a summary list of Goldberg's trait factor poles as well as categories within each factor pole according to valence; however, for the exhaustive list of examples Goldberg gives for each category that was used to map each descriptor in this study onto Goldberg's factor poles, see Goldberg (1990). All descriptors (each with a continuous nature) to be used for the next study were accounted for by Goldberg's factor poles, with the majority of descriptors falling under agreeableness, and only two descriptors falling under intellect. This means that the attitudes the semantic differential task was going to measure, were going to reflect stereotypes about the *disposition* (personality traits) of the targets.

Study 3b: Attitudes Toward Conspiracy Theorists

The research aim of the second part of this study was to determine if people's stereotypes of a conspiracy theorist is more similar to their stereotypes to people with various psychopathology (e.g. schizophrenia, paranoia, delusional disorder) than their stereotypes of people without psychopathology (e.g. *The Average Man*).

As a basis for the current study, the same 12 targets used by Bryson and Wilson (unpublished) were used here, however, in order to include the element of public attitude towards conspiracy theorists, the term "conspiracy theorists" were added as a thirteenth target. Furthermore, in addition to the descriptors used by Bryson and Wilson, characteristics used to describe conspiracy theorists (see Study 3a) were incorporated into the final measure. Correspondence analysis was used to analyse the degree of distinction or similarity between the judgements of a range of target people, including "conspiracy theorist".

Hypothesis

Storti (2000, as cited in Doey & Kurta, 2011) states that correspondence analysis is an exploratory data technique that does not require hypotheses to have been formulated. However, based on the terms used to describe conspiracy theorists (across academic literature and on websites), it was hypothesised that the distance between participants' judgements of conspiracy theorists would be closer to that of their judgements of those with psychopathology, compared to those without psychopathology.

Method

Participants

Two hundred and fourteen individuals took part in studies 3b, 3c, and 4. Response sets for thirteen participants were incomplete and were removed from analysis resulting in two hundred and one (120 females) participants included in the final analysis. Of this final sample, ninety-four participants were general members of the public recruited through posters, Facebook, and email (see procedure section). The study was also open internationally, and some of the participants were likely to have been non-New Zealand

based. This portion of the total sample were eligible to provide their contact details to go into a prize draw to receive Motor Trade Association vouchers (to use in exchange for fuel or mechanical services) as a token of appreciation for their time in participating. The remaining participants were undergraduate psychology students enrolled at Victoria of University of Wellington, who received credit towards a mandatory course research requirement in exchange for their participation.

Overall, participants were aged between 18-67 years with a mean age of 27.85 years (*SD* = 12.31 years). 60.2% of the sample identified as New Zealand European/Pakeha, 9.5% Maori, 8% Asian, 8% European, 4% New Zealand Pacific Islander, 2% Pacific Islander, and 1.5% Indian. Six percent of the total sample comprised the "other" ethnic category (including South African, New Zealand Asian, and New Zealand Indian). Ethical approval for all the studies in this thesis was granted by the Victoria University of Wellington School of Psychology Human Ethics Committee.

Materials

Using the most frequent antonyms for a list of 26 descriptors, in combination with 10 of the descriptors used by Bryson and Wilson (unpublished) in their semantic differential study, a total list of 36 descriptors were compiled to comprise the final semantic differential scale (see Appendix F). The final scale was administered to participants through a short online survey using Qualtrics (an online survey tool), and on average took no longer than 10 minutes to complete. Participants simply selected (by a mouse-click) a point within the 7-point scale that best described each target person (13 target people in total) along each semantic differential. The target people that participants were asked to consider are also presented in Appendix F, but included targets such as the average man, people with schizophrenia, a convicted criminal, the conspiracy theorist and so on.

Procedure

Recruitment of participants for this study who were general members of the public (non-Victoria University of Wellington undergraduate psychology students) was conducted in a number of ways: through social media, posters and flyers, and email. The

participants recruited for this study using these methods also completed other measures used for Studies 4 and 5.

Recruitment using Facebook

The social network Facebook was used to provide potential participants with information on how to participate in the study, and was also used to employ snowball sampling to advertise the study. Facebook has been used internationally in the past to invite people to participate in various types of research (Anonymous, 2008; Anonymous, 2010; Bhaskaran, 2010; Taylor, 2010; also see Wilson, Gosling, & Graham, 2012 for a review). Recruitment of participants through this medium was undertaken using two Facebook tools. The first tool that was used was a Facebook 'group page'. "Groups can be created by any user and about any topic, as a space for users to share their opinions and interest in that subject" (Facebook.com, 2010). Therefore a group page was set up where I could post the link for the online survey (see Appendix G for wording used on the group page) which was accessible through a separate website. Wilson et al. (2012) outlines three key ways Facebook can be utilised in social science research. The method employed in this thesis is most similar to the method Wilson et al (2012) refer to as 'recruitment of participants in offline contexts'. That is, Facebook was solely used to advertise the research taking place, and to invite potential participants to seek more information on a separate website which hosted the secure online questionnaire.

The second Facebook tool that was used in the recruitment phase of this study was the profile page of the lead investigator. Every user of Facebook must first sign up for a Facebook account. When a person signs up to open an account, one is not received immediately. Facebook administrators first ratify each request for an account to ensure that it comes from an actual person with a real name, as opposed to companies or groups (including research groups) etc. Therefore, the research team could not open an account solely for the use of this research. Therefore, the personal profile page of the primary investigator was used to post the electronic link to the online survey, and also the group page for the study (see Appendix H for wording used on the profile page to advertise the study). The rationale for posting the link to a personal profile page was two-fold. First, it

is one of the fastest ways to advertise that a group page exists. Second, the snowball sampling method (Kendall et al., 2008) was employed. According to Biernacki and Waldorf (1981, as cited by Kendall et al, p. 98), "Snowball sampling increases efficiency, identification, and inclusion of hidden populations by having members of the target population recruit other members". In this case, people who saw the survey link on the profile page and group page could then pass the link forward to people on their contact list and so forth.

One of the potential ethical pitfalls of snowball sampling is that relying on others' to provide accurate information regarding the study is less than ideal. This potential flaw was limited in the current research however, as the information sheet appeared onscreen as the first page to the survey when potential participants clicked on the electronic link to the survey. Such a quality assurance measure was put in place to ensure that all participants received consistent and accurate information about what was involved should they wish to participate in the study. This information sheet also provided detailed information about what the research would require from participants should they wish to take part in the research, their right to ask questions before consenting, their right to withdraw from the questionnaire at any time, and how the consent process worked. The information sheet also required participants to confirm they were over the age of 18. The data collection for this research took place prior to the publication of Wilson et al. (2012), however, the procedures just described are consistent with their recommendations for conducting ethical research using Facebook. Smith and Leigh (1997) also make similar recommendations for ethical research using virtual participants, although their recommendations were not specific to Facebook. The snowball sampling method was also used to recruit participants using emails sent initially within Victoria University of Wellington (VUW), so that potential participants could also forward the electronic link to their contacts (both nationally and internationally (see Appendix I for wording used in the initial email). An ethical issue associated with how the snowballing sampling method was used in this study was that information about the study was distributed initially via the lead investigator's personal profile page and student email account at VUW. One of

the consequences of such an approach then is that at least some of the sample are likely to be associates of the lead investigator with some common areas of interest, and then these associates advertised the study to their associates with whom they have common interests, therefore they final sample may not have been as diverse if alternative methods of participant recruitment had been used (that is, the sample may have in fact been more homogeneous than intended). Furthermore, the participants who were potentially known to the lead investigator may have responded in socially desirable ways for fear their responses could be traced back to them.

Posters and flyers were also distributed throughout the greater Wellington (New Zealand) region, directing potential participants to the electronic link for the online study (see Appendix J for wording used on posters and flyers).

Student Participants

Additional participants were recruited through a subject student pool. Using a website where these participants were able to sign up for a range of experiments they, were also given information about what the research involved, and if they were interested in participating. Instructions on how to access the website for this study were also provided. As mentioned earlier, this group of participants received credit towards a mandatory course research requirement in exchange for their participation. From this stage onwards, the information provided regarding the research, instructions, and the tests themselves were identical for the two participants groups. All participants were informed that the battery of tests for this research was estimated to take 30-45 minutes to complete. A small group (five post-graduate psychology VUW students) completed the study first in order to inform the completion time estimation as well as to identify any procedural obstacles in the design of the study.

The Online Survey

When participants first visited the online survey, they were presented with an information sheet (see Appendix K) which outlined what the research was about and what was required of them should they choose to participate. Participants could not proceed any further at this stage until they confirmed that they had read the information

sheet thoroughly (by way of selecting a box with a mouse-click). The School of Psychology Human Ethics Committee (Victoria University of Wellington) required that participants be over the age of 18 years. Therefore, participants had to confirm they were 18 years or over (by way of selecting a box with a mouse-click). As the survey was anonymous, names of participants and their signatures were not collected, therefore, completion of the survey was taken as consent to participate (this was also outlined to participants in the information sheet). If any potential participant had questions they wanted answered before taking part in the study, they were provided with an email address for the research team whom they could contact. Any questions sent to this email address were replied to within 12 hours. After the last question in the survey, debrief information (see Appendix L) was presented onscreen which outlined the purpose of the study in greater detail. Deception was not overtly used in this study, however, participants were not told the specific aims of the study prior to testing. However, the debrief information presented at the conclusion of the survey was thorough. Again, participants were provided with the email address for the research team should they have had any questions at this stage.

In order to allow for comparison of findings with previous studies (Abalakina-Paap et al., 1999; Whitson & Galinsky, 2008), measures used in previous studies were also selected for use in this present study. Participants were then presented with each measure in the following order: the semantic differential task, the Conspiracy Beliefs Scale (Wilson, 2007), the Peters Delusion Inventory (Peters, Joseph, Day & Garety, 2004), the Modified Snowy Pictures Task (Whitson & Galinsky, 2008), the Schizotypy Personality Questionnaire (Raine, 1991), the British Inventory of Mental Pathology – 36 (Bedford & Deary, 2006), the Powerlessness Scale (Pearlin, Menagham, Lieberma & Mullan, 1981), the Paranoia Checklist (Freeman et al., 2005), and the Conspiracy Pattern Perception Scale (Whitson & Galinsky, 2008). As the first measure listed above is the only measure relevant to the present study, the rest of the measures are not described here and instead are described the study 4 in chapter 4.

A debriefing sheet (see Appendix L) then appeared outlining the purpose of the study and how each research question was investigated. Participants were also provided with details of support services to contact should they be experiencing any distress elicited by the study. Additionally, the VUW sample was also provided with the contact details for support services within the university. At the end of the debrief information participants were thanked for their time.

In exchange for their time, non- psychology-VUW participants involved in studies 3b, 4, and 5 could choose to email the research team with their details once they had completed the survey (the instruction to do so appeared onscreen during the debriefing phase) if they wish to enter a prize draw to win 1 of 25 Motor Trade Association vouchers (which could be presented to a wide range of petrol stations and mechanic garages throughout New Zealand in exchange for goods or services including fuel) valued at NZ$20 each. The prize draw was only open to participants living in New Zealand (this point was clearly made on the information sheet). As participants interested in entering the prize draw emailed the research team their contact details, this process ensured that anonymity of their responses on the survey was protected (as the responses and contact details were kept separate and were not linkable).

Results

Rennie (1982) recommends that in order to minimise an agreement or disagreement response set (that is participants responding in a particular direction regardless of the content of the items), some of the items in a rating-style questionnaire be reversed in direction (e.g. by changing the wording in a typical Likert-type style questionnaire). Therefore, in this study, 12 of the items for each target from the final semantic differential scale were reversed so that positive descriptors were presented at the left end of the scale, and negative descriptors were presented at the right end of the scale. The remainder of the 36 items for each target were anchored with negative descriptors at the left end of the scale. Therefore, prior to any analysis taking place, the 12 reverse scaled items were reverse coded so that all negative descriptors were anchored to the left

side of the scale. Therefore high scores reflect a more positive opinion of the target person.

Correspondence Analysis

Correspondence analysis (CA) also known as optimal scaling, reciprocal averaging, and homogeneity analysis (Hair, Black, Babin, Anderson, & Tatham, 2007) was then used to analyse the attitudinal data in this study. CA allows for complex data to be displayed visually in categorical terms in a simplified and descriptive format. This method is particularly useful when working with a large amount of data, as when the data is tabulated, associations between variables could be obscured (Doey & Kurta, 2011). In the case of this study, CA allowed target persons judged similarly to be grouped close together in dimensional space, whereas larger distances between biplots would suggest that the target persons in question were judged to be quite different from each other. Such a graphical mapping technique allows for simultaneous comparisons to be drawn between a number of targets overall, and finer analysis allows for graphical mapping of attributes judged similar and dissimilar to each other in regards a minimum of one target at a time (Hair et al., 2007; Doey & Kurta, 2011).

The means of all descriptors for the 13 targets across all participants were calculated and then CA was conducted on these means. Figure 3 depicts the correspondence matrix for all the targets and descriptors. Three targets in particular appear to sit apart from clusters of the other targets; *Average Man, Conspiracy Theorist, and Convicted Criminal*. Targets of those with mental illnesses sit in the top-right quadrant, targets representing normalized characteristics were distributed in the two-left quadrants, and *Conspiracy Theorist* and *Convicted Criminal* can be seen in the bottom-right quadrant. In order to understand/identify the two dimensions, I analysed the spatial placement of the descriptors. This allowed identification of which descriptors were most prominent in differentiating between the targets. The distances between the descriptors are magnified in Figure 4 so that their distribution across the quadrants may be examined more closely. The descriptors appear to be dispersed more in the top- right and bottom-left quadrants, and more closely spaced in the top-left and bottom-right quadrants. The

targets *Me, The Average Woman,* and *Ex-Mental Patient* were more likely to be judged trustworthy, peaceful, sincere, good, agreeable, clean, accepting, friendly and clean. The targets representing current mental health concerns (*Depressed, Mentally Ill, Bipolar Disorder, Multiple Personality, Schizophrenic, Insane People*) were more likely to be considered abnormal, tense, misunderstood, mentally unhealthy, and attention-seeking. The *Conspiracy Theorist* and *Convicted Criminal* targets were more likely to be seen as rebellious, guilty, slow, unsafe, weak, cold, indelicate, unimaginative, and uninterested. *The Average Man* and *Most People* targets were more likely to be seen as objective, powerful, simple, included, predictable, sane, rational, relaxed, and content.

Spatially the strongest distinction appears to be in how the targets are distributed on the x-axis, suggesting that Dimension 1 accounts for the greatest variance (inertia) in the grouping of the targets. One possible interpretation is that Dimension 1 represents the perception of how well adjusted each target is. That is, the placement of the targets on the right side of the x-axis possibly reflects the perception by the sample that these targets are poorly adjusted individuals resulting in mental health and criminal issues. However the targets on the left side of the x-axis may reflect the perception by the sample that these targets are better adjusted compared to the targets on the right side of the x-axis. Spatially the targets on the left side of the figure appear to be distributed more closely on the y-axis compared to the targets on the right side of the figure. However, overall the same degree of spatial distribution as seen with Dimension 1 is not seen with Dimension 2, suggesting that it does not account for as much of the variance in the sample's perceptions compared to Dimension 1. Dimension 2 was hypothesised to relate to level of culpability each target could be held to, i.e how much responsibility can be ascribed to each target for their actions. The interpretation of each dimension is elaborated on in the Discussion section.

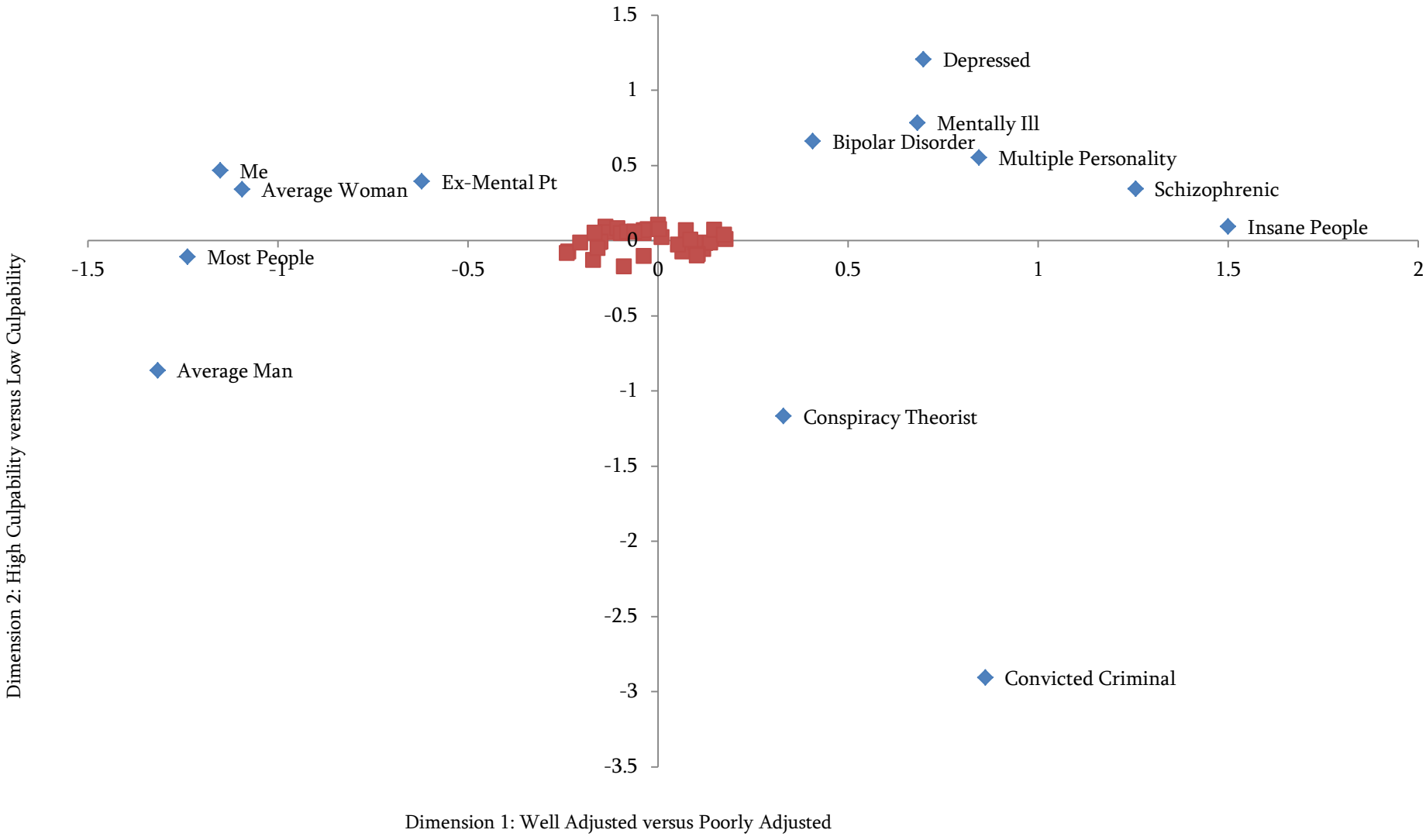

Figure 3. Correspondence matrix of target stereotypes. ◆ = Targets. ■ = Descriptors.

Figure 4. Magnification of correspondence matrix for descriptors of targets.

Cluster Analysis

In order to understand participants' responses on the semantic differential task in more detail, cluster analysis was conducted (Johnson & Wall, 1969) using a hierarchical agglomerative cluster method (Hummert, 1990; Schmidt & Boland, 1986). Cluster analysis is considered a bottom-up procedure as in this process each observation (or target) is considered a cluster in its own right. Progressively moving up (or along from left to right as in the dendrogram in Figure 5), observations or smaller clusters that are characteristically similar get absorbed into bigger clusters,

with increasingly relaxed similarity criteria moving further along the dendrogram. Ward's variance method using a hierarchical clustering process which incrementally groups targets (or objects) together so that each addition to each cluster causes the least within-cluster variance, compared to other linkage methods (Blashfield, 1976). The within-cluster variance is identified by calculating the mean for each cluster. The squared Euclidean distance between each target to the cluster mean is then summed across all targets. At each stage, the targets are grouped together in the way that causes the smallest increase in the sum of squares. In this case, Ward's linkage revealed two obvious clusters as illustrated in Figure 5. The first cluster combines targets representing current mental health issues (*Multiple Personality Disordered, Mentally Ill, Schizophrenia Disordered, Bipolar Disordered, Insane Person, and Depressed Person* stereotypes) at its most base level (first stage), but as the similarity criteria is relaxed to the next stage (second stage), *Conspiracy Theorist* and *Convicted Criminal* are added to this cluster (referred to as the 'mental-health' cluster for the remainder of this thesis), and once the criteria are relaxed to the third stage, *Ex-Mental Health Patient* is also absorbed into this cluster. In contrast, the second cluster groups *Average Man* and *Average Woman* at the first stage, and then at the third stage incorporates the *Most People* and *Me* stereotypes. This second cluster will be referred to as the non-mental health cluster for the remainder of this thesis. All targets combined could only be considered as one cluster at the 25th stage (after greatly relaxing the similarity criteria).

Analysis of Variance

A one-way repeated measures ANOVA was calculated on participants' responses on each of the 13 targets which revealed there was a significant within-groups difference of how participants judged the targets, Wilks' Lambda = .16, $F(1, 209) = 91.16$, $p < .001$. Looking at the pairwise comparisons for only the *Conspiracy Theorist* stereotype against all the other targets, it is evident that conspiracy theorists

were judged to be more similar to different forms of psychopathology compared to more normative targets (Table 9). Estimated marginal means for each target were then plotted on a line graph (Figure 6) which illustrates how conspiracy theorists were judged to be similar to targets representing some form of psychopathology as well as convicted criminals; but were judged to be quite dissimilar from normative targets such as *Me, Average Woman, Average Man, and Most People* (higher estimated marginal means reflect more positive ratings).

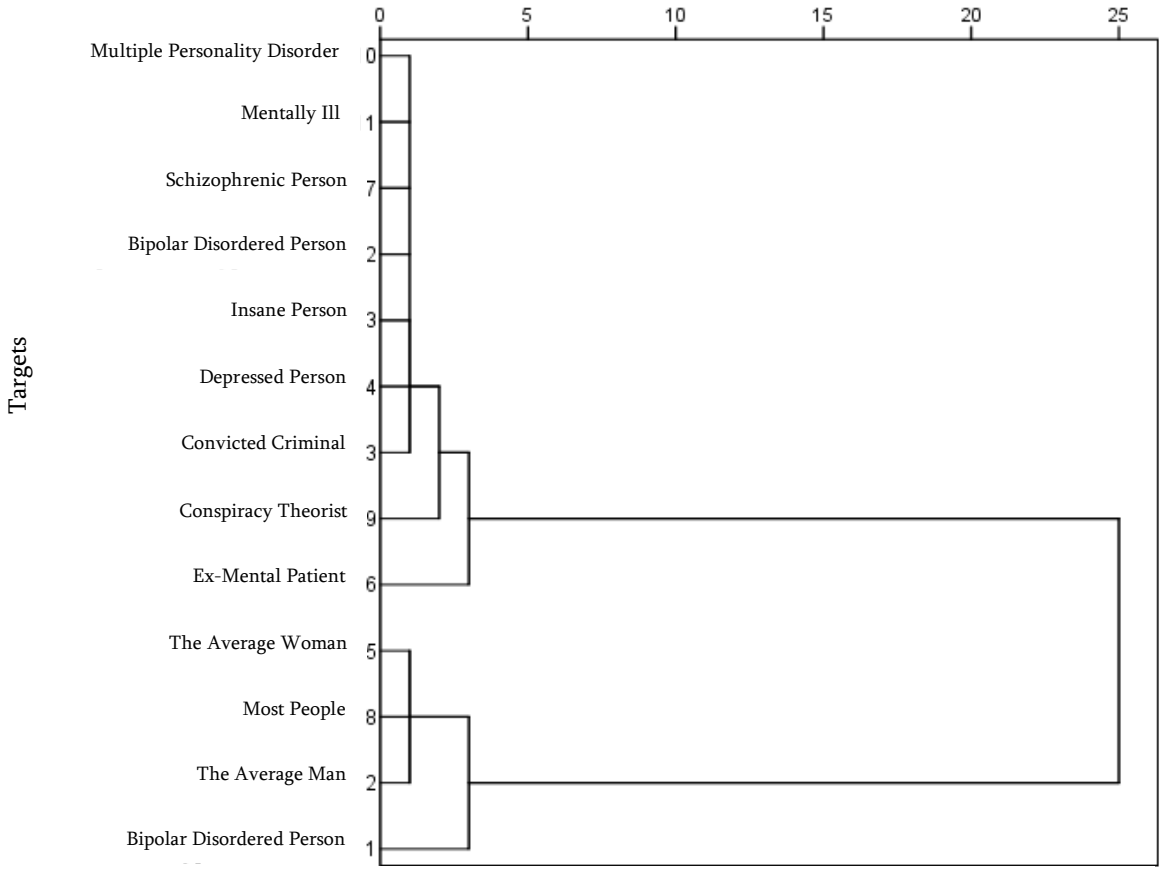

Figure 5. Dendrogram showing distances between clusters as they are combined.

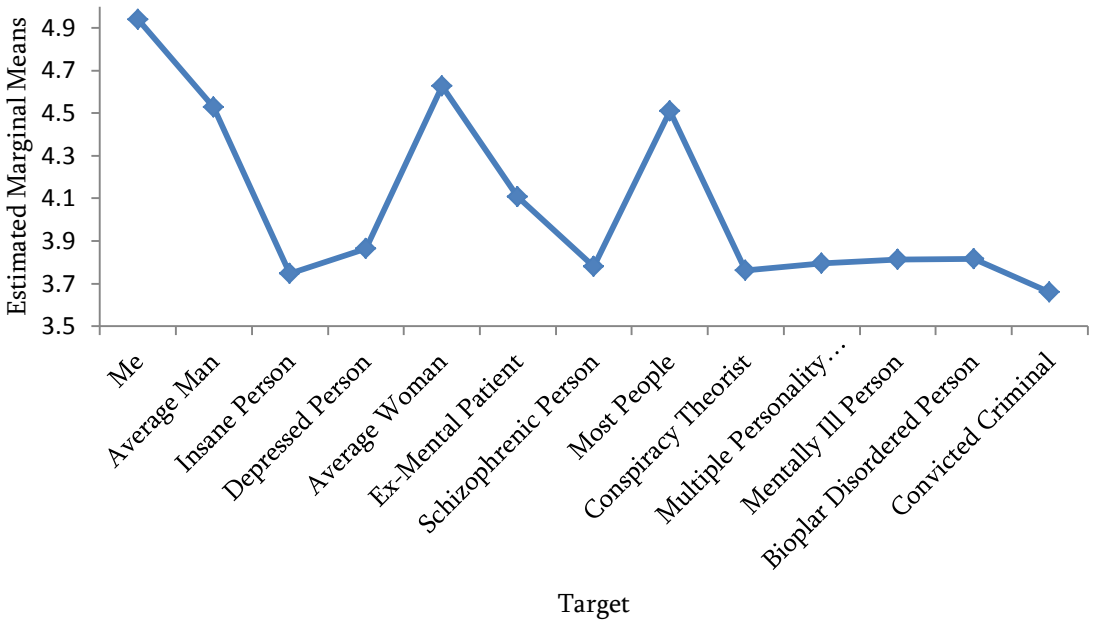

Figure 6. Estimated marginal means of judgements of thirteen targets.

Table 9

Mean Differences Between the Stereotype of Conspiracy Theorist to Twelve Other Targets.

Conspiracy Theorist Stereotype compared to	Mean Difference (Conspiracy Theorist stereotype – second stereotype)	*p*
Me stereotype	-1.18	< .001
Average man stereotype	-.77	< .001
Insane stereotype	.02	= ns
Depressed stereotype	-.10	< .001
Woman stereotype	-.87	< .001
Ex-mental patient stereotype	-.35	< .001
Schizophrenic stereotype	-.02	= ns
Most people stereotype	-.75	< .001
Multiple personality disorder stereotype	-.03	= ns
Mentally ill stereotype	-.05	= ns
Bipolar disorder stereotype	-.06	= ns
Convicted criminal stereotype	.10	< .001

Discussion

The aim of the current study was to examine the dominant stereotype of conspiracy theorists. A semantic differential questionnaire was used where participants made judgements of targets including *Conspiracy Theorist*. These judgements were then analysed using correspondence and cluster analyses across targets, as well as across descriptors. Two obvious clusters emerged, one with a theme of current mental health issues; and the other with non-mental health issues. *Conspiracy Theorist* belonged to the current mental health cluster, as did *Convicted Criminal*. Based on this categorisation, but also the distances between biplots (correspondence analysis), it became clear that that *Conspiracy Theorist* was

considered similar to those who with psychopathology, than those without psychopathology (e.g. *Average Man*). This finding supports the hypothesis that conspiracy theorists would be considered more similar to those with psychopathology than those without psychopathology.

The findings of this study provide strong support for the contention that the public tends to judge conspiracy theorists similarly to stigmatised groups , such as those with current mental health issues (Bryson & Wilson, unpublished; Olmstead & Durham, 1976; Walkey et al., 1981; Green et al., 1987). This suggests that there is stigma associated with being a conspiracy theorist. Additionally, conspiracy theorists were also judged to be characteristically similar to convicted criminals.

If the descriptor findings are interpreted in the context of Goldberg's (1990) taxonomy of personality traits (Table 8), then in terms of Goldberg's factor poles, the majority of participants deemed the normative cluster to be characterised by people who are agreeable, emotionally stable, conscientious, and confident by nature. In contrast however, the targets comprising the anti-normative cluster (which also includes *Conspiracy Theorist* and *Convicted Criminal*) were primarily judged as people who are low on emotionally stability, agreeableness, conscientiousness, but are also creative.

How were the groups differentiated?

Based on two-dimensional analysis of the spatial distribution of the targets and correspondent descriptors, Dimension 1 (x-axis) of Figures 3 and 4, appeared to account for the greatest spatial variation. Two main clusters were apparent with one cluster grouping all targets relating to current mental health issues, as well as two other targets relating to criminality and conspiracy theorising. The second cluster grouped all the remaining targets which were characterised by non-current psychopathological attributes. Thus it could be argued that one key aspect in how

participants' judged the targets was the level of psychological adjustment they perceived their stereotype of each target to be.

According to Shock (1952), psychological adjustment relates to a person's competence in satisfying their needs and wants keeping within the constraints of their culture. Research has tended to define poor psychological adjustment in terms of psychological phenomena. For instance, Juvonen, Nishina, and Graham (2000) defined psychological maladjustment as loneliness, depression, and poor self-worth). Therefore, we can extrapolate that psychological adjustment refers to how able an individual is able to psychologically (internally) adapt to their changing environment (external circumstances). Based on synthesis of the relevant literature, well-adjusted individuals have greater distress tolerance thresholds and are able to adaptively cope with stress (Kasl, Gore, & Cobb, 1975; Durlak & Wells, 1992; Colvin, Block, & Funder, 1995; Hackney & Sanders, 2003). The literature also suggests that well-adjusted individuals are more effective in being able to understand the consequences of their social behaviour, and who are fairly honest with themselves or self-enhancing (inflated self-impressions) about the type of person they are (Kasl, Gore, & Cobb, 1975; Colvin et al., 1995; Gold, Issenman, Roberts, & Watt, 2000; Taylor, Lerner, Sherman, Sage, & McDowell, 2003).

Different methods of measuring psychological adjustment have been employed in past research, including measuring their degree of life satisfaction (Hackney & Sanders, 2003), or more commonly measuring the level of psychopathology within an individual. Therefore, it is possible that participants judged the targets with current mental health issues, as well as *Convicted Criminal* and *Conspiracy Theorist* as unable to adapt to their environment and function in an adaptive way; whereas the normative targets may have been considered by participants to be relatively better adjusted.

Distinguishing what Dimension 2 of Figure 3 and 4 relates to may assist in understanding the basis for the stereotypes held about conspiracy theorists. As mentioned above. Juoven et al. (2000) defined psychological adjustment in terms of psychopathology. According to Lewis and Whitley (2012), prior to the nineteenth century, mental illness was considered to be a result of moral weakness, but since psychiatry has become a branch of medical science, the general populous has come to view those with mental illness as sick rather than bad. Based on examination of target placements on Dimension 2 (y-axis), it could be reasoned that this dimension relates to the degree of culpability each figure is thought to possess by participants. That is Dimension 2 may relate to differences in how participants attribute responsibility for their undesirable behaviour. More specifically, Figure 3 shows that *Convicted Criminal* sits at the most extreme negative position, potentially relating to the greatest degree of culpability, whereas the majority of the targets relating to current mental health issues (*Depressed, Mentally Ill, Bipolar Disorder* and *Multiple Personality*) sit in the most positive positions reflecting that these targets cannot be considered culpable for their actions. Normative targets *Me, Average Woman, Ex-Mental Patient, Most People,* and *Average Man* sit between *Convicted Criminal,* and the current mental health related targets. *Conspiracy Theorist* sits slightly lower than the normative target, but closer to the normative targets than *Convicted Criminal*. When one considers what dimension might differentiate a *Convicted Criminal* from those with current mental health concerns, the degree to which these targets can be held responsible for their actions is hypothesised to account for this. For instance, when a crime is committed and a person is indicted, it is the responsibility of the defence team to bring to light any mitigating circumstances for their client's actions. Those with a mental illness that is thought to have had a deleterious effect on their ability to deem whether their actions or behaviour are legally reprehensible are sometimes considered to be not guilty by reason of insanity (Reznek, 2013).

Reznek (2013) outline four key 'insanity defences' that are legally used as defence strategies when a defendant is considered to suffer a mental illness: cognitive defence, volitional defence, causal defence, and character change defence. A cognitive defence would be one that would reason the defendant was not able to judge their actions as wrong due to their mental illness. A volitional defence would be one that would suggest that due to a mental illness the defendant was not able to control their impulses and were not able to stop themselves from committing a criminal act. A causal defence would be one that would attribute the cause of the defendant's criminal actions to be their mental illness. And lastly, the character change defence would be one that would explain the defendant's actions by saying their mental illness caused a moral change leading them to commit a criminal act. Underlying each of these defences is the belief that those who are mentally ill have a diminished capacity to such an extent that they should not have to serve a prison sentence for their criminal actions. By contrast, based on Figures 3 and 4, it could be reasoned that a person who commits a criminal act but does not suffer a mental illness would be considered to be more culpable for their actions. In the case of the current study, the *Convicted Criminal* target was considered to be high in culpability (how responsible they can be held for their actions), and to represent poor psychological adjustment. Some forensic clinical psychology research (Ward & Birgden, 2007) has suggested that offenders are often considered moral strangers. That is, convicted criminals are a coterie that the majority of society considers a moral outgroup; and people would consider themselves to be morally superior to offenders. Unfortunately, because of this tradition, at times in correctional settings, "moral transgressors" are not afforded the same range of human rights as the rest of society (Ward & Birgden, 2007). That is, by committing crime; a large group of people believe that offenders have given up their entitlement to be treated equivalently to non-convicted criminals.

Those with current mental health concerns were also considered to be poorly adjusted individuals, but not culpable for their actions. As the majority of the sample was female, it is possible that the targets *Me* and the *Average Woman* were rated positively (low culpability and well adjusted) due to the respondents being favourably biased when considering themselves (*Me*) and those they are most similar to (*Average Woman*). Due to having a history of mental illness, *Ex-Mental Patient* could have also been considered to have somewhat less diminished responsibility for their actions, due to residual illness that may slightly diminish their ability to operate in prosocial ways . In terms of the *Conspiracy Theorist* it appears respondents may have judged this target as being poorly adjusted but as responsible/culpable for their actions as the *Average Man*.

The propositions above also make conceptual sense in the context of the fundamental attribution error (Clarke, 2002) where participants appeared to ascribe culpability for negative events based on their stereotypes of the dispositional characteristics of each target. However, in this study the extent to which participants consider situational factors was not examined, which would be needed in order to make clearer interpretations regarding the fundamental attribution error. Future research could take advantage of a scenario-based methodology where participants could rate the relative causal contribution of dispositional versus situational factors for the outcome. The findings of such research could elucidate whether those who stereotype conspiracy theorists consider situational factors influencing conspiracy theorists to generate CTs (e.g. historical evidence of purposeful harm towards a particular ethnic group; Thomas & Quinn, 1991). This would be compared to whether people tend to focus on dispositional explanations at the expense of considering situational influences when appraising conspiracy theorists.

According to Stangor and Schaller (1996), stereotypes are cognitive representations that can serve a number of functions including providing

explanations of others' behaviour. The type of stereotyping seen here appears consistent with perceived symbolic threat discussed by Stephan and Stephan (2000). Symbolic threat perception relates to perceived differences in "morals, values, standards, beliefs, and attitudes (Stephan & Stephan, 2000, p. 25). When an ingroup asserts that their moral code or system of behaviour is right, any deviation from this by outgroups is perceived as threatening. Therefore, when symbolic threat from socially deviant/different groups is perceived, this social comparison can serve a distancing function between the groups.

Summary

The findings of this study regarding the non-mental health cluster compared to those with current mental health concerns are consistent with previous studies on community attitudes towards mental health (Bryson & Wilson, unpublished; Olmstead & Durham, 1976; Walkey et al., 1981; Green et al., 1987), where the two groups were considered separate from each other. That is, targets within the non-mental health cluster were considered more positively compared to the mental-health cluster. However, this is the first study of its kind to also include conspiracy theorists and convicted criminals, and these target additions have provided further empirical evidence for the generalising nature of stereotypes. Furthermore, the current study also allowed for international participation, demonstrating that stability of such findings is not geographically or chronologically confined. That is, the stigma associated with having some level of psychopathology (poor psychological adjustment) is consistent across time and the world. Moreover, it is possible that conspiracy theorists were considered to be similarly poorly psychologically adjusted as those with current mental health concerns; and therefore the stigma attached to having some form of psychopathology likely also extends to conspiracy theorists.

Similarly, conspiracy theorists, and those with current mental health issues may not be considered too unwell to be culpable for their actions.

Study 3c: How Conspiracy Theorists Judge Other Conspiracy Theorists

In study 3b it was found that conspiracy theorists are judged by society to be similar to those with active mental health concerns, as well as convicted criminals, and very far removed from the respondent. Additionally, earlier I suggested that moral classification of targets in study 3b may account for some of the disparity seen in the judgement of the targets. That is, the majority of society may consider conspiracy theorists to be moral strangers. This idea of the us-them dichotomy lends itself to early research on social identification theory (Turner, Brown, & Tajfel, 1979) which was discussed in chapter one. The predominant finding relating to social identification theory has been that ingroups are rated more positively than outgroups. Therefore, in the context of study 3b, the majority of respondents perceived that morally and dispositionally, conspiracy theorists were the outgroup, whereas the targets within the normative cluster were considered the ingroup. But what about the perspective of conspiracy theorists? How do they perceive the label of conspiracy theorist? From the perspective of the conspiracy theorist, do they rate the target *Conspiracy Theorist* more favourably compared to the ratings of those with low CTA? If they do, this might suggest that conspiracy theorists do have some awareness of their membership to the label of conspiracy theorists and thus judge their ingroup more favourably. However, such a finding would be in opposition to previous research that has suggested that in some cases it is possible that conspiracy theorists are not overtly aware of their tendency to believe in CTs (Clarke, 2002; Douglas & Sutton, 2008). It is therefore also possible that whilst those with high CTA may not

consider themselves to be conspiracy theorists, they are still able to appreciate the positive aspects of the questioning style held by conspiracy theorists. Therefore, it was hypothesised that people who have a tendency to believe in conspiracies or who engage in conspiracy theorising, would then be likely to judge conspiracy theorists favourably compared to non-conspiracy theorists. Such a finding would imply that conspiracy theorists do not regard psychopathology to underlie how they perceive the causes of the events around them (if they are aware of their group membership). Or alternatively, if they are not aware of their group membership, they still appreciate the characteristics of conspiracy theorists, and do not consider belief in CTs to be associated with psychopathology.

In this study the responses of the LC/LP group and the HC/HP group (as defined in Study 4) on the semantic differential questionnaire (as outlined in Study 3b) with relation to the target of *Conspiracy Theorist* were examined.

Hypothesis

It was hypothesized that people who have a tendency to believe CTs or who create CTs would be likely to judge the *Conspiracy* Theorist target more favourably compared to those who do not believe or create CTs. The operationalized hypothesis for this study was that the HC/HP group (as defined by Study 4) would have a significantly higher (indicating more favourable) mean compared to the LC/LP group in relation to the *Conspiracy Theorist* target.

Method

Participants

Please refer to Study 3b for details of the participants used in the current study.

Materials

Participants were administered both the CBS and CPP. Please refer to the methodology section of Study 1 for a description of these scales.

Procedure

Please refer to Study 3b procedure section for these details.

Results

In order to be able to compare different levels of CTA, participants' responses were analysed after categorising participants into four groups of varying levels of CTA. The group allocations were based on participant scores on the CBS and CPP (Table 10).

Table 10

Conspiracy Theory Affinity Group Allocations.

	CBS score < 4 (low score)	CBS score ≥ 4 (high score)
CPP score < 4 (low score)	Low creation / Low plausibility (LC/LP)	Low creation / High plausibility (LC/HP)
CPP score ≥ 4 (high score)	High creation / Low plausibility (HC/LP)	High creation / High plausibility (HC/HP)

Note. CPP = Conspiracy Pattern Perception. CBS = Conspiracy Beliefs Scale.

The groups defined in Table 10 sit on the continuum at various positions depicting varying strengths of CTA (Figure 8). The HC/HP group reflects strong CTA. The LC/LP group reflects low CTA. The two remaining groups indicate moderate CTA.

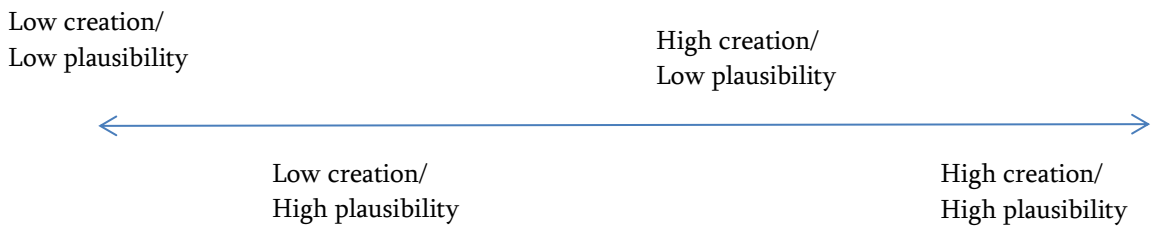

Figure 7. Conspiracy Theory Affinity conceptualised dimensionally in terms of perceived plausibility of conspiracy theories, and conspiracy theory creation.

In order to test the hypothesis that the HC/HP the *Conspiracy Theorist* target more favourably compared to the LC/LP group, an ANOVA was calculated to examine group differences. Descriptive statistics by group are presented in Table 11.

Table 11

Means and Standard Deviations for the Target 'Conspiracy Theorist' by Level of Conspiracy Affinity.

Conspiracy Affinity Group	*M (SD)*
LC/HP	3.74 (.35)
LC/HP	3.69 (.44)
HC/LP	3.79 (.34)
HC/HP	4.04 (.54)
Overall	3.75 (.43)

Note. LC = Low conspiracy creation. LP = Low perceived plausibility of conspiracy theories.

The between-subject difference effect (calculated using MANOVA) was significant suggesting that there is a significant difference in judgement of the Conspiracy Theorist target ($F(3, 197) = 4.25$, $p = .01$). Post-hoc Tukey HSD revealed that the *High Conspiracy Affinity Group* was significantly differentiated from not

only the *Low Conspiracy Affinity Group* ($p < .01$), but also *Moderately Low Conspiracy Affinity Group* ($p < .01$) with more favourable ratings. However, there was no significant difference between second highest conspiracy affinity group and any of the other groups.

Furthermore, a correlation was calculated to determine the relationship between subscale score on the semantic differential task with regard to the target 'conspiracy theorist', and how participants scored on the CPP scale and CBS. A significant relationship was not found between the semantic differential conspiracy theorist score and scores on the CPP scale, $r(199) = -.01$, $p = .90$. However, a significant relationship was identified between semantic differential conspiracy theorist scores and scores on the CBS, $r(199) = .22$, $p < .01$. This suggests that those who believed a range of CTs were also more likely to judge conspiracy theorists more favourably.

Discussion

Partial support for the above hypothesis was garnered from the favourability ratings of the target *Conspiracy Theorist.* When considering CTA, a composite of ascription to CT beliefs *and* CT creating, the highest CTA group (HC/HP) rated *Conspiracy Theorist* significantly more favourably compared to the two lowest CTA groups (LC/HP and LC/LP). Finer analysis separating responses on the CBS and CPP suggested that there was a significant relationship between responses on the CBS (but not the CPP scale) and *Conspiracy Theorist* target. This means that the higher the level of belief in CTs, the more favourably an individual was likely to rate *Conspiracy Theorist.* However, a significant relationship was not found between level of CT creation and valence of judgement of *Conspiracy Theorist*.

This finding could be interpreted in a number of ways. First, the CPP scale may be a measure that actually does tap into conspiracy theorising, but the conspiracy theorists in our sample had poor self-awareness or did not regard themselves as conspiracy theorists and were fairly neutral in their perception of the characteristics

of a conspiracy theorist (not negative, but also not favourable). Second, the CPP scale may not be a robust measure of conspiracy theorising. Third, there may be no stable pattern in how those with strong CTA judge "conspiracy theorists" compared to those with low CTA.

In this chapter, I established that those with lower levels CTA consider conspiracy theorists to have a similar disposition to those with known psychopathology. In contrast, those with higher levels of CTA perceive the target *Conspiracy Theorist* in a significantly more favourable light. The next key area of investigation in this thesis explores to what extent those with high CTA have psychopathological associations as the 'conspiracy theorist' stereotype assumes. That is, are those with stronger CTA likely to score significantly higher on various measures of psychopathology compared to those with weaker CTA. Chapter 4 empirically tests a range of hypotheses pertaining to these overall research questions, and explores the type of psychopathology that may be implicated in strong CTA, and whether there is any statistical evidence for such a link.

Chapter Four

Conspiracy Thinking as an Expression of Psychopathology?

> "Persecutory delusions arise because the person notices that other peoples' actions have become opaque and surmises that a conspiracy exists".
>
> (Freeman, 2007)

Introduction

Verifying an Anecdotal Connection

Previous research has shown that those with current mental health concerns are regarded more negatively than those with mental health issues and those with resolved mental health issues (Olmstead & Durham, 1976; Walkey et al., 1981; Green et al., 1987; Bryson & Wilson, nd).The results of study 3b suggests that, in general, the stereotype of conspiracy theorists is more consistent with psychopathology (e.g. targets such as *Bipolar Disorder, Multiple Personality Disorder,* and *Schizophrenia*) or abnormal mental health, a stereotype that is laden with negative connotations. On the internet, derogatory references to conspiracy theorists include terms such as "…conspiraloons, tinfoil hatters, loonspuds, fruit 'n'nut jobs" Ferentes (2009), and "…stupid…mental…hair brained…paranoid" (McDonald, 2013); all implying some form of mental disorder.

Very little empirical research has explored the potential association between psychopathology and conspiracy thinking. This chapter draws on both the literature on conspiracy thinking as well as key research in various aspects of psychopathology to identify if conceptual parallels between these two concepts exist.

The literature suggests that the variables most commonly associated with CT belief are anomie, hostility, powerlessness, poor moral reasoning, and authoritarianism (Abalakina-Paap et al., 1999, Goertzel, 1994; Hofstadter, 1958; Moscovici, 1987). It is important to emphasize that the literature refers to these variables as *stable* features of *personality*, rather than transient or fast-changing symptoms. It is possible however, that transient manifestations of psychopathology are also involved in the in the etiology and maintenance of conspiracy thinking. Possible syndromes that may be implicated include depression, anxiety, psychosis, and substance/alcohol misuse. Certainly, there is some evidence to suggest that personality disorders can be etiological for some clinical syndromes, in that maladaptive coping strategies are common in individuals with personality disorders, leading other types of psychopathology (Bayon, Hill, Svrakic, Przybeck, & Cloninger, 1996; Koenigsberg, Kaplan, Gilmore, & Cooper, 1985; Leaf, Alington, Mass, DiGiuseppe, & Ellis, 1991). For this reason, some psychometric instruments identify personality profiles that consider the relationship between personality patterns and clinical syndromes for each responder (e.g. Millon Clinical Multiaxial Inventory-III; MCMI-III; Millon, 1994). Clinical syndromes experienced by those with personality disorders can augment the typical response style of the individual (Millon, 1994). Such a conceptualisation is consistent with both the Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition – Text Revision (DSM-IV-TR; American Psychiatric Association, 2000) and DSM-5 (Fifth Edition; American Psychiatric

Association, 2013)[8] , where the American Psychiatric Association acknowledges the relationship between clinical syndromes and personality disorders (DSM-5; American Psychiatric Association, 2013). Accordingly, the DSM-5 has done away with the multiaxial system of classification (previous editions of the DSM classified difficulties across five axes; American Psychiatric Association, 2013).

For the purposes of this research, I was largely interested in stable psychological presentations, such as established personality traits, that may implicate a *tendency* for conspiracy thinking, rather than a one-off belief in a CT (which may be caused by transient symptomology). Conclusions drawn from the latter form of data would likely be more reliable and stable across time, than those drawn from syndrome measures. However, ideally, this research would have used a measure such as the MCMI-III which examines how stable personality styles are affected by clinical syndromes and vice versa. Unfortunately, measures such as the MCMI-III can be quite lengthy (MCMI-III has 175 items) and thus require significant time

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[8] I submit my thesis in a year where clinicians transition to a new edition of the DSM. There is much debate surrounding the DSM-5, with some in support of its restructure and inclusion of new diagnoses. Other researchers and clinicians oppose implementation of the DSM-5 particularly with respect to diagnosis of personality disorders (e.g. Widiger, 2011). In most cases I have chosen to reference the DSM-5 over the DSM-IV-TR a) in accordance with the Code of Ethics for Psychologists working in Aotearoa/New Zealand (2002), Principle 2 Responsible Caring, Competence Value (2.2.4) which states that "Psychologists utilise and rely on scientifically and professionally derived knowledge, and are able to justify their professional decisions and activities in the light of *current psychological knowledge and standards of practice*". In particular, the removal of the multiaxial system from the DSM is in line with the dimensional conceptualisation of mental disorders suggested by some researchers (American Psychiatric Association, 2013; Herbert, Hope, & Bellack, 1992; Livesley, 2003; Livesley, Schroeder, Jackson & Jang, 1994; Widiger, 2003). However, in some cases I have cited the DSM-IV-TR where the DSM-5 lacks specificity without justification. Therefore, I have cited one or the other edition as appropriate.

commitment from participants, in addition to the other measures that are required for this research. Issues such as the effects of fatigue on the data would then need to be considered. Therefore, in the present research, selected measures that tap into both personality traits, but also delusions (particularly of a paranoid theme) were utilised. Thus whilst the association between syndromal symptomology and conspiracy thinking could be important to explore in future research, such investigation was outside the scope of the present research.

How psychopathology should best be described has led to a wide and varied debate, particularly in the transition from the DSM-IV-TR to the DSM-5. Of particular concern to some researchers is the lack of acknowledgement of normal variants of personality traits. That is, scoring low on a particular personality trait does not necessarily reflect normal functioning, but merely a low level of a maladaptive trait (Widiger, 2011). For instance, a low score for inappropriate affect does not necessarily reflect appropriate affect, just low inappropriate affect. Therefore, in this chapter I will also discuss the non-clinical variants of delusions and schizotypy, and how they may be associated with the lower end of the CTA continuum.

The following study is intended to explore whether there are psychopathological features associated with CT beliefs and conspiracy theorising, and does not conceptualise CTA as its own unique form of psychopathology. One area of psychological difficulty that the CT literature has focused some research attention is delusional thinking (Darwin et al., 2011). Delusions are considered a key feature of psychotic disorders such as schizophrenia, delusional disorder, brief psychotic disorder, schizophreniform disorder, schizoaffective disorder, and substance/medication-induced psychotic disorder (American Psychiatric Association, 2013). Schizotypal personality disorder (described in detail later in this chapter) has also been suggested to be implicated in CTA (Darwin et al., 2011; Swami et al., 2013). Schizotypal personality disorder is also considered part of the schizophrenia spectrum

of disorders, further emphasising the relationship between clinical syndromes and personality disorders (American Psychiatric Association, 2013; cite).

In this chapter, both these forms of psychopathology are discussed and investigated empirically. This chapter will discuss the key features of delusions and schizotypy, how these features are most commonly expressed clinically and non-clinically, as well as associated information-processing biases. The basis for the following study is then justified by a synthesis of material concerning the psychological mechanisms involved in CTA, and the psychopathological features they conceptually correspond with. There are therefore a range of non-correspondent psychopathological features (e.g. impulse control, intellectual disability, memory impairment, etc.) that are beyond the scope of this thesis, and accordingly are excluded due to their lack of theoretical basis for inclusion.

Delusions

Fundamental Features

Delusions can be symptomatic (concurrent with other symptoms) of a range of possible mental disorders, but generally are considered the cornerstone of psychosis (American Psychiatric Association, 2013). Some refer to a delusion as a false or unfounded belief (Freeman et al., 2001), and in fact, the American Psychiatric Association (2000) succinctly defines delusions as distorted thought content, and also as "...erroneous beliefs that usually involve a misinterpretation of perceptions of experiences" (American Psychiatric Association, 2000. p. 299). However, what makes a delusion problematic may not just be the presence of the delusion, but also related auxiliary factors. David (1999) argues that a delusional thought can be distinguished from a non-delusional thought not only because delusional thoughts are not based upon by normal reasoning processes, but that second-tier factors feed into the existence of a delusion. These second-tier factors can include the individual's attitude

towards a particular thought, how much credence they give the thought, and how distressing the thought is to them. In line with this contention, tools used in the current research measuring problematic personality traits also account for these second-tier auxiliary factors (e.g. Peters' Delusion Inventory – 21; PDI-21). Furthermore, as with all other types of thoughts, delusions exist in a context of wider belief systems which are influenced by a person's own values, and which may be juxtaposed against the values and beliefs systems of others. That is to say, delusions make sense to the person thinking them, but not anyone else (Bell, Halligan, & Ellis, 2006). Therefore, a person with very high CTA may have a delusion that makes sense to them but not others, due to their belief system which supports the delusion.

Despite the immense potential variability and complexity delusions, delusional thinking is a feature that clinicians are able to identify when working with clients. In a clinical sense, what constitutes a delusion would be a range of thoughts which revolve around a theme that has no evidence to support it, or when the particular theme is not culturally or religiously consistent for that particular individual (Bell, Halligan, & Ellis, 2006; Freeman & Garety, 2000). The level of psychological impairment caused by the delusion may be related to the level of conviction the delusion is held with, the level of distress elicited by the delusion, as well as the persistence of a delusion, all which will affect how much a person is impeded in the ability to function on a day-to-day basis (Freeman, 2007; Peters, 1999).

Consistent with Armador et al.'s (1999) multidimensional conceptualisation of delusions, Freeman (2007) outlines seven key characteristics of delusions which individuals can vary on according to level of impairment. The first characteristic is how unfounded the delusion is, ranging from truth being exaggerated to impossible and fantastical beliefs which have no basis in reality. The second characteristic relates to the level of conviction that the delusion is real, ranging from the delusion only being strong in certain circumstances (for instance, when they are stressed). The third

characteristic concerns how resistant an individual is to acknowledging that there may be some truth to conflicting or alternative explanations other than their particular belief. The fourth characteristic revolves around how preoccupied an individual is by their delusion. That is, how much time do they spend thinking or ruminating on the delusion? Some individuals may only contemplate the delusion very rarely, whereas others may spend considerable amounts of their time focused on their delusion. The fifth characteristic is how distressing an individual finds the *content* of their delusion. For instance, grandiose delusions can be flattering to an individual, however, other delusions such as severe persecutory delusions may leave an individual in fear of their safety from some powerful other. The sixth way delusions can be characterised is by how much the delusion interferes with an individual's ability to function interpersonally. Some people may cease engagement in activities where they may have to interact with others, for instance by not maintaining employment. Others may be able to continue to keep important relationships going. The final characteristic of delusions is who the delusion refers to. For instance, some delusions are focused solely on the person that holds the delusion. An example of such a delusion may be that a person believes that they alone have the ability to communicate with extra-terrestrials. Others may be in fear for the safety of those they love due to their delusional beliefs. Consideration of these factors in the assessment of a client's delusions is essential in order to understand the impact the delusional thinking has on their ability to function across different contexts (e.g. interpersonally, occupationally, and so on).

Persecutory Delusions

Consistent with the idea of thematic belief systems, the DSM-IV-TR notes some delusional themes may be "persecutory, referential, somatic, religious, or grandiose" in nature (American Psychiatric Association, 2013, p. 87), reflecting that

not all delusions are of a paranoid-theme. Persecutory delusions are the most commonly seen delusion clinically (for example, persecutory delusions are seen in approximately 50% of patients with schizophrenia; Freeman, 2007). To summarise an abundance of literature, Freeman and Garety (2000) define persecutory beliefs as those where a person believes they are being harmed or will be harmed by someone who has the power to exact this harm. Freeman (2007) mentions however, that there is a great deal of variance within the subcategory of persecutory delusions itself, such as who the victim and persecutor are, and the timing of threats and so on. To further conceptualise the continuous nature of this variance, Freeman and colleagues (Freeman, Garety, Bebbington, Smith, Rollinson, Fowler et al., 2005) proposed a hierarchy of paranoia (Figure 8) where severe paranoid beliefs refer to significant harm of some kind. Of particular note, in this model, Freeman et al. (2005) has classified CTs as severe threat beliefs, reflecting that they are less commonly held by the non-clinical population, but cause the belief-holder a significant level of distress. At the lowest level of the hierarchy, are concerns regarding being socially vulnerable to rejection and such, reflecting that they are more common in terms of paranoid thought, but do not cause as severe distress to the belief-holder, compared to those who perceive a conspiracy against them (Freeman et al., 2005).

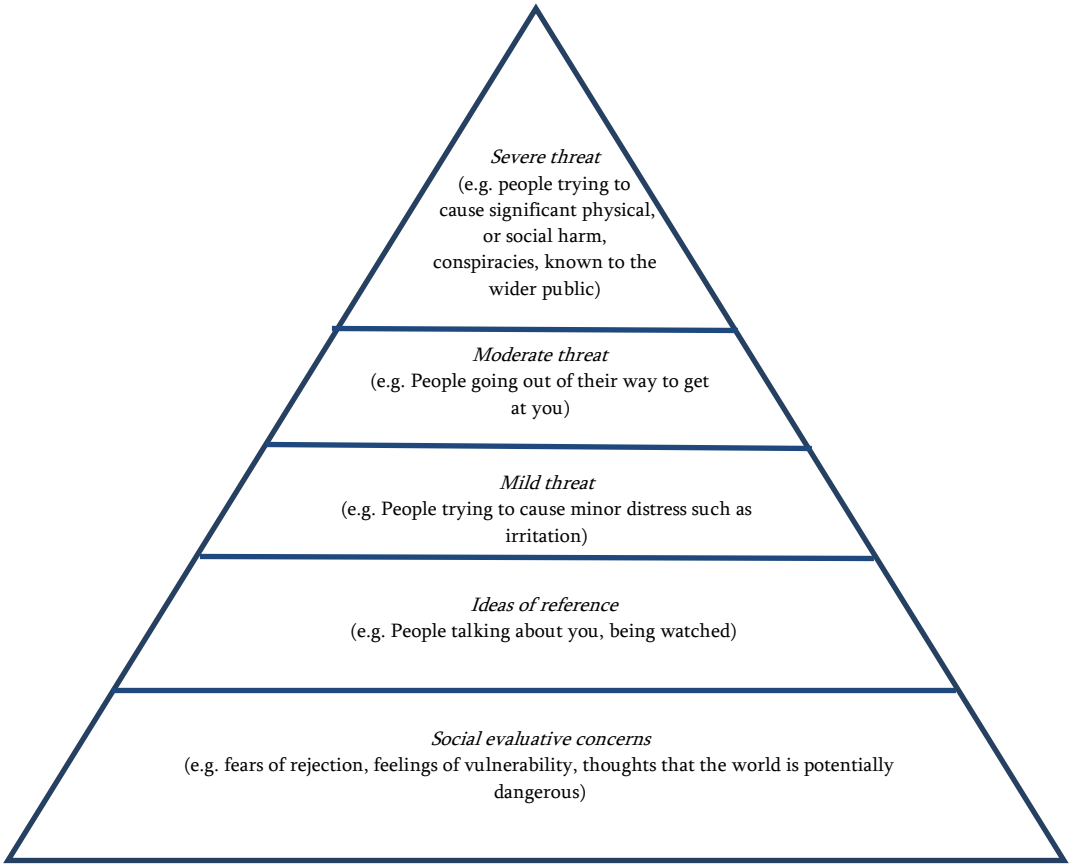

Figure 8. The hierarchy of paranoid thoughts (reproduced from Freeman et al, (2005).

Another important aspect of the persecutory delusion literature is that persecutory delusions, paranoia, and persecutory beliefs are terms which are often used interchangeably. Persecutory beliefs can be held at non-clinical levels, however when the level of conviction they are held with, the level of distress caused by them, and the persistence of the belief develops to such a degree that it begins to impede a person's ability to function as they normally would, they become delusional (Freeman, 2006). In addition, if a person continues to hold the thought with strong

conviction even in the presence of contradictory of alternative explanations, this adds further impetus to the classification of the thought as a delusion. Paranoid belief is seen to be similar to a persecutory belief, due to the anticipation of potential threat or harm. The main exception to this parallel is that according to Freeman (2007), a belief cannot be considered persecutory if the belief is only about others being hurt. If the belief includes the believer as *also* being targeted for harm, it would then be considered persecutory. That is, paranoia can be self and/or other-focused.

Clinical and Non-Clinical Presentation

In clinical cases, delusions can be seen in patients suffering psychotic disorders such as brief psychotic disorder, delusional disorder, psychosis due to a general medical condition, psychosis not otherwise specified, schizoaffective disorder, schizophrenia, schizophreniform disorder, shared psychotic disorder, and substance/medication-induced psychotic disorder (American Psychiatric Association, 2013). Delusions can also be seen in other conditions where psychotic features are only sometimes seen, such as both unipolar and bipolar major depressive episodes, manic episodes, and mixed mood episodes (American Psychiatric Association, 2013). Persecutory delusion in the context of psychosis is also be associated with post-traumatic stress disorder (Morrison, Frame, Larkin, 2003; Shaw, McFarlane, Bookless, Air, 2002; Read, Agar, Argyle, & Aderhold, 2003). When there is a long-standing history of a paranoid style of thinking to the extent that there is pervasive misinterpretation of others behaviour as suspicious, an individual may meet the diagnostic criteria for paranoid personality disorder (DSM-5; American Psychiatric Association, 2013).

In order to explore the prevalence of delusional *thinking* (as opposed to full disorder) in the general (non-clinical) population, a number of researchers have administered a variety of screening measures for psychosis to non-clinical samples

and compared their findings to rates of delusional thinking in the clinical population. A review by Freeman (2006) suggested that at least 1-3% of the non-clinical population experienced delusions of a severity comparable to psychotic levels, with an additional 5-6% also experiencing delusions but not to such a severe degree. Furthermore, due to the continuous and hierarchical nature of paranoid thinking, Freeman (2007) estimates that approximately 10-15% of the general population experience paranoia on a *regular basis*. In one particular study, using the Psychosis Screening Questionnaire (Bebbington & Nayani, 1995), Johns et al. (2004) found that of their 8,580 participants (from the general population) aged between 16 and 74 years, 21.2% reported that in the previous 12 months they felt as though other people were 'against' them. Of the total sample 9.1% felt that there were times when people have acted deliberately to harm them, and 1.5% of the total sample felt as though there have been times when a *group* of people were plotting to harm them. On the basis of these results Johns et al. (2004) suggested that paranoia is at least as widely experienced as anxiety and depression.

There has also been some evidence to suggest that sub-clinical (worse than normal, but not yet at clinical threshold) levels of paranoid thinking can be indicative of increased risk for later development of psychosis (Johns & van Os, 2003; Myin-germeys, Krabbendam, & van Os, 2003; Chapman, Chapman, Kwapil, Eckblad, & Kinser, 1994). However, for this later development of psychosis to occur, there must at some stage also be the development of other psychotic features (for example auditory hallucinations) in addition to delusional thinking. Therefore, paranoid thinking could be more usefully considered a vulnerability marker for disorder development. That is not to say, that every person that has ever experienced a paranoid thought will later become psychotic. For a portion of the non-clinical population whose paranoia revolves around their perception of severe threat from conspiracies against them (Freeman et al., 2005), some may reach a threshold point,

beyond which more florid symptomology may emerge. The moderator factors for severity of illness will likely depend on the conviction, preoccupation, distress, and persistence of the symptoms (Johns & van Os, 2003).

Another complicating factor in delusional cognitive processes, for both clinical (Chadwick, Trower, Juustic-Butler, & Maguire, 2005) and non-clinical (Johns et al., 2004) populations, is concomitant affective conditions such as anxiety which is estimated to be a co-occurring problem in approximately 66% of those who experience persecutory delusions. Anxiety in this respect can relate to fear, stress, and worry. High levels of any of these types of anxiety can in fact amplify the level of distress a delusion causes for the individual and therefore also serve as a maintaining factor for their dysfunction (Freeman, 2007). For instance, if an individual with strong conspiracy belief genuinely believes they are in imminent danger, it follows that they may experience clinically significant levels of fear, stress, and worry about their safety. Other affective correlates of paranoia have been found to be high levels of depression, and low levels of self-esteem (Chadwick, Trower, Juustic-Butler, & Maguire, 2005).

Cognitive Processes Associated with Delusions

Theory of Mind Deficits

Misinterpretation of interpersonal experiences can lead an individual with to believe that they are being targeted for harm by others (persecutory delusion), and thus this misinterpretation can escalate to the extent that it causes them clinically significant distress (Bentall et al., 2001). That is, paranoid individuals make maladaptive social inferences. Frith (1992) suggested that this clinical phenomenon is somewhat consistent with dysfunctional Theory of Mind. Theory of Mind (ToM) is a process whereby people are aware that others have their own thoughts and feelings which may be inconsistent with one's own. The deficits in ToM discussed by Frith

relate to misinterpreting the intentions behind others' behaviour to be malevolent in nature.

A common way to assess ToM is through a hinting task whereby participants are presented with scenarios of interpersonal interactions, and are asked to explain what the people in the scenario meant when they dropped a hint (Corcoran et al., 1995; Craig, Hatton, Craig, & Bentall, 2004). Another method of assessment is through emotion identification tasks (Craig et al., 2004). The findings of ToM deficits in delusional patients have not been consistent particularly with respect to patients with paranoid delusions. For instance, some studies have been able to find evidence of ToM deficits in the paranoid subgroup of their delusional samples (Corcoran et al., 1995; Frith & Corcoran, 1996; Corcoran et al., 1997; Craig et al., 2004); however, other studies have been able to replicate the findings of previous studies relating to schizophrenic participants demonstrating ToM deficits, but did not find ToM deficits in the paranoid subgroups (Sarfati et al., 1997; Langdon et al., 1997; Doody et al., 1998; however the latter study did not break their sample down into symptom subgroups). Nevertheless, one consistent finding across these studies was that schizophrenic participants presenting with more negative symptomology (loss of normal functioning, e.g. avolition, alogia, flattened affect; Rector, Beck, & Stolar, 2005) compared to positive symptoms (features which are additive to normal functioning such as delusions and hallucinations) showed greater deficits in an ability to infer others intentions compared to the paranoid subgroups, consistent with more recent studies of this nature (Harrington, Langdon, Seigert, & McClure, 2005; Harrington, Seigert, & McClure, 2005).

ToM has also been investigated visually using animations of two moving objects (Blakemore, Sarfati, Bazin, & Decety, 2003). In half of the presentations, the movement of one object was contingent on the other, but in the other half of the presentations, there was no relationship between the movements of the objects.

Under different conditions, participants were required to respond as to whether they thought the movement of one shape had any relationship with the movement of the other shape, and were asked to rate the strength of the relationship. The key finding from this study was that paranoid participants perceived a relationship between the objects even in conditions where the movements of the objects were non-contingent, whereas non-paranoid participants did not. Additionally, Blakemore et al. (2003) concluded that when paranoid participants observe movements by objects which they perceive to be caused by other objects, they infer that these objects have intentions, motivations, and goals the same way humans and animals do (that they have agency; Blakemore et al., 2003). This may have important implications for how conspiracy theorists may connect unrelated situational stimuli, and based on the actions of others in those situations infer their intentions as malevolent. This is further discussed in chapter two. Therefore, the perception of non-existent relationships (or patterns), is argued to be due to over-attribution of a contingency between the objects (Blakemore et al., 2003).

Because of the conflicting nature of these findings on the presence of ToM deficits in persecutory delusions, Freeman (2007) has suggested that ToM deficits may indeed be implicated in the development of such delusions, but that they are unlikely to be the only contributing factor. Craig et al, (2004), has also stated that dysfunction in ToM contributes to a paranoid delusional thinking style, but that an externally-biased attribution style also plays an important role.

Information-Processing Biases

Biases in the way individuals with persecutory delusions process information have received much empirical attention (Bentall, Kinderman, & Kaney, 1994; Garety & Freeman, 1999). One form of cognitive bias commonly demonstrated by this subgroup of delusional people is the tendency to make external attributions (ascribing

the causes of events to factors outside oneself; Kinderman & Bentall, 1996; Bentall, Corcoran, Howard, Blackwood, & Kinderman, 2001), and thus serve to help develop and maintain a "paranoid worldview" (Bentall et al., 2001, p. 1143). Of particular note, a number of studies have managed to replicate (using a range of measurement tools for assessing attribution style) the finding that when paranoid patients try to make causal explanations for negative events, they are more likely to make external-person-focused attributions rather than external-situation-focused attributions (Kinderman & Bentall, 1996a; Kinderman & Bentall, 1996b; Kinderman & Bentall, 1997; Craig, Hatton, Craig, & Bentall, 2004; Martin & Penn, 2002.) That is, they are more likely to blame the causes for negative events on other people, rather than situational factors (e.g. the economy being on a down-swing). Therefore, an individual with conspiracy-driven paranoid delusions would be more likely to attribute the cause of a negative event to those they see as conspirators rather than to possible situational factors.

A related finding regarding the cognitive style of those with paranoid delusions is the way they explain or justify the events around them. Paranoid thinkers tend to require fewer (compared to non-clinical samples) pieces of information in order to accept a particular explanation for an event (Fine, Gardner, Craigie, & Gold, 2007; Freeman, Pugh, & Garety, 2008), and thus have an incomplete reasoning style. This is known as the jump-to-conclusions (JTC) reasoning bias.

In order to empirically test JTC in paranoia-deluded individuals, a simple probabilistic reasoning task is often employed, which is able to directly measure the number of pieces of information a participant requires before they will make a decision. The most commonly used task is one where participants are shown two jars, each with beads of two colours of opposite relative proportions (Garety, Hemsley, & Wessely, 1991). For example, one jar may contain 40 red beads, and 60 blue beads – the mainly blue jar; whereas the other jar will contain 60 red beads and 40 blue beads

– the mainly red jar. The jars are then hidden from the participant's view, and they are then told that the experimenter has selected one of these jars. The participant's task is to decide which jar was selected. The experimenter will draw one bead out of the selected jar at a time, and the dependent measure is how many drawn beads the participant will view before they arrive at a decision as to whether the mainly blue jar or mainly red jar had been selected. The fewer the beads drawn, the more hasty a participant's data-gathering is said to be.

There has been a bit of a "chicken and egg debate" about which comes first, JTC or delusions. Some argue that JTC acts as a vulnerability marker for later development of delusions, whilst others argue that the severity of delusions and JTC co-vary. For instance, some studies have found JTC to be more prominent in cases of paranoia where delusions are held with strong conviction (Freeman, Pugh, & Garety, 2008). Other studies have also found JTC to still be a feature of data-gathering in those who are no longer actively psychotic, with delusions that have subsided to subclinical levels (Moritz & Woodward, 2005).

Dudley and Over (2003) integrate the JTC seen in paranoia with the concept of confirmation bias. A confirmation bias is when an individual looks only for evidence which supports their notion, and not evidence that may contradict it (Freeman, 2007). Using an example provided by Dudley and Over (2003); if a paranoid individual notices someone laughing, they may jump-to-conclusions and assume the laughter is directed at them in a disparaging way, which may then lead them to assume that there is a plot against them. The one piece of information would be sufficient for him to come to this conclusion. This confirmation bias would then mean that he would not consider other evidence as a possible explanation for the ambiguous situation.

Summary

Paranoid delusions are characterised by distorted thought content often based on misinterpretations of a range of experiences (situational and interpersonal), which can give rise to clinically significant distress depending on the level of credence they attribute to the delusion as well as how much harm they believe themselves to be at risk of. According to Freeman et al. (2005), CTs are delusions characterised by perceived severe threats to one's wellbeing. Furthermore, when a negative event does take place, the cause of the event is attributed to external-person-focused factors rather than external-situational factors. Therefore, an individual with a high level of CTA will be more likely to assign the blame for a negative event to conspirators rather than to possible situational factors.

Whilst some of the features of delusional presentation bear resemblance to that of those with very high CTA, there are also other forms of psychopathology that have parallels with high CTA. Schizotypal-type traits also bear some likeness to conspiracy beliefs.

Schizotypy

Fundamental Features

Schizotypy is a term used to describe a family of personality traits seen in both clinical and non-clinical populations (Raine, Reynolds, Lencz, Scerbo, Triphon, & Kim, 1994; Vollema & Hoijtink, 2000). The most extreme presentation of these traits can be seen in schizotypal personality disorder, which relates to deficits in interpersonal functioning, eccentricities of behaviour, and cognitive-perceptuo abnormalities. Raine and colleagues (Raine, 1991; Raine et al., 1994) based their conceptualisation of schizotypy on the nine schizotypal personality features outlined in the DSM-IV-TR (American Psychiatric Association, 2000), of which at least five

need to be present before a diagnosis of schizotypal personality disorder can be justified: ideas of reference, odd beliefs or MI, unusual perceptual experiences, odd thinking and speech, suspiciousness or paranoid ideation, inappropriate affect, peculiar, odd or eccentric behaviour, excessive social anxiety, and lack of close friends (American Psychiatric Association, 2000; American Psychiatric Association, 2013).

For ideas of reference to be considered a significant clinical feature of presentation, an individual must be seen to have a tendency to misinterpret ambiguous events as being self-referential in nature. According to Wong et al. (2012), one of the most common presentations of ideas of reference is when an individual feels as though something they have witnessed in the mass media relates specifically to them. An important clinical consideration however, is that the referential ideas must not be of such severity as to be considered delusional (American Psychiatric Association, 2000; Wong et al., 2012).

MI is one of the signature features of schizotypy. Please refer to chapter two for a full description. Briefly, MI is a state of belief in one or more magical influences (which are culturally-inconsistent) as being responsible for the outcome of events (Meehl, 1964, as cited in Eckblad & Chapman, 1983).

The schizotypal feature of unusual perceptual episodes can relate to out-of-body-experiences (feeling experientially separate from one's own body; McCreery & Claridge, 2002), or perceiving non-existing stimuli (Tsakanikos, 2006). The theory behind why unusual perceptual experiences take place, is that schizotypal individuals (or indeed schizophrenic patients with this form of positive symptomatology), misattribute internally generated stimuli to external sources, and additionally have acquired loose semantic networks, which can reinforce these external explanations (Tsakanikos, 2006). This may bear implications for paranormal CT belief. For example, Spanos, Cross, & DuBreuil (1993) suggest that reports of alien abduction could be explained instead by sleep paralysis, based on the similarity of physiological

symptoms reported. Another schizotypal feature which has been empirically linked to atypical and loose semantic knowledge and memory networks, is odd speech and thinking (Minor, Cohen, Weber, & Brown, 2011). According to Minor et al., individuals with schizotypically-odd thinking often make ambiguous references, experience loss of goal-directed thought, and demonstrate very loose associations between phrases in their speech. In conspiracy theorists, it is possible that these loose semantic networks may serve to make CTs seem more plausible, even in the face of disconfirming evidence.

Schizotypal individuals can also be suspicious and paranoid that other people (and in some cases, those known to the individual) have hostile intentions towards them (Darwin, Neave, & Holmes, 2011). This believed hostility from others can be perceived to be manifested through disloyalty, deception, exploitation, and at the extreme end, potential physical harm (Darwin et al., 2011). Loughland and Williams (1997), suggest a link between suspiciousness and excessive social anxiety, in that those believing they are victim to the malice or mal-judgement (behavioural and cognitive expressions respectively) of others, as a response begin to withdraw socially as a defence mechanism, although they may be unhappy about their lack of friendships and so on (unlike for example, schizoid personality disorder, where the individual also experiences a lack of close friendships). To capture the suspiciousness experienced by schizotypal individuals a number of measures ask questions that are designed to tap into suspicious and paranoid thoughts. Such measures include Persecutory Beliefs subscale of the British Inventory of Mental Pathology (Bedford & Deary, 2006), the Paranoia Checklist (Freeman et al., 2005), the suspiciousness subscale of the Schizotypal Personality Questionnaire (SPQ; Raine, 1991). All three measures were utilised in the current thesis.

Another feature of schizotypy relates to a constricted range of affect, or inappropriately timed and levels of expressions of emotion (American Psychiatric

Association, 2013). Thus, such individuals can come across as emotionally stunted or ambivalent (Kerns, 2006). Schizotypal individuals may also have eccentricities or oddities of behaviour that may present as "unusual mannerisms, an often unkempt manner of dress that does not quite 'fit together', and inattention to the usual social conventions (e.g., the person may avoid eye contact, wear clothes that are ink stained and ill-fitting, and be unable to join in and give-and-take banter of co-workers)" (American Psychiatric Association, 2013, p. 656).

Social cognition research (e.g. Meyer & Shean, 2006) has suggested that magical ideation can account somewhat for the social/ToM challenges facing schizotypes, such as being unable to correctly interpret others' thoughts, beliefs, and intentions during interpersonal situations. ToM deficits were also discussed earlier in relation to delusional thinking. Cognitive slippage is considered the mildest form of formal thought disorder which is commonly seen in schizophrenia spectrum disorders (Gooding, Tallent, & Hegyi, 2001; Meehl, 1962). It is said to be characterised by an abnormal associative network (connections made between unrelated pieces of knowledge and memories; Tsakanisos, 2006), as well as a tendency to lose track of one's own thoughts. Cognitive slippage has been identified has having the most influence on development of schizotypal traits, and potential escalation of these traits to a clinically significant level (Gooding, Tallent, & Hegyi, 2001; Meehl, 1990). This makes intuitive sense when considering that at least five of the nine key features of schizotypy have an obvious cognitive basis (ideas of reference, odd beliefs/magical ideation, unusual perceptual experiences, odd thinking and speech, and suspiciousness or paranoid ideation), and only five symptoms are required to satisfy the diagnostic criteria for schizotypal personality disorder (American Psychiatric Association, 2013). In some studies researchers have considered MI a proxy for cognitive slippage and have measured cognitive slippage indirectly through measuring MI (Meyer & Shean, 2006). Formal thought disorder has been implicated in the development of positive

and negative symptoms of schizophrenia (Andreasen & Olsen, 1982; Docherty, Shnur, & Harvey, 1988), a form of psychosis which has strong empirical support for being related to schizotypy.

The Dimension Debate and Schizophrenia-Proneness

Over the past 25 years debate has evolved regarding the dimensionality of schizotypy, and the most useful way to conceptualise the presentation of those with schizotypal traits. Investigation of the dimensionality of schizotypy is important for informing the types of cases likely to have poor prognosis and potential to develop into more serious forms of psychopathology such as psychosis (Vollema & Hoijtink, 2000). And indeed the susceptibility link between schizotypy and schizophrenia has been made as a result of evidence that schizophrenic individuals are highly likely to have schizotypal biological relatives, and vice versa (Torgersen, 1985). The dimensionality of schizophrenia spectrum disorders is relevant to the study of CT belief as I propose that conspiracy belief can be conceptualised as continuous in nature; and that strong CTA may be associated with severity of schizophrenia-type symptomology. That is, the stronger the CTA, the more severe the schizotypal/schizophrenia-like symptoms and vice versa. Similarly, weak CTA may be associated with lower levels of schizotypal/schizophrenia-like symptoms.

Researchers have found MI and perceptual aberrations to be markers of psychosis-proneness, with MI being the strongest predictor of the two (Chapman & Chapman, 1987; Meyer & Hautzinger, 1999). Early work by Hewitt and Claridge (1989), subsequently replicated by Joseph and Peters (1995), initially suggested three factors to account for schizotypal traits seen non-clinically. These factors were identified as magical ideation, unusual perceptual experiences, and paranoid ideation/suspiciousness. However, the Hewitt and Claridge (1989) model was only able to account for approximately 28% of the variance in their sample. The

Schizotypal Personality Scale (Claridge & Brocks, 1984) which was used in their study did not adequately account for Ideas of reference and social anxiety in their sample, However, Hewitt and Claridge (1989) acknowledged the need to include items in their measurement scale that would reflect ideas of reference and social anxiety more satisfactorily.

Other research has been more convincingly able to account for schizotypy seen in non-clinical populations. For instance, Raine et al. (1994), found a three-factor model to be particularly effective to account for such traits. The first factor relates to *cognitive-perceptual deficits* which account for ideas of reference, magical thinking, unusual perceptual experiences, and paranoid ideation. The second factor pertains to *interpersonal deficits* such as social anxiety, no close friends, constricted affect, and paranoid ideation again. The final schizotypal factor according to Raine et al. (1994), *disorganisation*, has to do with odd behaviour and speech. Raine et al. (1994) have also suggested that if any of these factors were to be considered as a major vulnerability marker for schizotypal personality, it would be the disorganisation factor. The disorganisation factor of course includes poverty of speech and content, which is in line with earlier mention that cognitive slippage is the most important vulnerability marker for schizotypy (Gooding et al., 2001). On a theoretical level, these three factors appear to be rather analogous to the three symptomatology factors underpinning schizophrenia (Arnt, Alliger, & Andreason, 1991). More specifically, the Raine et al. (1994) cognitive-perceptual factor seems akin to the positive (productive) symptoms of schizophrenia (such as hallucinations and delusions). Furthermore, Raine et al.'s (1994) interpersonal factor is similar to the negative symptomology (loss of functioning such as anhedonia, social withdrawal) seen in schizophrenia. And finally, Raine et al.'s (1994) disorganisation factor corresponds with the thought disorder and bizarre behaviour seen in schizophrenia. These findings and theoretical link made by Raine et al. (1994) are also supported by other

findings such as those of Vollema and Hoijtink (2000) who similarly found a three factor model to best account for schizotypal traits, in both clinical and non-clinical samples (however, they excluded actively psychotic participants from their clinical sample). Their resulting three factors were labelled positive schizotypy, disorganisation, and negative schizotypy, reflecting much the same categorisation as used by Raine et al. (1994).

These findings suggest a continuous nature of schizotypal traits between non-clinical and clinical populations (Raine et al., 1994; Vollema & Hoijtink, 2000). According to Vollema and Hoijtink (2000), psychotic symptoms seen in schizophrenia can be seen as an exaggeration of symptoms comprising the cognitive-perceptual/positive factor of schizotypy, symptoms demonstrating formal thought disorder in schizophrenia can be seen as an exaggeration of the symptoms grouped into the disorganised schizotypal factor, and negative symptomatology seen in schizophrenia as an exacerbation of the interpersonal/negative factor of schizotypy.

There is evidence to suggest that some within the non-clinical population with schizotypal traits are able to remain high functioning regardless of experiencing some features which would classically be considered psychotic such as hallucinations and out-of-the-body experiences. (McCreery & Claridge, 2002). These findings may then be applicable to the present research if an empirical relationship between Schizotypal traits and strong CTA is found, to account for why if these traits are present, such individuals are able to continue functioning at non-clinical levels. In order to explain why such individuals are able to remain high functioning, McCreery and Claridge (2002) suggest that elevated scores on the positive trait factor are not sufficient to account for a psychotic break. Rather, when anhedonia is implicated on top of other schizoptypal traits, then the risk for psychosis becomes much more probable. That is to say, hedonism may act as a protective factor in those who have out-of-the-body experiences but do not present for the assistance of medical professionals (McCreery

& Claridge, 2002). Another interpretation of their findings by these researchers was that in the cases of problematic psychosis, elevations on more than one factor are likely to be present. More specifically, positive symptomology may relate to more transient psychological states, whereas the other two factors may be anchored much more as stable traits. Furthermore, McCreery and Claridge (2002) endorse the fully dimensional perspective of schizotypy, suggesting that only those who score fairly highly on measures of schizotypy (who are beyond a particular threshold), and who then develop psychotic features, are more likely to experience delusions and hallucinations of such severity that it impedes their level of functioning.

Closing the Gap Between Delusional Thinking and Schizotypy: Bias Against Disconfirmatory Evidence

Bias Against Disconfirmatory Evidence (BADE) is considered an information-processing deficit, whereby an individual will hold their initial hypotheses with great conviction, even in the face of contradictory evidence (Freeman, Garety, Kuipers, Fowler, & Bebbington, 2002) BADE is most classically associated with clinical delusions, however, it is also evident in schizotypy (Buchy, Woodward, & Liotti, 2007; Orenes, Navarrete, Beltran, & Santamaria, 2012) providing a plausible link between schizotypy and potential for development of clinical delusions (Zawadzki, Woodward, Sokolowski, Boon, Wong, & Menon, 2012). Such a link is consistent with McCleery and Claridge's (2002) fully dimensional perspective.

The presence of BADE is most commonly tested using tasks where pieces of information (either pictorial or details of a story) are sequentially presented to participants with decreasing levels of fragmentation, thus allowing less and less amounts of information to be obscured, or more details to be revealed (e.g. Orenes et al., 2012). BADE is typically defined by how long an individual maintains the same

response despite disconfirming details being revealed, and how plausible they thought their response was at each stage.

The general finding has been that delusional individuals have a greater tendency towards BADE compared to non-delusional participants (Moritz & Woodward, 2006; Riccaboni, Fresi, Buonocore, Leiba, Smeraldi, & Cavallaro, 2012; Woodward, Buchy, Moritz, & Liotti, 2007; Woodward, Moritz, Cuttler, & Whitman, 2006; Zawadzki, Woodward, Sokolowski, Boon, Wong, & Menon, 2012). More specifically, the deficit is in the ability to recognise the disconfirmatory nature of conflicting information, and then integrate this with their other knowledge in order to change their judgement (Woodward et al., 2006).

Another aspect of BADE is that delusional individuals have a tendency to not be selective enough when deciding on a particular causal explanation (Woodward et al., 2006; Woodward et al., 2007; Zawadzki et al., 2012). Delusional individuals use fewer pieces of information before arriving at their decision (Garety et al., 1991; Freeman et al., 2008) compared to non-delusional individuals. Furthermore, Zawadzki et al. (2012) have tried to explain the underlying mechanism for this liberal acceptance bias as being due to a high need for closure in delusional individuals, demonstrated by a hasty decision making processing. Similarly, research has found that non-clinical individuals with high levels of schizotypal traits (as measured by the SPQ) took longer to change their initial explanation (on the BADE task described earlier), despite increasing amounts of disconfirmatory evidence being present, compared to low-SPQ scorers (Buchy et al., 2007; Orenes et al., 2012). According to Gray and Snowden (2005) schizotypes have more associative networks of knowledge and memory (which relates to odd beliefs and magical thinking), and are more hasty in their data-gathering and reasoning.

The Conceptual Link between Psychopathology and Conspiracy Theory Affinity

The psychopathology literature bears some conceptual resemblance to the literature on CTA in a number of ways. In the first instance, I have discussed two major forms of psychopathology (schizotypy and delusional thinking) that are dimensional in nature. Similarly, I argued in the first chapter that CTA also likely exists on a continuum, with low levels of CT *belief* at one end, and a strong tendency to *create* CTs at the other. The key thing to note in both CTA and psychopathology is that in order for more extreme forms of the respective presentations to develop, an individual has to have worked their way up the continuum from the lower levels. That is, conspiracy theorising is unlikely to occur unless an individual is first open to believing CTs. Similarly, as discussed by Freeman et al. (2005) there is a progression from social evaluative concerns to paranoid delusions where severe threat is perceived.

Second, the conception of what constitutes a CT assumes malevolent intentions of others' (usually groups), which they intend to act out upon an individual or group of individuals (Moscovici, 1987; Pruitt, 1987; Zonis & Joseph, 1994; Keeley, 1999). Indeed Freeman et al. (2005) conceptualised severe paranoid delusions to include conspiracy beliefs. Keeping their dimensional natures in mind, it may be possible that the stronger the paranoia, the greater the likelihood that one may be in transition from conspiracy belief alone, to belief in and generation of CTs. As mentioned earlier, previous research (Johns et al., 2004; Freeman, 2006) found that 1%- 21.2% of their non-clinical samples had been affected by some level of paranoid thought in the previous twelve months. The severity of the paranoia varied across the sample (hence the argument that persecutory delusions are dimensional). A related interpretation might be that it is self-referential CTs (as opposed to CTs about others)

that contribute to paranoia. Freeman et al. (2005) has suggested that believing that a conspiracy against oneself exists, is experienced by a small portion of those who feel paranoid, but also represents experience of a severe level of threat. Thus, based on these findings part of the experience of severe paranoia could be perception of a conspiracy against oneself. What is now needed is research that examines if there is empirical evidence of a link between CTA and paranoid delusions, which the current research aims to do.

Third, if we are to follow Freeman et al.'s (2005) line of theory, then as with delusions, those with strong CTA may present with deficits in ToM ascription; the inability to accurately infer others thoughts (intentions) and emotions (Bentall et al., 2001; Frith, 1992; Harrington et al., 2005a; Harrington et al., 2005b; Rector et al., 2005). A fourth conceptual parallel is paranormality. According to Groh (1987) CTs can represent irrational beliefs about malevolent paranormal or non-paranormal forces exacting harm. For example, historical paranormal CTs about witches were characterised by both malevolent intentions. Therefore this CT relates both to paranoia, but also magical thinking. Additionally, Pronin et al. (2006) have suggested that odd/magical thinking may be a heuristic style of reasoning used to infer causality, where similarly natured circumstances are judged to be causally-related. Certainly this has been found in CTA literature where Crocker et al. (1999) found that African-Americans, a marginalised group with a history of victimisation, were more likely to believe CTs relating to discrimination of their racial group compared to White Americans. This may be at least in part due to awareness of the Tuskegee Syphilis study that was responsible for the death of thousands of African-Americans (Bates, 1990; Thomas & Quinn, 1991). Therefore when African-Americans are presented with a situation that resembles the Tuskegee study (e.g. high prevalence of AIDS among African-Americans), they may be more likely to believe a conspiracy of ethnic cleansing is at play.

A particularly important aspect of MI is that it allows an individual the ability to preserve a sense of control over the outcomes of a situation in uncontrollable situations (Pronin et al., 2006). Similarly, a very salient finding and theoretical underpinning of conspiracy belief is that those who feel a low sense of control or powerlessness are more likely to believe CTs and to engage in conspiracy theorising themselves (Abalakina-Paap et al., 1999; Douglas & Sutton, 2008; Groh, 1987; Hofstadter, 1965; Leman, 2007; Newheiser, Farias, & Tausch, 2011; Swami et al., 2013; Sullivan et al., 2010; Whitson & Galinsky, 2008).

The sixth parallel between strong CTA and psychopathology relates to information-processing biases. A stable information-processing bias seen in conspiracy theorists is external attribution style (which likely becomes more prominent as CTA increases), where they often demonstrate the fundamental attribution error (Clarke, 2002). That is, conspiracy theorists will focus blame on the disposition of the conspirators, to whom they can ascribe culpability for the low level of perceived control, at the exclusion of considering situational factors. This process can operate outside the conspiracy theorist's awareness (Douglas & Sutton, 2008), or may be an overt strategy to create greater psychological distance between oneself (part of the ingroup) and the malevolent personalities of the conspirators (the outgroup). By emphasising the differences from the outgroup, by identifying them and increasing the awareness of their malicious nature, their power to influence the ingroup weakens, that satisfying one of the key responsibilities of being a conspiracy theorist (Mugny & Papastamou, 1982; Turner et al., 1979). Similarly, paranoid individuals have also been found to have an external-person-focused attribution style, rarely blaming situational factors for negative events (Craig et al., 2004; Kinderman & Bentall, 1996a; Kinderman & Bentall, 1996b; Kinderman & Bentall, 1997; Martin & Penn, 2002).

Review of the PNS literature in chapter two suggests that when one feels a low sense of control, or powerlessness, one's response to this state can take one of two forms. A person may either show response inhibition or apathy towards their situation, or they may instead demonstrate high levels of response initiation. The latter group of people are likely to have a heightened PNS. If CTs as simple causal explanations are considered a form of response initiation, then some of the information-processing biases seen in conspiracy theorising could possibly be interpreted in the context of paranoia and schizotypy. First, Leone et al. (1999) found high PNS was related to a strong need for closure, dogmatism, and intolerance of ambiguity. Similarly, research in psychopathology has found that paranoid individuals also have a high need for closure. Furthermore, at least one study has found a negative correlation between tolerance for ambiguity and paranormal beliefs (Houran & Lange, 1996). Tobacyk and Milford (1983) also found that believers in some forms of paranormal belief (e.g. witchcraft and spiritualism) were also dogmatic in their beliefs, which therefore restricts their scope for attribution.

In order to summarise the conceptual parallels between conspiracy thinking, paranoia, and schizotypy (which are all continuous in nature), Table 12 presents a tabulation of the related concepts outlined above.

Table 12

Conceptual Parallels seen in Conspiracy Thinking and Psychopathology.

	Conspiracy Thinking	Paranoia	Schizotypy
Dogmatism	☑		☑
Intolerance of ambiguity	☑		☑
Need for closure	☑		☑
External-person-focused LOC	☑	☑	
Low sense of control	☑		☑
Heuristic reasoning style	☑		☑
Jump-to-conclusions	☑	☑	☑
Apophenia	☑	☑	☑
BADE	☑	☑	☑
Social alienation	☑		☑
Monological belief system	☑	☑	☑
Association with low mood	☑	☑	☑
Association with anxiety	☑	☑	☑

Similar to conspiracy belief, magical thinking is conceptualised as a generalised ideological trait, where holders possess monological belief systems, where feedback loops bear no influence on the system, and the individual is unlikely to alter or revise the nature of their beliefs (Goertzel, 1993; Goertzel, 1994; Leman & Cinnirella, 2007). For example, belief in one type of paranormal belief (e.g. clairvoyance), may then predispose that individual to hold other paranormal beliefs (e.g. telepathy). Similarly, belief in one conspiracy tends to cultivate openness to believing other CTs (Goertzel, 1993; Goertzel, 1994; Leman & Cinnirella, 2007; Swami et al., 2010). An underdeveloped but related area of research has been the apparent immunity to disconfirming evidence seen in conspiracy theorists (Clarke, 2002; Groh, 1987;

Keeley, 1999; Leman, 2007; McHoskey, 1995; Sunstein & Vermeule, 2009). Such a reasoning bias bears close resemblance to the BADE seen in paranoid and schizotypal individuals. If paranoia and schizotypal traits are empirically implicated in conspiracy belief, this may suggest that conspiracy theorists possess a general cognitive tendency to disregard contradictory information, whereby they do not fully process alternative explanations for events and are not fully able to accept their disconfirming nature.

Another obvious similarity between conspiracy theorists and schizotypy is the sense of alienation and lack of close friends seen in both cases (Abalakina-Paap et al., 1999; American Psychiatric Association, 2000; American Psychiatric Association, 2013; Goertzel, 1994; Melley, 2000; Nefes, 2012; Srole, 1956; Volkan, 1985). A conspiracy theorist's alienated lifestyle may therefore be because of both a weak attachment to society (feeling a low level of integration with society), but also rejection by peers because of odd behaviour and stereotyped speech. Fear of rejection may thus feed into development and maintenance of excessive social anxiety. To my knowledge, no research has investigated how conspiracy theorists feel about other conspiracy theorists. That is, examining whether they are dismissive of other conspiracy theorists, or whether they feel connected to them.

Furthermore, Mirowsky and Ross (1983) have suggested that when a sense of powerlessness interacts with a sense of alienation, it becomes the first step in a developmental sequence of traits that may escalate to a paranoid personality. Researchers have suggested that paranoia is one of the factors likely to be implicated in the beliefs of conspiracy theorists (Hofstadter, 1966; Darwin et al., 2011).

The second stage of the sequential trait development process is mistrust, which moderates the relationship between powerlessness and paranoia. Mirowsky and Ross (1983) proposed that this developmental sequence is really a stepwise progression in how alienated an individual feels in relation towards others, with paranoia signifying the greatest degree of alienation. These researchers defined mistrust as a loss of, or ill-

developed, faith in others, and a developed proclivity to misinterpret the intentions and behaviours of others as being in the spirit of exploitation. Indeed, only a weak direct statistical relationship was found between a sense of powerlessness and paranoia, with moderate positive relationships between these variables and mistrust. When their data was entered into a path model, the findings revealed a weak positive relationship between powerlessness and mistrust, and a moderate positive relationship between mistrust and paranoia, suggesting that mistrust does bear some influence in the link between developing paranoia from a generalised sense of external control, even if only to a small-moderate degree.

One of the most interesting links that can be made between conspiracy theorising and mechanisms of psychopathology is illusory pattern perception in both cases. Illusory pattern perception (or apophenia) refers to a phenomenon where an individual perceives meaningful connections between unrelated stimuli (see chapter two). For instance, apophenia has been implicated in MI, where MI individuals have a tendency to perceive connections between unrelated stimuli. According to Pronin et al. (2006) and Giannotti et al. (2001), MI individuals are more likely to make odd causal connections between stimuli that non-MI individuals would perceive as coincidental. Young, Bentall, Slade, and Dewey (1987) suggested that findings related to illusory pattern perception should not however be construed as a phenomenon seen pathologically, and that it more likely to be continuous in nature, where those experiencing psychotic symptoms are likely to show stronger illusory pattern perception. Consistent with this notion, Merckelbach and van de Ven (2001) reported that approximately 32% of their *non-clinical* sample demonstrated auditory illusory pattern perception, where they indicated they had heard Bing Crosby's White Christmas song, when in actuality all they were presented with was white auditory noise (a methodology first introduced by Barber & Calverley, 1964). These respondents scored higher on a self-report measure of hallucinations, and also

demonstrated a propensity for fantastical thinking which could be considered related to an odd or magical thinking style. Similarly, using a contingency judgement task, Brugger and Graves (1997) found that MI individuals did not require as much information as non-MI individuals to arrive at a hypothesis, and these hypotheses tended to be apophenic in nature.

Apophenia has also recently been linked to delusions as well as schizotypy, where high scorers on scales of delusion and schizotypy (e.g. Peters Delusional Inventory and Schizotypy Traits Questionnaire respectively), were more likely to connect unrelated visual stimuli compared to non-delusional participants and non-schizotypal participants (Fyfe, Williams, Mason, & Pickup, 2008). Fyfe et al. interpreted the findings pertaining to delusions as high delusion scorers having a tendency to over-mentalize contingency-related information, and that this may due to a hyper-associative processing style. Congruently, Vannucci et al. (2011) concluded that those who feel a low sense of control employ a more "liberal response criterion" (p. 529), requiring only a minimal amount of information in order to feel comfortable in making a judgement. This idea is consistent with research presented on JTC. Furthermore, these interpretations are very much in line with research conclusions that have been drawn regarding magical ideation, anamolous perceptual experiences, and cognitive slippage as a loose association network, where odd connections are made between unrelated stimuli.

The nature of the meaning-making processes seen in conspiracy theorising has also been attributed to apophenia. Dixon (2012) argues that apophenia is a type of experience which is formative of conspiracy theorising, and has a presence in both non-clinical and clinical populations. Accordingly he suggests that in mental illness a more extreme form of apophenia is seen, where an individual will be particularly stubborn in their abductive reasoning style, not altering their conclusions regardless of the type of information they have access to. With regard to the non-clinical

population, Dixon (2012) explains that a substantial part of life is the perception of patterns; however, people do not always get the opportunity to see if their interpretations of events are accurate. Therefore, without this feedback loop, CTs and paranoid ideation can perpetuate, and it can be difficult from a subjective point of view to construe what a real pattern is and what an illusory pattern is. Therefore, the lack of reciprocity with ones context through feedback and re-evaluation, can mean common-sense or rationality can be thwarted because such individuals do not allow opportunities for their perception to be adjusted.

Indeed, there is some empirical evidence to suggest that those who *generate* CTs are vulnerable to illusory pattern perception, with regard to both visual patterns and situational perception (Whitson & Galinsky, 2008). Whitson and Galinsky (2008) assigned experimentally manipulated the level of subjective control their participants felt. Participants were then presented with visual stimuli of pictures. Half of the pictures contained a degraded image of an object (e.g. chair), whereas the other half of the pictures contained no objects, just “noise” like snow on television. High control participants did not perceive non-existent objects. Participants in the low control group perceived images even when there was no object in the picture, as a result of perceiving meaningful connections between unrelated visual stimuli. CT generation was measured by presentation of scenarios containing ambiguous information about a situation. Low control participants perceived meaningful connections between ambiguous pieces of information in the scenarios in order to explain the cause of the outcome described. High control participants did not present with this situational apophenia. Whitson and Galinsky (2008) concluded that when one experiences low subjective control, they are more likely to present with illusory pattern perception. Illusory pattern perception was interpreted by the researchers as an attempt to re-establish some semblance of control but making order out of chaos.

Study 4: Psychopathology and Conspiracy Theory Affinity

The review above suggests that there are some conceptual and theoretical links that can be made between conspiracy belief and theorising and aspects of psychopathology such as schizotypy and persecutory delusions. However, very little research has examined an empirical link*s* between psychopathology and CTA (Darwin et al., 2011; Swami et al., 2013). Therefore, the key research aim of the current study was to elucidate to what extent believing in conspiracies is associated with markers of psychopathology such as delusional and schizotypal traits.

Paranoid thinking was measured using three measurement tools: the Peters Delusions Inventory (Peters, Joseph, Day & Garety, 2004) which examines the presence of delusions as a general category. The Paranoia Checklist (Freeman et al., 2005) and suspiciousness subscale of the Schizotypal Personality Questionnaire (SPQ; Raine, 1991) were used to allow focussed examination of persecutory beliefs and its psychometric presentation amongst conspiracy theorists versus non-conspiracy theorists. Schizotypal personality traits were measured using the SPQ. To allow examination of general psychopathological traits, the British Inventory of Mental Pathology (BIMP; Bedford & Deary, 2006) was administered. The BIMP also measures paranoia. Furthermore, in order to determine the association between conspiracy belief and a low sense of control, the Powerlessness/Mastery Scale (Pearlin, Menaghan, Lieberman, & Mullan, 1987) was administered to participants.

In order to encourage diversity in the sample, an international online approach was taken towards data collection. Due to the potential stigma associated with being a conspiracy theorist (as evidence by the findings of Study 3b), this

methodology was employed to ensure the anonymity of respondents, thus excluding the effects of social desirability as much as possible.

Hypotheses

Based on extensive review of the literature, the following hypotheses were predicted. It was hypothesised that those with strong CTA will perceive lower levels of subjective control compared to those with low CTA. It was also hypothesised that those with strong CTA will demonstrate significantly higher levels of general mental pathology, paranoia, general delusions, and schizotypal traits compared to those with low CTA.

Method

Participants

In total, two hundred and one (120 females) participants took part in this study. Ninety-four participants were general members of the public recruited through posters, Facebook, and email (see procedure section). The study was also open internationally, thus some of the participants are likely to have been non-New Zealand based. This portion of the total sample were eligible to provide their contact details to go into a prize draw to receive Motor Trade Association vouchers (often used in New Zealand to in exchange for fuel) as a token of appreciation for their time. The remaining participants were undergraduate psychology students enrolled at Victoria of University of Wellington, who received credit towards a mandatory course research requirement in exchange for their participation. Overall, participants were aged between 18-67 years with a mean age of 27.85 years (*SD* = 12.31 years). 60.2% were New Zealand European/Pakeha, 9.5% Maori, 8% Asian, 8% European, 4% New Zealand Pacific Islander, 2% Pacific Islander, and 1.5% Indian. Six percent of the total sample fell into the “other” ethnic category (including South African, New Zealand Asian, and New Zealand Indian). Ethical approval of this study was granted

by the Victoria University of Wellington School of Psychology Human Ethics Committee.

Materials

See Appendix M for a full set of the measures used in this study.

British Inventory of Mental Pathology -36 (BIMP-36). This measure was designed by Bedford and Deary (2006) as a screening measure for general psychopathology, can be used as a tool for monitoring change in self-reported symptomatology. This measure (with the exception of one subscale – Euphoric mood) has been shown to accurately differentiate between clinical patients and non-clinical subjects and was designed primarily for use in clinical samples (Bedford & Deary, 2006). Unfortunately there has been no publication of BIMP-36 norms to which we can compare the responses in the current study. The BIMP-36 is comprised by six subscales each with six items encompassing psychological distress, euphoric mood, persecutory beliefs, intrusive thoughts and acts, grandiose beliefs, somatic distress. Participants are presented with 36 statements tapping into a range of mental states, to which they respond true to indicate they experience that symptom, or false to indicate they do not experience that symptom. If the participant responds with 'true' for any items, they then answer an additional question about how much the symptom affects them on a three-point Likert-type scale. An example item is "Recently there have been people trying to poison me or do me very great harm". The follow-up sub-question for this item is "If true, how sure are you?", to which participants can respond by selecting one of the following options: "not very, fairly, certain". Each 'true' response scores a 1, with the sub-question response choices scoring between 1-3, depending on the severity of the self-reported effect. The degree of impairment for each subscale is also scored based on responses to the sub-questions administered only for items where participants responded 'yes'. Although no norms for this clinical

measure are available, Bedford & Deary (2006) note that endorsement of 2 or more items on any of the scales qualifies as clinical disturbance.

Paranoia Checklist. Freeman et al. (2005) adapted this measure of paranoia from Fenigstein and Vanable's (1992) 20-item measure of paranoia, in order to measure what would be defined as clinical levels of paranoia through a multi-dimensional approach. The measure was designed in order to provide information to clinical samples about the epidemiology of paranoia-related thoughts in the general population. That is, the Paranoia Checklist was designed for use in non-clinical samples to screen for clinical levels of paranoia. The measure is comprised by 18 items tapping into the presence of paranoid thoughts, to which participants respond yes or no (yes responses receive a score of 1). Participants report the frequency of the paranoid thoughts, the amount of conviction with which these thoughts are held with, and the level of distress these thoughts cause them. Participants use a five-point Likert-scale is to respond the latter three sub-questions.

Peters Delusion Inventory -21. This inventory (PDI-21) was devised by Peters, Joseph, Day, and Garety (2004) to measure delusions that are not considered by most cultures to be normative. The PDI-21 was designed for use in the general population. Like the Paranoia Checklist, the PDI-21 takes a multi-dimensional approach to measuring this form of psychopathology. The measure is comprised by 21 items, and yields four subscale scores: the affirmative scale score (labelled such in this research for clarity), a distress score, preoccupation score, and conviction score. Therefore, this measure not only measures the presence of a range of delusional thoughts, but also the severity of the delusion in terms of how much a person believes their delusion, how much they think about it, and how much distress it causes them. Each 'yes' response scores a 1 (each 'no' response receives a 0) in order to comprise the affirmative scale (score range 0-21). Responses to the other three subscales were given using a five-point Likert-type scale to give a maximum score for each subscale of 105.

Schizotypal Personality Questionnaire (SPQ). This questionnaire devised by Raine (1991), measures the degree to which respondents possess schizotypal personality traits across nine subscales: ideas of reference, excessive social anxiety, odd beliefs or magical thinking, unusual perceptual experiences, odd or eccentric behaviour, no close friends, odd speech, constricted affect, and suspiciousness. These subscales correspond with the DSM-IV-TR nine core traits of schizotypy. This questionnaire is the most commonly used measurement tool for schizotypal trait identification in non-clinical populations, and has well known criterion validity for correctly distinguishing between those with clinically diagnosed schizotypal personality disorder (Wuthrich & Bates, 2005). Participants respond yes or no to 74 items. 'Yes' responses score 1, with 'no' responses scoring 0.

Conspiracy Beliefs Scale. This measure was constructed by Wilson (2007) to gauge general beliefs in a range of common CTs (in the general population) encompassing both ones specific to New Zealand as well as more internationally-known CTs. The questionnaire asks participants how plausible they think the CTs are. The questionnaire contains 30 items (e.g. "The All Blacks were deliberately poisoned before the 1995 rugby world cup final"). Participants rate how likely they believe each statement reflects actual descriptions of events using a 7-point Likert-type scale (response options range from "Not at all likely" to "Very Likely"). Possible total scores can range from 30-210. Higher scores reflect greater belief in the presented conspiracies.

Conspiracy Pattern Perception Scale. Conspiracy pattern perception was measured using this scale created by Whitson and Galinsky (2008). This measure was designed for use in non-psychiatric populations. This mode of measurement involves presenting three scenarios, each outlining an ambiguous situation. Participants were required to then rate to what extent they believed the events or other actors in the scenario were connected to the outcome for the protagonist. Participants responded

using a 7-point Likert-type scale ranging from “not at all” to “a great deal”. A high score on this measure reflects stronger conspiracy theory generation.

Modified Snowy Pictures Task (MSPT). The MSPT (Whitson and Galinsky, 2008) was used to assess visual pattern perception in the general population. Twenty-four items (plus two practice items) of granulated images (that visually looked similar to a snowy television screen) were presented to participants. In 12 of the items, objects were present, however even though the images were grainy, the objects were still discernible, e.g. chair. In the remaining 12 items there was no object present. Participants were told that some items may not contain an object. Participants were required to write one or two words to describe each item. They were told to simply write ‘none if they could not see an object. A further instruction for this measure was to not spend too long on any one item. Consistent with Whitson and Galinsky (2008), scores on this scale are calculated in three ways: total number of correct responses; object present correct responses (saying an object is present in an image when it really is; OP); and object absent correct responses (saying an object is present in an image when it is not; OA).

Powerlessness/Mastery Scale. This 7-item measure was devised by Pearlin et al. (1981) to measure to what extent people believe they control the external forces that affect their lives. The scale was designed to examine the effects of stress in the general population. Participants rate how strongly they agree or disagree with items using a 5-point Likert scale.

Procedure

The same subject pool was used for both this study and Study 3b. Please see the procedure section of Study 3b for details.

Results

Prior to analysis, all the measures were scored according to the scoring guidelines of the authors of each measure. The Cronbach’s alpha for each measure used in this study was then calculated (presented in Table 13). All measures demonstrated excellent internal reliability with the exception of the CPP scale and

the powerlessness scale. An alpha level of 5% ($\alpha = 0.05$) was used for all statistical tests in this study.

Table 13

Internal Reliability of Study 4 Measures.

Measure	Number of items	α =
Conspiracy Beliefs Scale	30	.91
Peters Delusion Inventory	21	.92
Schizotypal Personality Questionnaire	74	.95
British Inventory of Mental Pathology	36	.90
Powerlessness Scale	7	.39
Paranoia Checklist	18	.95
Conspiracy Pattern Perception Scale	3	.56

Conspiracy Theory Affinity

A first step to examining the data was to explore whether the two measures of conspiracy theorising (CPP and CBS) correlate. A significant relationship was not found between these two measures ($r(199) = .09$, $p = .20$). This may reflect that the two measures are in fact measuring two different constructs: one examines believed plausibility of CTs (CBS), whereas the other measures level of CT creation (CPP). And indeed when the two were combined and treated as a singular construct, this resulted in extremely poor internal reliability ($\alpha = .16$). Therefore, rather than conglomerating the CPP and CBS into one global measure of CTA, a more prudent approach was to examine variations perceived plausibility and CT creation. A simple median split (two groups) across both measures may have obscured important relationships with moderate levels of CTA with psychopathology. Therefore, the data was analysed comparing the groups defined in Table 10.

Between-Group Differences

Table 14 shows the means and standard deviations for each group by psychopathology measure. The means (and standard deviations) appear very low, but this is a result of the majority of participants responding that they do not have these areas of psychopathology, thus the means represent the small portion of participants who reported markers of psychopathology.

A one-way between-groups multivariate analysis of variance (MANOVA) was performed to investigate group differences in psychopathology. Twenty-six dependent variables were used (see Table 14), with the independent variable being group (level of conspiracy affinity). Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices and multicollinearity, with no serious violations noted (Field, 2009). Using Wilk's statistic, there was a significant effect of level of conspiracy affinity considering psychopathology on the whole (all dependent variables which were various measures of psychopathology), $\Lambda = .42$, $F(69, 524) = 1.98$, $p < .001$; partial eta-squared = .25. Subsequent univariate tests revealed that most differences reached significance (see Table 14), with the exception of the persecutory beliefs and grandiose beliefs subscales of the BIMP-36. The intrusive thoughts, somatic distress subscales of the BIMP-36, as well as the constricted affect subscale of the SPQ almost reached significance with significance values equal to or below .056.

In order to specifically identify where the significant group differences lay, post-hoc Tukey Honestly Significant Difference test (HSD) were performed on each of the measures of psychopathology shown to have significant group (therefore excluding persecutory beliefs, grandiose beliefs, intrusive thoughts, and somatic distress subscales of the BIMP, as well as the constricted affect subscale of the SPQ).

Only significant group differences (using a confidence interval of 95%) are reported and presented in Table 14.

With respect to general psychopathology, the LC/LP Group was significantly less psychologically distressed and demonstrated significantly lower overall levels of mental pathology than other groups. In terms of euphoric mood, significant group differences were found between the HC/LP group and the two lowest CTA groups. However, level of somatic distress was not significantly differentiated between any groups, and no other subscale group differences were found. Turning now to paranoia, the LC/LP Group reported significantly lower levels of paranoia in terms of frequency, conviction, distress, and overall paranoia compared to all other groups, except in terms of distress when compared to the LC/HP Group. No other group differences were found. The LC/LP Group reported significantly less delusions, experienced them significantly less frequently, which were held with significantly less conviction, and therefore causing significantly less distress compared to all other groups. Otherwise, the HC/LP Group experienced significantly more delusions held with significantly more conviction compared to the LC/HP Group; but significantly less delusions held with significantly less conviction compared to the HC/HP group. No other significant differences were found. The only significant difference in perceived powerlessness was seen where the LC/LP experienced significantly less feelings of powerlessness compared to the HC/LP. The most pronounced finding with regard to schizotypal personality features was that the LC/LP demonstrated significantly lower levels of most schizotypal traits compared to the other groups. The other notable finding was that the two moderate conspiracy affinity groups were significantly differentiated in terms of magical ideation and unusual perceptual experiences, with the HC/LP scoring higher in both respects.

Figure 9 presents the relative average level of paranoia of each CTA group. Figure 9 shows that the HC/LP Group demonstrated higher means compared to all

other conspiracy affinity groups on the Paranoia Checklist total score as well as the Suspiciousness Subscale of SPQ. The LC/LP group was visually distinct (lower than) from all other conspiracy affinity groups on these measures also. However, the Persecutory Beliefs subscale of the BIMP-36 shows no real differentiation across level of conspiracy affinity. Indeed, when Pearson's correlations were calculated convergent validity was not established between these three measures of suspiciousness, indicating that they were not all tapping into the same construct. The Paranoia Checklist total score and the SPQ Suspiciousness subscale were strongly correlated at the .05 level ($r(199) = .95$, $p < .05$), however, the Persecutory Beliefs subscale was not correlated to either of the other two measures.

Given that the current study utilised a subclinical sample and none of the measures used were diagnostic in nature, it is not possible to make a determination of whether any of the groups reached clinical thresholds (e.g. on the BIMP-36) – particularly in the absence of normed data.

Table 14

Means, Standard Deviations, and Between-Group Differences by Measure of Psychopathology.

Measure	Conspiracy Theory Affinity Group				$F(3, 197)$	Partial Eta-Squared
	LC/LP	LC/HP	HC/LP	HC/HC		
	$n = 82$	$n = 86$	$n = 11$	$n = 22$		
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*		
BIMP-36						
Psychological Distress	$.12_{a}$ (.19)	$.22_{b}$ (.27)	$.33_{b}$ (.38)	$.27_{b}$ (.24)	5.01*	.07
Degree of Impairment	$.16_{a}$ (.29)	$.37_{b}$ (.48)	$.62_{bd}$ (.74)	$.42_{ab}$ (.47)	6.50	.09
Euphoric Mood	$.07_{a}$ (.15)	$.11_{a}$ (.18)	$.24_{bc}$ (.28)	$.17_{ac}$ (.20)	3.93*	.06
Degree of Impairment	$.15_{a}$ (.31)	$.22_{a}$ (.36)	$.56_{bc}$ (.65)	$.37_{ac}$ (.43)	5.29	.08
Persecutory Beliefs	$.01_{a}$ (.08)	$.01_{a}$ (.04)	$.02_{a}$ (.05)	$.01_{a}$ (.04)	.19	.00
Degree of Impairment	$.03_{a}$ (.16)	$.01_{a}$ (.08)	$.03_{a}$ (.10)	$.02_{a}$ (.11)	.17	.00
Intrusive Thoughts	$.06_{a}$ (.14)	$.13_{a}$ (.21)	$.12_{a}$ (.17)	$.16_{a}$ (.20)	2.70	.04
Degree of	$.15_{a}$ (.36)	$.33_{a}$ (.52)	$.33_{a}$ (.50)	$.36_{a}$ (.43)	2.50	.04

Measure	Conspiracy Theory Affinity Group				F(3, 197)	Partial Eta-Squared
	LC/LP	LC/HP	HC/LP	HC/HC		
	n = 82	n = 86	n = 11	n = 22		
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*		
Impairment						
Grandiose Beliefs	.03$_{a}$ (.11)	.04$_{a}$ (.08)	.08$_{a}$ (.16)	.09$_{a}$ (.20)	1.84	.03
Degree of Impairment	.05$_{a}$ (.18)	.08$_{a}$ (.20)	.12$_{a}$ (.26)	.18$_{a}$ (.35)	2.12	.03
Somatic Distress	.16$_{a}$ (.20)	.20$_{a}$ (.22)	.33$_{a}$ (.21)	.23$_{a}$ (.27)	2.22	.03
Degree of Impairment	.20$_{a}$ (.27)	.26$_{a}$ (.32)	.45$_{a}$ (.31)	.36$_{a}$ (.54)	2.80	.04
Overall Level of General Psychopathology	.08$_{a}$ (.10)	.12$_{ac}$ (.10)	.19$_{bc}$ (.13)	.15$_{bc}$ (.14)	5.87*	.08
Degree of Overall Impairment	.12$_{a}$ (.20)	.20$_{b}$ (.20)	.34$_{b}$ (.24)	.27$_{b}$ (.28)	6.30	.09
Paranoia						
Frequency	.09$_{a}$ (.15)	.28$_{b}$ (.42)	.45$_{b}$ (.55)	.38$_{b}$ (.70)	6.37*	.09
Conviction	.10$_{a}$ (.17)	.32$_{b}$ (.46)	.58$_{b}$ (.69)	.40$_{b}$ (.67)	7.17*	.10

Measure	Conspiracy Theory Affinity Group				F(3, 197)	Partial Eta-Squared
	LC/LP	LC/HP	HC/LP	HC/HC		
	n = 82	n = 86	n = 11	n = 22		
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*		
Distress	$.09_{a}$ (.16)	$.28_{b}$ (.42)	$.38_{ab}$ (.43)	$.35_{bc}$ (.65)	5.37*	.08
Total Scale	$.09_{a}$ (.16)	$.29_{b}$ (.43)	$.47_{b}$ (.55)	$.38_{b}$ (.67)	6.44*	.09
PDI						
Affirmative	$.18_{a}$ (.12)	$.25_{b}$ (.14)	$.41_{c}$ (.16)	$.27_{bcd}$ (.16)	10.70*	.14
Frequency	$.42_{a}$ (.37)	$.64_{b}$ (.43)	$.98_{bc}$ (.50)	$.77_{bd}$ (.57)	9.15*	.12
Conviction	$.54_{a}$ (.43)	$.80_{b}$ (.50)	1.56_{c} (.72)	$.89_{bd}$ (.63)	11.20*	.15
Distress	$.41_{a}$ (.34)	$.63_{b}$ (.47)	$.90b_{c}$ (.54)	$.75_{bd}$ (.54)	7.76*	.11
Total Scale	$.38_{a}$ (.30)	$.58_{b}$ (.37)	$.96_{c}$ (.44)	$.67_{bcd}$ (.46)	10.70*	.15
Power	19.02_{a} (2.69)	20.73_{bc} (3.14)	20.45_{ac} (3.67)	20.77_{ac} (2.33)	5.47	.08
SPQ						
Ideas of Reference	1.30_{a} (1.82)	2.87_{b} (2.47)	4.09_{bc} (2.63)	2.86_{bd} (2.80)	9.78*	.13
Excessive Social Anxiety	2.40_{a} (2.27)	4.05_{b} (2.45)	3.27_{ab} (2.41)	3.95_{b} (3.20)	6.76*	.09
Odd/Magical Beliefs	$.72_{a}$ (1.09)	1.08_{ac} (1.35)	3.18_{b} (1.78)	1.91_{bc} (1.95)	13.35*	.17

Measure	Conspiracy Theory Affinity Group				$F(3, 197)$	Partial Eta-Squared
	LC/LP	LC/HP	HC/LP	HC/HC		
	$n = 82$	$n = 86$	$n = 11$	$n = 22$		
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*		
Unusual Experiences	1.48_{a} (1.50)	2.02_{ac} (1.69)	4.00_{b} (2.86)	2.72_{bc} (2.73)	7.75*	.11
Eccentric Behaviour	1.33_{a} (1.79)	2.21_{b} (2.25)	3.36_{b} (2.42)	2.86_{b} (2.59)	5.73*	.08
No Close Friends	1.56_{a} (1.96)	2.66_{bc} (2.66)	2.09_{ac} (2.07)	2.91_{ab} (2.65)	3.75*	.05
Odd Speech	2.29_{a} (2.24)	3.84_{b} (2.57)	4.64_{c} (2.46)	4.77_{cd} (2.81)	9.59*	.13
Constricted Affect	1.43_{a} (1.49)	2.02_{a} (1.80)	2.08_{a} (1.87)	2.32_{a} (1.94)	2.60	.04
Suspiciousness	1.15_{a} (1.63)	2.59_{b} (2.24)	2.91_{bc} (2.02)	2.73_{bd} (2.81)	8.53*	.12
Total Scale	13.66_{a}(10.87)	23.35_{b}(13.13)	29.64_{bc}(15.29)	27.05_{bd}(19.09)	12.23*	.16

Note. Means with differing subscripts within rows indicate significant difference at the $p < .05$ level. * indicates that $p < .05$. LC = low conspiracy theory creation. HC = high conspiracy theory creation. LP = low perceived plausibility of conspiracy theories. HP = high perceived plausibility of conspiracy theories.

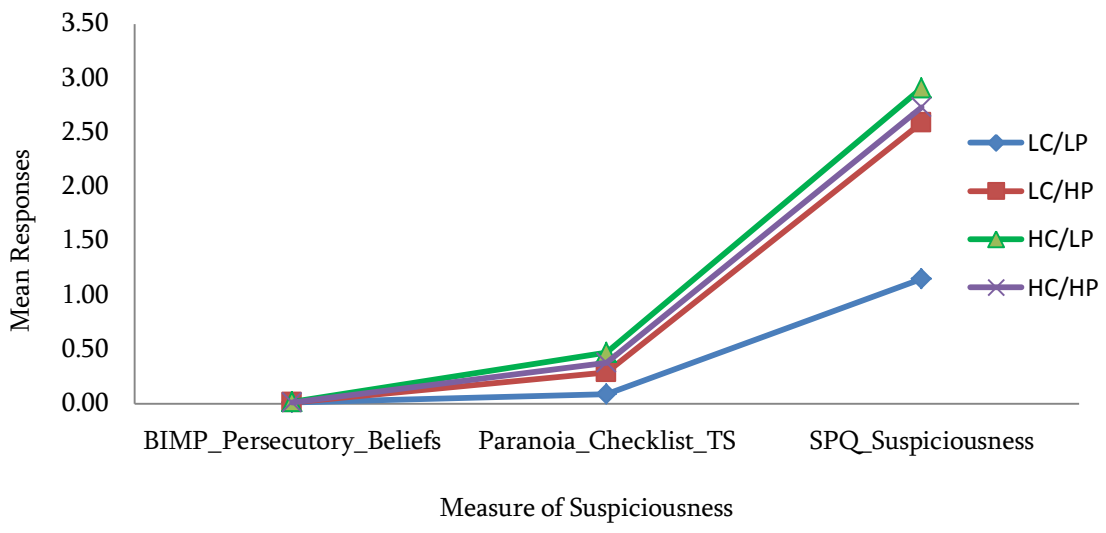

Figure 9. Mean responses on measures of suspiciousness by level of conspiracy theory affinity. BIMP = British Inventory of Mental Pathology; TS = Total Score; SPQ = Schizotypal Personality Questionnaire. LC = low conspiracy theory creation. HC = high conspiracy theory creation. LP = low perceived plausibility of conspiracy theories. HP = high perceived plausibility of conspiracy theories.

Illusory Pattern Perception

In order to investigate illusory pattern perception within and across the HC/HP and LC/LP groups a MANOVA was calculated. Using Wilks' statistic no significant difference was found between the two levels of CTA (Wilks' Lambda = .97, $F(3,197) = 1.09$, $p = .37$; partial eta-squared = .02). Examination of the means within each condition suggests that the HC/HP group showed a type II error where they were not able to identify objects that were actually present as well as they were able to identify when objects were absent (see Table 15). The opposite finding was true for the LC/LP group. No significant difference was found between the groups

Correlations between the powerlessness scale and both object absent and object present groups were calculated. There was no significant relationship found between object absent ($r(204) = -.07$, $p = .32$), object present ($r(204) = -.02$, $p = .77$) and level of perceived control.

Table 15

Mean Scores for Accuracy According to Level of Subjective Control.

	Low control	High control
	M (SD)	*M (SD)*
Object Absent	.63 (.30)	.48 (.36)
Object Present	.56 (.19)	.56 (.22)

Discussion

The aim of this study was to explore to what extent believing and creating CTs is associated with self-reported markers of psychopathology (general mental pathology, schizotypal or delusional symptoms). Two studies have previously considered psychopathology in the context of CTA, and have employed correlational methodologies to investigate this (Darwin et al., 2011; Swami et al., 2013). A particular strength of the current study is that level of psychopathology is compared across various levels of CTA, thereby furthering our understanding of the role psychopathology may play in CTA development and maintenance.

During the early stages of data analysis it quickly became apparent that more specificity in this research question was required as the CPP scale and CBS did not significantly correlate, and there are two possible explanations of this. First, either the measures were not representative of their underlying construct, or second, each measure may have been tapping into two different aspects of CTA (as conceptualised in Figure 1): conspiracy theory belief (CBS) versus conspiracy theory creation (CPP). Thus the findings regarding psychopathological markers were compared across four groups, each representing escalating strength of CTA. That is, the LC/LP reflects the lowest level of CTA, and the HC/HP reflects the strongest level of CTA. Comparative statistics showed that the majority of the dependent variables varied according to CTA.

It was hypothesised that compared to those with low CTA (LC/LP group), those with strong CTA (HC/HP group) would demonstrate significantly higher levels of general mental pathology, paranoid delusions, and schizotypal traits.

General psychopathology as measured by the BIMP-36 was found to be significantly lower in the LC/LP group compared to the other CTA groups, with the exception of somatic distress where no significant group difference was detected. Most importantly, the HC/HP group significantly differed from the LC/LP group in terms of psychological distress and overall mental pathology.

Delusional ideation was first assessed using Peters Delusions Inventory (PDI; Peters, Joseph, Day, & Garety, 2004) to investigate presence of delusional thought, as well as conviction in the veracity of the delusions, frequency of the delusions, and the level of distress caused by delusions. In all respects the LC/LP group was significantly less delusional compared to all other groups. Of most relevance, the HC/HP group reported significantly more delusional symptoms than the LC/LP group in all respects, and experienced more and held more conviction in delusions than the HC/LP group. This provides support for the continuous nature of delusional ideation, at least in terms of the amount of delusions experienced, and similarly, when these delusions are experienced, the higher the level of CTA, and the higher the level of authenticity ascribed to delusions experienced. The PDI does not differentiate its results according to type of delusional theme experienced.

According to the DSM-5 (American Psychiatric Association, 2013), delusions may embody one of five themes: persecution, self-reference, somatization, religiosity, or grandiosity; however, persecutory delusions are the most prevalent (American Psychiatric Association, 2013). The literature has also suggested that conspiracy theorists (our main group of interest) are a particularly paranoid subgroup of the population; therefore paranoia was specifically measured in this study using the Paranoia Checklist (Freeman et al., 2005). The findings revealed that the HC/HP group was significantly more paranoid when compared to the LC/LP group with respect to frequency of experience, perceived authenticity, and distress elicited by the persecutory beliefs. In addition, with respect to paranoia, the LC/LP group was significantly less pathological than other

groups (with the exception of distress in one case – when compared with the HC/LP group). Finally, a greater presence of schizotypal traits was found in the HC/HP group compared to the LC/LP group, as reflected by a significant difference in the SPQ mean total scores.

It was also hypothesised that within the context of schizotypy, those with strong CTA (HC/HP group) will demonstrate a higher presence of each trait compared to those with low CTA (LC/LP group). On the SPQ with the exception of the 'no close friends' subscale, a pronounced finding was that the HC/HP group was significantly differentiated from the LC/LP group. That is, the HC/HP group reported higher levels of eight of the personality traits associated with schizotypy (ideas of reference, excessive social anxiety, odd/magical beliefs, unusual perceptual experiences, eccentric behaviour, odd speech and thinking, and suspiciousness) compared to the LC/LP group. Of particular note, the finding regarding suspiciousness is consistent with findings pertaining to specific measurement of paranoia and delusions in general.

Another expectation in the current study was that those with strong CTA (HC/HP group) would perceive lower levels of subjective control (as measured by the Powerlessness scale by Pearlin and colleagues, 1981) compared to those with low CTA (LC/LP group). Contrary to expectation, only the two lowest conspiracy affinity groups (LC/LP group and LC/HP group) were significantly differentiated in terms of how much subjective powerlessness was experienced. No other significant differences with regard to powerlessness were found.

It was also hypothesised that those with strong CTA (HC/HP group) would demonstrate lower levels of accuracy in the ability to identify when a visual pattern does not exist compared to those with low CTA (LC/LP group). This prediction was not supported with no significant differences between the two groups in being able to accurate identify when visual pattern did actually exist. Finally, it was expected that there would be no significant difference between any CTA groups in accurately detecting that visual pattern that actually exist. Support

for this expectation was gleaned from the finding that both the HC/HP and LC/LP groups were relatively similar in their ability to accurately perceive visual patterns that did exist.

Overall in this study, psychopathology was defined as the presence of markers of schizotypy, paranoia, and general mental pathology. On balance, those who reported the highest level of CT plausibility *and* with the highest level CT creation (HC/HP group) showed a significantly higher level of psychopathology compared to those who do not CTs to be plausible and also do not create CTs. This finding is consistent with previous research suggesting that schizotypy and paranoid ideation are positively correlated with belief in CTs (Darwin et al., 2011; Hofstadter, 1966; Swami et al., 2013).

A number of researchers have asserted that belief in CTs is better conceptualised as a non-psychopathology motivation to understand one's environment (Pratt, 2003; Raab, Ortlieb, Auer, Guthmann, & Carbon, 2013; Sunstein & Vermeule, 2009; Swami et al., 2013; Waters, 1997; Zonis & Joseph, 1994). However, the findings of the current study suggest that psychopathology may play an important role in the development of maintenance of strong CTA. That is to say, belief in one CT is unlikely to be related to markers of psychopathology, however, those with a generalised ideological tendency to believe CTs (Goertzel, 1994; Leman & Cinnirella, 2007; Swami, et al., 2010) and also to create them are more likely to experience some form of psychopathology.

In this chapter I described literature that asserts that persecutory delusions and schizotypy (schizophrenia-proneness) is dimensional in nature (Chapman et al., 1994; Freeman et al., 2005; Freeman, 2007; Johns & van Os, 2003; Johns et al., 2004; McCreery & Claridge, 2002; Mirowsky & Ross, 1983; Myin-Germeys et al., 2003; Vollema & Hoijtink, 2000). Relatedly, the contention in this thesis is that CTA is also continuous in nature, where non-clinical populations can have low CTA and relatively low levels of psychopathology. Similarly, those with strong CTA are likely to be more vulnerable to some form of clinical disturbance. The

clinical disturbance is likely to take the form of odd/magical thinking, as well as paranoia about others' intentions. Future research could investigate the covariance of CTA and psychopathology.

Limitations

There are some careful considerations required when interpreting the present findings. First, two of the measures used in this study had poor internal reliability: the CPP scale (devised by Whitson & Galinsky, 2008), and the Powerlessness Mastery Scale (Pearlin et al., 1987). However, it is important to note that measures with few items will often have low Cronbach's alphas due to larger inter-item variance Cortina (1993). Therefore alphas of measures with few items should be interpreted with caution, as a low alpha does not necessarily reflect that the items of the measure do not all tap into the same dimension, and thus should not be discarded prematurely. Cortina (1993) discusses other methods of assessing the internal consistency of measures aside from Cronbach's alpha, however, this was not undertaken in this thesis as previous research has been able to demonstrate the inter-group differentiation using the measures in question here. For instance, the CPP scale, had poor internal reliability in the current sample, although, while Whitson and Galinsky (2008) did not report the internal reliability of this measure for their sample, in their study, they found significant group differences (between their low control and high control groups) based on this measure. In this study it is unknown how much of a contribution the CPP made over and above that of the CBS, and particularly with regards to the HC/HP group, this could bear some influence on the interpretation of the findings. Additionally, the Powerlessness Mastery scale was administered in the present research with the purpose of measuring the extent of control participants perceived in their own lives, however, in this sample the internal reliability substantially below the recommended alpha of .70. In Pearlin and colleagues' (1981) construction and testing of this scale, they did not report the internal reliability for their sample; however, they were able to demonstrate a significant

positive correlation between participants' scores across two time points, which suggests the scale is stable across time. Cortina (1993) discusses how stability of responses over time is another important measurement of error important to consider when selecting measures for research. Ideally, a pre-existing measure of perceived personal control with excellent psychometric properties would be available; however, to the best of my knowledge, no such measure exists. To circumvent this, typically researchers will randomly assign participants and attempt to induce low perceived personal control through some kind of activity. To confirm that this type of manipulation has been successful, researchers will sometimes conduct a manipulation check. For example after condition induction Sullivan et al. (2010) administered a short questionnaire asking participants how much control in general they felt they had over the direction of their life. Given the fairly crucial requirement of a valid measure of perceived personal control to research like that reported here, future research should invest in development of such a measure.

A potential limitation of this study is that the order of presentation for the measures was the same for all participants. Whilst this was done due to the fixed parameters of the online survey tool used for this study, it is possible that the findings were affected by order effects where an earlier measure (e.g. the CBS) had a priming effect on the responses for later administered measures. Later versions of Qualtrics and other online survey tools such as Survey Monkey have a new feature where the order of presentation can be randomised across participants. Therefore, future research could capitalise on this randomisation function to prevent order effects.

Another potential limitation worth acknowledgement is that in this research information regarding medical background or substance use was not gathered (e.g. through the use of a relevant psychometric). Clinically speaking, a psychologist would typically collect this information to ascertain if the symptoms experienced by a client are a result of or influenced by a medical condition,

substance (including medication) or alcohol consumption, and whether these symptoms occur during intoxication or withdrawal from the substance or alcohol (American Psychiatric Association, 2000; American Psychiatric Association, 2013; Kuipers, Peters, & Bebbington, 2006). Blood tests for toxin screens would also be recommended prior to any diagnosis being made. Because this information was not collected in this study, it is unknown whether high participant ratings on any of the measures were influenced by illicit substance or alcohol consumption, the effects of medication, or as a result of general medical condition.

Summary

In summary, the findings of this study support the contention that strong CTA is associated with significantly higher levels of psychopathology compared to low CTA. Future research will need to construct and test more reliable measures of CT creation in order to examine the extent to which conspiracy theorising is affected by underlying psychopathology. Although previous research has found a significant group difference in apophenia depending on perceived subjective control, when applying to this to strong CTA versus low CTA, a significant difference in illusory pattern perception was not found in the present study. Based on the contention that CTA can be conceptualised dimensionally, those with high CTA may have a stronger likelihood of developing a tendency to perceive illusory patterns visually, but also in their environment. Future research could seek to investigate this hypothesis using psychometrics with strong psychometric properties.

Chapter Five

General Discussion

"I'm only paranoid because they want me dead"

- CT Motion Picture (Donner, 1997)

This body of work was born from the need to further our understanding of the role psychopathology plays in CTA. Previous research has suggested that schizotypy and delusional thinking are implicated in the tendency to ascribe to CTs (Darwin et al., 2011; Swami et al., 2013). One major underpinning of most CT research has been that perceived low personal control can entice compensatory strategies to restore a sense of control (LeBoeuf & Norton, 2012; Heider, 1958; Katz, 1960; Kay, Gaucher, McGregor, & Nash, 2010; McCauley & Jacques, 1979; Salt, 2008; Swami & Coles, 2010). Therefore a number of researchers have asserted that CTA may be better conceptualised as a rational process undertaken to re-establish perceived control, rather than a consequence of psychopathology. My overarching expectation in this research was that perceived low subjective control would be related to all CT endorsing degrees of CTA, and that psychopathology would be strongly associated with stronger levels of CTA as compared to weaker CTA.

I divided this work in to five broad categories: the facets comprising CTs; how people ascribe causality and why; the stereotype of "conspiracy theorist"; psychopathology; and what those with strong CTA think about "conspiracy theorists". In chapter one I spent some time differentiating between those who may believe one CT compared to those who believe many CTs and also create CTs using a continuum I labelled CTA. I then went on to describe the content and structure of CTs; and perhaps most importantly, the function CTs serve for those who believe them. In chapter two I reviewed the literature on perceived

low subjective control, and how that can manifest with regards to how people ascribe causality for situations they encounter, and also how it can influence people to prefer situations characterised by certainty and closure.

Key Findings

In my first two studies I examined illusory pattern perception, a phenomena sometimes seen in people who perceive low subjective control. In the first study I found that when a person perceives low subjective control and also has an odd/magical thinking style, they are more likely to perceive meaningful connections between unrelated stimuli. However, this finding did not extend to non-visual situational stimuli as has been shown in at least one previous study (Whitson & Galinsky, 2008). That is low-control participants did not perceive more CTs than high-control participants. Both findings were novel in that they were not consistent with previous research (Whitson & Galinsky, 2008).

In the second study, I attempted to induce a perception of low subjective control in half of the participants by increasing their access to death-related thoughts (mortality salience), to see if this control prime induced more illusory pattern perception as compared to those in a high-control group. The key findings from this study were that those in the non-mortality salience group perceived significantly more conspiracies (situational illusory pattern perception) than the mortality salience group, and there was no significant difference between the groups in visual illusory pattern perception. Additionally, self-esteem was found to be lower amongst the mortality salience group compared to the non-mortality salience group, whereas the other personality variables (anomie, authoritarianism, and hostility) were fairly similar across the two groups.

In the third study I explored the stereotype of "conspiracy theorist" and the attributes people associate with the idea of a conspiracy theorist. Using correspondence analysis, cluster analysis, and analysis of variance, it was found

that people tended to consider conspiracy theorists similarly to those with current mental health issues. In contrast, conspiracy theorists were considered dissimilar to those without mental health issues. It appears plausible that people distinguish between these two groups based on how they well-adjusted they perceive the targets be, as well as how responsible people feel the targets are for negative events they have caused.

In study four I firstly measured the internal consistency of a CTA measure if we were to combine the CBS and CPP into one measure. The items of these two measures were not correlated possibly demonstrating that the two measures tap into different processes. This could provide support for the contention that CT belief and CT creation can be conceptualised as different positions on the same dimension (CTA). To my knowledge, this is the first time research has attempted to identify any differentiation between CT belief and CT creation, which have often been treated synonymously in previous research.

Furthermore, a key finding of study four was that those who strongly believe CTs to be plausible but also to create CTs were more likely to be experiencing symptoms of general psychopathology, psychological distress, overall delusional thinking, paranoia, and schizotypal traits, compared to those did not believe CTs were plausible and did not have a tendency to create CTs. The exceptions to this pattern of findings were that psychological distress expressed somatically (general psychopathology) and no close friends (schizotypal trait) were fairly equivalent between the two groups. This finding makes an important contribution to the literature regarding a) the continuous nature of psychopathological difficulties facing those with escalating degrees of CTA; b) that the psychopathology seen in strong CTA is not limited to paranoia, but also overall psychological wellness, as well as stable thinking styles (such as that seen in schizotypal personality disorder).

An important consideration born from the above finding is that with escalating affinity to CTs psychopathology is more likely. That is, the more likely

a person is to *create* CTs, the more likely they are also to experience some kind of psychopathology as compared to a) those who do not believe CTs; and b) those who believe CTs but do not create them. This finding is consistent with Freeman et al.'s (2005) perspective that persecutory delusions can be expressed through CTs, whereby CTs signify severe threat perception. The findings of the current research are also consistent with that of Darwin et al. (2011) who found that the stronger CT belief, the higher the presence of paranoid ideation and schizotypal traits. It is possible that in their sample, those who scored highly on CT belief may have also been individuals who also engage in CT creation, thus reflecting strong CTA. Similarly, Swami et al. (2013) also found that the greater the presence of schizotypal traits the higher the likelihood of CT endorsement.

Like the current research, both previous studies (Darwin et al., 2011; Swami et al., 2013) that have detected a relationship between strength of CTA and schizotypal traits have accounted for MI in their measurement of schizotypy. Furthermore, in the current research it was found that when MI and the experience of low subjective control interact, visual illusory pattern perception is more likely to occur. This suggests that those who are prone to an odd thinking style are more likely to make odd connections between unrelated stimuli, particularly in situations characterised by powerlessness in an attempt to re-establish a sense of control. The findings of the present research may also suggest that low perceived subjective control in isolation is not sufficient to elicit illusory pattern perception. In contrast with the findings of Whitson and Galinsky (2008), in the current study illusory *conspiracy* pattern perception was not related to MI. One significant limitation of both the current study and Whitson and Galinsky (2008) was that no manipulation check was undertaken to ascertain if the control prime was successful. Therefore, it is difficult to identify if the findings of Whitson and Galinsky (2008) in relation to CPP were a result of perceived personal control, or some other unknown variable. Similarly, it is difficult to decipher whether the inability to replicate Whitson and Galinsky's (2008) finding

is related to perceived control or another variable. Therefore, comparing the findings across these two studies is problematic. Certainly in future studies of where perceived personal control is manipulated, a control manipulation check would be crucial in allowing clearer interpretation of the findings. At present, I am left to conclude that the inconsistency in findings could be due to either an ineffective control prime, an ineffective measure of CPP, or that there simply is no significant difference in CPP between those who perceive low versus high personal control. For this reason a different method of controlling perceived control was utilised in study 2.

In study 2, inducing mortality salience was reasoned to induce a sense of powerlessness, and thus may make it possible to detect a difference between how low versus high perceived control affects CT creation. Contrary to expectations and previous research (Newheiser et al., 2011; Sullivan et al., 2010), participants in the high-control group (mortality salience induced after other measures administered) perceived more conspiracy compared to those in the low-control group (mortality salience induced prior to other measures being administered). One reason for this finding may be that those in the low-control group responded with a proximal defence, where death-related thoughts were temporarily suppressed from awareness (Pyszczynski et al., 1999). Another possibility is that access to death-related thoughts in the low-control group temporarily softened the level of experienced anomie, thus making perception of conspiracy less likely. This explanation is also supported by the finding that the high-control group reported higher levels of anomie than the low-control group. As frequently mentioned in this thesis, anomie is positively correlated with CT belief (Abalakina-Paap et al., 1999). Alternatively, integrating the findings of study 2 with the LH research, the participants captured in the study may be individuals who when experiencing low perceived control (e.g. through mortality salience) display reduced response initiation (LH). This could account for why the low-control group perceived significantly less conspiracy than the high-control group.

It is also important to consider Newheiser et al. (2011) examined CT belief rather than CT creation, and that Sullivan et al. (2010) looked at causal explanations in the context of low personal control. Therefore, Whitson and Galinsky (2008) is the only study comparable to the research in the present thesis relating to CT creation. Future research should importantly consider distinguishing between different levels of CTA and how it is influence by different levels of perceived personal control.

When considering the findings across studies 3b and 4, on balance it appears that the stereotype of the 'conspiracy theorist' is of an individual who likely suffers some form of psychopathology, and that this stereotype is not completely unfounded. However, the fact remains that mental illness is a stigmatising condition (Bryson and Wilson, unpublished; Green et al., 1987; Olmstead & Durham, 1976; Walkey et al., 1981). Thus by CTA being considered similar to mental illness, believing CTs is also a stigmatised manifestation. In fact, CT belief is considered as negative as being a convicted criminal. Such stigmatisation suggests that conspiracy theorists are not valued members of society, despite the fact that actual conspiracies have been known to take place (e.g. the Watergate and Iran-contra affair scandals; Keeley, 1999).

On balance, the high CTA group demonstrated higher levels of psychopathology in terms of general psychological disturbance, delusional paranoia, and schizotypal traits compared to the lowest CTA group. This suggests that those who are more likely to believe and create CTs are more likely to present with schizotypal traits, persecutory delusions, and general pathology. The findings relating to schizotypy and delusions are consistent with previous findings (Darwin et al., 2011; Swami et al., 2013) who found that higher CT belief was correlated with a more schizotypal and delusional presentation. Although their studies did not specifically account for CT creation, one could assume that those with stronger tendencies to endorse CTs are more likely to create CTs compared to those with weak CT endorsement/belief. Interestingly, the high CTA

group did not report significantly more powerlessness than the low CTA group, nor did they demonstrate visual illusory pattern perception. This finding is thus in contrast with Swami and Cole's (2010) suggestion that CT belief could be considered a rational strategy to restore a sense of personal control. Possibly this may be the case with lower affinity to CTs, however, the present research clearly demonstrates that some clear pathological mechanisms are implicated in *stronger* levels of CTA. That is, a psychological predisposition to have unfounded beliefs, deficits in interpersonal functioning, eccentricities of behaviour, and cognitive-perceptual abnormalities think in odd ways is associated with a tendency to believe many CTs strongly and to create CTs. This pattern of findings provides support for the dimensional conceptualisation of CTA, where different levels of CT endorsement and creation can have accordingly different levels of associated difficulties. Previous researchers have postulated that low perceived personal control is an etiological factor for CT belief. However, based on the findings of the present research, a major conclusion of this thesis is that perceived control is not the only contributing factor influencing CT belief. That is, features of schizotypy, clinical paranoia, and overall psychological disturbance, is uniquely associated with stronger levels of CTA. What still remains unclear is whether the psychopathology causes strong CTA, or whether odd thinking patterns associated with strong CTA give way to formation of psychopathology.

Early research has suggested that some conspiracy theorists are not aware of their membership to the group, and sometimes belief in CTs operates below awareness (Douglas & Sutton, 2008). I was therefore interested in investigating how those with strong CTA stereotyped "conspiracy theorists". The findings of Study 3c suggested that the strongest CTA groups were significantly more favourable in their judgement of the target *Conspiracy Theorist* compared to the two lowest CT affinity groups. Moreover, the greater the level of belief in CTs, the more favourably an individual was likely to judge the target *Conspiracy Theorist*. This finding suggests that those with strong CTA, regardless of their

conscious membership to the label “conspiracy theorist” appreciate the attributes of conspiracy theorists. Furthermore, strong CTA participants did not consider

Strengths and Contributions of this Research

The first notable strength of this research has been the conceptual delineation between CT belief and CT creation. Most of the literature appears to treat the concepts CT believer and conspiracy theorist as interchangeable, however, the present thesis suggests that these different levels of CTA tap into different processes. At the less extreme end, CTA can be considered a rational attempt for control restoration, whereas strong CTA is associated with psychopathological processes. The dimensional nature of CTA is not completely new to psychological research as previous research has found positive correlations between CT belief and a range of personality variables (Abalakina-Paap et al., 1999), and some markers of psychopathology (Darwin et al., 2011; Swami et al., 2013). This reflects that the stronger the CT belief the stronger the presence of the personality variable or marker of mental illness. As outlined in chapter one, not all conspiracy believers will be conspiracy theorists; however, those who believe many CTs strongly are more likely to engage in CT creation. Thus these previous studies may have included participants in their sample, who at strong levels of CT endorsement may also create CTs. Therefore, CTA should be considered at least quasi-continuous in nature where beyond a particular threshold of conspiracy belief, a person is more prone to also constructing CTs to explain their world.

Another key contribution of the present research is confirmation that strong CTA has psychopathological foundations. Previous research examining markers of psychopathology has been correlational (Darwin et al., 2011; Swami et al., 2013). However, the present research compared psychopathological difficulties across different degrees of CTA. Therefore, we can now conclude that conspiracy theorists are more likely to also experience psychopathology

compared to those who only believe CTs, or do not endorse CTs at all.

Additionally, the present research was unable to replicate the findings of Whitson and Galinsky (2008) in terms of conspiracy illusory pattern perception. What I did found however, was that when a marker of psychopathology, MI (which is a tendency to make odd connections) interacted with perceived low personal control, participants were more likely to demonstrate visual illusory pattern perception. This finding suggests that low perceived subjective control in isolation cannot always account for CT belief. In fact, psychopathology can be uniquely associated with CT endorsement. It is possible then, that in samples where higher levels of psychopathology are experienced, there may be a greater tendency to create CTs. Future research comparing illusory pattern perception across various levels of CTA could shed light on this matter. The contradiction across our studies will hopefully generate future novel ways of examining the potential link between the conspiracy theorising and lack of control.

Theoretical Implications

The first aspect of this study worthy of further theoretical discussion is in relation to how conspiracy theorists are stereotyped. From 36 continuous descriptors, I was able to deduce the personality traits perceived to be characteristic of each target. This research suggests that the majority of people characterise those with active mental illness, conspiracy theorists and convicted criminals to be people who are emotionally unstable, argumentative, irrational, and discontent; whereas the remainder of the targets were deemed to be agreeable, emotionally stable, conscientious, and confident people. I arrived at this conclusion by mapping the descriptors used in the semantic differential study onto Goldberg's (1990) taxonomy of personality traits and examining which personality traits were most closely associated with the quadratic distribution of the targets.

There are a number of personality factor models suggested in the wider personality literature; however, Goldberg's (1990) five-factor model of personality has received the most empirical attention. Some researchers have argued that questionnaires of this model are psychological constructions and may not accurately reflect the full breadth of personality traits that exists in reality, and therefore cannot be considered a theory of personality (Block, 1995). However, as argued by (Goldberg, 1993; John, Naumann, & Soto, 2008), the five-factor model was not intended as a theory of personality, but rather a framework for approximating how common personality traits are structurally and dimensionally related to each other. Therefore, for the purposes of this particular study, which was not focused on explaining how the personalities of conspiracy theorists develop, the five-factor model was applied here to understand the personality traits broadly stereotyped to be characteristic of the *Conspiracy Theorist.* Therefore, I believe this model to be sufficient for the purposes of the present research.

According to Stangor and Schaller (1996), stereotypes are cognitive representations that can serve a number of functions including providing explanations of others' behaviour. One of the causes of stereotyping discussed by Stephan and Stephan (2000) is symbolic threat socially deviant/different groups are perceived to have on the ingroup. Accordingly in study 3b, it was hypothesised that targets were judged based on ascription of culpability and perceived psychological adjustment. Despite evidence that real conspiracies have been known to take place (Keeley, 1999), it appeared that participants judged the *Conspiracy Theorist* target to have poor psychological adjustment and low in culpability for their negative behaviour. Therefore, participants' perception of the contrast between their own psychological adjustment and culpability (target *Me*) compared to the *Conspiracy Theorist* may have led to the wide distance between the two targets.

Another theoretical implication of the present research has been that when a sense of low control is felt by someone who tends to think in odd or magical ways, this is likely to amplify their tendency to perceive patterns that do not actually exist. This interactive effect therefore may suggest that those with a tendency for MI may experience lack of control more strongly as an aversive state, or may be more likely to look for meaning between unrelated stimuli (illusory pattern perception) engage in illusory pattern perception rather than utilising other strategies for control restoration.

In a related study I induced mortality salience for half of my sample before administering visual pattern perception task as well as some measures of psychopathology, and they were considered the low control group. However, this group demonstrated significantly lower levels of conspiracy pattern perception compared to the high control group (who were given the MFODS *after* administration of the other measures and questionnaires). Mortality salience has been employed as a lack of control manipulation in previous unrelated studies (e.g. Newheiser et al., 2011), and were found to be effective. However, the results my study may be accounted for by the fear of death literature. Pyszczynski et al. (1999) explain the initial drop in access to death-related thoughts to be a result of an active suppression strategy, whereby an individual focuses their attention elsewhere to prevent being encumbered by fear or anxiety. This proximal defence strategy exhausts after a small elapse of time, and a subsequent increase in access to death-related thoughts ensues. Therefore, potentially if I had administered the MFODS, then one of the psychopathology inventories and *then* administered the visual and conspiracy pattern perception tasks; I may plausibly have found mortality salience to have effectively induced lack of control, and interpretation of those findings would be more reliable.

However, the mortality salience manipulation may have influenced the findings in another way. One personality trait the CT research consistently reports to be associated with belief in CTs in a sense of alienation or anomie

(Abalakina-Paap et al., 1999; Goertzel, 1994). This means they are a group of people who feel low attachment to society. One of the findings of my research was that those not faced with mortality salience reported higher levels of alienation compared to those with increased access to death-related thoughts. It is possible that such thorough exposure to death-related topics as occurs with administration of the MFODs leads to more than cursory contemplation of death, and actually results in contemplation of life. This may at first glance appear a fairly zen interpretation; but nevertheless, the mortality salience group may have been inadvertently drawn to consider what they would miss about their world and their life, and temporarily feel more socially integrated (a stronger bond to society), thus reflecting lower self-reported anomie.

Clinical Implications

Through this research I am not suggesting that having an enquiring mind is a negative thing. Some researchers have considered CTs to be harmful/dangerous false beliefs (Pfau ,2005; Sunstein & Vermeule, 2009). This is certainly not intended to be the take home message of my research. CTs often have the connotation of being bogus theories (Bale, 2007), and the findings of study 3b suggest that the label of "conspiracy theorist" is as stigmatising as having a mental disorder or being criminally convicted. It is important to maintain a balanced view and acknowledge that whilst some CTs certainly have a far-fetched flavour to them, there have been some instances in history where CTs have eventuated as actual conspiracies (Keeley, 1999). So while the term 'CT' evidently has many negative connotations, there is historical evidence that conspiracies do sometimes happen. In fact, many consider it important that for example, politics should be characterised by transparent processes, and those who intend to or do harm others should be held accountable (Sasson, 1995) – this is the basis of democracy. CTs often ask questions such as how and why did this happen, who was involved, what can we do to prevent it happening again in the

future? What the findings of the present research do suggest however, is that strong CTA is associated with psychopathology. When unverified CTs are culturally transmitted, the consequences can be dire (e.g. loss of life and risky decision-making; Bird & Bogart, 2003; Bird & Bogart, 2005; Goertzel, 2010; Grebe & Nattrass, 2012; Hutchison, Begley, Sullivan, Clark, Boyett, & Kellerman, 2007; Nattrass, 2005; Nattrass, 2012; Ross, Essien, & Torres, 2006; Thorburn & Bogart, 2005).

As I detailed earlier (chapter two), it is also important to acknowledge how important novel meaning-making can be for example, in the realm of scientific discovery (Petchovsky, 2008). Again, the interacting forces of odd meaning making and low perceived personal control may make a person susceptible to a style of pattern perception that differs from when people feel in control and do not make odd connections.

Considering the strength of the argument that lack of control is *implicated* (it is not the only contributing factor) in conspiracy theorising, clinicians with clients appearing to be experiencing high levels of psychological distress, social alienation, and impairments in the ability to function on a daily basis, should consider implementing strategies to increase mastery and enhance perceived personal as a target for therapy. For instance, encouraging the client to engage in activities where they can amplify their sense of control such as organising clubs, events, volunteer work, developing competencies that will improve the chance of promotion in the workplace. Interpersonal skills training may also arm the client with more confidence (and therefore more control) in relating to others, with the aim of re-establishing old relationships, or establishing new ones, and may also improve the level of social integration the client feels.

Limitations

Whilst this research has contributed significantly to this area of research, there are some limitations of my methodology that I would like to acknowledge and suggest future means of minimising such weaknesses.

Tools of Measurement

First, I have some reservations as to the efficacy of the CPP scale as a proxy for conspiracy theorising. Whilst Whitson and Galinsky (2008) found significant group differences, my findings were less marked than theirs. There has been no published information relating to the CPP scale development or reliability to measure the construct, or any equivalent tool to measure CT creation. In my research the internal consistency of the CPP did not prove to be satisfactory. For instance, the Cronbach's alpha for CPP in study 2 was only .49. Pallant (2002) explains that as the number items comprising a measure can affect the strength of the internal consistency and too few items can result with very small Cronbach's values. In the case of the CPP, it is a measure comprised by only three items (with significant inter-item correlations), so potentially in future more items could be included to see if the internal consistency improves to a more satisfactory level (over $\alpha = .70$). Low item numbers may have also been the issue concerning the poor internal consistency of the Powerlessness scale (Pearlin et al., 1981). Improving the internal consistency of any measure of low control should be a priority for future research as experimental induction of low control is associated with its own weaknesses.

Similar to previous research (Whitson & Galinsky, 2008), studies 1 and 2 randomly assigned participants to either the low or high control conditions, and then artificially induced a low sense of control for participants in the low control condition. A stable tendency to subjectively feel a low level of control may possible present differently from a transient feeling of low control. Thus, an effective measure of sense of control is considered here to be the best way to

investigate genuine illusory pattern perception, the significance of lack of control in its contribution to conspiracy theorising.

Finally, based on review of the literature (and hindsight), low control and its influence on the contribution to conspiracy theorising might arguably be more of an issue for individuals with a high personal need for structure (PNS). In chapter two it was argued that conspiracy theorising may be more likely in those with a high PNS. That is, individuals with high PNS have a strong motivation for simplicity, clarity, and predictability in their environment (Meiser & Machunsky, 2008; Moskowitz, 1993). Thus when faced with complexity or uncertainty, high PNS individuals may be more likely to ascribe to CTs. Whitson and Galinsky (2008) found that participants with high PNS were more likely to demonstrate illusory pattern perception in the visual realm; however, they did not investigate this in relation to CT belief. PNS was not measured in the present research in order to keep testing sessions to a reasonable duration, however, investigation of PNS (using the PNS measure by Thompson, Naccarato, & Parker, 1992) in conspiracy theorising and psychopathology could be a fruitful avenue for future research.

The Impact of Clinical Considerations

Arguably one of the most limiting aspects of study 4 was the lack of data collection relating to substance and medication use of participants. A conceptual link has been made in prior research that the paranoia or suspiciousness seen in conspiracy theorists are akin to the paranoid delusions seen in psychosis (Bentall et al., 2001). Psychosis with delusional features can also be substance or medication-induced (American Psychiatric Association, 2013; Kuipers et al., 2006). For the present research, the series of questionnaires and measures presented to participants was found to take 30-45 minutes to complete, and it was considered that an additional questionnaire could prove problematic in terms of fatigue effects on responding. Therefore, at the expense of this limitation, data on

substance and medication use was not collected. However, future research could consider collecting information regarding level of substance or medication consumption in order to rule out cases whose paranoia may be related to heavy substance or medication use.

Future Directions

As I have outlined above, there are a range of considerations future research could consider in reducing the limitations that may be implicated in the present work. Additionally, there are some a range of aspects of CT research that is deserving of future empirical attention. One particularly fruitful avenue for research may be the specific investigation of bias against disconfirmatory evidence in CT affinity using a BADE task such as used in studies of delusion and schizotypy (Buchy et al., 2007; Freeman et al., 2002; Orenes et al., 2012). Previous research has suggested that the majority conspiracy theorists are not able shift their beliefs even in the face of contradictory evidence (Clarke, 2002; Goertzel, 1994; Groh, 1987; Keeley, 1999; Leman, 2007; Sunstein & Vermeule, 2009). Therefore, direct investigation using the BADE methodological paradigm would be particularly relevant. Similarly, investigation of theory of mind deficits in conspiracy theorists would be an important contribution to the CT literature. A task such as the Character Intention Task as used by Sarfati et al. (1997) in their research of theory of mind deficits in schizophrenia could have utility in CT affinity research. Most importantly, future research should seek to clearly distinguish between variants of CTA when designing their methodology, so that interpretation of their findings can be more meaningful.

Concluding Remarks

Prior CT research has largely focused on which CTs are most commonly believed, and the personality variables most closely associated with the tendency to believe conspiracies. Another popular area of interest has been how belief in

CTs affect the decisions of the believers. For instance, the belief that HIV is a man-made weapon devised with the intention of genocide has been found to be related to less consistent safe sex practices, and therefore has implications for public health (e.g. Bogart & Thorburn, 2005). However, only very limited and correlational research has examined the link between CT belief and psychopathology. And at least one study has considered CT creation as a form of illusory pattern perception.

This thesis sought to take a cohesive approach to examining the factors implicated in development and maintenance of CTA to fill these empirical gaps. On balance, my research suggests strong CTA is associated with markers of psychopathology such as paranoia, schizotypy, and general psychological distress. Furthermore, when an individual with a magical or odd thinking style perceives low subjective control they are also likely to present with illusory pattern perception. Therefore, public perception of conspiracy theorists where they are associated with those who have current mental health concerns has a nugget of truth to it. However, unfortunately, public perception of mental illness is largely stigmatizing, and therefore, the similar perception of conspiracy theorists also suggests that it is a stigmatizing title to be labelled with. The personality traits that these targets judged on arguably relate to ascription of culpability as well as perception of psychological adjustment.

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Appendix A

Study 1 Measures

Recall task: Low control condition

Please recall a particular incident in which something happened and you did not have any control over the situation. Please describe the situation in which you felt a complete lack of control – what happened, how you felt etc.

Describe here what happened in this situation where you felt no control:

How did you feel in this situation?:

Recall task: High control condition

Please recall a particular incident in which something happened and you were in complete control over the situation. Please describe the situation in which you felt complete control – what happened, how you felt etc.

Describe here what happened in this situation where you felt complete control:

How did you feel in this situation?:

Modified snowy pictures task

It is helpful to be able to see objects quickly in spite of their being partially concealed by snow, rain, haze, darkness, or other visual obstructions.

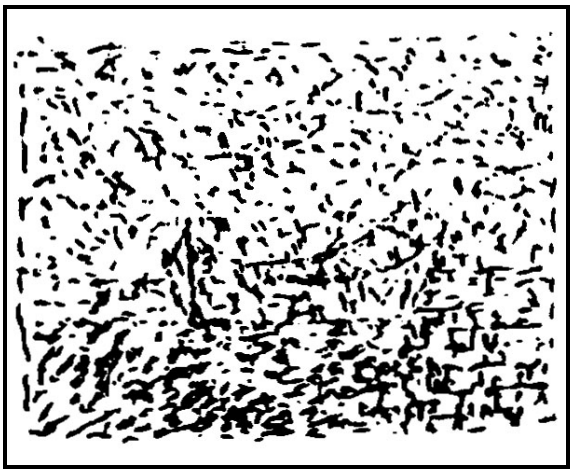
Look at the picture below. What object do you see?

Sample Item 1:

1. _____Anchor_____

By looking carefully at this sample you will see an anchor. The word anchor has been written on the line under this picture. Now try another sample. Write the name of the object on the line provided.

Sample Item 2:



2. _____

The picture shows a small boat sitting in the water. Boat, rowboat, or other similar words would be correct answers.

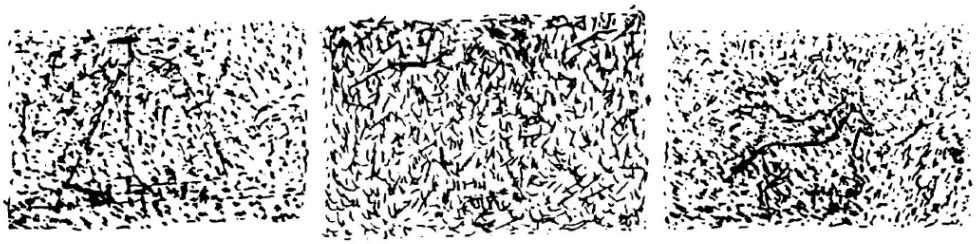
Some pictures in this test may have no object in them. If you believe a picture does not have an object in it then describe the picture by writing 'none'.

Your score on this test will be the number of pictures of objects that you name correctly. Work as quickly as you can without sacrificing accuracy. If some pictures are difficult, skip them and return to them later if you have time.

Do not spend too much time on any one picture.

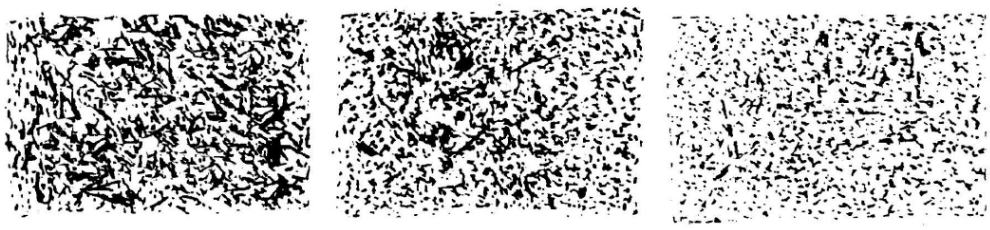
PART 1

Write one or two words to name the object in each picture.

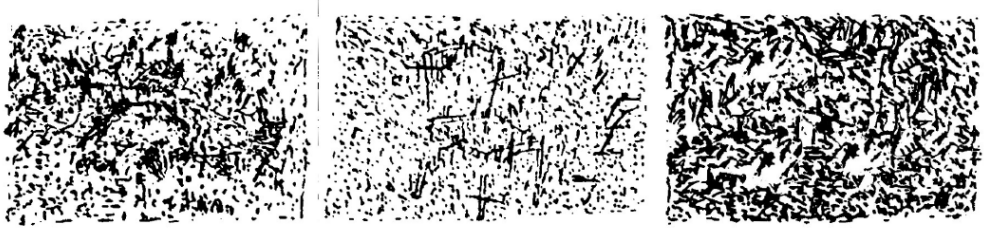


1. _____ 2. _____ 3. _____

4. _____ 5. _____ 6. _____



7. _____ 8. _____ 9. _____

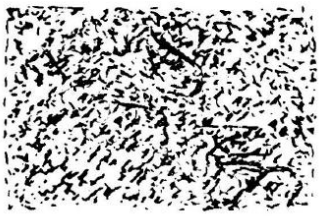


10. _____ 11. _____ 12. _____

PART 2

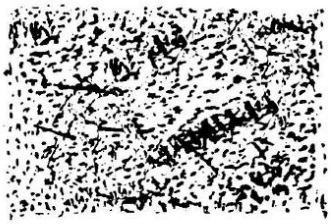
Write one or two words to name the object in each picture.

13. _____



14. _____

15. _____

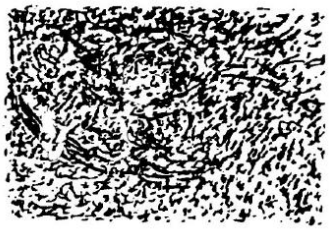


16. _____

17. _____

18. _____

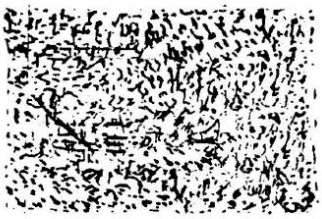
19. _____



20. _____

21. _____

22. _____



23. _____

24. _____

DO NOT GO BACK TO PART 1

Conspiracy Pattern Perception

Please read the scenarios below and rate your response on the scale provided.

1. Imagine that you are one of the top administrators in your organisation. You are in charge of running a number of aspects of the organisation, including tracking the hours of all employees and their email and internet usage. You will soon be up for promotion. The day before your scheduled meeting with your superiors, you notice that the number of emails between your boss and the coworker sitting next to you jumps drastically.
   When you meet with your boss, you are told that you're not getting the promotion.

   To what extent do you think your coworker may be connected to you not getting the promotion?

Not at all						A great deal
1	2	3	4	5	6	7

2. Imagine that you buy stock in one of the three construction companies that service your area. One day, your spouse, who runs the local bed and breakfast, notes that the families of all three company owners have checked into the B&B recently. Later, the prices all three companies offer for their services has risen drastically.
   Because of the higher prices, all three companies post very high profits, and you make a lot of money off of the stock you own.

   To what extent do you think the visits to the bed and breakfast may be connected to the earnings you made off your stocks?

Not at all						A great deal
1	2	3	4	5	6	7

3. Imagine that the office you work at is deciding whether to relocate to a different location within the city you live in, or to a city several hours away. Your commute time will double if your company relocates to a different city. You happen to come into the office late one night and see the mayor's car parked in a secluded corner of the loading dock.

   The next day, it is announced that the company will relocate within the city you live in.

   To what extent do you think the mayor's being car in the loading dock is connected to your office being relocated?

Not at all						A great deal
1	2	3	4	5	6	7

Conspiracy Beliefs Scale

Below is a list of theories about the causes of important or controversial events. Please read through, and indicate how likely these are as actual explanations.

	Not at all likely ↓			Don't know ↓			Very likely ↓
The All Blacks were deliberately poisoned before the 1995 rugby world cup final	1	2	3	4	5	6	7
The HIV virus was deliberately developed and released by someone with a vendetta against minority groups (e.g., non-whites, homosexuals, etc)	1	2	3	4	5	6	7
The Rainbow Warrior was bombed by representatives of a foreign government	1	2	3	4	5	6	7
Princess Diana was killed by British secret service in order to prevent a Royal scandal	1	2	3	4	5	6	7
The CIA orchestrates the production, traffic and sales of drugs, in order to obtain covert funding and oppress ethnic minorities	1	2	3	4	5	6	7
The government and military have been spraying mysterious substances into the atmosphere under cover of normal aircraft contrails and other spraying	1	2	3	4	5	6	7
A secret cabal of American and European elite control the election of national leaders, the world economy, and direct the course of history in their favour	1	2	3	4	5	6	7
Martin Luther King was not killed by a lone assassin but by a FBI, CIA, or Mafia conspiracy to remove the most charismatic black leader of his era	1	2	3	4	5	6	7
NASA faked the first moon landings for publicity	1	2	3	4	5	6	7
Members of the Illuminati have infiltrated world governments, intent on fomenting revolution to achieve global domination	1	2	3	4	5	6	7
Many of the major events in recent world history are part of a Jewish conspiracy	1	2	3	4	5	6	7
George W. Bush and his administration either planned the September 11 attacks or let them happen in order to secure their hold on power and increase defence spending	1	2	3	4	5	6	7
The US military has covered up evidence that an alien spacecraft crashed in Roswell, New Mexico, in 1947	1	2	3	4	5	6	7
When Lee Harvey Oswald killed John F. Kennedy, he did so with the assistance of the FBI, the CIA, the KGB, or the anti-Castro Cubans	1	2	3	4	5	6	7
The war in Iraq has less to do with promoting democracy than it does with controlling oil production in the East	1	2	3	4	5	6	7

There is a deliberate political conspiracy to suppress the rights of Maori in NZ	1	2	3	4	5	6	7
Elvis Presley faked his own death to escape the pressures of fame, the shame of his decline, or the unwanted attentions of the Mob	1	2	3	4	5	6	7
The US is hiding evidence of alien technology in installations at Area 51 in Nevada	1	2	3	4	5	6	7
The United States is deliberately trying to start a war with Iran over Iran's nuclear energy programme	1	2	3	4	5	6	7
The AIDS virus was created deliberately in a government laboratory	1	2	3	4	5	6	7
The police are deliberately allowing drugs into poorer communities	1	2	3	4	5	6	7
Thousands, perhaps millions, of people are regularly kidnapped by aliens to be experimented on	1	2	3	4	5	6	7
World governments are hiding evidence that the earth has been visited by aliens	1	2	3	4	5	6	7
Asian countries are deliberately conspiring to destroy the Western economy	1	2	3	4	5	6	7
There is a deliberate plan to advantage Maori, and other minorities, at the expense of mainstream New Zealanders	1	2	3	4	5	6	7
George W. Bush and his party rigged the 2000 and 2004 US elections	1	2	3	4	5	6	7
Muslim extremists were responsible for attacking the Twin Towers on September 11	1	2	3	4	5	6	7
New Zealand society is constantly being manipulated by Big Business	1	2	3	4	5	6	7
The AIDS virus has been deliberately spread into the gay and black communities	1	2	3	4	5	6	7
The American government was either involved in, or knew about, the September 11 attacks before they happened	1	2	3	4	5	6	7

Schizotypal Personality Questionnaire

For each of the items below, please answer (circle) "yes" or "no"

1	Do you sometimes feel that things you see on the TV or read in the newspaper have a special meaning for them.	Yes	No
2	I sometimes avoid going to places where there will be many people because I will get anxious.	Yes	No
3	Gave you had experiences with the supernatural?	Yes	No
4	Have you often mistaken objects or shadows for people, or noises for voices?	Yes	No
5	Other people see me as slightly eccentric (odd).	Yes	No
6	I have little interest in getting to know other people.	Yes	No
7	People sometimes find it hard to understand what I am saying.	Yes	No
8	People sometimes find me aloof and distant.	Yes	No
9	I am sure I am being talked about behind my back.	Yes	No
10	I am aware that people notice me when I go out for a meal or to see a film.	Yes	No
11	I get very nervous when I have to make polite conversation.	Yes	No
12	Do you believe in telepathy (mind-reading)?	Yes	No
13	Have you ever had the sense that some person or force is around you, even though you cannot see anyone?	Yes	No
14	People sometimes comment on my unusual mannerisms and habits.	Yes	No
15	I prefer to keep myself to myself.	Yes	No
16	I sometimes jump quickly from one topic to another when speaking.	Yes	No
17	I am not good at expressing my true feelings by the way I talk and look.	Yes	No
18	Do you often feel that other people have it in for you?	Yes	No
19	Do some people drop hints about you or say things with a double meaning?	Yes	No
20	Do you ever get nervous when someone is walking behind you?	Yes	No
21	Are you sometimes sure that other people can tell what you're thinking?	Yes	No
22	When you look at a person, or yourself in a mirror, have you ever seen the face change right before your eyes?	Yes	No

23	Sometimes other people think that I am a little strange.	Yes	No
24	I am mostly quiet when with other people.	Yes	No
25	I sometimes forget what I am trying to say.	Yes	No
26	I rarely laugh and smile.	Yes	No
27	Do you sometimes get concerned that friends or co-workers are not really loyal or trustworthy?	Yes	No
28	Have you ever noticed a common event or object that seemed to be a special sign for you?	Yes	No
29	I get anxious when meeting people for the first time.	Yes	No
30	do you believe in clairvoyancy (psychic forces, fortune telling)?	Yes	No
31	I often hear a voice speaking my thoughts aloud.	Yes	No
32	Some people think that I am a very bizarre person.	Yes	No
33	I find it hard to be emotionally close to other people.	Yes	No
34	I often ramble on too much when speaking.	Yes	No
35	My "nonverbal" communication (smiling and nodding during a conversation) is not very good.	Yes	No
36	I feel I have to be on my guard even with friends.	Yes	No
37	Do you sometimes see special meanings in advertisements, shop windows, or in the way things are arranged around you?	Yes	No
38	Do you often feel nervous when you are in a group of unfamiliar people?	Yes	No
39	Can other people feel your feelings when they are not there?	Yes	No
40	Have you ever seen things invisible to other people?	Yes	No
41	Do you feel that there is no one you are really close to outside of your immediate family, or people you can confide in or talk to about personal problems.	Yes	No
42	Some people find me a bit vague and elusive during a conversation.	Yes	No
43	I am poor at returning social courtesies and gestures.	Yes	No
44	Do you often pick up hidden threats or put-downs from what people say or do?	Yes	No
45	When shopping do you get the feeling that other people are taking notice of you?	Yes	No
46	I feel very uncomfortable in social situaitons involving unfamiliar people.	Yes	No
47	Have you had experiences with astrology, seeing the future, UFOs, ESP, or a sixth sense?	Yes	No

48	Do everyday things seem unusually large or small?	Yes	No
49	Writing letters to friends is more trouble than it is worth.	Yes	No
50	I sometimes use words in unusual ways.	Yes	No
51	I tend to avoid eye contact when conversing with others.	Yes	No
52	Have you found that it is best not to let other people know too much about you?	Yes	No
53	When you see people talking to each other, do you often wonder if they are talking about you?	Yes	No
54	I would feel very anxious if I had to give a speech in front of a large group of people.	Yes	No
55	Have you ever felt that you are communitcating with another person telepathically (by mind-reading)?	Yes	No
56	Does your sense of smell sometimes become unusually strong?	Yes	No
57	I tend to keep in the background on social occasions.	Yes	No
58	Do you tend to wander off the topic when having a conversation?	Yes	No
59	I often feel that others have it in for me.	Yes	No
60	Do you sometimes feel that other people are watching you?	Yes	No
61	Do you ever suddenly feel distracted by distant sounds that you are not normally aware of?	Yes	No
62	I attach little importance to having close friends.	Yes	No
63	Do you ever feel sometimes that people are talking about you?	Yes	No
64	Are your thoughts sometimes so strong that you can almost hear them?	Yes	No
65	Do you often have to keep an eye out to stop people from taking advantage of you?	Yes	No
66	Do you feel that you cannot get "close" to people?	Yes	No
67	I am an odd, unusual person.	Yes	No
68	I do not have an expressive and lively way of speaking.	Yes	No
69	I find it hard to communicate clearly what I want to say to people.	Yes	No
70	I have some eccentric (odd) habits.	Yes	No
71	I feel very uneasy talking to people I do not know well.	Yes	No
72	People occasionally comment that my conversation is confusing.	Yes	No
73	I tend to keep my feelings to myself.	Yes	No
74	People sometimes stare at me because of my odd appearance.	Yes	No

Locus of Control Scale

For each question below, please choose (tick) the statement that best reflects how you feel.

1.

☐a. Children get into trouble because their parents punish them too much

☐b. The trouble with most children nowadays is that their parents are too easy with them.

2.

☐ a. Many of the unhappy things in people's lives are partly due to bad luck.

☐ b. People's misfortunes result from the mistakes they make.

3.

☐ a. One of the major reasons why we have wars is because people don't take enough interest in politics

☐ b. There will always be wars, no matter how hard people try to prevent them.

4.

☐ a. In the long run people get the respect they deserve in the world.

☐ b. Unfortunately, an individual's worth often passes unrecognised no matter how hard he tries.

5.

☐ a. The idea that teachers are unfair to students is nonsense.

☐ b. Most students don't realise the extent to which their grades are influence by accidental happenings.

6.

☐ a. Without the right breaks one cannot be an effective leader.

☐ b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7.

☐ a. No matter how hard you try some people just don't like you.

☐ b. People who can't get others to like them don't understand how to get along with others.

8.

☐ a. Heredity plays a major role in determining one's personality.

☐ b. It is one's experiences in life which determine what they're like.

9.

☐ a. I have often found that what is going to happen will happen.

☐ b. Trusting to fate has never turned out well for me as making a decision to take a definite course of action.

10.

☐ a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.

☐ b. Many times exam questions tend to be so unrelated to course work that studying is really useless.

11.

☐ a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.

☐ b. Getting a good job depends mainly on being in the right place at the right time.

12.

☐ a. the average citizen can have an influence in government decisions.

☐ b. This world is run by the few people in power, and there is not much the little guy can do about it.

13.

☐ a. When I make plans, I am almost certain that I can make them work.

☐ b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

14.

☐ a. There are certain people who are just no good.

☐ b. There is some good in everybody.

15.

☐ a. In my case getting what I want has little or nothing to do with luck.

☐ b. Many times we might just as well decide what to do by flipping a coin.

16.

☐ a. Who gets to be boss often depends on who was lucky enough to be in the right place first.

☐ b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

17.

☐ a. As far as world affairs are concerned, most of us are the victim of forces we can neither understand, nor control.

☐ b. By taking an active part in political and social affairs the people can control world events.

18.

☐ a. Most people don't realise the extent to which their lives are controlled by accidental happenings.

☐ b. There really is no such thing as "luck".

19.

☐ a. One should always be willing to admit mistakes.

☐ b. It is usually best to cover up one's mistakes.

20.

☐ a. It is hard to know whether or not a person really likes you.

☐ b. How many friends you have depends upon how nice a person you are.

21.

☐ a. In the long run the bad things that happen to us are balanced by good ones.

☐ b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22.

☐ a. With enough effort we can wipe out political corruption.

☐ b. It is difficult for people to have much control over the things politicians do in office.

23.

☐ a. Sometimes I can't understand how teachers arrive at the grades they give.

☐ b. There is a direct connection between how hard I study and the grades I get.

24.

☐ a. A good leader expects people to decide for themselves what they should do.

☐b. A good leader makes it clear to everybody what their jobs are.

25.

☐ a. Many times I feel that I have little influence over the things that happen to me.

☐ b. It is impossible for me to believe that chance or luck plays an important role in my life.

26.

☐ a. People are lonely because they don't try to be friendly.

☐ b. There's not much use in trying too hard to please people, if they like you, they like you.

27.

☐ a. There is too much emphasis on athletics in high school.

☐ b. Team sports are an excellent way to build character.

28.

☐ a. What happens to me is my own doing.

☐ b. Sometimes I feel that I don't have enough control over the direction my life is taking.

29.

☐ a. Most of the time I can't understand why politicians behave the way they do.

☐ b. In the long run the people are responsible for bad government on a national as well as on a local level.

Hostility Questionnaire

Below are a list of statements. Using the scale below, please rate (circle) how characteristic of you each statement is.

1 = Extremely uncharacteristic of me
2 = Uncharacteristic of me
3 = Neutral
4 = Characteristic of me
5 = Extremely characteristic of me

1. I am sometimes eaten up with jealousy

1	2	3	4	5

2. At times I feel I have gotten a raw deal out of life.

1	2	3	4	5

3. Other people always seem to get the breaks.

1	2	3	4	5

4. I wonder why sometimes I feel so bitter about things.

1	2	3	4	5

5. I know that “friends” talk about me behind my back.

1	2	3	4	5

6. I am suspicious of overly friendly strangers.

1	2	3	4	5

7. I sometimes feel that people are laughing at me behind my back.

1	2	3	4	5

8. When people are especially nice, I wonder what they want.

1	2	3	4	5

Self-Esteem Questionnaire

Below is a list of statement dealing with your general feelings about yourself. For each statement circle the option that best describes your feelings about yourself.

1. On the whole, I am satisfied with myself.

Strongly Agree	Agree	Disagree	Strongly Disagree

2. At times, I think I am no good at all.

Strongly Agree	Agree	Disagree	Strongly Disagree

3. I feel that I have a number of good qualities.

Strongly Agree	Agree	Disagree	Strongly Disagree

4. I am able to do things as well as most other people.

Strongly Agree	Agree	Disagree	Strongly Disagree

5. I feel I do not have much to be proud of.

Strongly Agree	Agree	Disagree	Strongly Disagree

6. I certainly feel useless at times.

Strongly Agree	Agree	Disagree	Strongly Disagree

7. I feel that I'm a person of worth, at least on an equal plan with others.

Strongly Agree	Agree	Disagree	Strongly Disagree

8. I wish I could have more respect for myself.

Strongly Agree	Agree	Disagree	Strongly Disagree

9. All in all, I am inclined to feel that I am a failure.

Strongly Agree	Agree	Disagree	Strongly Disagree

10. I take a positive attitude toward myself.

Strongly Agree	Agree	Disagree	Strongly Disagree

Anomie Authoritarianism scale

Please read the statements below, and circle the option that best reflects your level of agreement for each one.

1. There's little use in writing to public officials because often they aren't really interested in the problems of the average man.

Strongly Agree	Agree	Disagree	Strongly Disagree

2. Nowadays a person has to live pretty much for today and let tomorrow take care of itself.

Strongly Agree	Agree	Disagree	Strongly Disagree

3. In spite of what some people say, the lot of the average man is getting worse, not better.

Strongly Agree	Agree	Disagree	Strongly Disagree

4. It's hardly fair to bring children into the world with the way things look for the future.

Strongly Agree	Agree	Disagree	Strongly Disagree

5. These days a person doesn't really know whom he can count on.

Strongly Agree	Agree	Disagree	Strongly Disagree

6. The most important thing to teach children is absolute obedience to their parents.

Strongly Agree	Agree	Disagree	Strongly Disagree

7. Any good leader should be strict with people under him in order to gain their respect.

Strongly Agree	Agree	Disagree	Strongly Disagree

8. There are two kinds of people in the world: the weak and the strong.

Strongly Agree	Agree	Disagree	Strongly Disagree

9. Prison is too good for sex criminals. They should be publicly whipped or worse.

Strongly Agree	Agree	Disagree	Strongly Disagree

10. No decent man can respect a woman who has had sex relations before marriage.

Strongly Agree	Agree	Disagree	Strongly Disagree

Appendix B

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Information Sheet and Statement of Consent for IPRP Participants

Dr Marc Wilson	Associate Prof. John McDowall	Darshani Kumareswaran
Prinicipal Investigator	**Researcher**	**PhD Student**
Email:	Email:	Email:
marc.wilson@vuw.ac.nz	*john.mcdowall@vuw.ac.nz*	*darshani.kumareswaran@vuw.ac.nz*

What is the purpose of this research?

- This research will allow us to examine how people perceive patterns and how they interpret scenarios.

Who is conducting the research?

- We are a team of researchers in the School of Psychology. Dr. Wilson is the principal investigator. This research has been approved by the University ethics committee.

What is involved if you agree to participate?

- If you agree to participate in this study you will be asked to recall a past event in your life, view some pictures and name them, and interpret some scenarios. We will also ask you to fill out some personality questionnaires.
- We anticipate that your total involvement will take no more than an hour.
- During the research you are free to withdraw, without any penalty, at any point before your data have been collected.

Privacy and Confidentiality

- We will keep your consent forms and data for at least five years after publication.
- You will never be identified in my research project or in any other presentation or publication. The information you provide will be coded by number only.
- In accordance with the requirements of some scientific journals and organisations, your coded data (where you cannot be personally identified) may be shared with other competent researchers.
- Your coded data may be used in other, related studies.
- A copy of the coded data will remain in the custody of the researchers listed above.

What happens to the information that you provide?

- The data you provide may be used for one or more of the following purposes:
- The overall findings may be submitted for publication in a scientific journal, or presented at scientific conferences.
- The overall findings may form part of a PhD thesis, Masters thesis, or Honours research project that will be submitted for assessment.

Please Turn Over

If you would like to receive a summarized copy of the results of this study, please provide your email address on the next part of the form. The results should be available by August 2011.

If you have any further questions regarding this study please contact any one of us above.

Statement of consent

I have read the information about this research and any questions I wanted to ask have been answered to my satisfaction.

I agree to participate in this research. I understand that I can withdraw my consent at any time, without penalty, prior to the end of my participation.

Name: _____

Signature: _____

Date: _____

Student ID: _____

If you would like to receive a summarized copy of the results of this study please provide your email address:

Email: _____

Copy to:

[a] participant,

[b] researcher (initial both copies below)

Appendix C

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Debrief Sheet for IPRP Participants

Thank you for your participating in this experiment.

This study examined how people perceive patterns depending on how much power or control they feel. According to previous research, when people feel a low level of control when looking at patterns, they may perceive patterns that are not there. However, when people feel a high level of control, they are more able to discern whether an actual pattern in an image exists or not. According to other previous research, how people look for explanations for different situations is a form of pattern perception. In this study, we were interested in how people look for patterns in visual stimuli as well as patterns in situations when they feel low control compared to people who feel a high level of control.

To manipulate level of control (independent variable), half of the participants were asked to recall an event in their lives where they felt no control in the situation, and the other half of participants were asked to recall an event where they felt complete control in a situation. The visual pattern perception task was the task where there were grainy images presented to you. Half the images really did have pictures within them, and the other half did not. We wanted to compare whether people in the low control group would report recognizing a picture in images (dependent variable) where there really wasn't a picture, more often than the high control group. In the other task, scenarios containing ambiguous facts with either a positive or negative outcome were presented to you. We then wanted to know if people would make a connection (dependent variable) between the outcome and the people around the protagonist to explain the outcome. Again, the responses of the low control group will be compared to the high control group.

Note: Whether you were in the low or high control group does not reflect whether you really feel a low or high level of control in your daily life. The point of the study was to *induce* that feeling for this particular purpose i.e. it was an experimental manipulation.

We also asked all participants to fill out personality questionnaires to see if certain traits are related to how people perceive patterns in visual stimuli and also situations/events. These questionnaires measured elements such as self-esteem, feelings of alignment with society (anomie), attribution style (internal vs. external locus of control), and hostility. Again, please remember that your data is completely confidential, and you cannot and will not be personally identified in any way in our research.

This kind of research is important because it helps us understand a little better how and why people explain events (good and bad) that happen to and around them. That is, the factors that might be involved in how we explain these events or situations. This kind of research is so interesting (particularly to social psychologists) because it is directly relevant to all of us. We are always seeking to understand or explain the causes for situations to make sense of our world.

Thank you again for participating in this research.

Appendix D

Multidimensional Fear of Death Scale

Below is a list of statements about death and dying.

- Please read each one carefully, and circle a number from '**1**' to '7', which represents the extent to which you agree or disagree with each statement.
- Like opinions, some of these statements may seem contradictory - this is not a trick - it's the way the world is.
- There are no trick questions or right or wrong answers - just give your opinion.

	Strongly Disagree ⇓			**Neutral** ⇓ ⇓			**Strongly Agree**
I get upset when acquaintances die	1	2	3	4	5	6	7
I dread visiting a funeral home	1	2	3	4	5	6	7
I do not like the thought of being cremated	1	2	3	4	5	6	7
I have a fear of other people in my family dying	1	2	3	4	5	6	7
I am not afraid of meeting my creator	1	2	3	4	5	6	7
I am afraid of dying very slowly	1	2	3	4	5	6	7
I am afraid of my body being disfigured when I die	1	2	3	4	5	6	7
I am afraid of being buried alive	1	2	3	4	5	6	7
I am afraid I will not live long enough to enjoy my retirement	1	2	3	4	5	6	7
I am afraid of dying in an accident	1	2	3	4	5	6	7
I would be frightened to spend time alone with a corpse	1	2	3	4	5	6	7
I would like to donate my body to science	1	2	3	4	5	6	7
I fear the thought that when I die, no one will care	1	2	3	4	5	6	7
I am afraid that there is no afterlife	1	2	3	4	5	6	7
There are probably many people who are pronounced dead that are really still alive	1	2	3	4	5	6	7
I am not concerned about what might happen to my body after I die	1	2	3	4	5	6	7
I have a fear of not accomplishing my goals in life before I die	1	2	3	4	5	6	7
I am afraid of dying in a fire	1	2	3	4	5	6	7
Touching a corpse would not bother me	1	2	3	4	5	6	7
I do not want medical students using my body for practice after I die	1	2	3	4	5	6	7
If the people I am very close to were to die, I would suffer for a very long time	1	2	3	4	5	6	7
I am afraid of what might wait for me after I die	1	2	3	4	5	6	7
I am frightened by the thought that I could still be conscious when I die	1	2	3	4	5	6	7
I dread the thought of my body being embalmed one day	1	2	3	4	5	6	7
It scares me to think that I have no control over when I die	1	2	3	4	5	6	7
I am afraid of experiencing a great deal of pain when I die	1	2	3	4	5	6	7
Discovering a dead body would be a horrifying experience	1	2	3	4	5	6	7
I would like to be a heart donor	1	2	3	4	5	6	7
If I were to die tomorrow my family would be upset for a long time	1	2	3	4	5	6	7
I am afraid that death is the end of one's existence	1	2	3	4	5	6	7
People should have autopsies to ensure that they are really dead	1	2	3	4	5	6	7
The thought of my body never being found after I die scares me	1	2	3	4	5	6	7
I am afraid I will not have time to experience everything I want to	1	2	3	4	5	6	7
I am afraid of dying of cancer	1	2	3	4	5	6	7
I would be afraid to walk through a graveyard, alone, at night	1	2	3	4	5	6	7
I would like my body to be intact when I am buried / cremated	1	2	3	4	5	6	7
Since everyone dies, I won't be upset when my friends die	1	2	3	4	5	6	7
I am afraid that there may not be a supreme being	1	2	3	4	5	6	7
It scares me to think that I may be conscious while lying in a morgue	1	2	3	4	5	6	7
It doesn't matter whether I am buried in a wooden box or a steel vault	1	2	3	4	5	6	7

I am afraid that I may not be able to share as many experiences with my children as I would like to	1	2	3	4	5	6	7
I have a fear of suffocating (including drowning)	1	2	3	4	5	6	7
It would bother me to remove a dead animal from the road	1	2	3	4	5	6	7
I do not want anyone experimenting on my body after I die	1	2	3	4	5	6	7
No one can say for sure what will happen after death	1	2	3	4	5	6	7
I hope more than one doctor examines me before I am pronounced dead	1	2	3	4	5	6	7
The thought of being in a locked coffin scares me	1	2	3	4	5	6	7
I have a fear of dying violently	1	2	3	4	5	6	7
I am afraid of things which are dead	1	2	3	4	5	6	7
The thought of my body decaying after I die scares me	1	2	3	4	5	6	7
I do not want anyone experimenting with my body after I die	1	2	3	4	5	6	7
I am frightened by the thought that all those I am close to might die before me	1	2	3	4	5	6	7
The thought that I could die tomorrow frightens me	1	2	3	4	5	6	7
I do not want to donate any part of my body when I die	1	2	3	4	5	6	7
I am frightened by the thought of someone close to me dying	1	2	3	4	5	6	7
I am frightened by the thought of what might happen to me after I die	1	2	3	4	5	6	7
I hope every step is taken to save me before I am pronounced dead	1	2	3	4	5	6	7
I have a fear of dying without resolving differences with those I am close to	1	2	3	4	5	6	7

Appendix E

Study 2 Forms

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA UNIVERSITY OF WELLINGTON

Information Sheet and Statement of Consent for Non-IPRP Participants

Dr Marc Wilson	Associate Prof. John McDowall	Darshani Kumareswaran
Prinicipal Investigator	**Researcher**	**PhD Student**
Email: *marc.wilson@vuw.ac.nz*	Email: *john.mcdowall@vuw.ac.nz*	Email: *darshani.kumareswaran@vuw.ac.nz*

What is the purpose of this research?

- This research will allow us to examine how people perceive patterns and how they interpret scenarios.

Who is conducting the research?

- We are a team of researchers in the School of Psychology. Dr. Wilson is the principal investigator. This research has been approved by the School of Psychology Human Ethics Committee.

What is involved if you agree to participate?

- If you agree to participate in this study, you will be asked to complete a number of questionnaires. One asks that you view some pictures and name the objects in the pictures. Other questionnaires collect information about personality. One questionnaire also asks questions about death and dying. If you feel that the topic of death and dying may be upsetting or distressing to you, we encourage you to not participate in this study.
- Should you feel any distress as a result of the topic of death raised in this study, you can contact a range of services (a list is automatically provided at the end of the study) for support.
- We anticipate that your total involvement will take no more than twenty minutes.
- During the research you are free to withdraw, at any point before your data have been collected.

Privacy and Confidentiality

- We will keep your consent forms and data for at least five years after publication.
- You will never be identified in my research project or in any other presentation or publication. The information you provide will be coded by number only.
- In accordance with the requirements of some scientific journals and organisations, your coded data (where you cannot be personally identified) may be shared with other competent researchers.
- Your coded data may be used in other, related studies.
- A copy of the coded data will remain in the custody of the researchers listed above.

What happens to the information that you provide?

- The data you provide may be used for one or more of the following purposes:
- The overall findings may be submitted for publication in a scientific journal, or presented at scientific conferences.
- The overall findings may form part of a PhD thesis, Masters thesis, or Honours research project that will be submitted for assessment.

If you would like to receive a summarized copy of the results of this study, please provide your email address on the next part of the form. The results should be available by August 2011.

If you have any further questions regarding this study please contact any one of us above.

Statement of consent

I have read the information about this research and any questions I wanted to ask have been answered to my satisfaction.

I agree to participate in this research. I understand that I can withdraw my consent at any time, without penalty, prior to the end of my participation.

Name: _____

Signature: _____

Date: _____

Student ID: _____

If you would like to receive a summarized copy of the results of this study please provide your email address:

Email: _____

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Debrief Sheet

Thank you for your participating in this experiment.

This study examined how people perceive patterns depending on how much power or control they feel. According to previous research, when people feel a low level of control when looking at patterns, they may perceive patterns that are not there. However, when people feel a high level of control, they are more able to discern whether an actual pattern in an image exists or not. According to other previous research, how people look for explanations for different situations is a form of pattern perception. In this study, we were interested in how people look for patterns in visual stimuli as well as patterns in situations when they feel low control. These results will be compared to the results of a previous study that also manipulated a high level of control in participants.

To manipulate level of control (independent variable), participants were asked some questions about death and dying using the Multidimensional Fear of Death Scale (M-FODS; Hoelter, 1979). The M-FODS asks participants to indicate their attitudes towards a variety of death-related topics (e.g., comfort with the presence of dead people, touching dead animals, etc). The assertion is that the idea of death and dying will elicit a feeling of low control. The visual pattern perception task was the task where there were grainy images presented to you. Half the images really did have pictures within them, and the other half did not. We wanted to compare whether people in the low control group would report recognizing a picture in images (dependent variable) where there really wasn't a picture, more often than the high control group. In the other task, scenarios containing ambiguous facts with either a positive or negative outcome were presented to you. We then wanted to know if people would make a connection (dependent variable) between the outcome and the people around the protagonist to explain the outcome. Again, the responses of the low control group will be compared to the high control group.

Note: Whether you were in the low or high control group does not reflect whether you really feel a low or high level of control in your daily life. The point of the study was to *induce* that feeling for this particular purpose i.e. it was an experimental manipulation.

We also asked all participants to fill out personality questionnaires to see if certain traits are related to how people perceive patterns in visual stimuli and also situations/events. These questionnaires measured elements such as self-esteem, feelings of alignment with society (anomie), attribution style (internal vs. external locus of control), and hostility. Again, please remember that your data is completely confidential, and you cannot and will not be personally identified in any way in our research.

This kind of research is important because it helps us understand a little better how and why people explain events (good and bad) that happen to and around them. That is, the factors that might be involved in how we explain these events or situations. This kind of

research is so interesting (particularly to social psychologists) because it is directly relevant to all of us. We are always seeking to understand or explain the causes for situations to make sense of our world.

If you are feeling distressed or upset by any issues raised in this study, here is a list of services that may be able to offer support:

Lifeline:
0800 543 354

Youthline:
0800 376 633

Mensline:
0800 636 754

The Lowdown:
Free text 5626
thelowdown.co.nz

Victoria University Counseling Service:
Phone: 04 463 5310
Email: counseling-service@vuw.ac.nz
Website: http://www.victoria.ac.nz/st_services/counselling/about/contact.aspx

Appendix F

Semantic Differential Measure

Participants were asked to rate the following twelve targets using the 7-point Likert-Scale for the tabulated descriptors: Me, The Average Man, Insane People, Depressed People, An Average Woman, Ex-Mental Patient, Schizophrenic People, Most People, Bipolar People, Multiple Personality Disordered People, Mentally-Ill People, Conspiracy Theorist, Convicted Criminal.

Complicated	1 2 3 4 5 6 7	Simple
Unpredictable	1 2 3 4 5 6 7	Predictable
Strong	1 2 3 4 5 6 7	Weak
Foolish	1 2 3 4 5 6 7	Wise
Safe	1 2 3 4 5 6 7	Dangerous
Dirty	1 2 3 4 5 6 7	Clean
Relaxed	1 2 3 4 5 6 7	Tense
Worthless	1 2 3 4 5 6 7	Valuable
Delicate	1 2 3 4 5 6 7	Rugged
Slow	1 2 3 4 5 6 7	Fast
Warm	1 2 3 4 5 6 7	Cold
Insincere	1 2 3 4 5 6 7	Sincere
Powerless	1 2 3 4 5 6 7	Powerful
Isolated/Alienated	1 2 3 4 5 6 7	Connected/Included
Untrustworthy	1 2 3 4 5 6 7	Trustworthy
Hostile	1 2 3 4 5 6 7	Friendly
Aggressive	1 2 3 4 5 6 7	Peaceful
Arrogant	1 2 3 4 5 6 7	Humble
Restless	1 2 3 4 5 6 7	Relaxed
Cynical	1 2 3 4 5 6 7	Accepting
Imaginative	1 2 3 4 5 6 7	Unimaginative
Curious	1 2 3 4 5 6 7	Uninterested
Discontent	1 2 3 4 5 6 7	Content
Diabolic	1 2 3 4 5 6 7	Good
Suspicious	1 2 3 4 5 6 7	Trusting
Irrational	1 2 3 4 5 6 7	Rational
Emotional	1 2 3 4 5 6 7	Objective
Argumentative	1 2 3 4 5 6 7	Agreeable
Innocent	1 2 3 4 5 6 7	Guilty
Nutty	1 2 3 4 5 6 7	Sane
Mentally	1 2 3 4 5 6 7	Healthy Mentally ill
Manipulative	1 2 3 4 5 6 7	Not manipulative
Attention-seeking	1 2 3 4 5 6 7	Avoids attention
Understood	1 2 3 4 5 6 7	Misunderstood
Compliant	1 2 3 4 5 6 7	Rebellious
Normal	1 2 3 4 5 6 7	Abnormal

Appendix G

Wording used on Facebook Group Page

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA UNIVERSITY OF WELLINGTON

Hi there,

I am a PhD student at Victoria University of Wellington (New Zealand) in the School of Psychology. I am looking for people to participate in an **anonymous** online study. In an online survey you will be presented with a range of patterns, and also asked for your opinions and views in a series of short questionnaires.

The survey will take 30-45mins to complete.

In appreciation of your time you can go a prize draw for a chance to win 1 of 25 $20 mta vouchers! (prize draw for NZ residents only).

When you follow the link (below), you will be asked to first read an information sheet which outlines the purpose of the study and what would be required of you as a participant.

If you have any questions, please email:

patternperception@gmail.com

IF YOU'RE INTERESTED, THE LINK FOR THE ONLINE SURVEY IS:

[link goes here].

It would be greatly appreciated if you could let your friends know about this study so that they also have an opportunity to participate. Simply copy and paste the text below and post it on your facebook wall or send as an email:

"A friend of mine is conducting an **anonymous** online survey for her PhD in psychology at Victoria University of Wellington (New Zealand). She's using a method of recruitment of participants that relies on people passing the link to the study forward to their friends/contacts. Please visit the link below to find out more about what the study is about and to participate yourself if you're interested. If you could pass this link forward to your own friends that would be greatly appreciated as well! **In appreciation of your time taken completing the online survey you can go in draw to win a $20 mta voucher**. [link goes here."]

Please note that as this survey is anonymous, if you 'like' this group page, that 'like' notification may show up on your facebook wall or your friends'

newsfeed. If you want to avoid this, don't 'like' this page. You can still participate in this study without liking this page.

Appendix H

Wording used on Facebook Profile Page

If you would like to participate in an anonymous study for my PhD research, please follow the link below. You go in a prize draw for a chance to win 1 of 25 $20 mta vouchers!!! (Anyone can do the survey, but the prize draw is for people with a NZ address only). LINK GOES HERE.

Appendix I

Wording used in Initial Email

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA UNIVERSITY OF WELLINGTON

Hi there,

Our research team comprised by Associate Professor John McDowall, Dr Marc Wilson, and Darshani Kumareswaran, in the School of Psychology (Victoria University of Wellington, New Zealand) is looking for people to participate in an **anonymous** online study. In the online survey you will be presented with a range of patterns, and also asked for your opinions and views in a series of short questionnaires.

The survey will take 30-45mins to complete.

In appreciation of your time you go a prize draw for a chance to win 1 of 25 $20 mta vouchers!

When you follow the link (below), you will be asked to first read an information sheet which outlines the purpose of the study and what would be required of you as a participant.

If you have any questions, please email:

patternperception@gmail.com

IF YOU'RE INTERESTED, THE LINK FOR THE ONLINE SURVEY IS:

link goes here.

It would be greatly appreciated if you could let your friends know about this study so that they also have an opportunity to participate. Simply copy and paste the text below into a new email that does not contain any other personal communication (a requirement of the School of Psychology Human Ethics Committee):

"A friend of mine is conducting an **anonymous** online survey for her PhD in psychology at Victoria University of Wellington (New Zealand). She's using a method of recruitment of participants that relies on people passing the link to the study forward to their friends/contacts. Please visit the link below to find out more about what the study is about and to participate yourself if you're interested. If you could pass this link forward to your own friends that would be greatly appreciated as well! **In appreciation of your time taken completing the online survey you can go in draw to win a $20 mta voucher**. link goes here."

Alternatively, you can just forward this email as is.

Thank you so much for your time!

Kind regards

Darshani Kumareswaran
PhD Candidate
School of Psychology
Victoria University of Wellington

Appendix J

Wording used on Posters and Flyers

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA UNIVERSITY OF WELLINGTON

Our research team comprised by Associate Professor John McDowall, Dr Marc Wilson, and Darshani Kumar, in the School of Psychology is looking for people to participate in an anonymous online study. In the online survey you will be presented with a range of patterns, and also asked for your opinions and views in a series of short questionnaires.
The survey will take 30-45mins to complete.

In appreciation of your time in completing the survey you can go a prize draw for a chance to win 1 of 25 $20 mta vouchers!

Questions?? Email:

patternperception@gmail.com

INTERESTED? TAKE A TAB (BELOW) FOR THE ONLINE LINK

LINK GOES HERE	LINK GOES HERE	LINK GOES HERE	LINK GOES HERE	LINK GOES HERE	LINK GOES HERE	LINK GOES HERE	LINK GOES HERE	LINK GOES HERE	LINK GOES HERE

Appendix K

Online Survey Information Sheet

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA UNIVERSITY OF WELLINGTON

Dr Marc Wilson	Associate Prof. John McDowall	Darshani Kumareswaran
Researcher	**Researcher**	**PhD Student**

What is the purpose of this research?

- This research will allow us to examine how people perceive patterns and how they interpret scenarios and how this is related to various personality variables.

Who is conducting the research?

- We are a team of researchers in the School of Psychology. Darshani is the principal investigator. This research has been approved by the School of Psychology Human Ethics Committee.

What is involved if you agree to participate?

- If you agree to participate in this study, you will be asked to complete an online survey. In the survey you will be presented with a number of questionnaires that collect information about personality and opinions. One questionnaire asks that you view some pictures and name the objects in the pictures.
- We anticipate that your total involvement will take approximately 45minutes.
- During the research you are free to withdraw, without any penalty, at any point before your data have been collected.
- You must be aged 18 or over to participate in this study.

Privacy and Confidentiality

- Your responses/answers in the survey are strictly anonymous.
- At the end of the survey, if you wish to enter the prize draw, you will be given an email address (different to the one given here) to send your name and contact details to. Your name and contact details will remain strictly confidential and will only be seen by the principal investigator, for the purposes of contacting you should you be successful in the prize draw, and to send you your prize. Your details will be destroyed a year after data collection.
- You will never be identified in our research project or in any other presentation or publication. The information you provide will be coded by number only.
- In accordance with the requirements of some scientific journals and organisations, your coded data (where you cannot be personally identified) may be shared with other competent researchers.
- Your coded data may be used in other, related studies.
- A copy of the coded data will remain in the custody of the researchers listed above.

What happens to the information that you provide?

- The data you provide may be used for one or more of the following purposes:
- The overall findings may be submitted for publication in a scientific journal, or presented at scientific conferences.

- The overall findings may form part of a PhD thesis, Masters thesis, or Honours research project that will be submitted for assessment.

If you would like to receive a summarized copy of the results of this study, please provide your email address on the next part of the form. The results should be available by December 2011.

If you have any further questions regarding this study please contact:

patternperception@gmail.com

The details of how to enter the prize draw will be provided at the end of the questionnaire.

Before you go any further, please confirm the following statement (by clicking the "yes" box below).

I have read the information about this research and any questions I wanted to ask have been answered to my satisfaction. Yes □

I am aged 18 years or over. Yes □

Appendix L

Online Survey Debrief Sheet

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Thank you for your participating in this experiment. Details of how to enter the prize draw are at the bottom of this screen.

The main topic of this study was conspiracy theories. We could not tell you this before as it may have affected how you answered. The three key objectives of this study were:

a) To determine if people's stereotypes of a conspiracy theorist are similar to their stereotypes of people with various psychological disorders (e.g. Schizophrenia).
b) To investigate to what extent believing in conspiracies is associated with other markers of abnormal psychological functioning.
c) According to previous research, people who tend to believe in conspiracies also tend to feel powerless or feel a lack of control. Looking for explanations for the negative things that happen to us or around us is considered a type of pattern perception. The last objective of this study is to understand how this phenomena relates to abnormal psychology.

To research the first objective we collected people's opinions of various target people including 'the conspiracy theorist' to see how these opinions of each of the target people are similar or different to each other.

To research the second objective we presented people with a range of conspiracy theories, and measure the degree of belief for each one. We also measured whether people believe conspiracies in general exist at all. We then administered a range of measures of mental functioning. We will then investigate the relationships between conspiracy theorizing and abnormal psychology. Please note that none of these measures administered in this study are diagnostic of any psychological condition.

To research the third objective, we gave a visual pattern perception task to people. This was the where there were grainy images presented. Half the images really did have pictures within them, and the other half did not. We want to see how people's responses for the second objective related to their visual pattern perception. In another task, scenarios containing ambiguous facts with either a positive or negative outcome were presented to participants in this study. We then wanted to know if people would make a connection between the outcome and the people around the protagonist to explain the outcome.

Conspiracy theories have widespread belief the world over; however, we know very little about the factors associated with beliefs in conspiracies. This research is important as it will be able to contribute an empirical foundation for future research in this area.

Again, please remember that your data is completely **anonymous**, and you cannot and will not be personally identified in any way in our research.

In appreciation of your time, we would like to invite you to enter our prize draw. For your chance to win 1 of 25 $20 mta vouchers, please email your name, contact phone number, and postal address to:

conspiracy_prizedraw@gmail.com.

Your name and contact details will be kept strictly confidential, and restricted to the principal investigator of this research. Please note that there is no way for us to link your email address or personal details with your responses in the survey – remember the survey is completely anonymous.

If you would like to receive a summary of the results of this study (available around December 2011), please email us at:

patternperception@gmail.com

If you are experiencing any distress as a result of any themes or issues raised in this study, please contact a helpline or counsellor for support. If you live in New Zealand some of the following helplines may be useful:

Lifeline:
0800 543 354

Youthline:
0800 376 633

Mensline:
0800 636 754

The Lowdown:
Free text 5626
thelowdown.co.nz

THANK YOU FOR YOUR TIME

Appendix M

Online Survey Measures

British Inventory of Mental Pathology – 36

INSTRUCTIONS

This booklet contains descriptions of how you may have felt, thought or acted *recently*.

After reading each statement you have to put a circle around either 'False' or 'True', depending upon which is the correct answer for you. On those occasions you have marked 'True' you then have to indicate how much this *upset* you. Do this by putting a circle around the *one* phrase or word which best explains this.

If you put a circle around 'False' go on to read the next statement.

Your answers are strictly confidential.

EXAMPLES

1. Recently I have been getting frequent headaches.

   False (True) If true, this has upset me:

   Unbearably (A lot) A bit

   The first example would mean that recently you have been getting frequent headaches which upset you a lot.

2. Recently my concentration has been poor.

   False (True) If true, this has upset me:

   (A bit) A lot Unbearably

   The second example would mean that recently your concentration has been poor, which upset you a bit.

3. Recently people have been getting on my nerves.

   (False) True If true, this has upset me:

   Unbearably A lot A bit

   The third example would mean that recently people have <u>not</u> been getting on your nerves.

4. Recently I have worried about family troubles:

   False (True) If true, this has upset me:

   A bit A lot (Unbearably)

   The fourth example would mean that recently you had worried about family troubles, which has upset you unbearably.

   If you are not sure what to do please ask *now*. Otherwise begin on the next page.

1. Recently, for no good reason, I have had feelings of panic.
   False True If true, this has upset me:
   A bit A lot Unbearably

2. Recently I have thought that I am the richest person in the world.
   False True If true, how sure are you:
   Certain Fairly Not very

3. Recently I have lost consciousness for a few seconds without actually falling.
   False True If true, this has upset me:
   A bit A lot Unbearably

4. Recently I just haven't been able to stop laughing and joking with *everyone*.
   False True If true, how often:
   Nearly always Often Seldom

5. Recently there have been people trying to poison me or do me *very great harm*.
   False True If true, how sure are you:
   Not very Fairly Certain

6. Recently I have had an *unreasonable* fear of germs.
   False True If true, this has upset me:
   Unbearably A lot A bit

---

7. Recently I have been tense and "on edge".
   False True If true, this has upset me:
   A bit A lot Unbearably

8. Recently I have thought that I was being followed for a special reason.
   False True If true, how sure are you:
   Certain Fairly Not very

9. Recently I have had a pain *or* tense feeling in my neck *or* head.
   False True If true, this has upset me:
   A bit A lot Unbearably

10. Recently I have been very excitedly happy for no particular reason.
    False True If true, how often:
    Nearly always Often Seldom

11. Recently someone has *deliberately* tried to make me ill.
    False True If true, how sure are you:
    Uncertain Not very Fairly

12. Recently I have had an *unreasonable* fear that I might forget to do something and then something *really awful* might happen.
    False True If true, this has upset me:
    Unbearably A lot A bit

13. Recently worrying has kept me awake at night.
False True If true, this has upset me:

A bit A lot Unbearably

14. Recently I have felt I must tell the whole world of my brilliant ideas.
False True If true, how sure are you:

Certain Fairly Not very

15. Recently I have been breathless *or* had a pounding of my heart.
False True If true, this has upset me:

A bit A lot Unbearably

16. Recently I have been so cheerful that I have wanted to decorate myself with *much* brighter, *more* colourful things, than I usually do.
False True If true, how often:

Nearly always Often Seldom

17. Recently someone has had evil designs against me.
False True If true, how sure are you:

Not very Fairly Certain

18. Recently I have had to wash things *again and again* to make absolutely certain that they were safe.
False True If true, this has upset me:

Unbearably A lot A bit

---

19. Recently I have lost interest in just about *everything*.
False True If true, how much loss:

A bit A lot Complete

20. Recently I have felt that I have special, almost magical, powers.
False True If true, How sure are you:

Certain Fairly Not very

21. Recently I have had burning *or* tingling sensations under my skin which were much worse than 'pins and needles'.
False True If true, this has upset me:

A bit A lot Unbearably

22. Recently I have had so much pep and energy that I could hardly stop doing things.
False True If true, how often:

Nearly always Often Seldom

23. Recently I have felt that an organisation or group has been planning my downfall.
False True If true, how sure are you:

Not very Fairly Certain

24. Recently I have had persistent feelings of having left something unfinished without knowing what.
False True If true, this has upset me:

Unbearably A lot A bit

Please turn over

25. Recently I have been so depressed that I have thought of doing away with myself.
False True If true, how seriously:

Not very Very Completely

26. Recently I have felt that I have been sent to save the world.
False True If true, how sure are you:

Certain Fairly Not very

27. Recently I have had pains over my heart *or* in my chest *or* back.
False True If true, this has upset me:

A bit A lot Unbearably

28. Recently things could not have been better in *any* way
False True If true, how often have you felt that way:

Nearly always Often Now and again

29. Recently people have been trying to drive me insane.
False True If true, how sure are you:

Not very Fairly Certain

30. Recently I have felt compelled to do things in a certain order, *or* a certain number of times, to guard against something going wrong.
False True If true, this has upset me:

Unbearably A lot A bit

---

31. Recently the future has seemed hopeless.
False True If true, how hopeless:

A bit Very Completely

32. Recently I have felt that I have a mission to carry out of great importance to the world.
False True If true, how sure are you:

Certain Fairly Not very

33. Recently I have often had difficulty in keeping my balance.
False True If true, this has upset me:

A bit A lot Unbearably

34. Recently I have been absolutely 'on top of the world'.
False True If true, how often:

Nearly always Often Seldom

35. Recently people have been secretly plotting to ruin me.
False True If true, how sure are you:

Not very Fairly Certain

36. Recently I have been worried by the thought that certain things might have been left lying around.
False True If true, this has upset me:

Unbearably A lot A bit

Now please check that you have answered all of the questions.
Thank you for your co-operation.

Paranoia Checklist

For the following questions, please answer yes or no (circle). For the questions you answer yes to, we are interested in: a) how often you think about them, b) how true you believe them to be, c) how upsetting it is for you. On the right hand side of the page wou would like you to circle the number which corresponds most closely to how distressing this belief is, how often you think about it, how much you believe that it is true, and how upsetting it is to you. If you answer NO please move on to the next question.
EXAMPLE.

Do you ever feel as if people are reading your mind? (please circle)

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

1 I need to be on my guard against others.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

2 There might be negative comments being circulated about me.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

3 People deliberately try to irritate me.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

4 I might be being observed or followed.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

5 People are trying to make me upset.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

6 People communicate about me in subtle ways.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

7 Strangers and friends look at me critically.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

8 People might be hostile towards me.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

9 Bad things are being said about me behind my back.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

10 Someone I know has bad intentions towards me.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

11 I have a suspicion that someone has it in for me.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

12 People would harm me if given an opportunity.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

13 Someone I don't know has bad intentions towards me.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

14 There is a possibility of a conspiracy against me.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

15 People are laughing at me.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

16 I am under threat from others.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

17 I can detect coded messages about me in the press/TV/radio

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

18 My actions and thoughts might be controlled by others.

NO YES

How often have you had the thought?

Not very often				Very often
1	2	3	4	5

How strongly do you believe it?

Not strongly at all				Very strongly
1	2	3	4	5

How upsetting is it for you?

Not upsetting at all				Very upsetting
1	2	3	4	5

Peters Delusion Inventory – 21

This questionnaire is designed to measure beliefs and vivid mental experiences. We believe that they are much more common than has previously been supposed, and that most people have had some such experiences during their lives. Please answer the following questions as honestly as you can. There are no right or wrong answers, and there are no trick questions.

Please note that we are NOT interested in experiences people may have had when under the influence of drugs.

IT IS IMPORTANT THAT YOU ANSWER *ALL* QUESTIONS.

For the questions you answer YES to, we are interested in:
(a) how distressing these beliefs or experiences are
(b) how often you think about them; and
(c) how true you believe them to be.
On the right hand side of the page we would like you to circle the number which corresponds most closely to how distressing this belief is, how often you think about it, and how much you believe that it is true.
If you answer NO please move on to the next question.

Example

Do you ever feel as if people are reading your mind ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

Do you ever feel as if you could read other people's minds ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

1) Do you ever feel as if people seem to drop hints about you or say things with a double meaning ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

2) Do you ever feel as if things in magazines or on TV were written especially for you ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

3) Do you ever feel as if some people are not what they seem to be ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

4) Do you ever feel as if you are being persecuted in some way ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

5) Do you ever feel as if there is a conspiracy against you ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

6) Do you ever feel as if you are, or destined to be someone very important ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

7) Do you ever feel that you are a very special or unusual person ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

8) Do you ever feel that you are especially close to God ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

9) Do you ever think people can communicate telepathically ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

10) Do you ever feel as if electrical devices such as computers can influence the way you think ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

11) Do you ever feel as if you have been chosen by God in some way ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

12) Do you believe in the power of witchcraft, voodoo or the occult ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

13) Are you often worried that your partner may be unfaithful ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

14) Do you ever feel that you have sinned more than the average person ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

15) Do you ever feel that people look at you oddly because of your appearance ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

16) Do you ever feel as if you had no thoughts in your head at all ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

17) Do you ever feel as if the world is about to end ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

18) Do your thoughts ever feel alien to you in some way ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

19) Have your thoughts ever been so vivid that you were worried other people would hear them ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

20) Do you ever feel as if your own thoughts were being echoed back to you ?

NO YES

(please circle)

Not at all distressing				Very distressing
1	2	3	4	5
Hardly ever think about it				Think about it all the time
1	2	3	4	5
Don't believe it's true				Believe it is absolutely true
1	2	3	4	5

21) Do you ever feel as if you are a robot or zombie without a will of your own ?					
NO YES (please circle)	Not at all distressing				Very distressing
	1	2	3	4	5
	Hardly ever think about it				Think about it all the time
	1	2	3	4	5
	Don't believe it's true				Believe it is absolutely true
	1	2	3	4	5

Schizotypal Personality Questionnaire, Conspiracy Beliefs Scale, Conspiracy Pattern Perception Scale, Modified Snowy Picture Task
Please see Appendix A

Powerlessness Scale

Participants responded to the 7 items below using a 5-point Likert-type scale.

How strongly do you agree or disagree with these statements about yourself?

1. There is really no way I can solve some of the problems I have.
2. Sometimes I feel that I'm being pushed around in life.
3. I have little or no control over the things that happen to me.
4. I can do just about anything I really set my mind to.
5. I often feel helpless in dealing with the problems of life.
6. What happens to me in the future mostly depends on me.
7. There is little I can do to change many of the important things in my life.

Strongly Agree 1 2 3 4 5 Strongly Disagree