Connections and Contradictions: The Social Psychology of Conspiracy Theories

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A thesis submitted for the degree of Doctor of Philosophy at the University of Kent at Canterbury

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February 2013

Declaration of Authorship

The research reported in this thesis is my own, except where indicated, and has not been submitted for a higher degree at any other institution.

Acknowledgements

The first acknowledgements, without question, are due to Karen and Robbie, my two excellent supervisors. I couldn't have asked for a better supervisory team, and this thesis would not be close to existing without their well-considered guidance, insightful feedback, and much-needed encouragement.

Much credit must also go to my girlfriend, Luise, whose intellectual and moral support was invaluable; Dan Jolley, who very kindly did the inter-rater coding on Study 5 and provided some great advice; my parents, Jean and Martin, for their love, patience, and faith; and all of my friends and colleagues at the University and elsewhere for their support through the more difficult times.

Finally, though I understand that acknowledging inanimate objects is not generally a done thing, I must thank caffeine and whatever quirk of evolution caused it to manifest itself in this world.

Abstract

Conspiracy theories are an ever more prominent part of modern social and political discourse. While an increasing amount of psychological research has been devoted to investigating the determinants of conspiracism, there is no overarching theoretical perspective that can unify the field's disparate findings. In the present thesis, we develop and test a novel theoretical framework that we call *extended monological belief system theory*. The theory, based on well-established models of cognitive consistency and parallel constraint satisfaction, proposes that beliefs in conspiracy theories are best understood as fairly vague outward manifestations of broader underlying beliefs and attitudes which together serve to construct a conspiratorial worldview. In a series of ten empirical studies we demonstrate that contradictory conspiracy theories are correlated in belief, that these correlations are at least partially explained by higher-order beliefs, and that the correlations are not reliably found for conventional explanations; that conspiracists prefer to make arguments based on refuting official narratives rather than proposing specific alternatives; and that interpersonal suspicion appears to be a natural outcome of reading pro-conspiracist persuasive texts. Moreover, connectionist models built on the architecture of the model accurately predicted behavioural responses to fictitious conspiracy scenarios. The results indicate that the degree to which someone believes in a conspiracy theory is determined less by the details of the theory and more by the degree to which the theory matches that person's higher-order beliefs. Based on these results and on the current state of the literature on the psychology of conspiracism, we propose that extended monological belief system theory can be used as a framework for understanding the contributions of beliefs, attitudes, individual-difference variables, and various other contributors to beliefs in conspiracy theories.

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Chapter 1: Conspiracies and Connectionism

Abstract

Conspiracy theories are an important force in the popular understanding of science, history, religion, and politics. In spite of the increasing relevance of these theories in the electronic age, relatively little is known about the determinants of conspiracy belief. The vast majority of previous research is correlational and questionnaire-based, and focuses largely on individual differences. Chapter 1 reviews the relevant scientific literature to date regarding beliefs in conspiracy theories, from the initial flurry of interest following the John F. Kennedy assassination to the advent of the electronic age, and proposes a novel theory that can unify many of the disparate findings in the field. Extended monological belief system theory proposes that conspiracy beliefs form a more or less coherent worldview that is held together by various higher-order beliefs, and is amenable to computational modelling via feedforward connectionist network models such as those used in the explanatory coherence theory of cognitive consistency.

In the past half-century, and particularly since the emergence of the internet as a medium for mass communication, conspiracy theories (hereafter CTs) in the West have become a cultural force to be reckoned with. Reliable online information on the safety and efficacy of childhood vaccines is dwarfed by discussion of shadowy conspiracies by pharmaceutical corporations to exaggerate their benefits and cover up their harmful effect, skewing internet discourse against the consensus of medical science (Downs, Bruine de Bruin, & Fischhoff, 2008; Kata, 2012). Social movements based around CTs, such as the 9/11 Truth Movement, seek to recruit outsiders by manufacturing doubt about every aspect of their chosen targets (e.g. Kay, 2011). As will be shown later, this is particularly evident in news website comments. These theories are not harmless – they affect people's opinions even without their knowledge (Douglas & Sutton, 2008), and can decrease engagement with politics, society, and the environment (Butler, Koopman, & Zimbardo, 1995; Jolley & Douglas, in press). Further, CTs are still not well understood: despite an intensification of research efforts in the past two decades (Swami & Coles, 2010), the findings are generally disparate and unconnected with one another. There is no unifying framework under which research is conducted, other than a widespread interest in individual differences. Indeed, there is substantial disagreement regarding how CTs should even be defined (Brotherton, 2012; Coady, 2006).

In the present thesis we seek to remedy this deficiency by proposing and testing a theory of conspiracist belief that can work as a unifying framework for many of the various findings in the field. The current chapter summarises the current research literature on the psychology of beliefs in CTs and presents a specification of the theory itself as a potential avenue for contextualising the various strains of research that have resulted from attempts to understand conspiracism. Finally, we outline the principles of a computational connectionist network model that will be used to test the theory's

predictions in several of the empirical studies that follow.

Definitional issues

Before commencing an investigation of the nature of conspiracy belief, it is necessary to come up with a sensible definition of the term. The word conspiracy comes from a Latin phrase meaning 'to breathe together', and in the legal sense has come to signify two or more people secretly plotting to commit an illegal act. In the broadest sense, a CT could simply be the proposition that a conspiracy lies behind a particular event. Under this definition, a prosecutor seeking to convict two gang members of robbing a bank together and a politician blaming a bombing on a terrorist group would be advocating CTs. As Coady (2006) noted, however, in the modern context this definition is perhaps too broad given the emotional baggage of the term – the film *Conspiracy Theory*, for instance, is about a paranoid man spinning wildly implausible theories of secret plots and government persecution (Donner, 1997), and if asked to name a CT the average person would probably say something about the John F. Kennedy (JFK) assassination being a set-up or 9/11 being an inside job.

Many philosophers have attempted to come to grips with this conflict between the literal meaning given by the constituent words of the phrase and the common usage (e.g. Coady, 2006; Keeley, 1999; Pigden, 2007). Keeley (1999) distinguished warranted CTs from unwarranted ones – a warranted CT is something along the lines of the Watergate affair or the idea that the 9/11 attacks were carried out by a Middle Eastern terrorist group, while unwarranted CTs necessarily run counter to official or 'obvious' accounts, tie together events with no obvious relation, are deeply shrouded in mystery and secrecy, depend largely upon 'errant data' for support, and invariably work toward nefarious ends. In a similar vein, Brotherton (2012) drew a distinction between CTs and 'theorised conspiracies'. The latter are akin to Keeley's warranted CTs, while the

former hew more closely to the unwarranted CT mold and are distinguished from their warranted cousins by a complex collection of necessary and sufficient criteria.

The research presented in this thesis will focus exclusively on the CTs that would be generally referred to as such under Brotherton's (2012) definition and classified by Keeley (1999) as unwarranted. This captures the most common usage of the term, and is also in line with the definitions used in the majority of previous psychological work on the subject (e.g. Abalakina-Paap, Stephan, Craig, & Gregory, 1999; Bale, 2007; Douglas & Sutton, 2008; Goertzel, 1994; Swami *et al.*, 2011). A CT, therefore, is defined as a proposed plot by powerful people or organisations working together in secret to accomplish some (usually sinister) goal. Popular contemporary examples include the idea that the 9/11 attacks were planned and carried out by elements within the American government (Kay, 2011), the allegation that doctors and medical researchers are conspiring to cover up the fact that HIV and AIDS are unrelated (Smith & Novella, 2007), and the idea that evidence of a causal link between autism and childhood vaccination is being suppressed by an unscrupulous medical industry (Goertzel, 2010).

What do we know about the psychology of conspiracy belief (and disbelief)?

CTs have been a topic of interest to psychologists since at least the John F. Kennedy assassination, and to the general public for many years before. As alluded to above, the existing research on CTs is relatively sparse, and can be generally grouped into a few distinct categories: the consequences of conspiracy belief, trait-like individual differences between conspiracists and non-conspiracists, states and beliefs which can serve as antecedents to conspiracy belief, and the issue of what makes a good (i.e. plausible) CT. As will be seen, an understanding of all of these is an essential element in understanding the phenomenon of conspiracism. In each case, however, the bulk of

the existing research into the topic is strictly correlational, and there has been almost no investigation into interventions that predispose people toward conspiracism or anti-conspiracism.

Consequences of conspiracist belief

Research in the psychological and medical spheres has confirmed the importance of understanding conspiracy beliefs. Bogart and colleagues (Bogart, Galvan, Wagner, & Klein, 2011; Bogart & Thorburn, 2005) have shown that belief in CTs regarding the origin of AIDS negatively predicts prophylactic use, increasing the risk of HIV transmission. Fears of vaccines, fuelled by CTs about pharmaceutical corporations, have caused a dramatic drop in immunisation rates and prompted outbreaks of easily preventable diseases (Poland & Jacobson, 2011; Roxby, 2011). Butler *et al.* (1995) demonstrated that viewing the pro-conspiracist film *JFK* led not just to increased conspiracy belief, but also to feelings of helplessness and a decreased willingness to participate in the political process. Exposure to climate-science CTs makes people less likely to attempt to reduce their carbon footprint (Jolley & Douglas, in press). CTs can be used by opportunistic politicians to stir up anger against minority groups, as with suspicions about Jewish bankers in Nazi Germany or the publication of the bogus Protocols of the Learned Elders of Zion in Tsarist Russia (Poliakov, 1987), or to encourage belief in revisionist history via propaganda, as in the case of Holocaust denial (Yelland & Stone, 1996). Even when CTs arise organically, they can lead to an escalation of existing conflicts between rival groups (Pruitt, 1987).

This is not to say that conspiracy belief is universally a bad thing. Darwin, Neave, and Holmes (2011) have proposed that conspiracy beliefs may be an outgrowth of a more suspicious thinking style that is adaptive in many circumstances. Moreover, CTs are sometimes accurate: the idea that President Nixon orchestrated a burglary at the

headquarters of the Democratic National Committee would seem like an outlandish CT if it had not been shown to be true (Bale, 2007). However, conspiracy theories, even when wrong, are notoriously resistant to falsification, and can take on the appearance of a 'degenerating research program' (Clarke, 2002, p. 136), with new layers of conspiracy being added to rationalise each new piece of disconfirming evidence (Keeley, 1999).

Traits and demographics

The bulk of existing research into the psychology of CTs has been in the area of individual differences. There are certain traits and trait-like variables that predispose people to be more or less sceptical of CTs. This line of research has provoked unfavourable reactions from conspiracy advocates, who feel unfairly targeted and suspect that such research is an effort to pathologise and suppress alternative worldviews (Lewandowsky, Cook, Oberauer, & Hubble, 2013). Even from within academia there has been some criticism of such efforts: Bratich (2008) has characterised mainstream responses to conspiracy theorising as a sort of moral panic aimed at enforcing intellectual orthodoxy.

Perceptions of the motivations of such research aside, some of the most reliable results in conspiracy psychology have come from the examination of individual differences. In an influential essay, Hofstadter (1964) drew upon this idea in characterising 'political paranoia' as having its roots in a 'persistent psychic complex... a style made up of certain preoccupations and fantasies' (p. 86) to which people adhere to a greater or lesser extent. Empirical evidence of individual differences was soon to follow. Four years after Hofstadter's seminal article, Hamsher, Geller, and Rotter (1968) found that men with an external locus of control were more likely than other men to believe that the JFK assassination was the result of a secret government conspiracy. This finding was replicated three decades later by Abalakina-Paap, Stefan, Craig, and

Gregory (1999) for a wider variety of CTs and for both men and women. This finding makes theoretical sense; those with an external locus of control seem obviously more likely to believe in powerful external forces influencing events.

Hamsher *et al.* (1968) also found a correlation between interpersonal trust and JFK conspiracy belief, such that people who are dispositionally less trustful of others are more likely to believe in a conspiracist account of Kennedy's death. Ten years later, this finding was replicated in reference to a different conspiracy – this time, a veridical one: the Watergate affair. In the midst of the developing scandal, Wright and Arbuthnot (1974) examined the determinants of suspicion toward the government. Their results were in line with those of Hamsher *et al.* (1968): interpersonal trust was negatively related to perceptions of conspiracy, such that less trustful people suspected a greater degree of official involvement in the Watergate burglary. Abalakina-Paap *et al.* (1999) were able to replicate the connection between conspiracy belief and interpersonal trust, along with Simmons and Parsons (2005). Similarly, Yelland and Stone (1996) found that while most people were persuaded to some extent by Holocaust denialist arguments, high-trust participants could also be persuaded that the Holocaust was real while low-trust participants were unaffected by the anti-conspiracy manipulation.

Research into the effect of mistrust continued into the 1980s, albeit with a shift in focus from the interpersonal to the institutional. Swami and colleagues (Swami *et al.*, 2010; Swami *et al.*, 2011) have demonstrated a correlation between mistrust in the institutions of society and conspiracy belief. A related construct, anomie, defined as a sense of alienation from and ambivalence toward society and its norms, has also been shown to be positively associated with conspiracy belief (Goertzel, 1994b; Abalakina-Paap *et al.*, 1999; Leman & Cinnirella, 2007a; Swami *et al.*, 2011). Following Swami and colleagues, Inglehart (1987) found that mistrust of institutions such as government

and courts positively predicted conspiracy belief. He proposed that this was in part due to political extremism: people at the extremes of the political spectrum are likely to be opposed in their goals by the relatively centrist majority, both at the individual and governmental levels, and characterise this opposition as a sort of deliberate persecution by the power elite. Others have expanded on the idea that political extremism can be an important precursor to conspiracy beliefs – for instance, Willman (2002) drew a parallel between conspiracism and fascism, noting the similarity between the fascist conception of a near-Edenic default state of society before a Fall precipitated by the intrusion of some corrupting foreign influence and the conspiracist tendency to scapegoat the conspirators for all of the evils of society. A rather extreme example of this tendency comes from David Icke, one of the more popular British conspiracists of the early 21st century, who proposes that the world was a literal paradise before a celestial catastrophe created by the extra-dimensional reptilian conspirators who currently control the world (Icke, 2012).

Crocker, Luhtanen, Broadnax, and Blaine (1999) found that blaming the system for one's disadvantages is a strong predictor of conspiracy belief, especially among racial minorities. In fact, being a member of a racial minority itself contributes to beliefs in conspiracies, and this effect is even more pronounced in young people (Goertzel, 1994b). However, little research has directly compared majority and minority groups on conspiracy belief. Some biomedical research has examined beliefs in HIV-related conspiracies among majority versus minority ethnic groups, but these CTs usually allege that AIDS is an attempt at viral genocide of the minority groups involved and may therefore constitute a special case (e.g. Russell *et al.*, 2011).

In recent years, researchers have paid more attention to Big Five personality traits (McCrae & Costa, 1987). Openness to experience was identified as an early

candidate for correlation with belief in conspiracies, given that CTs usually exist as an alternative to mainstream explanations. It would therefore make sense that people with a high degree of openness would be more likely to expose themselves to (and therefore believe in) alternative accounts of events. Similarly, it would make sense for agreeableness to show a negative correlation with conspiracy belief: highly agreeable people would be more likely to accept received wisdom at face value. Both of these predictions were supported to varying degrees in a series of studies by Swami and colleagues (Swami *et al.*, 2010; Swami *et al.*, 2011; Swami *et al.*, 2012). Low agreeableness was associated with 9/11 conspiracy belief (Swami *et al.*, 2010), but not with belief in a moon landing hoax CT (Swami *et al.*, 2012). The effect of openness was equally unclear: in the 2010 study it had an indirect effect on conspiracy belief via exposure to CTs, but in the 2011 study there was no significant relationship with 9/11 CT belief when other predictors were taken into account (Swami *et al.*, 2011), and the 2012 study showed no relationship at all with moon landing CT belief (Swami *et al.*, 2012). Research in this area is ongoing.

A once-popular explanation for beliefs in CTs was the idea that they serve as a simplifying filter in life, providing simple explanations for complex events that would otherwise be extremely difficult to understand. However, this idea has not received much empirical support. For example, Abalakina-Paap *et al.* (1999) examined the correlation between conspiracy belief and a number of measures that should be associated with a dispositional desire for simplification: attributional complexity, need for cognition, and tolerance for ambiguity. None of these variables showed a significant correlation with either attitudes toward CTs in general or with measures of specific conspiracy belief. In a similar vein, Leman and Cinnirella (2007a) found that conspiracy belief was unrelated to dispositional need for cognitive closure (NFCC). A manipulated

decrease in situational NFCC did succeed in lowering the degree of congruence between previously held conspiracy beliefs and conspiracist attribution in a novel scenario, but there was no simple effect of the NFCC manipulation on conspiracy belief.

More recently, Machiavellianism has emerged as a predictor of conspiracy belief. The more Machiavellian someone is, the more likely they are to believe CTs to be true (Douglas & Sutton, 2011). This is thought to be due to psychological projection: if someone can picture themselves making the same decisions as the alleged conspirators, they will find the CT more plausible. Grzesiak-Feldman and Izrycka (2009) demonstrated a positive correlation between right-wing authoritarianism (RWA) and conspiracy thinking about other nationalities, which could also be interpreted as a consequence of projection given the authoritarian tendency toward intergroup aggression (Altemeyer, 2006). Abalakina-Paap *et al.* (1999) also found that authoritarians are more likely to believe in CTs, Yelland and Stone (1996) found that participants high in RWA were amenable to persuasion that the Holocaust was a conspiratorial hoax while those low in RWA were not, and Swami (2012) showed a significant positive correlation between RWA and beliefs in a Jewish conspiracy among a Malaysian sample. The evidence regarding RWA as a predictor of conspiracy beliefs is mixed, however: Leman and Cinnirella (2007b) found no relationship between authoritarianism and general conspiracy beliefs, and McIlhoskey (1995) found a marginal trend toward the opposite effect – participants high in authoritarianism were more likely to believe the official story of the JFK assassination. Similarly, Swami *et al.* (2010) obtained a positive correlation between anti-authoritarian attitudes and beliefs in 9/11 conspiracies.

The crucial difference may lie in the types of CTs examined: most of the studies which found a positive correlation with RWA examined scapegoating-type

conspiracies, in which a minority (usually the Jews) is accused of orchestrating the ills of society at large (Grzesiak-Feldman & Izrycka, 2009; Swami, 2012; Yelland & Stone, 1996). In contrast, studies that found no effect or the opposite focused on CTs surrounding particular events such as terrorist attacks and high-profile assassinations (Leman & Cinnirella, 2007b; McHoskey, 1995; Swami, 2010). These different classes of CTs may therefore be psychologically distinct from one another, a tendency that has been noted by previous authors: Barkun (2006) distinguished between event conspiracies (JFK, 9/11) and systemic conspiracies (Jewish control of the banking system), Kruglanski (1987) considered scapegoating and conspiracy theorising to be completely separate phenomena, and Byford (2002) drew a line between pseudo-mystical classical conspiracism, which includes anti-Jewish and anti-Masonic CTs, and more banal world-elite theories which focus on malevolent (but still earthly) ambitions.

Finally, there has been a small amount of investigation into the role of intelligence in conspiracy belief. Swami *et al.* (2011) conducted two studies involving intelligence. In the first, they found no reliable correlation between self-assessed intelligence and conspiracy belief; however, the second study revealed a significant negative correlation between intelligence and belief in conspiracies relating to the Red Bull energy drink. The findings of the second study should be interpreted with caution, however; many of the 'conspiracy' items did not involve conspiracies at all, and could be more accurately classified as myths or rumours (e.g. 'The slogan "Red Bull gives you wings" is used because in animal experiments, rats grew rudimentary wings'). Further complicating the interpretation of the findings regarding intelligence, Goertzel (1994b) found no significant association between education level and conspiracy belief. Considering the substantial shared variance between intelligence and education level, this result casts doubt on the validity of the connection suggested by Swami *et al.*

(2011). Most recently, in the spirit of Hofstadter's (1964) invocation of a paranoid personality as a possible reason for conspiracy beliefs, Darwin *et al.* (2011) and Swami *et al.* (2012) found reliable correlations between conspiracy beliefs, paranoid ideation, and subclinical schizotypy, particularly the cognitive-perceptual deficit subscale.

States and beliefs

The third major area of research into the psychology of conspiracy belief concerns cognitive or affective states, as well as other beliefs held by the perceiver, which make conspiracies seem subjectively more or less likely. Perhaps the most robust finding in this category is a strong correlation among beliefs in different CTs: the more CTs someone believes in, the more likely they are to believe in other, unrelated conspiracies as well (for a review, see Swami *et al.*, 2010). Swami and colleagues (Swami *et al.*, 2010; Swami *et al.*, 2011), as well as Goertzel (1994b), have characterised this tendency as evidence that conspiracism constitutes a monological belief system: a closed network of mutually consonant beliefs that resist falsification and provide support for one another. Deeply embedded within this system is an abiding distrust of authority, an intuitive thinking style, and a preference for alternative narratives, which may explain the strong correlation between conspiracy belief and other forms of unconventional thinking such as superstitious or paranormal beliefs (Swami *et al.*, 2011; Darwin *et al.*, 2011).

The relationship between conspiracy belief and superstition may be an indirect one, however. Whitson and Galinsky (2008) found that inducing a feeling of lacking control significantly increased both superstition and conspiracist thinking, even when controlling for negative affect. In a similar vein, Abalakina-Paap *et al.* (1999) found a correlation between perceived powerlessness and conspiracy belief. However, Crocker *et al.* (1999) were unable to find any relationship between conspiracy belief and feelings

of political powerlessness. This apparent discrepancy may be due to the measures used; while Crocker *et al.* examined political powerlessness in particular, Abalakina-Paap *et al.* (1999) used a more generalised measure of powerlessness. The idea that CT belief can stem from a general feeling of powerlessness is consistent with many philosophical writings on the subject, which characterise conspiracy belief as the result of agency panic – an oversimplified cognitive mapping of a social landscape that, with the progress of technology, is increasingly unmappable (Melley, 2002; Willman, 2002). CTs restore the perception that the world is not a random and capricious place, but one governed by agency – even if that agency is a malevolent one (Bale, 2007; Kay, Whitson, Gaucher, & Galinsky, 2009; Zukier, 1983).

Feelings of powerlessness are no doubt associated to some degree with self-esteem, yet another variable found to predict beliefs in CTs. Those with lower self-esteem are more likely to find conspiracies plausible (Goertzel, 1994; Abalakina-Paap *et al.*, 1999; Swami *et al.*, 2011). Whether this relationship has any causal significance remains unclear. It may simply be an artefact of correlations between conspiracy belief and other variables relevant to psychological well-being, such as perceived powerlessness, social alienation, job-related pessimism (Goertzel, 1994), and interpersonal trust. Similarly unclear is the nature of the relationship between conspiracy beliefs and belief in an unjust world (Douglas, 2012) – perhaps CTs make the world seem unjust, or maybe CT belief somehow acts as a palliative against the uncertainty and discomfort provoked by unjust-world belief.

One relatively neglected area of research is the role of anger. Abalakina-Paap *et al.* (1999) found that people who show signs of anger and hostility are more likely to believe in CTs. However, this work is strictly correlational and it is not clear, if a causal relationship does indeed exist, which way the direction of causation goes. Both options

are plausible: a belief that the world is controlled by malevolent conspirators could well provoke a certain amount of anger, but anger or dispositional hostility could also affect attributional style via projection. Hostile affect may lead to the assumption that others are equally hostile and thus more likely to conspire (cf. Douglas & Sutton, 2011). Research in this area could be valuable given the bombastic rhetorical style of prominent CT advocates such as radio host Alex Jones, who seek to incite popular anger at what they see as an imminent takeover of the world by the forces of evil. This approach may prove to be extremely effective, though at this point there is insufficient evidence to support such a claim.

Content and presentation

Not all CTs are created equal. Some, like the theories about the death of Princess Diana, maintain a hold on the public consciousness for years after they are first proposed (Douglas & Sutton, 2008), while others never achieve anywhere near the same level of popularity. What makes some theories more popular than others? Most of the research in this area concerns the perceived characteristics of the alleged conspirators themselves. Grzesiak-Feldman and Suszek (2008; see also Kofta & Sedek, 2005) found that CTs are considered to be more plausible if the perceiver sees the proposed conspirators as a highly entitative group. Entitativity, or 'groupiness', is the degree to which a group is able to function as a single unit, with a high degree of cohesion, homogeneity, and shared goals. This relationship makes sense: a group low in entitativity would probably find much less success in an attempt to conspire than a highly entitative one would.

One idea that was advanced in the wake of the JFK assassination proposes that people seek to explain large, important events by recourse to equally large, important causes – essentially an attempt at making the world seem consistent. There is an

uncomfortable incongruity in proposing that a president can be killed by a lone gunman (Leman and Cinnirella, 2007b). In a Bayesian analysis, McCauley and Jacques (1979) found that this is essentially a rational position to take: conspiracies are generally considered to be more competent than individuals, so the conditional probability of a conspiracy given a successful assassination is judged to be higher than the conditional probability of a lone gunman given a successful assassination, while the opposite is true for unsuccessful assassination attempts. However, many CTs concern events that are, according to official narratives, accidents: the death of Princess Diana, for instance, or the Deepwater Horizon oil spill. In other cases, the conventional explanation holds that the cause of an event is a conspiracy in the sense that there were multiple perpetrators, such as the 9/11 attacks and the 7/7 bombings. The Bayesian reasoning of McCauley and Jacques may apply well to incidents like the JFK assassination, but its applicability is questionable outside the boundaries of the 'caused by single person versus caused by a conspiracy' scenario. A better generalisation to draw from this body of research may be that event-related CTs are more plausible when the event is disproportionately large compared to the perceived power of the parties implicated in the official explanation. This is exemplified by the common 9/11 conspiracist claim that it is implausible that "nineteen men in a cave" (TruthMove.org, 2007) could have caused such a large catastrophe.

Summary

The psychology of conspiracy belief is a relatively young field. The majority of investigations so far have constitutional correlational studies of individual-difference variables via questionnaire methods, without much in the way of theoretical work to unify the disparate results. However, some patterns have begun to emerge in the literature that raise the possibility of further theoretical development. Conspiracist belief

appears to be undergirded by a series of beliefs and attitudes that seem to agree with one another in how they view the world: mistrust of authority and public institutions, political cynicism, anomie, belief in an unjust world, a feeling of lacking control, system blame, low self-esteem, and a worldview that incorporates elements from beyond the intellectual mainstream such as superstition and the paranormal. The most consistent themes are a generalised suspicion of others, a distaste for the mainstream, and a feeling of being lied to.

While this is not an especially flattering cluster of traits, it is important to note that psychological research into conspiracy belief is mainly a phenomenon of the last twenty-five years. The reliance on correlational methods leaves us largely in the dark in terms of the exact nature of the relationships among these different variables. Many of these relationships have plausible rationales for different directions of causation. For instance, a lack of interpersonal trust might lead to suspicions of conspiracy, but at the same time the belief that others are engaged in sinister conspiracies would certainly undermine interpersonal trust. It seems likely that there is some degree of positive feedback, which causes a conspiracist to progressively withdraw his or her trust from society as more and more conspiracies come to light. There is still much work to be done in this area, either through direct experimentation or longitudinal studies. We now turn to one framework which may prove useful for such investigations, and which will ultimately form the theoretical basis for the present research.

Extended monological belief system theory

In a tract attempting to apply formal systems theory to the psychology of belief, Goertzel (1994a) drew a distinction between two types of belief systems: monological and dialogical. A dialogical belief system is amenable to change from outside and engages in continual readjustment to fit the demands of external reality, while a

monological belief system (hereafter MBS) is self-contained and self-sustaining, and works to filter out information from the outside world that may threaten it. Goertzel (1994b) drew upon this distinction in an attempt to explain the extremely consistent observation that conspiracy belief is a nearly unitary construct: beliefs in different CTs are highly correlated with one another, even when the theories are apparently unrelated (Swami *et al.*, 2010; Swami *et al.*, 2011). In Goertzel's (1994b) view, CTs can form the basis for an MBS because they support one another – that is, they have some degree of mutual coherence, such that 'each of the beliefs serves as evidence for each of the other beliefs' (p.741). A conspiracist belief system therefore arises from beliefs in many different CTs, which through their mutual agreement make CTs in general seem more plausible. Conspiracy thus becomes the dominant mode of explaining events, and seemingly contradictory evidence can be dismissed as having been planted or fabricated by the conspirators (c.f. Keeley, 1999).

Observers of the conspiracy world have made informal observations that agree with the view of conspiracist belief systems as being essentially monological. Locke (2009), for instance, noted the unfalsifiable nature of many CTs, a hypothesis echoed by Buenting and Taylor's (2010) praise of their nearly unlimited explanatory power. Likewise, Clarke (2002) noted the tendency of CTs to respond to disconfirmation not with structural changes, but with layers of epicycles and ad-hoc hypotheses designed to insulate the core of the theory from disconfirmation.

It is important at this juncture to note that not all conspiracy belief is necessarily part of an MBS; Goertzel (1994a) explicitly acknowledged that conspiracy beliefs can be dialogical as well as monological. Though CTs do tend to intercorrelate, many people believe in just one or two and do not take the rest very seriously. The difference lies in how the beliefs are modified (or not) with changing contexts and with the

presentation of new evidence.

In the present thesis, we propose an extended version of MBS theory that we believe provides a more accurate representation of conspiracist thought. This theory, hereafter referred to as *extended MBS theory*, proposes that conspiracy belief is best represented as a network of more general higher-order beliefs that bind together a sub-network of CTs which may on its own have a relatively low degree of internal coherence. That is, the reason beliefs in CTs tend to intercorrelate is not because of a direct coherence between them, but because of an indirect coherence via broader beliefs and attitudes about the world. These broader beliefs could encompass many variables previously found to be correlated with conspiracy belief. For instance, interpersonal mistrust could be seen as a generalised higher-order belief that others are untrustworthy (Wright & Arbuthnot, 1974). This belief could be a strong component of a conspiracist worldview: the less trustworthy others seem, the more plausible the idea that they are likely to engage in conspiracies. Likewise, the research on perceived entitativity of potential conspirators (Grzesiak-Feldman & Suszek, 2008; Kofta & Sedek, 2005) could be reinterpreted within the extended MBS framework as a demonstration of the relevance of higher-order beliefs regarding potential conspirators. Applied in this way, extended MBS theory could provide a unifying framework for much of the disparate research into conspiracy belief of the last 40 years. The theory can be outlined as follows:

1. Beliefs can be represented as nodes in a feedforward connectionist network.
2. Belief in a particular CT has excitatory and inhibitory connections with beliefs in other CTs and conventional (non-conspiracist) explanations: contradictory beliefs inhibit one another, while those that directly support each other are bridged by excitatory connections.

3. Beliefs in individual explanations also share connections with higher-order beliefs: broader assumptions and ideas about how the world works in general. These higher-order beliefs can constitute any general approach or opinion, such as a negative perception of a particular group, a generalised mistrust of people, or the idea that conspiracies are common.

4. Higher-order beliefs generally play a more important role in binding together conspiracist beliefs than beliefs in individual theories do.

Consistent with points 3 and 4, some recent research has moved in the direction of acknowledging the relevance of higher-order knowledge structures in conspiracy belief. Darwin *et al.* (2011) found that conspiracist ideation was reliably associated with beliefs in the paranormal and other unusual beliefs consistent with high levels of trait schizotypy. Newheiser, Farias, and Tausch (2011) examined the effects of congruent and incongruent worldviews on beliefs in CTs relating to alleged descendants of Jesus Christ and secret codes hidden in the works of Leonardo da Vinci. Consistent with the idea that higher-order beliefs are relevant to individual differences in conspiracy belief, they found that Christian religiosity negatively predicted beliefs in the (rather subversive to conventional Christian theology) CT while New Age orientation positively predicted such beliefs. The latter result was replicated by Swami *et al.* (2012) in reference to beliefs in moon landing CTs. Moreover, a further experimental study by Newheiser *et al.* (2011) revealed that counterevidence against the CT was only effective among those participants whose belief systems were already somewhat incongruent with the CT. However, the researchers did not examine specifically conspiracist belief systems – only mainstream and pseudo-mainstream belief systems that had some degree of coherence or incoherence with this specific CT. Extended MBS theory essentially proposes that there is a cluster of higher-order beliefs that make CTs in general, as well

as specific ones, more plausible.

The studies cited above show an interesting pattern: they have all demonstrated that conspiracy belief is specifically associated with *non-mainstream* beliefs. In a similar vein, Inglehart (1987) found that conspiracism is more prevalent among people whose political opinions place them on the fringes of society. Taken together, this seems to indicate that being outside of the mainstream in some sense might be extremely important for much CT belief. The sociologist Colin Campbell characterised the intellectual and mystical fringes of society as a *cultic milieu* – an eclectic assortment of beliefs that encompasses 'the worlds of the occult and the magical, of spiritualism and psychic phenomena, of mysticism and new thought, of alien intelligences and lost civilizations, of faith healing and nature cure' (Campbell, 1972, p. 122) – and, we argue, of conspiracism. Like new religious movements and countercultural mysticism, contemporary Western conspiracism places itself in opposition to mainstream belief and purports to hold hidden truths that only dedicated seekers might divine (Barkun, 2006). An opposition to officialdom may therefore be an important part of the conspiracist worldview, and we will examine this idea further in Chapter 2.

There is, then, some initial support for the third and fourth points of extended MBS theory, as well as a clear framework for further investigation. For a more detailed explanation of the first and second points of the theory, and for the purposes of illustrating (and even analysing a priori) the relationships among beliefs – coherence, contradiction, or the lack of any connection at all – we turn now to a description of the explanatory coherence framework, first put forward by Thagard (1989).

Explanatory coherence theory

The explanatory coherence framework (ECHO) is a connectionist network model that seeks to explain how people come to accept certain explanations for events

and pieces of knowledge over others. More generally, it can be viewed as a system by which the relationships among propositions and bits of knowledge can be conceptualised. Originally proposed and formalised by Thagard (1989), it is a theory of abduction, or inference to the best explanation; in other words, it is a framework for determining which explanation best fits an available set of data, premises, or initial assumptions through a process of parallel constraint satisfaction. Thus it is in essence a model of cognitive consistency, owing much of its approach to dissonance theory (Festinger, 1957) and the work of Fritz Heider (1958; Farr, 1987).

Architecture and previous applications

In explanatory coherence theory, each proposition or piece of knowledge is represented as a node in a connectionist neural network. There are three possible relationships that propositions and pieces of evidence can have: they can cohere with one another, meaning that there is some explanatory relationship between them (i.e. one explains the other, or their conjunction explains something else); they can incohere, meaning that they contradict one another or are otherwise incompatible; and they can be unrelated – that is, the truth value of one proposition has no direct bearing on the other. In connectionist terms, this amounts to an excitatory connection between nodes, an inhibitory connection, or no connection, respectively. Activation in the connectionist network propagates from evidence nodes to the propositions with which they cohere, and from there throughout the network. This process continues iteratively until the system reaches a stable equilibrium, at which time a decision is considered to have been reached: the nodes with the highest activation are considered to have 'won', and are accepted as explanations (Thagard, 1989).

As a natural consequence of this architecture, explanatory coherence networks instantiate several principles of logical reasoning. Explanations are favoured when they

explain many different pieces of evidence, since they draw activation from many different sources. An explanation which can itself be explained is at an advantage as well. Simple explanations enjoy a privileged position: a smaller set of mutually coherent explanations for a certain amount of evidence will be favoured over a larger one. Analogy is instantiated as well; if the relationship between two nodes can be explained by way of an analogy with two other nodes, it will have an advantage over rival explanations. Finally, higher-order knowledge structures are represented in the network as well. An explanation is more likely to be accepted if it is in broad agreement not just with facts and evidence, but also with more general ideas about how the world works, including social knowledge such as ideas about the goals and traits of the actors involved (Read, 1987; Simon, Snow, & Read, 2004; Thagard, 1989).

Explanatory coherence theory has been used successfully in the past to simulate human decision-making and likelihood judgements. One common application is to legal reasoning, simulating the deliberation of a real or mock jury (Read & Miller, 1993; Thagard, 1989; Thagard, 2004). Others have applied the theory to social reasoning problems, inferring motive and goal information from the actions of others (Read & Marcus-Newhall, 1993), and to scientific reasoning, finding that explanatory coherence can replicate both expert-level reasoning (Thagard, 1989) and the thought processes of young children (Samarapungavan & Wiers, 1991) with respect to scientific controversies, such as the question of whether stomach ulcers are caused by stress or by bacteria. Modified versions of the ECHO model have also been shown to incorporate covariation information in a manner consistent with human reasoning (Read & Montoya, 1999). ECHO models are generally instantiated through computer programs, the most accessible of which is the web-based javaECHO (Thagard, 1994). Each proposition or piece of evidence in a network is represented by a name chosen by the

user, and lines of code are entered to explain the relationships among the different nodes. When the simulation is run, activation propagates from the evidence nodes throughout the network by way of excitatory and inhibitory connections, and the output consists of the final node activations (positive or negative) once the network reaches a stable equilibrium. Comparing the equilibrium node activations allows conclusions to be drawn about the network's decision. For example, consider the case of a murder trial in which the following two pieces of evidence are known:

E1. The defendant was seen in the same part of town as the victim around the time of the murder.

E2. The murder weapon was identified as belonging to the defendant.

E1 and E2 are the two evidence nodes for the model, and are therefore represented by entering the line 'data(E1,E2)' into javaECHO. Declaring nodes E1 and E2 to be data gives them some initial activation, which, when the model is run, will propagate through the network. To explain this evidence, the prosecutor puts forward a straightforward explanation:

P1. The defendant killed the victim.

P1 explains (or in the language of ECHO, *coheres with*) both E1 and E2. If the defendant killed the victim, that would explain why the defendant was seen near the scene of the crime and why the murder weapon belonged to the defendant. These relationships are conveyed to javaECHO as 'explain((P1),E1)' and 'explain((P1),E2)'.

The defence accounts for the evidence using two different arguments:

D1. The defendant was in the area for an unrelated reason.

D2. The murder weapon was stolen from the defendant by the real murderer.

If the defendant had some other reason to be in the area, that would explain why he or

she was seen near the scene of the crime. Therefore, D1 explains E1, or in the language of javaECHO, 'explain((D1),E1)'. Similarly, a theft would explain why the defendant's weapon was used in the murder, so D2 explains E2, or 'explain((D2),E2)'..

However, there are contradictions between the prosecution's argument and the defence's. If the defendant was near the scene of the crime for some reason besides murder, that implies that the defendant did not kill the victim – in other words, P1 contradicts (or, in the language of ECHO, *incoheres with)* D1. Similarly, the defendant could not have killed the victim without the murder weapon, which implies that it was not stolen; in other words, P1 contradicts (incoheres with) D2. These relationships would be represented by 'contradict(P1,D1)' and 'contradict(P1,D2)', respectively. The full script to represent this scenario in javaECHO would therefore be:

data(E1,E2)

explain((P1),E1)

explain((P1),E2)

explain((D1),E1)

explain((D2),E2)

contradict(P1,D1)

contradict(P1,D2)

When the javaECHO simulation is run using this input, the final activations for the three proposition nodes are as follows:

P1, 0.55602

D1, -0.1832976

D2, -0.18329757

This pattern of activations indicates that the prosecution's argument has won out, as the final activation of P1 is both positive and higher than either of the defence's arguments. In this case, the defence lost because their argument was less parsimonious than the prosecution's: in ECHO, as in intuitive human reasoning, arguments which make fewer assumptions tend to win out over more complex ones (Thagard, 1989). The conclusion might be reached more quickly or decisively if congruent higher-order goal or trait knowledge were also available. For example, knowing that the defendant is an aggressive person and had a motive for murder would make the decision even easier.

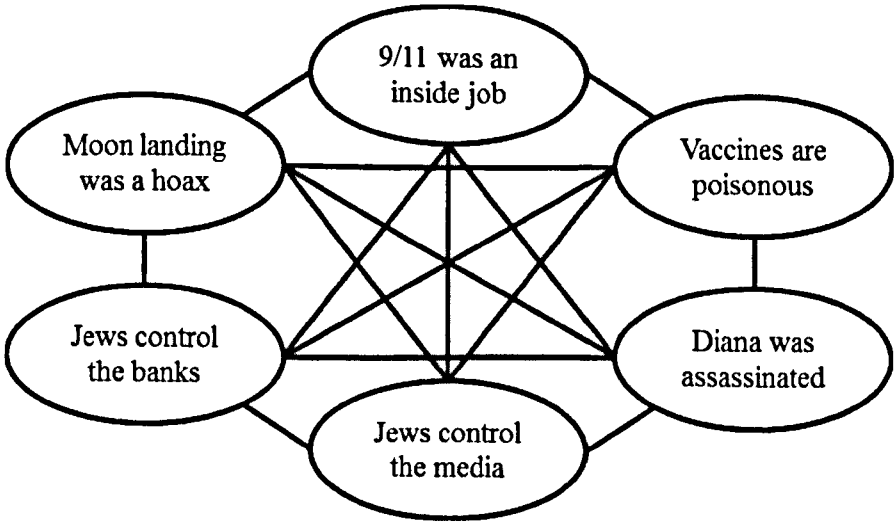
Relevance to the extended MBS theory of conspiracism

As a tool for illustrating systems of competing or coherent beliefs and explanations, the utility of the explanatory coherence approach for examining the validity of extended MBS theory is clear. Given that CTs are essentially social explanations for events, they can be conceptualised as propositions within an explanatory coherence framework, in direct competition with other explanations (conspiracist or non-conspiracist) for the same pieces of evidence. As is the case with any other explanation, CTs also conflict or cohere with various higher-order knowledge structures about the world. For instance, the theory that Princess Diana was assassinated by a conspiracy between MI6 and the royal family might draw support from the idea that people are basically evil and opportunistic, but would be inhibited by a general belief in incompetence in government. Activation also runs the other way: the more CTs one believes, the more one's higher-order knowledge structures shift toward conspiracy-friendly positions (c.f. Simon *et al.*, 2004). Together, these two processes explain the reliable correlations in beliefs in unrelated CTs (Goertzel, 1994b): a belief that conspiracies are commonplace is highly coherent with an external locus of control (Hamsher *et al.*, 1968), a tendency to mistrust others (Wright & Arbuthnot, 1974), and

so on.

Figure 1 shows an example of a conspiracist MBS under the original formulation by Goertzel (1994b). The system is sustained by coherence among the individual conspiracy beliefs. Some of these CT seem to fit together – for instance, the idea that a sinister Jewish conspiracy controls the world's banking system is at first glance obviously coherent with the idea that the Jews also control the media, thanks to the instantiation of the principle of analogy in the explanatory coherence framework: just as they control the media, so too do they control the banks. (Thagard, 1989). Other connections are not as apparent, however. Why is the idea that the moon landings were fake in any way connected to the 9/11 attacks? What does either of these have to do with the Jews? It would be an exaggeration to say that Goertzel's (1994b) MBS theory requires that all possible CTs must cohere with one another, but the majority of the theories in this example appear to have no direct relationship with one another.

Figure 1. A hypothetical visualisation of a problematically structured monological belief system, represented by coherence relationships among beliefs in various CTs.



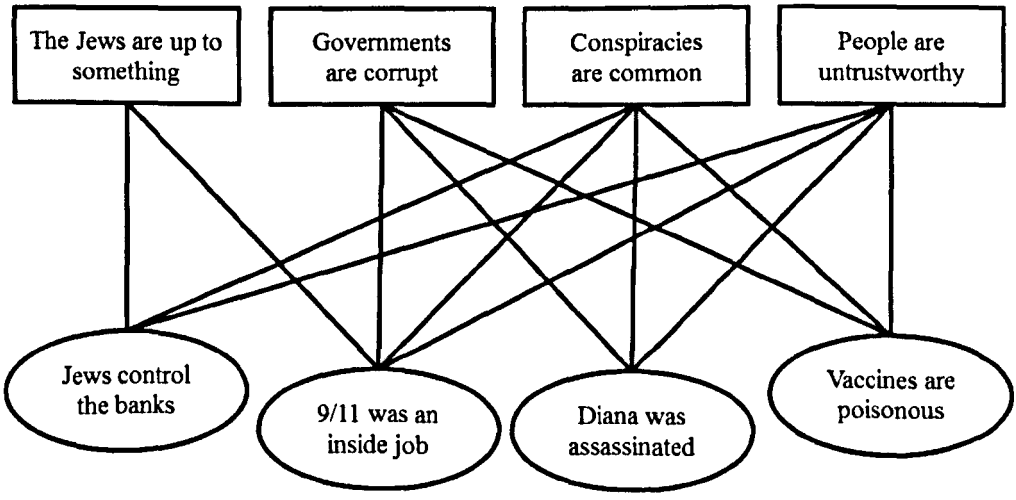
The original MBS framework makes the most sense when all of the CTs involved can be subsumed under a unifying theory – what Barkun (2006) called a superconspiracy, a theory that several conspiracies are orchestrated by the same group for more or less the same purposes. These arguments proceed by analogy (which, according to Thagardian principles of coherence, spreads activation throughout the belief system): just as the Jews control the banks, they control the media too. Just as the white medical establishment conspired against African-Americans in the Tuskegee syphilis study, they are now doing the same thing with HIV/AIDS. When such a framework is not in place, however, or when a CT falls outside of the boundaries of the superconspiracy, the hypothesis of mutual coherence becomes more difficult to justify.

Figure 2 shows a multi-level belief system following the specification of extended MBS theory. This network is different in several important ways. First, in addition to CTs, it includes several nodes representing broader worldviews that are generally consonant with CTs. These range from opinions about particular groups (e.g. 'The Jews are up to something' or 'The government is corrupt') to general views about how the world works (e.g. 'Conspiracies are common' or 'People are untrustworthy'). These higher-order beliefs serve as intermediate links between many otherwise unrelated CTs, and serve to increase the overall connectedness of the network.

Which of these networks more accurately portrays the structure of conspiracist belief systems? It could be argued that Goertzel (1994b) and others who have worked on MBS theory (e.g. Swami *et al.*, 2011) never explicitly argued that the coherence of a conspiracist MBS stems from direct agreement between CTs. While there may be some truth to this, no other source of coherence has been specified. This, of course, may simply be because the MBS theory has until now been rather vaguely defined. The original MBS theory is therefore at a disadvantage in a direct, quantitative comparison,

because the version which takes more information into account will in general explain more as well. This asymmetry is inevitable, though, as the original MBS theory of conspiracist belief as laid out by Goertzel (1994b) is somewhat vague and is likely to be supplanted by more heavily elaborated versions at some point or another. In addition, the proposed extended MBS architecture makes specific quantitative and qualitative predictions about the nature of the connections among conspiracy beliefs. It is these predictions which we examine in the empirical component of the present thesis.

Figure 2. Proposed architecture of a conspiracist extended MBS. Lines represent coherence relationships, rectangles represent higher-order beliefs, and circles represent individual CT beliefs.



Overview of studies

In Studies 1 and 2, we investigate the utility of the extended MBS framework by exploring the nature and consequences of higher-order knowledge structures that result in beliefs in CTs. Specifically, we expand on the findings of Goertzel (1994b) and

Swami *et al.* (2010) regarding correlations between beliefs in different CTs, hypothesizing that we could find such a correlation even between beliefs in contradictory theories. One higher-order knowledge structure which could produce such a correlation is a belief in motivated deception by authority, an element present in nearly all contemporary CTs. Studies 3 and 4 provide experimental confirmation of the role of higher-order beliefs in the conspiracy worldview, and illustrate the complexity of the mental representations elicited even by even fairly simple CTs.

In Study 5, we take a dialogical and archival approach to the question of how conspiracist belief systems are structured. A systematic coding and analysis of conspiracy-related persuasive comments on news websites not only replicates previous results concerning mistrust and intercorrelations among conspiracy beliefs, but also shows important differences in how ideas are presented by those arguing for CTs and by those attempting to debunk them.

Study 6 concerns the effect of varying levels of complexity and detail on the plausibility of CTs. Conspiracist beliefs are generally alternative in nature: they are usually adhered to by a minority (Goertzel, 1994b), run counter to official narratives, and exist on the periphery of what constitutes acceptable belief (Barkun, 2006). Due to their non-mainstream status, they may suffer from a degree of incoherence with socially acceptable higher-order beliefs such as trust in the institutions of society. It may be beneficial to avoid providing specific details of a CT when attempting to convince someone of its truth, so that the details do not have an opportunity to produce further incoherence between the theory and existing beliefs about the world. Finally, Studies 7, 8, 9, and 10 examine the consequences of the suspicion and mistrust provoked by pro-conspiracist rhetoric, demonstrating that generalised suspicion can be a disadvantage for CT persuasion as well as an advantage.

Together, these studies represent an effort not just at linking together the respective literatures on conspiracy belief and explanatory coherence, but also at developing a coherent theory of conspiracy belief that is amenable to testing via computational modelling in addition to direct empirical investigation. Future investigations can use extended MBS theory as a theoretical basis for novel research including investigations into conscious versus unconscious higher-order biases and experimental manipulations. A more ambitious but still important line of future research could involve assembling (and subsequently comparing) ECHO models of individual belief networks by participants with varying views on the subject of CTs.

Chapter 2: Contradictions

Abstract

Chapter 2 presents four studies that investigate the psychology of conspiracy belief from a connectionist perspective. Based on a prediction from extended monological belief system theory, Studies 1 and 2 investigated the relationships among contradictory beliefs about the same CTs, and as expected, found that beliefs in contradictory CTs were positively correlated. Study 3 used ECHO to model a belief network substructure and found that its predictions were a good match to the empirical data, and Study 4 modelled interactions between contradictory conventional explanations as well as contradictory CTs. The results indicate that connectionist representations of the hypothesised belief system structure accurately model empirical data, that mutual coherence with higher-order knowledge structures allows seemingly contradictory hypotheses to intercorrelate, and that while this pattern manifests under certain conditions in conventional theories as well, it is more prevalent among CTs. We argue that this reflects a unique quality of conspiracist belief systems – that conspiracism is less about beliefs in specific theories and more about a generalised opposition to authority and official narratives.

Studies 1 and 2 appear in: Wood, M.J., Douglas, K.M., & Sutton, R.M. (2012). Dead and alive: Beliefs in contradictory conspiracy theories. *Social Psychological and Personality Science, 3*, 767-773.

As outlined in Chapter 1, previous research has shown that there is a great deal of individual variation in the degree to which people believe CTs (e.g. Goertzel, 1994b), and also in the higher-order knowledge structures which are relevant to conspiracy belief – feelings of control, New Age orientation, or a lack of traditional religiosity, for instance (e.g. Whitson & Galinsky, 2008; Newheiser *et al.*, 2011). While some people generally hold a rather conventional, non-conspiracist worldview, others are deeply embedded in a belief system that holds conspiracy to be the driving force in history. The monological belief system theory of conspiracism, devised by Goertzel (1994b) and elaborated upon by Swami and colleagues (Swami *et al.*, 2010; Swami *et al.*, 2011) characterises conspiracist belief systems as organised according to connections and mutual support among the individual theories involved.

However, some CTs emphatically do not support one another; indeed, many provide mutually contradictory explanations for the same event. These contradictions among related theories are the focus of Studies 1 through 4. For instance, the CTs surrounding the death of Princess Diana vary widely; some claim that she was killed by MI6, while others allege that she was killed by Mohamed Al-Fayed's business enemies, and still others propose that she faked her own death. Likewise, the CTs surrounding the 9/11 attacks vary considerably – while the majority of individuals in the 9/11 Truth Movement believe that the Twin Towers were destroyed by controlled demolition (Kay, 2011), a vocal minority finds it more likely that they were destroyed by orbital energy weapons (Wood, 2009). How does a conspiracy-believing observer reconcile the presence of these competing, mutually contradictory accounts?

In the original formulation of the conspiracist MBS (Goertzel, 1994b), it is implicit that the reason for intercorrelations among conspiracist beliefs is their mutual coherence. In a situation with contradictory CTs, there is no mutual coherence – there is

no reason to suspect that people who believe Diana was killed by MI6 would be any more likely to believe that she faked her own death. However, extended MBS theory would not necessarily make this prediction. In the extended framework, the mutual support among CTs derives from a set of higher-order beliefs that, by the nature of their coherence with many different CTs, emerge as a central component of the belief system over time (Read *et al.*, 2003; Simon *et al.*, 2004). For instance, the idea that authorities are naturally malevolent and deceptive, and that they therefore cannot be trusted, would cohere with almost every conspiracy theory. For someone deeply invested in conspiracism, it may well be the case that the activation of this and other higher-order beliefs is high enough that the activation received by each CT will dwarf the inhibition from contradictory CTs, causing a seemingly paradoxical situation in which contradictory CTs positively correlate in belief. We argue, in other words, that a natural consequence of the extended MBS theory is an instantiation of the principle 'the enemy of my enemy is my friend'.

Some literature on stereotyping suggests that coherence with strongly held worldviews may well be sufficient to overwhelm contradictions at the local level. Adorno, Frenkel-Brunswik, Levinson, and Sanford (1950) found strong positive correlations in endorsement between contradictory negative stereotypes of Jews, such that highly prejudiced participants found them to be both too isolated from the rest of society and too eager to participate in it. Adorno *et al.* proposed that the paradoxical perception that Jews are 'both extremely seclusive and aloof and at the same time too intrusive and prying' (p. 75) has its roots in 'a relatively blind hostility which is reflected in the stereotypy, self-contradiction, and destructiveness' of anti-Jewish stereotyping (p. 76). In spite of their contradictory nature, both the seclusive and intrusive stereotypes drew enough credibility from their one common element – an

extremely negative perception of Jewish people – to end up with a strong positive association. The same may well be true of contradictory CTs; conspiracy advocates' distrust of official narratives may be so strong that many alternative theories are simultaneously endorsed in spite of any contradictions between them.

This chapter will focus on the relationships among contradictory theories, both conspiracist and conventional. Extended MBS theory predicts that contradictory CTs will nevertheless be positively correlated with one another: nearly any theory which includes deceptive and malevolent officialdom as explanations for a world event and stands in opposition to the official story will garner some agreement, such that people who believe in a world governed by conspiracy are likely to endorse contradictory CTs about the same topic. In other words, we expect to see positive or neutral relationships between endorsement of contradictory CTs about the same event. For example, the more a participant believes that an allegedly dead person at the centre of a CT, such as Princess Diana or Osama Bin Laden, is still alive, the more they will also tend to believe that the same person was killed in some secretive manner that differs from the official story told to the public at large.

Study 1 serves as a replication of the previously established finding that unrelated CTs tend to be correlated, while also demonstrating that CTs about the death of Princess Diana are positively correlated even when they contradict one another. Study 2 explores the reason underlying this correlation, showing that one higher-order belief, the belief that something is being covered up, can account for much of the relationship between two contradictory theories about the apparent death of Osama bin Laden. Study 3 examines the applicability of Thagard's (1989) model of explanatory coherence to conspiracist belief systems, using a simplified model of the beliefs and propositions surrounding the death of a fictional journalist to predict participants'

responses to the existence of multiple, contradictory CTs about the true cause of the incident. Finally, Study 4 investigates the difference between contradictory CTs and contradictory conventional (non-conspiracist) explanations for the same event, and proposes that asymmetries in the correlations among these theories are attributable to differences in the architecture of conspiracist and non-conspiracist belief systems.

Study 1

In Study 1, we examined the relationships between contradictory CTs regarding the same event by asking about several rival accounts of Princess Diana's death. The methods used here are similar to those employed by Douglas and Sutton (2008) in a previous study of CTs surrounding Princess Diana's death. Though we could have simply analysed the original data set, the 2008 study involved an experimental manipulation in which half of the participants read about several potential CTs before responding. Participants who read about the theories in advance displayed a generally higher level of conspiracy belief. In order to prevent any spurious inflation of correlations based on this group difference (and to obtain a larger sample size than would be obtained by analysing each group separately), we elected to analyse a new data set instead. Here, we predicted that in addition to the usual correlations among unrelated CTs (e.g. Goertzel, 1994b), there would also be significant positive correlations among the contradictory theories regarding what happened to Princess Diana.

Method

Participants

Study 1 was a reanalysis of existing data originally collected by the primary supervisor (Karen Douglas). One hundred and thirty seven undergraduate psychology students (83% female, mean age 20.4) were recruited from a second-year research

methods class at the University of Kent. Participation was voluntary and no compensation was given.

Materials and procedure

For the purposes of the present study, we used the CT belief scale previously used by Douglas and Sutton (2008). The questionnaire was 17 items long, used a 7-point Likert scale (1 = *'strongly disagree'* 7 = *'strongly agree'*) and asked about a variety of different CTs, including 9/11 as an inside job, global warming as a hoax, and the idea of a fake moon landing. Crucially, there were five items regarding the death of Princess Diana (Douglas & Sutton, 2008; $\alpha = .83$):

1. One or more rogue 'cells' in the British secret service constructed and carried out a plot to kill Diana.
2. There was an official campaign by MI6 to assassinate Diana, sanctioned by elements of the establishment.
3. Diana faked her own death so that she and Dodi could retreat into isolation.
4. Business enemies of Dodi and his father Mohamed Al Fayed assassinated Dodi, with the death of Diana a cover-up for the operation.
5. Diana had to be killed because the British government could not accept that the mother of the future king was involved with a Muslim Arab.

Not all of these items are mutually contradictory. Diana might conceivably have learned of a plot to kill her and faked her own death in response, so #3 and #2 do not necessarily contradict one another. #1 and #2 differ quite subtly in the degree to which the operation to kill Diana was sanctioned by the government, and not all participants would necessarily pick up on that difference. Likewise, #5 indicates the existence of a plot to kill Diana but does not specify whether it was successful, so it does not explicitly

contradict any of the other theories. However, there are some unambiguous contradictions. #1, #3, and #4 all propose different accounts of Diana's apparent death: either she was killed by a rogue cell of the British secret service (#1) or by business rivals of the Fayeds (#4), or she faked her own death and is still alive somewhere (#3). These three theories are mutually incompatible, and will be the focus of analysis in Study 1. A sample questionnaire is included in Appendix B.

Results and discussion

We first performed an exploratory principal components analysis to investigate the factor structure of the scale. Based on a scree plot, we extracted two unrotated factors that together accounted for 46.9% of scale variance. All items had loadings of at least .35 on the first factor in the unrotated solution, suggesting that it represents generic conspiracy belief; the second factor drew loadings only from the 5 items concerning climate change CTs, and thus appears to be related to beliefs in these conspiracies in particular.

In line with this factor structure, and with previous findings of high correlations among beliefs in different CTs, the scale showed reasonable reliability ($\alpha = .78$). Most of the items were significantly correlated with one another despite covering different topics; for instance, a belief that a rogue cell of MI6 was responsible for Diana's death was correlated with belief in theories that HIV was created in a laboratory ($r = .39$), that the moon landing was a hoax ($r = .34$), and that governments are covering up the existence of aliens ($r = .23$; all $ps < .01$).

As can be seen in Table 1, the correlations in endorsement with the idea that Diana faked her own death appear much lower than the rest, to the point that the only non-significant correlation involves that theory. We believe this to be due to a floor effect rather than any sort of response to contradiction; endorsement of the faked-own-

death theory was extremely low in this sample, with a mean of only 1.52 on a 1-7 scale. This level of endorsement was significantly lower than that of the other theories, for which agreement ranged from a mean of 2.51 (business rivals) to 2.98 (rogue cell) (all *p*s < .001). In line with this general pattern, there was a network of significant positive relationships among the majority of the Princess Diana CTs (see Table 1). People who believed that Diana faked her own death were marginally more likely to also believe that she was killed by a rogue cell of British Intelligence ($r = .15, p = .08$) and significantly more likely to also believe that she was killed by business enemies of the Fayeds ($r = .25, p < .01$). Similarly, participants who found it likely that the Fayeds' business rivals were responsible for the death of Diana were highly likely to also blame a rogue cell ($r = .61, p < .001$). To eliminate the possibility that these correlations are artefacts of a large subgroup which rejects all CTs, we performed a subsequent analysis which excluded all 17 participants who professed total disbelief in any Diana CT (i.e. their response to all Diana questions was 1, *Strongly Disagree.* While the correlations were attenuated somewhat, as might be expected, most remained significant (see Table 1).

In line with our hypothesis, the results show mostly clear positive correlations in endorsement of contradictory CTs. Intuitively, this does not make sense. One would think that there ought to be a negative correlation between beliefs in contradictory accounts of events—the more one believes in a particular theory, the less likely rival theories will seem. One possible alternative explanation for these results is acquiescence bias: Participants may have simply replied in the same way to every question, resulting in positive correlations across the scale, regardless of the questions' content. However, the scale included a reverse-coded Diana conspiracy item that read, 'The death of Princess Diana was an accident'. Contrary to the acquiescence hypothesis, this item was

consistently negatively correlated with the rest of the scale, most notably $r = -.75$ with the rogue-cell item and $r = -.65$ with the MI6 item (both $ps < .001$).

Table 1. Matrix of correlations in endorsement of different Princess Diana conspiracy theories. Figures without parentheses represent correlations across the entire sample; figures in parentheses exclude those participants who expressed complete disbelief in any Diana conspiracy theory.

	Official MI6 campaign to kill Diana	Killed by Al-Fayeds' business enemies	Diana had to die to stop her from marrying an Arab	Diana faked her own death
Killed by rogue cell	.749 *** (.686 ***)	**.614 *** (.494 ***)**	.670 *** (.603 ***)	**0.150 † (.055)**
Official MI6 campaign to kill Diana	1	.660 *** (.575 ***)	.622 *** (.553 ***)	.206 * (.127)
Killed by Al-Fayeds' business enemies		1	.607 *** (.527 ***)	**.253 *** (.173 †)**
Diana had to die to prevent marrying an Arab			1	.242 ** **(.177 †)**

Note. *** $p < .001$; ** $p < .01$; * $p < .05$, † $p < .10$. Correlations between mutually contradictory items are bolded. All correlation coefficients are Pearson *r*.

This result suggests that those who distrust the official story of Diana's death do not tend to settle on a single conspiracist account as the only acceptable explanation; rather, they simultaneously endorse several contradictory accounts, in accordance with the predictions of extended MBS theory and contrary to what would be expected from the original formulation. In Study 2, we set out to conceptually replicate these findings

in another setting, and also to determine whether higher-order beliefs can explain the simultaneous endorsement of contradictory CTs.

Study 2

On May 2nd, 2011, it was reported in the news media that Osama bin Laden had been killed in an American raid on a compound in Abbottabad, Pakistan. CTs surrounding this event immediately started to propagate throughout the internet and even traditional media, mostly alleging that bin Laden had not actually been killed in the raid. Proponents claimed that their suspicions were aroused by several actions of the Obama administration, including a refusal to release pictures of bin Laden's body and the decision to bury him at sea shortly after the raid.

The CTs surrounding the death of Osama bin Laden can be divided into two major categories: those which propose he was already dead at the time of the raid, and those which propose he is still alive (Kingsley & Jones, 2011). The former seems to have currency among the 9/11 conspiracist Truth Movement; many 'Truthers' allege that bin Laden died in 2000 or even earlier, and that his video appearances since then were in fact staged productions made with a body double. The latter theory varies; some people believe that he is still at large, while others think that he was captured alive and is being secretly held for interrogation by the CIA. Naturally, these two theories are irreconcilable; bin Laden cannot be both alive and dead at the same time. However, as in Study 1, we predicted that belief in the two CTs would be positively correlated.

Further, in order to test the idea that a higher-order belief in perceived deception by authorities might underlie the positive correlation between contradictory CTs, we asked participants to what degree they found the American government's actions surrounding the raid to be indicative of a cover-up. This was intended to operationalise one higher-order belief that may contribute to the coherence of the conspiracist MBS:

the idea that authorities are engaged in motivated deception. If higher-order beliefs such as the suspicion of a cover-up are indeed responsible for the positive association between contradictory CTs, controlling for one such belief should cause the correlation between the contradictory theories to disappear (or at least reduce substantially).

Method

Participants

One hundred and two undergraduate students (58% female, mean age 21) at the University of Kent were recruited to participate in the study between one and six weeks after the announcement of bin Laden's death. In exchange for their participation they received a randomised prize of either a snack or a small monetary reward (£1 -£2).

Materials and procedure

Participants were directed to read a brief summary of the official story of bin Laden's death, including the details regarding the refusal to release pictorial evidence and the burial at sea, followed by a short paragraph explaining that some people doubt the official story. They were then asked about their opinion the official story, followed by three conspiracy items:

1. Osama bin Laden was killed in the American raid.
2. Osama bin Laden is still alive.
3. When the raid took place, Osama bin Laden was already dead.
4. The actions of the Obama administration indicate that they are hiding some important or damaging piece of information about the raid.

After each of these statements participants were asked to rate their agreement, as well as to what degree they found the statements plausible, convincing, worth considering, interesting, and coherent (see also Douglas & Sutton, 2011). Ratings took the form of

Likert scales ranging from 1 ('*not at all*') to 7 ('*extremely*'). A sample questionnaire (including measures that were not used in the final analysis) can be seen in Appendix C.

Results and discussion

The idea that bin Laden was killed in the raid enjoyed a high level of agreement ($M = 4.97$, SD = 1.47), compared to much lower ratings for the idea that bin Laden is still alive ($M = 2.54$, SD = 1.45) or was already dead ($M = 2.74$, SD = 1.47). However, many participants found the Obama administration's actions to be suspicious ($M = 4.70$, SD = 1.74).

Following Douglas and Sutton (2011), in order to obtain a unitary measure of endorsement for each of the two conspiracy items and the cover-up item, we took the mean of agreement, plausibility, convincingness, coherence, and worthiness of consideration. There is no contradiction in finding two rival theories equally interesting, so we excluded interestingness from this composite measure in order to obtain a purer measure of endorsement and avoid artificially inflating the relevant correlations. Using this metric, we found a significant positive correlation between ratings of the two contradictory theories, $r = .21, p = .04$ (although it should be noted that the two theories were neither positively nor negatively correlated in terms of agreement alone, $r = .07, p = .53$).

We next examined the contribution of belief in a cover-up to the positive relationship between the two contradictory theories using a hierarchical multiple regression analysis. Composite endorsement scores on the cover-up item significantly predicted endorsement of the 'bin Laden is still alive' theory, $\beta = .373$, $t(97) = 4.04, p < .001$. Adding endorsement of the contradictory theory 'bin Laden was already dead' to the regression equation, however, explained no additional variance ($\Delta R^2 = .006$), and

the rival CT was not a significant predictor, $\beta = .086$, $t(96) = 0.86$, $p = .40$.

This indicates that the correlation in endorsement of the two contradictory theories is explainable entirely by their connection with belief in a deceptive cover-up by authority. The degree to which someone believes in a cover-up helps determine their endorsement of the official story, and of both CTs as well. This result is in line with our predictions and supports the idea that CTs are defined not by adherence to a particular alternative account, but by opposition to the official story and a belief that deception is taking place.

In order to further examine the obtained correlation between endorsement of the "already dead" and "still alive" theories, we performed an additional analysis that excluded all participants who gave a composite endorsement score of 1 for both CTs. This amounted to excluding only one participant, but still reduced the magnitude of the correlation from .21 to .19. Moreover, the revised correlation was only marginally significant ($p = .065$). Given the tenuous nature of the obtained correlation, the foregoing analyses should be treated with some caution.

In order to confirm the applicability of extended MBS theory to this situation, we modelled the scenario using javaECHO (Thagard, 1994), a Java-based instantiation of Thagard's (1989) ECHO model. The two CTs were represented as two separate propositions, C1 and C2:

C1. Osama bin Laden was already dead at the time of the American raid.

C2. Osama bin Laden is still alive.

These two contradict one another, as well as the official explanation O1:

O1. Osama bin Laden was killed in the raid.

There was one evidence node E1 which essentially summarises the evidence of the

event in question:

> **E1.** The American government claims to have killed bin Laden in a raid, but acted somewhat strangely.

The final node U1 represented the existence of a cover-up:

> **U1.** The American government is hiding something.

C1, C2, and O1 all explain E1 and contradict each other, C1 and C2 both cohere with U1, and E1 is entered as an evidence node. The information entered into the model is therefore:

data(E1)

explain((C1),E1)

explain((C2),E1)

explain((O1),E1)

explain((U1),C1)

explain((U1),C2)

contradict(C1,C2)

contradict(C1,O1)

contradict(C2,O1)

Entering this system of nodes and relationships into javaECHO leads to an equilibrium solution in which C1, C2, and U1 all have positive activation while O1 has negative activation (see Appendix A). The results of the simulation therefore show that the perception of a cover-up and both contradictory CTs are accepted, while the conventional explanation is discarded.

Together, the findings of Studies 1 and 2 bring initial support to the extended MBS theory of conspiracist belief. While it has been known for some time that belief in one CT is associated with belief in others, only now do we know that this can even apply to CTs that are mutually contradictory. We propose that this counterintuitive result is explainable via extended MBS theory. CTs do not support one another directly; rather, they help to shape beliefs about the world and other social actors, bringing one's higher-order beliefs more in line with the view that conspiracy is a major force in history. The correlations among beliefs in different conspiracies may therefore be a consequence of higher-order beliefs about the world: in particular, we have demonstrated here that perceived deception by authority appears to render CTs in general plausible, and may indeed more important to a conspiracist belief system than any individual CT. In connectionist terms, the global activation a CT receives from this central belief is sufficient to overwhelm the local inhibition it receives from competing CTs. Thus, almost any account of events which opposes the official version, and which includes motivated deception by officialdom, is likely to garner some endorsement by adherents of a conspiracist worldview. This explanation parallels Adorno *et al.*'s (1954) account of contradictory anti-Semitic stereotypes in that local contradictions are dwarfed by coherence with a broad worldview. The specifics of a CT do not matter as much as the fact that it is a CT at all.

In any case, the data we have gathered in Studies 1 and 2 is broadly consistent with the extended MBS theory of conspiracism. In this formulation, the belief system is centered around higher-order beliefs such as the idea that authorities and officials engage in organised deception of the public to achieve their malevolent goals. Connectivity with broad, central beliefs such as this one can lend support to many individual CTs, even to the point that mutually contradictory theories are positively

correlated in belief. Believing that Osama bin Laden is still alive is apparently no obstacle to believing that he has been dead for years.

The regression analysis in Study 2 was basically a simplified instantiation of the conspiracist MBS – a microcosm showing two conflicting CTs and a single shared higher-order belief that explained the variance that the two had in common. However, real CTs such as those surrounding the death of Osama bin Laden can be highly complex and involve many elements that are not captured in such a simplified model (Barkun, 2006), such as competing non-conspiracist explanations and different perceptions of evidence relating to the incident. To more closely model conspiracy beliefs in a way that can be analysed by the explanatory coherence framework (Thagard, 1989), we conducted a study examining conspiracy beliefs in the context of a fictional scenario containing two different CTs, an official non-conspiratorial explanation, a higher-order belief that united the two CTs, and a body of evidence that varied systematically between conditions. With the absence of any further lower-order information that could affect participants' judgements, it was possible to manipulate the support for different elements of the network and examine how activation propagated throughout.

Study 3

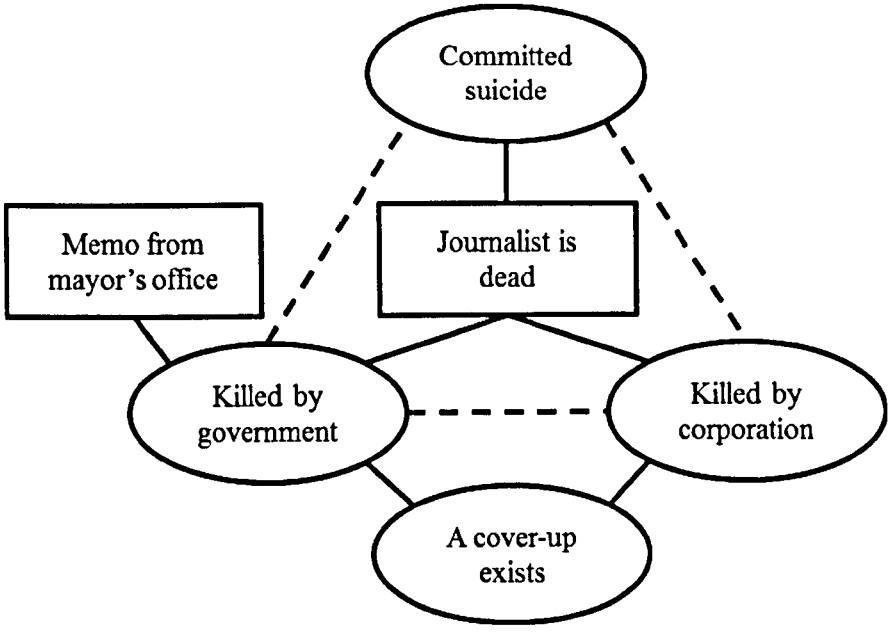
To this end, Study 3 was designed around a predetermined network architecture. The general outline of the scenario was as follows: a journalist was found dead, and there were three competing explanations for his death. Either he committed suicide, he was killed by a governmental conspiracy, or he was killed by a corporate conspiracy. In addition to this basic structure there were several different conditions: a control condition in which no additional information was given, an anti-conspiracy condition in which the official explanation was supported by evidence, two distinct pro-conspiracy

conditions in which one CT or the other was supported by evidence, and a cover-up condition in which there was evidence that the truth of the matter was being suppressed by authorities. All of these scenarios were then translated into ECHO networks as in Study 2 and run through the javaECHO programme (Thagard, 1994) to predict what responses they might elicit from participants (see Appendix A for the full model code and simulation results for each condition).

Figure 3 shows a visual representation of the ECHO network representing one of the two pro-conspiracy conditions. The two CTs are linked through mutual coherence with the proposition that a cover-up is taking place. The network initially contains one evidence node, representing the body of evidence seen by all participants. Each non-control condition adds an additional evidence node to the network, which coheres with one proposition and has no direct relationship to the rest of the network. In this case, the government conspiracy condition includes an incriminating memo suggesting that the city's mayor may have ordered the journalist killed. This coheres with the proposition that the government was responsible for his death and has no direct relationship with the other propositions.

Based on the results of Studies 1 and 2 and on the extended MBS theory of conspiracism, we predicted that in all conditions, beliefs in contradictory CTs would be positively correlated. We also predicted that the equilibrium activations from each condition's ECHO model would correctly predict the rank ordering of participants' agreement with each explanation of the journalist's death.

Figure 3. Explanatory coherence network representing the government conspiracy condition in Study 3. Solid lines represent coherence relationships, dotted lines represent incoherence, circles represent propositions, and rectangles represent data.

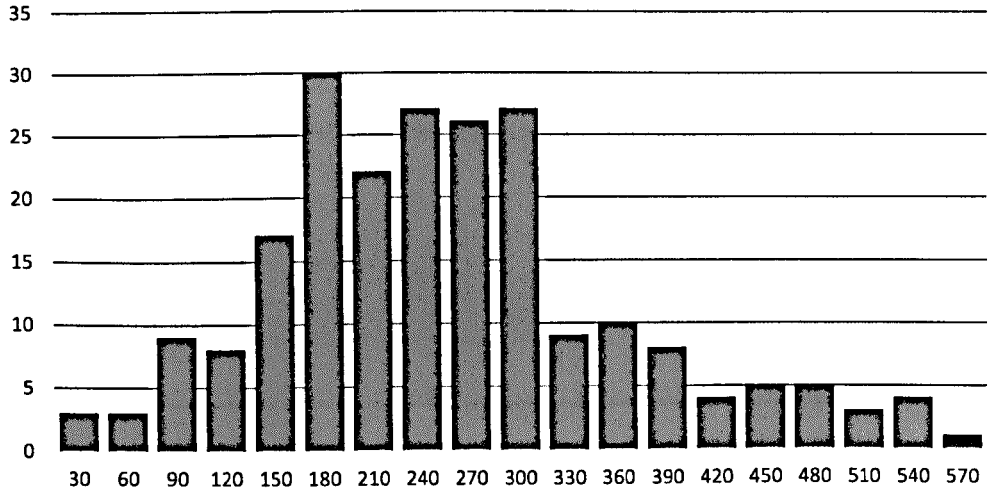


Method

Participants

Two hundred and thirty-one undergraduate participants (63% female) took part in Study 3 in exchange for course credit. Of these, twenty-nine were eliminated due to taking less than two minutes to complete the questionnaire, which was thought to be indicative of random responding. The stimulus materials and questionnaires were reasonably long and we deemed it unlikely that the students who responded in such a short time had engaged with the material in an effective way, although the exact cut-off point was determined post-hoc on the basis that the response times contained a group of unusually quick participants clustered around 60-90 seconds and tapering off by 120 (see Figure 4). This left 202 participants with analysable data.

Figure 4. Truncated histogram of questionnaire completion times in Study 3 (excludes highest response times for the sake of readability). Labels on the horizontal axis represent the upper time limit of each bin in seconds.



Design

Participants were divided into five groups. One was a control group and received no additional information beyond the basic scenario. Another received information supporting the verdict of suicide. A third group was given information that indicated the existence of a cover-up without specifically implicating either possible culprit. Finally, two more groups each received additional information supporting one of the possible CTs. Participants were then asked about their agreement with the suicide verdict, with each CT, and with the existence of the cover-up, giving Study 3 a 5 (condition; between-subjects) x 4 (explanation; within-subjects) mixed factorial design.

Materials and procedure

Each participant was first provided with a fictional written scenario describing the death of an investigative journalist. The journalist was said to have been found dead by apparent suicide. While the police maintained their verdict of suicide, a friend of the

journalist thought his death was a murder, and proposed that the police were conspiring with the murderer to make it look like a suicide. Two possible culprits were identified as having a motive to kill the journalist: an unscrupulous pharmaceutical corporation and a corrupt politician. After reading through the text, participants completed a brief Likert scale questionnaire (the same composite endorsement scales as in Study 2) asking about their agreement with various interpretations of the scenario: that the journalist committed suicide, that he was killed by a corporate conspiracy, that he was killed by a government conspiracy, and that some nonspecific cover-up existed. A sample questionnaire can be found in Appendix D.

Results

ECHO predictions

The ECHO models for all conditions converged to equilibrium as expected. The results were generally in line with what might be expected given the results of Studies 1 and 2 (see Appendix A). For the control condition, the cover-up ranked highest, followed by the two CTs in a tie, and the suicide explanation in last place. The cover-up condition gave a very similar result. Both pro-conspiracy conditions showed the cover-up with the highest activation, followed by the supported CT, then the unsupported one, with the suicide theory coming in last with the lowest activation. Finally, and interestingly, the model predicted that in the anti-conspiracy condition the suicide theory would still be rejected, with the cover-up the highest and the two CTs with equal activation in between suicide and cover-up.

Based on the modelling results, we extracted three patterns of interest to examine in the empirical data in addition to the contradictory correlations: the continued rejection of the suicide explanation in the anti-conspiracy condition, the pattern in the pro-conspiracy conditions of the unsupported CTs still garnering more agreement than

the conventional explanation, and the cover-up being the most highly activated hypothesis in every condition.

Empirical results

All reported results below use agreement rather than the composite measure used in Study 2 – agreement is more immediately interpretable, and all correlational analyses which resulted in statistically significant relationships in agreement gave the same results when the composite endorsement measure was substituted.

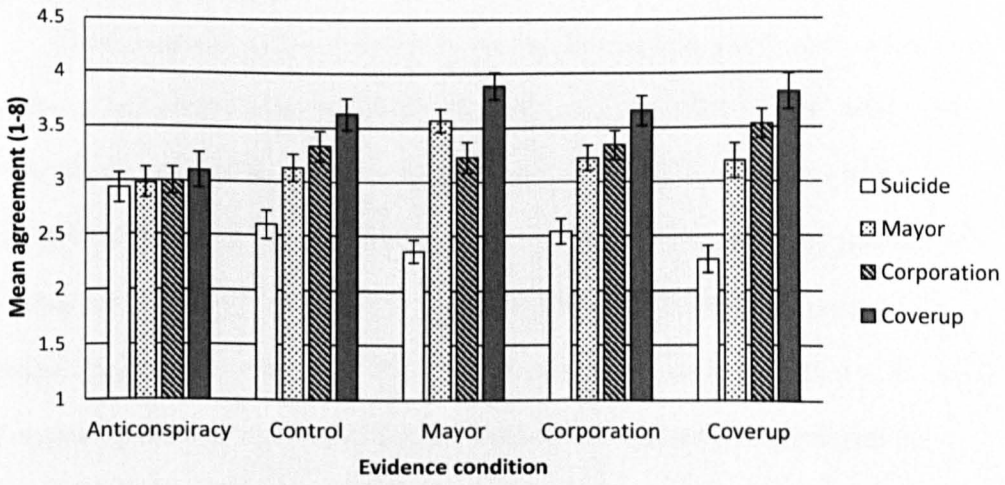
As predicted, condition-by-condition analysis showed that the two contradictory CTs were positively correlated in agreement in the anti-conspiracy condition, $r = .38, p = .02$; in the control condition, $r = .49, p < .01$; in the government conspiracy condition, $r = .38, p = .01$; and in the cover-up condition, $r = .61, p < .001$. In the condition where the evidence supported a corporate conspiracy, however, the correlation did not reach significance, $r = .24, p = .13$.

We performed hierarchical regression analyses for each condition following the pattern established in Study 2, predicting agreement with the government CT using the cover-up in the initial step and the corporate CT in the second step. This allowed an estimation of the degree to which the relationships between the contradictory CTs were attributable to their shared variance with the broader belief that something about the situation was being covered up. In all cases, the cover-up was a significant initial predictor of agreement with the government CT (all ps $< .05$). In the anti-conspiracy condition, adding the corporate CT to the regression equation did not improve the model fit, $\Delta R^2 < .01, F(1,38) = .16, p = .69$. The same was true in the government CT condition, $\Delta R^2 = .03, F(1,41) = 1.83, p = .18$, and in the corporate CT condition, $\Delta R^2 < .01, F(1,38) = .10, p = .75$. However, adding the rival CT to the regression equation did increase the proportion of variance explained in the control condition, $\Delta R^2 = .17$,

$F(1,37) = 8.90$, $p < .01$, and in the cover-up condition, $\Delta R^2 = .12$, $F(1,33) = 6.68$, $p = .01$.

Participants' mean agreement with each potential explanation in each condition is shown in Figure 5. A 5 (condition; between-subjects) x 4 (explanation; within-subjects) mixed ANOVA revealed no main effect of condition, $F(4,197) = 1.81$, $MSE = .892$, $p = .13$, $\eta^2 = .04$, but a significant main effect of explanation, $F(2.37, 460.58) = 59.44$, $MSE = .840$, $p < .001$, $\eta^2 = .24$, and a significant interaction, $F(9.46, 465.87) = 4.23$, $MSE = .840$, $p < .001$, $\eta^2 = .08$ (Huynh-Feldt df correction used due to violation of the sphericity assumption; Mauchly's $W = .65$, $\chi^2 = 85.33$, $p < .001$). This interaction was qualified by several simple main effects.

Figure 5. Mean agreement with each potential explanation across conditions in Study 3. Error bars represent standard error of the mean.



In the anti-conspiracy condition, there was no simple effect of explanation, indicating that all possibilities were agreed with about as much as one another, $F(2.09,83.77) = .303$, $MSE = 83.77$ $p = .77$, partial $\eta^2 = .01$, though the control

condition did show a simple effect of explanation, $F(2.60,101.50) = 8.82$, $MSE = .81$, $p < .001$, partial $\eta^2 = .21$. Here, post-hoc tests using the Least Significant Difference (LSD) error correction revealed that a cover-up showed higher agreement ($M = 3.63$) than the possibility of suicide ($M = 2.60$), the government CT ($M = 3.13$), and the corporate CT ($M = 3.33$) (all $ps < .05$). Participants agreed with the possibility of suicide less than either the government CT ($p = .01$) or the corporate CT ($p < .01$), and the two CTs showed no significant difference ($p = .16$).

When the evidence suggested that the mayor was the most likely culprit, there was a simple effect of explanation, $F(2.36,101.56) = 33.18$, $MSE = .73$, $p < .001$, partial $\eta^2 = .44$. Post-hoc LSD tests revealed that the idea that the mayor was behind a conspiracy to kill the journalist garnered more agreement ($M = 3.57$) than suicide ($M = 2.36$) and the corporate CTs ($M = 3.23$), but less than the idea that there was a cover-up behind events ($M = 3.89$) (all $ps < .05$). Consistent with our prediction, the corporate CT was still seen as more plausible than suicide, $p < .001$.

In the condition where evidence pointed to the pharmaceutical corporation, there was also a significant simple effect of explanation, $F(2.40,95.88) = 13.61$, $MSE = .84$, $p < .001$, partial $\eta^2 = .25$. Participants agreed with the corporate conspiracy ($M = 3.34$) more than the verdict of suicide ($M = 2.54$), $p < .01$, but less than with the presence of a cover-up ($M = 3.66$), $p = .04$. There was not a significant difference in agreement between the corporate conspiracy and the mayoral conspiracy ($M = 3.22$), $p = .39$. As in the mayoral condition, the incongruent government CT was still preferred over the suicide verdict, $p < .01$.

When the manipulated evidence suggested a cover-up, there was once again a simple effect of explanation, $F(2.40,83.88) = 27.80$, $MSE = .73$, $p < .001$, partial $\eta^2 = .44$. Participants agreed that there was a cover-up (M = 3.83) more than they agreed

that the mayor had conspired to kill the journalist (M = 3.19), $p < .001$, or that the journalist committed suicide ($M = 2.28$), $p < .001$, but their agreement with the corporate CT was only marginally lower ($M = 3.53$), $p = .06$.

Further post-hoc LSD comparisons revealed that CTs in conditions where a contradictory CT was supported (i.e. the corporate conspiracy in the government conspiracy condition and the government conspiracy in the corporate conspiracy condition) did not seem to benefit or suffer from the manipulation. Participants agreed with the corporate conspiracy no more or less in the government conspiracy condition ($M = 3.23$) than they did in the control condition ($M = 3.33$), $p = .60$. Likewise, in the corporate conspiracy condition, agreement with the government conspiracy was no different from in the control condition ($M = 3.22$ versus $M = 3.13$), $p = .60$.

Discussion

The correlations between contradictory CTs in Study 3 largely adhered to the pattern set by Study 2, confirming the predictions of extended MBS theory. In all conditions but one, the more someone agreed with the proposition that the journalist was killed by a vindictive local politician, the more they also agreed that he had been killed by an unscrupulous pharmaceutical corporation. The strongest correlation between the two rival CTs was in the cover-up condition, which makes sense given our rationale for the correlation in Study 2: increasing the activation of the cover-up node in the belief network makes each CT seem more plausible. The more participants subscribed to the uniting higher-order belief in the inadequacy of the official story and the presence of something beyond public view, the more tolerant of contradictions between individual CTs they became. Also consistent with the results of Study 2, belief in a cover-up was a significant predictor of conspiracy beliefs, in some conditions so much so that it entirely explained the correlations between contradictory CTs that had

been found to exist.

In accordance with the predictions of connectionist ECHO models based on extended MBS network architecture, in the two pro-conspiracy conditions, the unsupported CTs (i.e. the government CT in the corporate CT condition and the corporate CT in the government CT condition) were still preferred over the non-conspiracist explanation of suicide. In fact, these incongruent CTs showed no decline in agreement from the control condition in spite of evidence suggesting that an entirely different conspiracy was responsible for the incident in question. The ECHO models also correctly anticipated that in each condition (except for the anti-conspiracy condition, which we examine in further detail below), the existence of a cover-up would be agreed with more highly than any other explanation.

There are two main areas in which our empirical results did not match up with the predictions of extended MBS theory and with the output of the ECHO models designed to represent the scenarios presented in Study 3. Firstly, participants had a slight general preference for the corporate CT over the governmental CT. This might be due to beliefs about the relative competence of the proposed conspirators (cf. McCauley & Jacques, 1979) or some difference in how convincing the arguments in favour of each seemed. However, this preference does not seem to have interacted in any complex way with the other effects in the study. Secondly, the anti-conspiracy condition showed no differences in agreement between any of the different possibilities. This is in contrast to ECHO's prediction that the cover-up would be the preferred explanation, followed by the two CTs and suicide. Importantly, however, this was the only condition in which the suicide theory was on roughly equal footing with the other possibilities – in the other conditions, including the control condition, the participants agreed significantly more with the CTs. This matches up well with the differing activation levels of the suicide

node across different simulations: when the anti-conspiracy model reached equilibrium the suicide node had an activation of -.56, higher than in any of the other models. Alternatively, this result may be due to a complex interaction between the beliefs represented in the network and other higher-order beliefs that are outside its scope. For instance, CTs are well known for their ability to adapt to any conflicting information and assimilate it as part of the conspiracy (Keeley, 1999). The way in which this tendency could interact with such belief networks is not yet clear.

These issues aside, the main findings of Study 3 support the predictions of extended MBS theory. We have replicated the findings of Studies 1 and 2 regarding correlations between contradictory theories, and regression analyses provided further support for the role of higher-order knowledge structures in uniting CTs with one another. Moreover, we constructed explanatory coherence network models according to the tenets of extended MBS theory, and the resulting activations in the javaECHO output matched the data well. What deviations that existed appear to have been an effect of initial biases one way or another; in general, the qualitative predictions of the model were fulfilled. Not only does extended MBS theory explain pre-existing belief patterns, it is also able to accurately predict the effects of targeted manipulations of belief.

While the predictions of extended MBS theory appear to hold in Study 3, it is not clear to what extent these patterns are really unique to conspiracist belief. It could be the case that any two beliefs that contradict one another directly but nevertheless agree on some broad points of interpretation will be positively correlated in endorsement. Study 4 was designed to investigate this possibility while preserving the basic architecture of the scenarios used in Study 3.

Study 4

Studies 2 and 3 both pitted a pair of contradictory CTs against a single non-

conspiracist explanation. In some sense this parallels reality – CTs are generally devised in opposition to a mainstream or received narrative. While there are many different CTs regarding how John F. Kennedy was killed, with theorists blaming everyone from the Cubans to the CIA to the Pope (Hofstadter, 1964), there is only really one non-CT: the conclusion reached by the Warren Commission, that Oswald acted alone (Barkun, 2006). However, whether the tolerance for contradictory explanations is something inherent to CTs themselves or a result of the unitary nature of the official accounts to which they find themselves in opposition is an important distinction. To investigate this issue, Study 4 was designed with a symmetrical network in mind: rather than multiple CTs and a single official explanation, we constructed a scenario with two competing CTs and two competing non-conspiracist explanations, with separate conditions containing different pieces of evidence that supported each explanation in turn, along with a nonspecific cover-up and a separate control condition. In accordance with the results of Study 3, we predicted that beliefs in contradictory CTs would be positively correlated in the control and cover-up conditions, while beliefs in conventional theories would not. We also expected that in pro-conspiracy conditions, participants would prefer incongruent CTs over conventional explanations, and that an ECHO model of the scenarios would generally be a reliable predictor of participants' responses.

Method

Participants

We recruited 221 undergraduate participants for Study 4. Of these, 22 were eliminated from analysis for taking less than two minutes to complete the questionnaire, leaving 199 useable data points.

Design

Like Study 3, Study 4 followed a mixed factorial experimental design.

Participants were randomly assigned to one of six groups, each of which received a different version of a purportedly real news article and then completed a questionnaire regarding the likely cause of the events therein. Four of the groups received evidence implicating one of four different causes for an apparent terrorist attack. Of these four, two contained evidence supporting contradictory CTs and two contained evidence supporting contradictory conventional explanations. The fifth group was presented with evidence suggesting a nonspecific cover-up, and the sixth was a control group with no additional evidence. The questions at the end asked about the four groups that might have carried out the attack, making this a 6 (evidence group; between-participants) x 4 (possible cause; within-participants) mixed design.

Materials and procedure

The mock news articles used in Study 4 described a release of poisonous gas at an administrative government building in the United States. Authorities blamed the attack on one of two groups: either a nativist right-wing paramilitary group calling itself Free Knights of the Cross or an Islamic radical organisation called Al-Sharuq. Conspiracy theorists alleged that the incident was either a false-flag attack meant to justify increased security or an accident at a secret chemical weapons facility located within the building. The six different conditions presented different pieces of evidence: the two conditions supporting the different terrorist attacks each proposed that a bomb had been found with a note from the relevant group, the chemical weapons condition included an interview with a resident who claimed to have seen large amounts of chemical equipment being moved out of the building, the false-flag condition featured testimony by workers that government agents had recently installed mysterious devices in the building's ventilation system through which the gas was subsequently released, and the control condition described the forcible confiscation and destruction of nearby

businesses' CCTV tapes by mysterious government agents.

The questionnaire at the end comprised four statements regarding who was responsible for the incident. Each was followed by the same response items as in Studies 2 and 3: agreement, plausibility, convincingness, interestingness, worthiness of consideration, and coherence. The article and questionnaire were presented online using the Qualtrics survey website, and the time each participant took to complete the study was measured and logged. A sample questionnaire is included in Appendix E.

ECHO models

As in Study 3, the materials in Study 4 were designed to fit a predetermined family of ECHO models. The control condition model (see Figure 6), which is a proper subset of the other models used, involves the four hypotheses, represented by the nodes AS (Al-Sharuq), FK (Free Knights of the Cross), WL (chemical weapons lab accident), and IJ (inside job). All four cohere with the available evidence, represented by the data node PG (poison gas), and incohere with one another. WL and IJ both cohere with the higher-order node CU (cover-up). Each condition adds a piece of evidence that coheres with one of AS, FK, WL, IJ, or CU and has no direct relationship with the other nodes. Model simulations were run using the javaECHO applet.

Results

Empirical data

A 6 (evidence condition; between-participants) x 4 (proposed cause; within-participants) mixed ANOVA revealed a significant interaction, $F(14.30,551.77) = 1.75$, $MSE = 1.47$, $p = .04$, partial $\eta^2 = .04$ (Huynh-Feldt df correction used due to violation of the sphericity assumption; Mauchly's $W = .87$, $\chi^2 = 25.77$, $p < .001$; see Figure 7).

Figure 6. Explanatory coherence network representing the control condition in Study 4. Solid lines represent coherence relationships, dotted lines represent incoherence, circles represent propositions, and rectangles represent data.

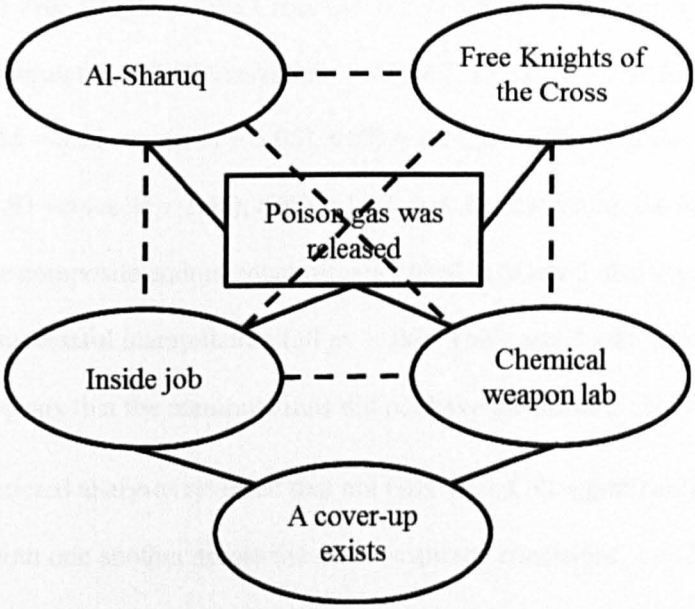
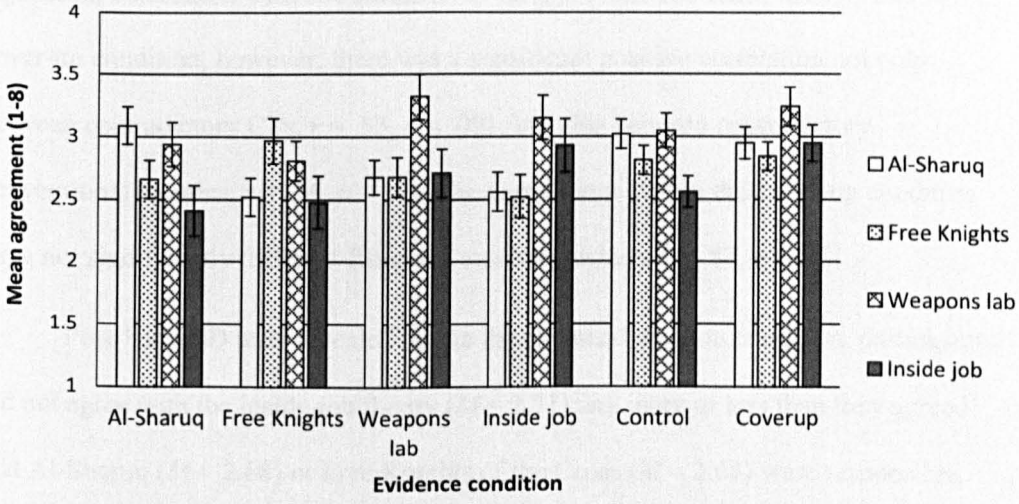


Figure 7. Mean agreement with each potential explanation across conditions in Study 4. Error bars represent standard error of the mean.



As a manipulation check we performed a series of Bonferroni-corrected planned comparisons, examining whether participants agreed with each proposed culprit more in the conditions that supported their involvement than in the control condition. This was not the case for Free Knights of the Cross (M = 2.97 versus M = 2.81), $t(72) = .74$, $p = .46$; for Al-Sharuq (M = 3.09 versus M = 3.02), $t(73) = .37$, $p = .71$; for the chemical weapons lab (M = 3.32 versus M = 3.05), $t(69) = 1.24$, $p = .22$; or for the false-flag theory (M = 2.93 versus M = 2.56), $t(68) = 1.62$, $p = .11$. Repeating the manipulation checks with the composite endorsement measure used in Study 2 also showed no evidence of a successful manipulation (all $ps > .05$). This casts doubt on any further results, as it appears that the manipulations did not have the desired effect.

Correlational analyses revealed that not only were CTs significantly correlated in agreement with one another across the pro-conspiracy conditions, $r = .31$, $p = .02$, conventional theories were too, $r = .42$, $p < .01$. In the pro-conventional conditions, both contradictory conventional theories, $r = -.04$, $p = .74$, and contradictory CTs, $r = -.02$, $p = .87$, were uncorrelated. In the control condition, CTs showed a significant positive correlation in agreement, $r = .36$, $p = .02$, while conventional theories showed no significant correlation with one another, $r = -.07$, $p = .64$. The same was not true in the cover-up condition, however; there was a significant positive correlation not only between contradictory CTs, $r = .53$, $p < .001$, but also between contradictory conventional theories, $r = .36$, $p = .03$. The correlations within the cover-up condition were not significantly different from one another, Fisher's $z = .87$, $p = .38$.

Post-hoc LSD tests revealed that in the chemical weapon condition, participants did not agree with the inside-job theory (M = 2.71) any more or less than they agreed that Al-Sharuq (M = 2.68) or Free Knights of the Cross (M = 2.68) were responsible, both $ps > .85$. In the inside job condition, however, the chemical weapon theory (M =

3.15) elicited significantly more agreement than both Al-Sharuq ($M = 2.56$) and Free Knights of the Cross ($M = 2.52$), both $ps < .02$. When Al-Sharuq was implicated in the gas attack, participants thought it no more likely that the Free Knights of the Cross were responsible ($M = 2.66$) than that the gas came from a secret chemical weapons facility ($M = 2.93$) or was the result of a deliberate inside job ($M = 2.40$), both $ps > .20$. When the evidence indicated that the Free Knights of the Cross were responsible, participants agreed that Al-Sharuq were really behind the bombing ($M = 2.52$) no more than they thought the building was a weapons lab ($M = 2.81$) or that the attack was perpetrated by the US government ($M = 2.48$), both $ps > .20$.

Fit of the ECHO model

The output of the ECHO model showed the same qualitative patterns as in Study 3 (see Appendix A). However, the large number of hypotheses examined in Study 4 (4 hypotheses per condition times 6 conditions for a total of 24 individual data points) allowed more rigorous statistical testing. In order to test the degree of agreement between the predictions of the model and the empirical data, we collected the ECHO model's equilibrium activations for each explanation across conditions and rank-ordered them from the lowest activation to the highest. We then did the same with participants' mean agreement with each explanation in each condition. Consistent with the prediction that ECHO can effectively model the structure of the belief system, the ranked node activations showed a strong correlation with ranked agreement, Spearman's $\rho = .55$, $p = .01$.

Discussion

The interpretation of Study 4 is not straightforward. The manipulation checks did not show any of the expected differences between the control condition and the others, so it is not clear to what extent the different conditions actually reflect the

differences that we expected when designing the study. To some extent, this may be an issue of statistical power – Study 4 had six separate conditions and only 200 participants to split between them. To make matters worse, due to an unexpected interaction between counterbalancing and the randomisation system used by the Qualtrics questionnaire website, these participants were not evenly divided between conditions: while the control and cover-up conditions had about 40 people each, the remaining conditions only had about 30 each after random responders were eliminated.

Regardless of the lack of statistically significant differences in agreement between the various hypotheses, the predictions generated by the ECHO model correlated very reliably with the empirical data. In this sense Study 4 has replicated the extended MBS theory's contention, and Study 3's finding, that beliefs in CTs are amenable to computational network modelling.

More theoretically interesting – and immediately interpretable – results come from the correlational analyses. Consistent with our findings in Studies 2 and 3, in the control condition only contradictory CTs were significantly correlated with one another. In the cover-up and pro-conspiracy conditions, however, both CTs and conventional theories showed contradictory correlations, while in the anti-conspiracy conditions there were no contradictory correlations at all. This was an unexpected result, but due to the way in which the study was designed any asymmetry between conspiracist and non-conspiracist explanations should in principle be traceable to beliefs in a cover-up (and related higher-order beliefs), since this is the linkage between CTs that the conventional theories do not possess. In this light, the correlation between CTs but not conventional explanations in the control condition makes some amount of intuitive sense: the CTs are correlated because they are linked by beliefs in a cover-up, as in Studies 1-3. In the cover-up condition, the cover-up node gains in activation due to its coherence with the

events related in the stimulus materials, and this activation propagates through the network via coherence with the CTs and incoherence with the conventional explanations.

Both the CTs and conventional explanations are affected equally by the change in the cover-up node, resulting in a positive correlation. In the pro-CT conditions, activation propagates from the CT nodes to the cover-up node – since a CT implies a cover-up (due to the incongruence between the CT and the story told to the public), the cover-up node gains in activation, which then spreads equally to each conventional theory and results in a contradictory correlation. Finally, in the pro-conventional conditions, the provided evidence has no bearing on a cover-up – the evidence could just as well be part of the cover-up, so there is no direct incoherence between the conventional theories and the cover-up. Activation, therefore, has to propagate through several different levels of the network in order to reach the cover-up node and produce an effect: from the evidence to the relevant conventional node, from there (via incoherence) to the CT nodes, and from there to the cover-up node, where the remaining activation propagates through the network. By that time, however, the signal is greatly attenuated and is not strong enough to produce consistent correlations between the various contradictory theories.

The apparent irrelevance of anti-conspiracy evidence to the overall perception of a cover-up is one that has been noted before by observers of the conspiracy world: the perception of a cover-up allows contradictory evidence to be dismissed as having been planted by the conspirators (Clarke, 2002; Keeley, 1999; Melley, 2002). This usage of cover-ups to explain away contradictory evidence is a hallmark of the conspiracist monological belief system as formulated by Goertzel (1994b). Of course, not everyone holds the cover-up belief strongly enough that they would make this assumption, but

those who consider it to be at least plausible would probably notice that the additional evidence in the anti-conspiracy conditions could itself be part of a conspiracy.

General discussion

In this chapter we have outlined four studies that provide initial support for the extended MBS theory of conspiracist belief. This theory proposes that belief in CTs are sustained by coherence with a broader belief system. Hypothesised components of this belief system include (but are not limited to) a belief that authorities and officials are inherently deceptive and that the truth about events is often covered up: that there is more going on than meets the eye. For this reason, conspiracy beliefs are often vague and poorly specified, as the most important elements of conspiracy beliefs are their coherence with a broader conspiracist worldview rather than the creation of a consistent and fruitful narrative.

Studies 1, 2, 3, and 4 all show that beliefs in contradictory CTs tend to be positively correlated. This is consistent with the predictions of the extended MBS framework: coherence with broader worldviews produces enough shared variance in belief to override inconsistencies in the specific details of a CT, such as the perpetrator, the motives, and the methods. Indeed, in Study 2 we showed that a shared belief in a cover-up accounted completely for the relationship between the two contradictory CTs. In Study 3, this was true in some conditions but not in others – perhaps a natural consequence of the generally stronger correlations, or an artefact of the manipulations used. After all, belief in a cover-up is not the only higher-order belief which can bind together disparate CTs; instead, it is one of a class of such beliefs that might include factors as diverse as a generalised social mistrust (Goertzel, 1994), an external locus of control (Abalakina-Paap *et al.*, 1999), high openness to experience (Swami *et al.*, 2012), and authoritarianism (Yelland & Stone, 1996).

In Study 3 we also used ECHO, a computational instantiation of Thagard's (1989) model of explanatory coherence, to model well-defined subsets of conspiracist belief systems. ECHO successfully predicted the empirically observed tendency for a CT incongruent with one given additional support to still be preferred over conventional explanations, an effect which is a straightforward predictions of the extended MBS framework. While ECHO accurately predicted the empirical results for most of the network model inputs it was given, the limited scope of the models may have restricted its accuracy to some degree. For instance, in Study 3 participants had a general preference for corporate CTs over governmental CTs, and the anti-conspiracy condition proved to be difficult to model at all. This is due to either some quirk of the stimulus materials or a more general preference that cannot be modelled. In the future, individual participants' thought processes about the plausibility of various CTs, conventional theories, and higher-order beliefs could be modelled more accurately using a procedure similar to that used by Schank and Ranney (1992), who had independent raters construct belief networks based on verbal descriptions of reasoning processes.

Finally, Study 4 provided another replication of the contradictory CT correlation effect, and added to it some indications that contradictory conventional explanations can show positive correlations as well, though not as widely as CTs do. This may indicate that some of the same processes at work in the interaction between individual conspiracy beliefs and the higher reaches of the belief system are also at work in non-conspiracist belief systems – in other words, that the tendency for individual contradictions between beliefs to be overtaken by mutual coherence or incoherence with higher-order beliefs might not be entirely specific to CTs. Everyone has broad worldviews and beliefs about how society works, and these can probably act in the same way that higher-order conspiracist beliefs do in order to override local contradictions

and allow consideration – and perhaps even provisional belief – in several contradictory hypotheses at once. Nevertheless, there was not an exact equivalency between the conspiracist and conventional theories in Study 4 – while contradictory conventional theories were correlated in some conditions, they were not as reliably correlated as the CTs were. Importantly, the CTs were significantly positively correlated in the control condition, where there was no manipulation of evidence, while the conventional theories were not. If this result is not a statistical fluke, it would seem to indicate an important difference between the two classes of explanations.

Of course, there are limits on the degree to which contradiction is tolerated. The idea that authorities are engaged in motivated deception may cohere with the vast majority of CTs, but a theory could conflict with any number of other deeply held beliefs. Beyond a certain point, a certain amount of conflict with established knowledge, a contradictory CT becomes unacceptable. Within the 9/11 Truth Movement, for instance, there is somewhat of a schism between the majority, who believe that the Twin Towers were hit by passenger jets but ultimately destroyed by demolition charges, and a vocal minority, who believe that the aircraft did not exist and were either holographic projections, missiles disguised with cloaking technology, or simply computer-generated images created by the news media. In these 'no-plane' theories, the towers are often said to have been destroyed by space-based energy weapons rather than by explosives (Wood, 2009). Many of the controlled demolition theorists have expressed dismay and incredulity in relation to the no-plane theories, finding their invocation of exotic weaponry implausible. Some even accuse the proponents of the no-plane theories of being in league with the conspirators in an attempt to divert attention from the evidence of controlled demolition or to tarnish the reputation of the Truth Movement (e.g. TruthMove.org, 2007). Even though the no-plane CT did not pass

muster in the mainstream Truth Movement, the monological nature of conspiracism persists, and the rejected CT is woven into the conspiracist narrative as yet another component of the conspirators' plot to deceive the public.

Based on these results, extended MBS theory may be useful as a basis for designing future measures of conspiracist thinking. If the idea of a cluster of broad beliefs which facilitate a generally conspiracist view of the world is accurate, belief in those central theses should not only predict endorsement of CTs in general, but should also mediate the relationships between different, overtly unrelated CTs in addition to contradictory theories about the same event. The scope of the present research is rather narrow, and only examines domain-specific beliefs; it will at some point be necessary to examine the process by which perceived deception by authority in individual cases is generalised to form part of a broadly applicable belief system. This question could naturally be approached from a connectionist perspective, as shown by Read and Miller (2003).

Finally, if a belief in malevolent, deceptive officialdom is indeed one of these defining central principles of the conspiracist belief system, new measures of conspiracy belief could be constructed using that belief as a basis. Historically, CT belief scales have taken the approach of asking about participants' agreement with a list of particular theories. Scales using this approach are tied to a particular geographic, historical, and cultural context, however; with the idea of an extended MBS in mind, it may be possible to create a more dispositional measure of conspiracist ideation, perhaps something approaching the conspiracist style of personality proposed by Kalichman, Eaton, and Cherry (2010).If the style of conspiracism has indeed shifted toward the vague and nonspecific, as Clarke (2007) has suggested, questionnaires which are direct and specific might be misguided; in a manner of speaking, they are written in a sort of

antiquated conspiracist language that has not had much currency since the advent of the internet. Future measures of conspiracist ideation may benefit from measuring the degree to which people endorse tenets of conspiracism itself, rather than individual theories. Such a measure would eliminate the need not just for culture-specific measures of conspiracist belief (c.f. Swami, 2012), but for changing the contents of questionnaires over time to reflect which CTs are most culturally relevant.

It must be noted that not all CTs fall under the 'malevolent, deceptive officialdom' umbrella. Anti-Semitic CTs are a notable and historically important exception; instead of alleging abuse of power by elites, historical theories of Jewish conspiracy usually detailed supposed attempts by a minority to seize power for themselves (Graumann, 1987). The character of these theories has changed over the last century, however; in latter-day anti-Semitic CTs, the Jews are more commonly portrayed as puppet-masters of the international finance system. Arguably, theories that governments are suppressing knowledge of the existence of alien visitation do not necessarily presuppose malevolence on the part of the conspirators; rather, the cover-up is sometimes said to be in place to avoid a mass panic. In these cases, the 'malevolent, deceptive officialdom' belief is probably not as important, and other higher-order beliefs might become more important. This distinction also parallels the conflicting lines of research regarding the role of authoritarianism in conspiracist belief, as examined in Chapter 1.

Returning to the question of whether there is a qualitative difference between the belief systems that support CTs and those that underlie a more conventional worldview, there is some indication from Study 4 that CTs are uniquely able to tolerate contradictions. Part and parcel of the conspiracist belief system is an opposition to officialdom in general, as suggested by studies showing a correlation between

conspiracy beliefs and negative attitudes toward authority (McIlhoskey, 1995; Swami *et al.*, 2010), and any event will have a conventional explanation for conspiracists to oppose. As CTs are rooted in opposition to some official narrative, they are almost inherently reactive rather than proactive. With opposition to a particular narrative as a starting point for discussion, a number of conspiratorial possibilities begin to seem more plausible despite the contradictions between them. In the next chapter, we explore this issue further: to what degree is there a difference between conspiracist and conventional belief systems? Specifically, how does this difference make itself manifest in the online discourse of conspiracists versus anti-conspiracists?

Chapter 3: Online Discourse

Abstract

Much of the discourse surrounding contemporary conspiracy theories occurs in online forums. Debates between conspiracy advocates and conspiracy sceptics are particularly contentious. In Chapter 3, we use archival methods to examine the differences between conspiracist and anti-conspiracist rhetoric in the course of such online debates. As predicted, pro-conspiracist commenters were more likely to argue against the opposing interpretation and less likely to argue in favour of their own interpretation compared to anti-conspiracist commenters. In addition, pro-conspiracists were more likely to express mistrust and made more positive and fewer negative references to other conspiracy theories. The data also indicate that pro-conspiracists were largely unwilling to apply the 'conspiracy theory' label to their own beliefs, lending support to the long-held suggestion that conspiracy belief carries a social stigma. Finally, anti-conspiracist arguments tended to have a more hostile tone. Consistent with extended MBS theory, these tendencies in persuasive communication can be understood as a reflection of an underlying conspiracist worldview.

Chapter 2 has provided initial support for the predictions of the extended MBS framework, a theory of conspiracism which proposes that beliefs in CTs are essentially held together by a series of broader, 'higher-order' beliefs, tendencies, and attitudes that are concordant with the idea that the world is a place governed by conspiracy. These higher-order beliefs might include factors like generalised mistrust or a broad disbelief in explanations provided by authority figures. In each of the first four studies, we found that contradictory CTs are positively correlated in endorsement and that this association is usually explainable (partially or in full) by the CTs' mutual associations with higher-order beliefs. In addition, when the evidence regarding a CT is manipulated systematically, the resulting shifts in agreement with various possible explanations can be predicted with considerable accuracy by a computational network model using architecture based on extended MBS theory.

Within the higher-order belief network thought to be the main component of conspiracist belief, one hypothesised component is a generalised disbelief in official explanations. If this is the case, then for those who hold conspiracist beliefs, the specifics of a CT are less important than the fact that it is a CT – or that it opposes whatever the received explanation is. The important element is that those in power are lying and cannot be trusted, and that they are covering up something sinister. That is, CT belief is generally more of a *negative* belief than a *positive* one – it is more concerned with saying what the cause of a condition or event was *not* (i.e. whatever the official explanation is) than with putting forward a specific alternative account. Opposition to officialdom, in this sense, parallels the generalised prejudice that Adorno *et al.* (1950) found to be strong enough to overcome contradictions between different anti-Jewish stereotypes. In this view, many CTs are not theories per se, at least not in the sense of being systematic attempts to engage with available evidence with the aim of

producing a coherent, unifying explanation of a particular event or condition. Rather, they are disorganised clusters of suspicions, claims, and spurious statements that may or may not fit together particularly well.

This tendency has been noted by Dean (2002), who described most CTs as 'bits and pieces without a plot... [which] fail to delineate any conspiracy at all. They simply counter conventional narratives with suspicions and allegations that, more often than not, resist coherent emplotment' (p. 92). It also finds some intuitive support in the form of the more accessible pro-conspiracy arguments. Perhaps the most famous argument in favour of a CT in the Western world is the 'magic bullet' scene in the film *JFK*, in which a character details the apparent absurdity of the idea that a single bullet could have produced the wounds that killed President Kennedy (Ho & Stone, 1991). Rather than advancing a particular conspiracist view of the assassination, the argument is simply that the official story cannot be true – and with that, a wealth of conspiratorial possibilities opens up. Chapter 3 focuses primarily on the idea that specific alternative beliefs are not the defining component of the conspiracist worldview. Rather, conspiracism is characterised primarily by a generalised opposition to officialdom. To investigate this possibility, we use archival methods to conduct a quantitative examination of the content and tone of public persuasive comments on news websites.

Study 5

An opportunity to examine the nature of conspiracist and anti-conspiracist thought from a different angle than the usual questionnaire methods presents itself in the form of online discourse. In spite of, or perhaps because of, the lack of mainstream public acceptance for their theories, many conspiracists, both prominent and otherwise, see themselves as having a duty to spread their views to the public at large. They often exhort the unthinking masses to 'wake up' (e.g. Byers, 2009; Crane, 2008; Icke, 2012).

This is a reasonable reaction: given a belief that our lives are being manipulated by shadowy forces beyond our control, most people would probably agree that trying to spread the word about that fact is a good idea. Others, such as those in the 'skeptic' movement (e.g. Randi, 1982; Sagan, 1995; Shermer, 1997), find most CTs to be misguided at best and destructive at worst, and so make a point of arguing against them in the public sphere.

This discussion is highly visible in many arenas, perhaps none more so than news website comment sections. Articles about topics for which popular CTs exist, such as 9/11, the moon landing, and vaccines, can have tens of thousands of comments, most of which are devoted to advancing or refuting allegations of conspiracy. These comments are often archived along with the associated articles for months or years afterward, which provides an excellent opportunity for archival research, which provides an excellent opportunity for archival research to give some insight into the thoughts and beliefs of those writing them (e.g. Fat, Sell, Barrowman, & Doja, 2012; Loke, 2012; Sisask, Mark, & Värnik, 2012).. In Study 5, we examined a large number of CT-related comments on news stories in an effort to gain insight into the way in which the comments' authors think about CTs and conventional explanations. Specifically, we were interested in whether the content of commenters' arguments reflects how their belief systems are structured.

How reasonable is the assumption that persuasive communications can reflect inner beliefs? Analysis of online discourse as a method of examining psychological states has increased in prominence as the internet has become a more popular place to discuss one's ideas. The subject and pace of online discussion has been shown to be a more or less reliable barometer of public concern over social issues (Roberts, Wanta, & Dzwo, 2002; Scharkow & Vogelgesang, 2011), and emotional reactions expressed

online can be used to consistently predict political approval ratings (González-Bailón, Banchs, & Kaltenbrunner, 2012). Quantitative analysis of online discussion has also been successfully applied to the end of gaining insight into the social psychology of groups with fringe views (Douglas, McGarty, Bliuc, & Lala, 2005), and even research following the explanatory coherence framework has been supplemented by quantitative studies based on coding participants' utterances when considering some issue or another (Schank & Ranney, 1992). Online writings have been used in the past to gain quantitative insight into their authors' mindsets, including attitudes toward Tourette's Syndrome (Fat *et al.*, 2012), personality traits (Rosenberg & Egbert, 2011), and racial views (Loke, 2012). Qualitative research on online discourse has been more common, even including a study of conspiracist ideation (Lewandowsky *et al.*, 2013).

There are some caveats associated with online archival research, however. As with any archival research, any trends in the data are several steps removed from the psychological processes thought to underlie them. As such, despite a potential increase in external validity, there is some degree of uncertainty regarding the internal validity of any conclusions drawn from such methods. Waller and Zimbelman (2003) have recommended using archival methods as a complement to more tightly controlled experimental methods that are more proximal to the constructs involved. In addition to the distal nature of the observations from the psychological constructs of interest, there is the issue of to what degree the content of persuasive communications reflects the properties of the author rather than of the situation. Rather than faithful representations of internal psychological processes, commenters' methods of argumentation might instead reflect strategic considerations regarding the audience, the venue, and the subject matter. Vogel, Kutzner, Fiedler, and Freytag (2010) found that people have some intuitive understanding of the psychology of persuasion: the more attractive

participants thought they were, the more successful they thought they would be in selling products in person compared to over the telephone. This effect was strongest when the potential customers were described as having low elaboration likelihood. This finding is in agreement with Douglas, Sutton, and Stathi (2010), who found that people's intuitive understanding of persuasion accords an important role to the psychological construct of need for cognition, a central variable in the psychology of persuasion. Given that people adapt their persuasive approaches according to the audience and the context, to what degree can we really expect persuasive communications to be an accurate reflection of inner psychological processes?

Unfortunately, the extant literature on the effect of lay persuasive knowledge on generation of persuasive arguments is extremely sparse. While there is a substantial body of research on lay persuasive knowledge, the vast majority of it focuses instead on how such knowledge affects susceptibility to the persuasive messages of others (e.g. Friestad & Wright, 1999). Vogel *et al.* (2010) and Douglas *et al.* (2010) appear to have conducted some of the only investigations into how people adapt their own persuasive strategies according to circumstances, so it is difficult to gauge the degree to which the content of persuasive arguments in favour of a particular viewpoint should diverge from the persuader's own thoughts on the matter. However, it is well established that people tend to rely heavily on projection for predicting others' behaviour – that is, they use themselves as a model for prediction. This effect is especially strong when relatively little is known about the target (for a review, see Robbins & Krueger, 2005). In general, then, persuaders probably use the self as a model for argument generation: in other words, they argue in a way that they would themselves find convincing. This, in turn, suggests that the types of arguments used by persuaders can contain information relevant to understanding how they think about the issue at hand.

The tendency to use social projection is especially relevant in online settings. Much online discussion is either fully anonymous or conducted under pseudonyms, greatly limiting the amount of information available about the other party in a discussion. As such, we assume in Study 5 that people will generally tend to use arguments that they themselves would find most convincing were they the audience rather than the persuader. This, in turn, should reflect the structure of their belief systems – the arguments that people find most convincing are those that match up with how they view the world (Newheiser *et al.*, 2011). To that end, we systematically coded and analysed comments from four major news websites on articles relating to 9/11 from the period of 1st July through 31st December, 2011, with a particular focus on comparing arguments made in favour of a 9/11 CT against arguments made in favour of the conventional explanation of 9/11.

In Study 5 we were specifically interested in the difference in persuasive tactics used in comments arguing for versus against CTs. If the above reasoning regarding the influence of projection on persuasive tactics is correct, we should see systematic differences in the ways in which pro- and anti-conspiracists argue. Specifically, we should be able to replicate earlier results which demonstrate that unrelated conspiracy beliefs are intercorrelated (e.g. Goertzel, 1994b; Swami *et al.*, 2010) – in this case, pro-conspiracist comments should contain more positive (and fewer negative) references to unrelated CTs compared with anti-conspiracist comments. We also examined the degree to which comments contained explicit expressions of mistrust, predicting that pro-conspiracist comments would be more likely to express mistrust of authorities or other targets than anti-conspiracist comments (e.g. Simmons & Parsons, 2005; Wright & Arbuthnot, 1974). Further, we examined expressions of powerlessness, and predicted that pro-conspiracist comments would express more concerns about power, as feelings

of powerlessness have been shown to correlate reliably with CT belief (Abalakina-Paap *et al.*, 1999). Replicating the previously established relationships between trust, feelings, and power would increase confidence in Study 5's methods and help to justify any novel results derived therefrom.

In addition to verifying the utility of this sort of archival approach by replicating previous results, we made several novel predictions. First, if we are correct in our contention that much of the conspiracist worldview is based on a higher-order opposition to officialdom rather than on positing particular alternative narratives, pro-conspiracist comments should focus on refuting the official story more than on presenting or supporting specific CTs. We expected that this would be in contrast to anti-conspiracist comments, which might do the same but to a lesser extent. Second, we elected to examine the veracity of the long-held contention that 'conspiracy theory' and 'conspiracy theorist' carry an intellectual stigma (e.g. Bratich, 2002, 2008; Coady, 2006). If this is true, people should be unwilling to apply the term to themselves. As such, we predicted that pro-conspiracists would avoid applying the term 'conspiracy theory' to their own beliefs (or 'conspiracy theorists' to themselves, etc.), and would argue the point if others did so.

Finally, another possible avenue by which the spread of CTs could be fruitfully understood is social influence theory (Latané, 1981). Since 9/11 CTs are (at least in the West) an opinion held by a vocal minority attempting to effect change, social influence theory (Latané, 1981) would predict that anti-conspiracists, if they are good majority influencers, are more likely to show patterns consistent with normative social influence. In particular, Bratich (2008) has highlighted the hostility of intellectual orthodoxy toward conspiracist explanations for events and the labelling of conspiracists as paranoid or otherwise mentally ill (c.f. Hofstadter, 1964; Kalichman *et al.*, 2010).

Therefore, we examined the hostility of each comment, and predicted that anti-conspiracist comments would be more hostile on average. This hostility would be the result of an attempt to signify that CTs are socially unacceptable and to enforce conformity to the majority view.

Method

Articles

The raw data consisted of the comment sections of various online news articles. Samples were taken from news articles posted between 1st July and 31st December, 2011, on four mainstream news websites: ABC News, CNN, the Independent, and the Daily Mail. This date range was chosen because of the large number of 9/11-related articles around the time of the tenth anniversary of the attacks, and these four news sites were selected on the reasoning that an ideal sample would not be restricted to a single country, journalistic style, or ideological position, as well as for more practical reasons such as search capabilities, comment archiving, and unpaid access.

Relevant articles were selected by searching for a series of terms within the specified date range: '9/11', '11/9', 'september 11th', '11th september', 'world trade center', 'world trade centre', 'wtc', 'al-qaeda', 'shanksville', and 'building 7.' Where possible (i.e. the Mail and Independent) the websites' own advanced search functions were used; on the remaining sites, we conducted the required searches using Google News.

Comments

In each article that resulted from these searches, the primary author read through the public comment sections and extracted verbatim all relevant comments regarding the various 9/11 CTs. Specifically, since only persuasive comments were of interest,

only comments containing original content that could be considered persuasive, or written with the intent to persuade, were extracted. To operationalise this constraint we adhered to four criteria.

1. The comment must not consist solely of insults, ridicule, or threats (e.g. 'u stupid sheeple need 2 wake up lol', 'Let me know what your home address is, and we can have a frank 'discussion' about your idiotic conspiracy theories'). This criterion was adopted because insults on their own are not persuasive, and while insults may be relevant to the hostility and stigma variables, they are irrelevant to the majority of the analyses we wished to conduct.

2. The comment must not consist solely of 'meta' discussion (e.g. 'I see the government disinfo machine is working overtime with all the shills posting here', 'can't believe CNN is letting these tinfoil hat nutjobs hijack a story about the 9/11 memorial'). As with insults, 'meta' comments do not make persuasive arguments, and are in fact about entirely different subject matter – they are concerned with the minutia of discussion rather than with the CTs and conventional explanations in question.

3. The comment must not consist solely of a link to an external website, Youtube video, or similar, or a link with minimal description that adds no meaningful content (e.g. 'go to ae911truth.org for some informed discussion about 9/11', 'google Popular Mechanics 9/11 debunking'). While it would be in principle possible to code the contents of such videos, websites, and other bodies of Web content, they are usually prohibitively large and may not even have been read or watched in their entirety by the commenter. Linking to them is no guarantee that the commenter finds their contents particularly persuasive, as they did not generate the content themselves.

4. The comment must not be copied verbatim from an external source. This was determined by conducting web searches when a comment was extremely long, contained unusual formatting such as inappropriate line breaks, or was out of character in terms of word choice or grammatical ability for a previously recognised commenter. As with external links, these passages were not generated by the commenters and cannot be relied upon as a reliable gauge of the structure of their own belief systems. As such, when an otherwise original post contained a passage quoted from an external source, only the original content was coded.

The author of each comment was recorded, along with the Web address of the parent news article and whether the comment was a direct reply to another, previously posted comment.

Coding

Once the comments were collected, they were coded by the primary author according to the hypotheses of interest. Although the primary coder was not blind to the hypotheses, the coding was vetted by a second coder who was (described below in the inter-rater reliability section). The tone of the comment (pro- or anti-conspiracist) was of interest to all analyses, so this was the first content variable coded. Since the first hypothesis concerned the number of unrelated CTs mentioned favourably and unfavourably in the comment, we coded two separate variables for each comment: one comprised the number of other CTs mentioned favourably, and the other comprised the number of other CTs mentioned unfavourably. Importantly, these counts did not include superconspiracies (Barkun, 2006) of which 9/11 was thought to be a part. For instance, if a commenter accused the New World Order or the Illuminati of masterminding the 9/11 attacks, this would be considered part of the 9/11 theory rather than a separate

theory entirely.

The next hypotheses concerned trust and powerlessness. We therefore coded whether each comment contained expressions of mistrust, whether generalised or specific (e.g. 'never believe what the media tells you' or 'nobody's trustworthy these days'), as well as powerlessness (e.g. 'they've won, there's nothing we can do').

Our primary hypothesis, and the one most relevant to the extended MBS theory of conspiracist belief, concerned whether the comments contained positive or negative arguments. As such we coded for two separate binary-valued variables: first, whether the comment contained advocacy of the person's favoured interpretation (e.g. 'thermite residue in the wreckage is consistent with controlled demolition', 'office fires can burn hot enough, uncontrolled, to weaken structural steel to the point of collapse'); second, whether the comment contained derogation of the opposing interpretation ('there is no way that a plane would have left so little wreckage at the Pentagon', 'it's totally implausible that such a large conspiracy could be kept secret for so long'); and third, whether the comment directly put forward an explanation for either the entirety of 9/11 or an element of it ('9/11 was an inside job', 'the collapse was caused by terrorists flying planes into buildings, nothing more').

We were also interested in how commenters used the term 'conspiracy theory'. As such, we created a nominally-coded variable with values representing the different ways in which each comment used the phrase and its variations: not at all; applied to an opposing interpretation ('that's just a crazy conspiracy theory'); applied to the commenter's own interpretation ('it may be a conspiracy theory, but it's still true'); both; or disputed in its applicability ('calling something a conspiracy theory is just a way of silencing dissent'). This included variations on the term, such as 'conspiracy theorist', 'silly conspiracy nonsense', etc.

The final hypothesis concerned the degree to which persuasive pro- and anti-conspiracist comments were hostile. As such, we coded the hostility of the comment toward those who hold opposing views on a scale of 1-5.

Data preparation

While a wide variety of comments were obtained, certain authors tended to dominate the conversation across several news articles and even multiple websites. Therefore, in addition to analysing the entire collection of comments, we conducted a separate analysis in which we calculated the mean values of each variable for each individual author and repeated the analysis on the level of authors rather than comments. All results obtained below were found at both the author and comment levels of analysis, so only the comment level is reported for the sake of brevity.

Inter-rater reliability

A random sample of 10% of the comments selected was passed to a second rater for coding, and intraclass correlation analyses were conducted to determine the degree of concordance between the two raters. We set the absolute limit for acceptable reliability for nominal data at $\kappa = .21$, the lower bound of the "fair agreement" range (Landis & Koch, 1997), and for ordinal data at ICC = .70, the usual lower-bound for the related Cronbach's alpha statistic. While there was good agreement regarding the conspiracist versus anti-conspiracist tone of each comment, $\kappa = .94$, and for hostility, ICC = .74, the ratings for advocacy, $\kappa = .49$, and the use of "conspiracy theory", $\kappa = .44$, showed only moderate inter-rater reliability. Derogation, $\kappa = .31$, and mistrust, $\kappa = .39$, showed fair reliability. The inter-rater reliability for making a direct statement about what happened was deemed to be unacceptably low ($\kappa = .20$), so this variable was dropped from the final analysis. With the exception of tone judgements, no variable showed very good reliability, so caution is due in interpreting these results.

Results

A total of 2174 useable comments were collected for analysis, of which 1459 were coded as pro-conspiracy and 715 as anti-conspiracy. The four news websites did not contribute equally to the sample, with 65 comments coming from ABC News, 632 from CNN, 1006 from the Daily Mail, and 471 from the Independent. Nevertheless, each site had about equal proportions of pro- and anti-conspiracy comments: for ABC, 21 anti-conspiracy and 44 pro-conspiracy; for CNN, 218 anti-conspiracy and 414 pro-conspiracy; for the Daily Mail, 330 anti-conspiracy and 676 pro-conspiracy; and for the Independent, 146 anti-conspiracy and 325 pro-conspiracy; $\chi^2(3) = 1.514, p = .68$.

Table 2 shows the general results of the coding analysis. In line with our predictions, pro-conspiracy comments mentioned more non-9/11 CTs as being correct than anti-conspiracy comments ($M = .12$ per comment versus $M = .02$; $t(2172) = 3.82, p < .001$) and fewer such theories as being incorrect ($M = .02$ per comment versus $M = .18$; $t(2172) = -7.51, p < .001$). Likewise, pro-conspiracy comments were more likely to express mistrust than their anti-conspiracy counterparts (10.6% versus 1.4%; $\chi^2(1) = 57.22, p < .001$). We were unable to test the powerlessness prediction, however, as only two comments in the entire sample contained expressions of powerlessness.

Analysis revealed a number of differences between the rhetorical styles of pro- and anti-conspiracist commenters. Twenty-six percent of pro-conspiracy comments contained information that constituted support for their own position, compared to 55% of anti-conspiracy comments. This difference proved to be significant, $\chi^2(1) = 170.22, p < .001$. In contrast, 72% of pro-conspiracy comments involved derogation of the opposing explanation, significantly more than the 55% of anti-conspiracy comments, $\chi^2(1) = 61.19, p < .001$.

As predicted, anti-conspiracy comments ($M = 2.08$, SD = 1.02) were

significantly more hostile than pro-conspiracy comments ($M = 1.44$, SD = .79), $t(2172) = 16.22$, $p < .001$ (see Table 2). Finally, neither pro- nor anti-conspiracists were particularly willing to self-apply the term 'conspiracy theory' or its derivatives: only 31 pro-conspiracist comments referred to their beliefs as such, while 63 used the term to describe the official story of 9/11 and 65 disputed others' use of it. Anti-conspiracists were likely to call opposing beliefs CTs, with 166 doing so, compared to only a single comment that self-applied the term and another one that contested its applicability. Four pro-conspiracist comments described both explanations as being CTs, but no anti-conspiracist comments did the same.

Table 2

Rhetorical components of pro- and anti-conspiracist comments in Study 5.

	Pro-conspiracist	Anti-conspiracist
Mean CTs mentioned favourably	0.12	0.02
Mean CTs mentioned unfavourably	0.02	0.18
% comments expressing mistrust	10.6	1.4
% comments advocating own explanation	26	55
% comments derogating other explanation	72	55
Mean hostility (1-5 scale)	1.43	2.07
Comments describing own belief as CT	31	1
Comments describing opposing belief as CT	63	166
Comments describing both beliefs as CTs	4	0
Comments disputing usage of 'CT'	65	1

Discussion

Although some caution is necessary in interpreting these data given the low inter-rater reliability of some of the variables, the data were generally consistent with our predictions. In agreement with the findings of Study 1, pro-conspiracist comments expressed more favourable opinions about unrelated CTs than anti-conspiracist comments did. This serves as a conceptual replication of previous findings indicating that beliefs in CTs tend to be correlated: if someone agrees with 9/11 CTs, they are also more likely to agree with other CTs (e.g. Goertzel, 1994; Swami *et al.*, 2010; Swami *et al.*, 2011). Further, in accordance with previous work on the role of trust in CT beliefs (e.g. Abalakina-Paap *et al.*, 1999; Simmons & Parsons, 2005; Wright & Arbuthnot, 1974), pro-conspiracist comments were more likely to contain expressions of mistrust than were anti-conspiracist comments. Despite the unexpected impossibility of testing the powerlessness hypothesis, this cluster of results should increase confidence in the validity of the remainder of Study 5's conclusions. The well-established tendencies for conspiracists to be less trusting than average and for CT beliefs to intercorrelate have manifested themselves in the persuasive communications examined, which suggests that other tendencies may do so as well.

Most notably, and in accordance with the idea that opposition to officialdom is a major component of the conspiracist extended MBS, conspiracy advocates showed a tendency to spend much more time arguing against the official explanation of 9/11 than advocating their own interpretation. In contrast, conspiracy opponents did both in approximately equal measures. This pattern of results supports the idea that CTs have their basis more in opposition to officialdom than in beliefs in specific alternative theories (Dean, 2002). For the adherents of the 9/11 Truth Movement examined in Study 5, the search for truth consists mostly of finding ways in which the official story

cannot be true. There is much less of a focus on providing and defending coherent explanations that can better account for the available evidence.

We also found that hostility was higher in persuasive arguments made by anti-conspiracists than in those by pro-conspiracists. As 9/11 conspiracism is by and large a minority viewpoint in the West (WorldPublicOpinion.org, 2008), this makes sense: anti-conspiracists, rather than focussing on presenting novel information, instead attempt to enforce conformity to the majority viewpoint (Latané, 1981). While the inter-rater reliability for hostility was acceptable, there is a risk that we may not have captured the full spectrum of responses, as we specifically excluded comments that consisted solely of threats, insults, or ridicule. As such, although we cannot say with certainty that anti-conspiracist comments are more hostile on average than pro-conspiracist comments, we can say with some confidence that this is true among comments that also contained some amount of persuasive content.

Finally, the statistics on the usage of the phrase 'conspiracy theory' provide an illustration of how the term is viewed. Few people were eager to apply it to their own positions. Pro-conspiracists were more likely to apply it to the conventional narrative, often counterintuitively referring to it as 'the official conspiracy theory', or to dismiss the term as needlessly loaded and derogatory, consistent with recent scholarly characterisations (Bratich, 2008). Part of the problem is probably the vagueness of the term; while we have provided a working definition in the present thesis, there is no universal agreement on what exactly constitutes a CT (Coady, 2006).

There are other possible interpretations for some of these results. For instance, the observed difference between pro- and anti-conspiracist comments could be seen as an issue of rhetorical congruence more than of genuine belief. This pattern could naturally arise as the result of an inclination toward arguing by analogy: conspiracists

might compare the 9/11 attacks to the JFK assassination, which a majority of Americans believe was the result of a conspiracy (Goertzel, 1994), in order to make a CT seem more plausible. In contrast, anti-conspiracists could compare 9/11 CTs to more overtly ridiculous or comical examples, such as the proposed cover-up of the existence of Bigfoot or the idea that Elvis Presley is still alive, in order to make the point that CTs in general are not to be taken seriously. While both of these strategies were in evidence in the data, there were also instances of the opposite tendency: some anti-conspiracists said that while some other CTs are true, there is no evidence for a 9/11 conspiracy, and some pro-conspiracists claimed that while most CTs are bogus, in the case of 9/11 the evidence is sufficient to reject the official story. This may ultimately be a more persuasive argument: people who portray themselves as nominal anti-conspiracists who nevertheless find 9/11 CTs plausible are essentially portraying themselves as deviant ingroup members. Such people can be very effective in exerting social influence on the majority (Maass & Clark, 1984).

Ideas of rhetorical congruency and self-presentation recall the issue of whether people's persuasive communications are really an accurate reflection of their own thoughts and ideas rather than a carefully calculated attempt to play off others' biases and reasoning. The 9/11 Truth Movement is, by and large, a movement of converts – most 'Truthers', at some point, became convinced that their previous belief in the official story was wrong (Kay, 2011). Therefore, in debating with those who hold the positions they previously held, they might repeat the arguments that first caused them to doubt the conventional narrative and shaped their subsequent thinking accordingly. On the other hand, the actual content that the discussions centred upon was often highly technical, and many of the arguments were unlikely to have been generated entirely by the people doing the commenting. While some commenters made intuitive judgements

about the physics of crashing airplanes and collapsing buildings, many others relied on arguments advanced in websites or documentaries devoted to either advancing or debunking 9/11 CTs. With the amount of information to choose from, however, the arguments commenters chose to put forward may still reveal useful information about their own decision-making.

The chief limitation of Study 5 is the fairly low inter-rater reliability. Aside from simply differentiating between pro- and anti-conspiracist comments, on which there was substantial agreement between raters, the reliability ranged from low to merely acceptable. The reason for this likely derives from the highly contextual nature of online discourse, in which the tone or main thrust of a comment depends upon previous comments and implicit information, the interpretation of which differs significantly between raters. Many of the comments had an ironic or sarcastic tone, which complicates interpretation somewhat. It can be difficult to tell the difference between a genuine comment making a particular point and an ironic comment attempting to parody it. Any comment whose tone is interpreted differently by two raters will naturally produce wildly different results. For instance, a comment reading 'ROFL FIRE CANT MELT STEEL U SHEEPLE!!!' could be interpreted either as a straightforward pro-conspiracist comment derogating the official story or an ironic anti-conspiracist comment mocking a common conspiracist argument. While this could be mitigated to some degree by referring to other posts by the same commenter, it was not always possible to do so. Even in the absence of irony and other challenges unique to an online debate setting, inter-rater agreement for this sort of coding is not very high; our reliability here is roughly on par with that of Schank and Ranney (1992), who used structured interviews to create personalised explanatory coherence networks. Whether Study 5 is an accurate analysis of conspiracist and anti-conspiracist discourse despite

the reliability problems is an issue that can only be addressed by future research.

In sum, despite some problems with the reliability of the coding, our results are in agreement with predictions derived from prior research and from the extended MBS theory of conspiracist belief. Consistent with much of the existing literature on individual differences associated with conspiracy belief, comments that supported 9/11 CTs were more likely to express mistrust and to refer to other CTs favourably. Pro-conspiracists were less overtly hostile than their anti-conspiracist counterparts, and did not appreciate being called conspiracy theorists. Perhaps most importantly, however, the finding that conspiracists spend more time arguing against official explanations than for alternative explanations supports extended MBS theory. The coherence of the belief system is driven by higher-order considerations such as a disbelief in official narratives, rather than positive beliefs in particular alternative narratives. This result also agrees with previous informal observations by anti-conspiracist commentators, who devote a great deal of time to examining and debunking CTs. One tactic which anti-conspiracists often accuse conspiracists of using is 'anomaly hunting':

> They imagine that if they can find (broadly defined) anomalies in that data that would point to another phenomenon at work. They then commit a pair of logical fallacies. First, they confuse unexplained with unexplainable. This leads them to prematurely declare something a true anomaly, without first exhaustively trying to explain it with conventional means. Second they use the argument from ignorance, saying that because we cannot explain an anomaly that means their specific pet theory must be true. I don't know what that fuzzy object in the sky is – therefore it is an alien spacecraft. (Novella, 2009)

The observed tendency of pro-conspiracists to argue against the conventional narrative

rather than in favour of a particular alternative closely resembles this description of anomaly hunting, and also parallels Keeley's (1999) observation that 'the chief tool of the conspiracy theorist is what I shall call errant data' (p. 117). We argue that in fact, anomaly hunting, or a fixation on errant data, is a manifestation of the way conspiracism is structured as a worldview, as specified in extended MBS theory. In general, conspiracy belief is not based around specific theories of how events transpire, though these may exist as well. Instead, conspiracism is rooted in several higher-order beliefs such as an abiding mistrust of authority, the conviction that nothing is quite as it seems, and the belief that most of what we are told is a lie. Apparent anomalies in official accounts seem to support this, even if they do not point to a specific, well-defined alternative. For the conspiracist, there are two worlds: one real and (mostly) unseen, the other a sinister illusion meant to cover up the truth; and evidence against the latter is evidence for the former.

While the existence of differences in pro- and anti-conspiracist persuasive tactics is informative in itself, it leaves us with the question of how effective this sort of pro-conspiracist argumentation really is. Does the vagueness in conspiracy advocacy identified by Clarke (2007) make for a more convincing argument than specificity? To what degree is derogating the official story effective when compared to advocating for a specific alternative theory? We explore these questions, and others, in Chapter 4.

Chapter 4: Just Asking Questions

Abstract

Following on from the study presented in Chapter 3, this chapter investigates the persuasiveness of various strategies used to convince people of CTs. Study 6 shows that CTs with few details are seen as more plausible than more detailed ones, while the opposite is true of conventional explanations, and Study 7 shows that raising generalised suspicion is effective in rendering CTs about as plausible as conventional explanations. Study 8 shows that provoking suspicion is a disadvantage when the evidence for a CT is high quality. Study 9 demonstrates that disparaging conventional explanations can backfire when combined with positive arguments in favour of a CT. Finally, Study 10 shows that there is no difference in persuasiveness between straightforward accusations of conspiracy and equivalent leading questions. Raising doubts about conventional narratives appears to promote generalised suspicion and mistrust, both of which are important components of conspiracist belief. This can eliminate the plausibility gap between conventional explanations and CTs by encouraging the audience to suspend their judgement regarding which explanation is correct, but can also lead people to question the CTs themselves if they are sufficiently well-specified. Moreover, additional details have the potential to create either coherence or conflict with higher-order beliefs, which can increase or decrease the plausibility of the explanation accordingly.

In Chapter 3, we examined the ways in which people argue for and against CTs in an online setting. This focus on the internet as a venue for conspiracy theorising is emblematic of a larger cultural shift: as digital communication has grown in popularity, the nature of discourse surrounding CTs has adapted accordingly. Stewart (1999), noting this shift, remarked that online discussion is remarkably well-suited for conspiracist discourse, as though 'the Internet [were] made for conspiracy theory: it *is* a conspiracy theory: one thing leads to another, always another link leading you deeper into no thing and no place' (p. 18).

While conspiracy advocates can propagate their ideas quickly and easily over the internet, however, conspiracy sceptics and proponents of rival theories can criticize and debunk with equal ease. The culture of instant criticism which has arisen on the internet has resulted in noticeable effects on the character of CTs: specifically, the most successful conspiracy advocates have become increasingly vague about the plots they propose (Clarke, 2007). Conspiracist tracts are increasingly likely to deal in innuendo rather than in comprehensive alternative narratives, with many of the details of how the alleged plot was accomplished being implicit or left as an exercise to the reader to figure out. This shift is particularly apparent among 9/11 conspiracists: the most influential figures in the 9/11 Truth Movement generally refuse to give a specific account of exactly what they believe happened on September 11th, 2001 (Kay, 2011). Instead, they focus on repeating the fairly nonspecific claim that the apparent terrorist attacks were an 'inside job' and raising doubts about the veracity of the official story rather than positing a coherent counter-narrative. This shift can be characterised as either a change in the complexity of the CTs themselves or a change in the degree of detail in which they are presented. Clarke (2007) has suggested that the latter is in fact the case: the theories might be quite complex in the minds of those proposing them, but

only the most essential details are presented explicitly. The fewest possible perpetrators are implicated, and methods are glossed over where possible.

The tendency toward vagueness in conspiracism has some intriguing parallels with the tenets of extended MBS theory put forward in this thesis. Recall that the theory proposes that conspiracist worldviews are held together not by beliefs in particular theories, but by broader beliefs – for instance, the idea that people are untrustworthy, or a negative attitude toward a particular group of potential conspirators. Extended MBS theory would therefore disagree with Clarke (2007) – in the domain of private belief as well as that of public advocacy, the particulars of a CT are less important than the simple fact that it is a CT. As long as a theory coheres with conspiracist higher-order belief structures, it will seem somewhat credible to people who hold a conspiracist worldview. These properties are inherent to almost all CTs, at least as they are defined in the present research. However, by the same token, a CT that is increasingly elaborate may seem decreasingly plausible to someone with an anti-conspiracist worldview: as more details are added, there are more opportunities for incoherence with incongruent higher-order beliefs. To take a recent example, alleging that the 2013 Sandy Hook school shooting is not all it appears to be coheres with a variety of conspiracist higher-order beliefs, and in the wake of the shooting there have been many such vague claims (Vancouver Sun, 2013). While some outright claim that it was an elaborate hoax or a false-flag attack, this approach appears to be less common, and may alienate people who are less invested in the particulars of the conspiracist worldview but may still agree with its general philosophy (Seitz-Wald, 2013).

There is good reason to believe that on some level, the general principles of the conspiracist worldview have broad appeal among Westerners. Conspiracy is a common theme in popular fiction (Melley, 2002) and the Western democratic ideal is predicated

upon a suspicion that those in authority are prone to abuse their power (Barkun, 2006). Trust in the institutions of society is at a historic ebb (Goertzel, 2010). This is fertile ground for conspiracy thinking. Moreover, under the extended MBS framework, mistrust and suspicion are thought to be core higher-order components of conspiracist belief, as dispositional trust is one of the most consistent predictors of conspiracist belief (e.g. Wright & Arbuthnot, 1974; Goertzel, 1994). However, mistrust may exert influence beyond simple coherence with CTs. Research has shown that when mistrust is provoked by some stimulus, it tends to generalise to any available target and promote the spontaneous generation of counterarguments (Schul, Mayo, & Burnstein, 2004; Sinaceur, 2010). This includes any well-specified account of an event, whether conspiracist or not, so providing the details of a CT may actually prove to be a disadvantage – the more details there are, the more amenable they are to counterargumentation.

If this formulation of the extended MBS theory is accurate, CTs will seem more convincing when they are presented vaguely and without much detail, and provoking suspicion will lead to spontaneous counterargumentat generation – not just against official explanations but against CTs as well. These ideas are the focus of the empirical component of this chapter. While Studies 7-10 investigate the role of suspicion and counterargument in the context of a particularly conspiracist rhetorical technique known as 'just asking questions', Study 6 examines the role of detail and specificity in the general plausibility of CTs. Are CTs more plausible when they are more or less detailed, and are they any different in this respect from conventional explanations?

Study 6

Perhaps the most relevant existing research on the effect of detail on the plausibility of social explanations comes from the literature on cognitive heuristics,

particularly the availability heuristic (Tversky & Kahneman, 1974). More complex, detailed explanations are seen as more plausible when they fit with existing ideas about the world. The canonical example used by Tversky and Kahneman is that of a woman who is politically liberal and interested in social justice issues, and is therefore judged more likely to be a feminist and work at a bank than simply to work at a bank. This holds true even though the latter option includes the former and therefore must be at least as probable – the closer the description of the woman is to the perceiver's schematic view of her, the more likely that the description will appear to be correct. Descriptions that add incongruent details, on the other hand, are generally perceived as being less accurate.

The availability heuristic can be instantiated within Thagard's (1989) explanatory coherence framework: an explanation for some event will seem more plausible if it draws additional activation through coherence with higher-order knowledge structures. As an illustration of this principle, consider the case of 9/11 CTs. To simplify matters, say we have one evidence node:

E1. The Twin Towers collapsed.

There are two rival explanations for E1, which are mutually incoherent. One is a simplified version of a popular 9/11 CT:

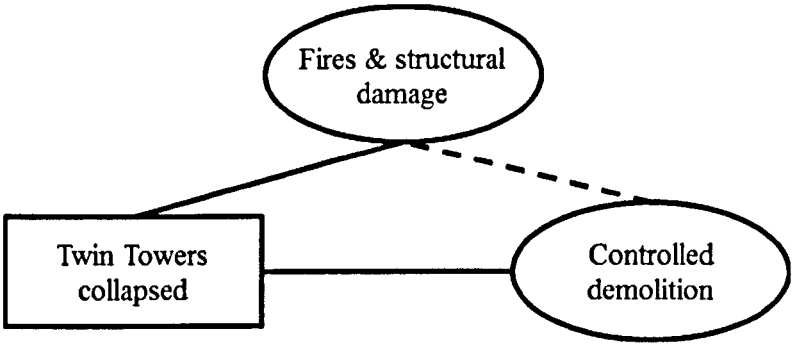
C1. The towers were destroyed by a controlled demolition.

The other is a shortened version of the official explanation:

O1. The towers collapsed because of fires and structural damage.

C1 and O1 both cohere with E1 and incohere with one another. In this simplified model, the network is symmetrical and neither explanation has a particular advantage (see Figure 8).

Figure 8. An explanatory coherence network representation of the 9/11 'controlled demolition' CT and the conflicting conventional explanation. Solid lines represent coherence and the dotted line represents incoherence.



Now consider what happens if more detail in the form of an additional proposition C2 is added to the CT, and if there is an additional evidence node E2, which represents a higher-order belief:

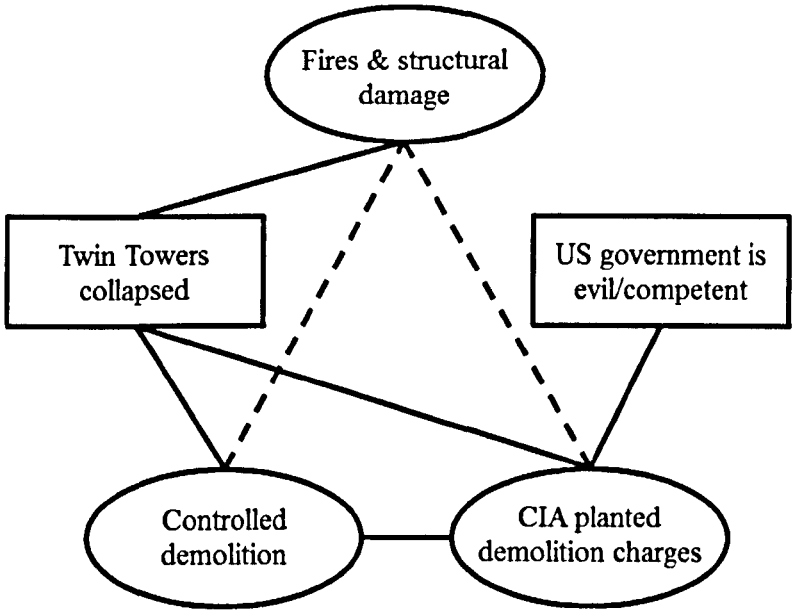
C2. Demolition charges were planted by CIA agents.

E2. The American government is both competent and malevolent.

C1 and C2 both cohere with E1. In addition, C2 coheres with E2, since such an evil and audacious plan would be in character for US Government agents, and C1 and C2 both incohere with O1 as both cannot be true at the same time (see Figure 9).

Running Thagard's (1989) javaECHO instantiation of the ECHO model on this network (see Appendix A for the code representing the full model, along with all other models referred to in the present section) reveals that the CT now has an advantage over the conventional explanation, with a final equilibrium activation of .61 for C1 versus -.51 for O1. This is the result of additional activation stemming from the CT's coherence with the belief in the competence and malevolence of the US government.

Figure 9. An explanatory coherence network representation of a simplified conspiracist belief system and a relatively detailed controlled demolition CT. Solid lines represent coherence and dotted lines represent incoherence.



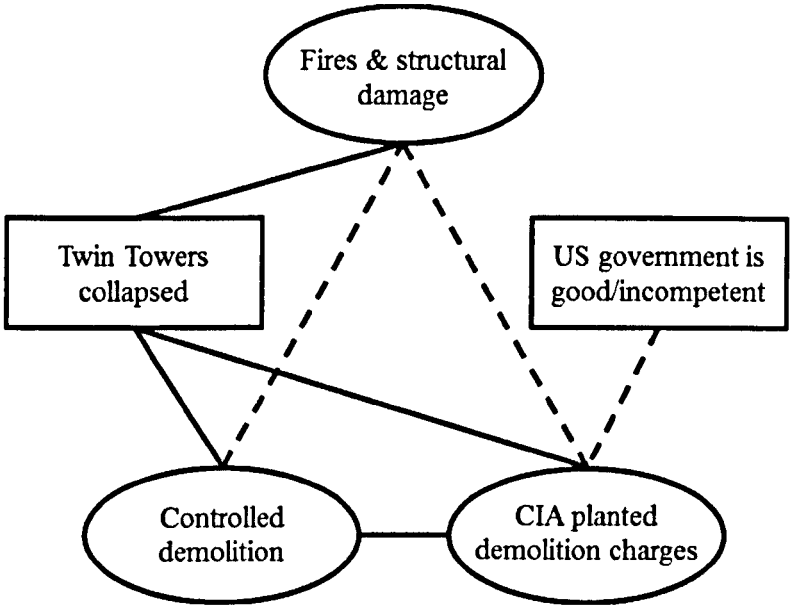
However, not everyone would hold belief E2. Many probably see the American government as benevolent, indifferent, or simply incompetent enough that they are incapable of executing and covering up such a complex plot. For these people, E2 might be revised as such:

> **E2'.** The American government is either incompetent or at least not actively malevolent.

In this version of the model, E2' does not cohere with C2, and in fact probably contradicts it – incompetence or lack of ill will would seem to incohere with an accusation of conspiracy. A javaECHO run of this version of the model (see Figure 10) reveals that replacing E2 with E2' has rendered the official explanation more plausible than the CT, with equilibrium activations of .61 and -.48 respectively (see Appendix A

for the full results). Whether detail is an advantage or a disadvantage therefore depends on coherence between the additional propositions and higher-order beliefs, as suggested by Tversky and Kahneman (1974).

Figure 10. An explanatory coherence network representation of a simplified anti-conspiracist belief system and a relatively detailed controlled demolition CT. Solid lines represent coherence and dotted lines represent incoherence.



Of course, these examples are simplified in the extreme; in reality, nearly every proposition might be supported or contradicted by a great number of different beliefs and pieces of knowledge about the world (e.g. Simon *et al.*, 2004). However, this example serves to demonstrate that all else being equal, increasing the complexity of a theory should work to its benefit when the added details are congruent with one's worldview, and should work against it when the added details contradict established views and beliefs. Given that CTs tend to be rejected by a majority of the population

(Goertzel, 1994b; WorldPublicOpinion.org, 2008; Zonis & Joseph, 1994), they likely involve elements that are at odds with beliefs held by the majority. For instance, an internal locus of control (Abalakina-Paap *et al.* 1999; Hamsher *et al.*, 1968), high trust in government (Wright & Arbuthnot, 1974), a belief that the proposed conspirators are low in entitativity (Grzesiak-Feldman & Suszek, 2008), and low Machiavellianism (Douglas & Sutton, 2011) would all constitute obstacles to conspiracy belief. Based on this potential incongruence between CTs and mainstream beliefs, we predicted that more complex CTs would generally be less convincing while more complex conventional explanations for the same event, following the availability heuristic (Tversky & Kahneman, 1974), would be more convincing.

Method

Participants

Ninety-four students (mean age 22.8, 39% female) from the University of Kent participated in Study 6 in exchange for sweets.

Materials, procedure, and design

For the purposes of Study 6, we created three fictional scenarios which could be explained either with or without reference to conspiracy: an explosion at a nuclear power plant, the announcement and subsequent retraction of the discovery of a cancer vaccine, and the assassination of the president of a developing nation. Each scenario was presented through a brief initial description, and was followed by four CTs or conventional explanations of increasing detail. The initial descriptions were very short and written so as not to favour either the conventional or conspiracist explanation. Each explanation included the text of the explanations before it, with an additional phrase added (for the sake of brevity, the repeated text is not included here). For example, the CTs for the cancer vaccine scenario were as follows:

1. The announcement was retracted because of external pressure.
2. … from pharmaceutical corporations, who stand to lose a great deal of money on cancer treatments if a vaccine is developed.
3. … The senior researchers were paid substantially for their silence.
4. … and the junior researchers were threatened into staying quiet.

The conventional explanations were created to be as similar as possible in terms of length and the number of actors involved. For the cancer cure scenario, the conventional explanations were as follows:

1. The announcement was retracted because the data were inaccurate.
2. … There was an error in the researchers' data analysis that led them to the wrong conclusion.
3. … The senior researchers were careless in double-checking their results.
4. … and the junior researchers were afraid to speak up about the errors.

As in Studies 2-4, each explanation was followed by a set of six Likert scale items ranging from 1-7, asking the participant to rate how much they agreed with the explanation (scale endpoints labelled *'strongly disagree'* and *'strongly agree'*), as well as the degree to which they found it plausible, convincing, worth considering, interesting, and coherent (scale endpoints labelled *'not at all'* and *'very much'*). Whether the scenarios were followed by conventional explanations or CTs varied between subjects, resulting in a 2 (explanation type: conspiracy vs. conventional; between-participants) x 4 (level of detail; repeated measures) mixed factorial design. The order in which the scenarios were presented was counterbalanced. A sample Study 3 questionnaire is included in Appendix F.

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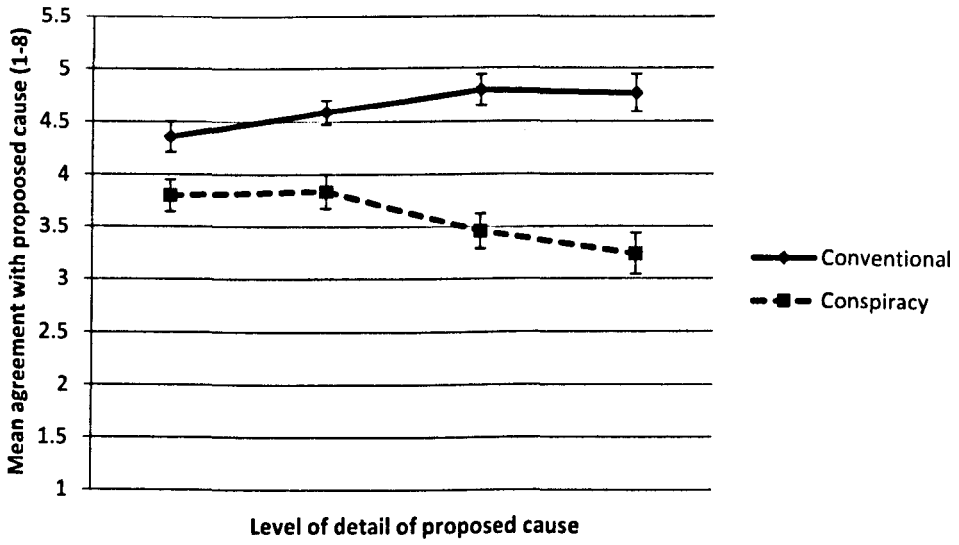
Results and discussion

A mixed-design 2 (explanation type: conspiracy vs. conventional; between-participants) x 4 (level of detail; repeated measures) ANOVA revealed a significant main effect of explanation type, such that CTs (marginal $M = 3.55$) elicited less agreement than conventional explanations (marginal $M = 4.63$), $F(1,90) = 32.61$, $MSE = 3.08$, $p < .001$. This was true not just in general, but also at each level of detail (planned comparisons; all $ps < .01$). There was also a significant interaction between explanation type and detail, $F(2.45,220.74) = 9.59$, $p < .001$ (Huynh-Feldt df correction used due to significant violation of the sphericity assumption, Mauchly's $W = .618$, $\chi^2(5) = 42.68$, $p < .001$). Simple effects analysis revealed that agreement increased with specificity for conventional explanations, $F(2.37,106.53) = 3.25$, $MSE = .74$, $p = .04$, partial $\eta^2 = .14$, and decreased with specificity for CTs, $F(2.59,116.6) = 8.45$, $MSE = .51$, $p < .001$, partial $\eta^2 = .16$ (see Figure 11).

Figure 11. Agreement with conventional and conspiracy explanations over varying levels of detail in Study 6. Error bars represent standard error of the mean.



This pattern of results is in line with our predictions. The more complex a CT is in its presentation, the less plausible it seems. Conversely, complexity appears to be an asset for conventional explanations. The dissociation between CTs and conventional explanations in this regard supports the idea that the added details are broadly coherent with existing higher-order knowledge structures in the latter case and incoherent in the former. The practical implications are clear: on average, the most effective way to convince someone of a CT is to make the theory as simple as possible and to make any added details conform to what they already believe to be true about the world. Likewise, when arguing against a CT, an effective approach would be to state the CT in the most specific, complex terms possible to make salient any potential incoherence between the details of the theory and the perceiver's other beliefs, as well as to promote spontaneous counterargument on the part of the audience (Schul *et al.*, 2004).

Study 6's effects are adequately explained by schematic incongruency. If counterargumentation is another possible contributor to the decrease in the plausibility of CTs as they become more detailed, why is the same not true for conventional explanations – in other words, why do people not generate counterarguments against complex conventional explanations? This is to be expected, as counterargumentation is prompted by mistrust or suspicion, both of which are inherent to the conspiracist belief system but not to the acceptance of conventional, non-conspiracist explanations.

Finally, it should be noted that even with the smallest possible amount of detail, there was still a gap between the two explanation types: at no point did CTs reach the level of agreement enjoyed by conventional explanations. Simply describing CTs in vague terms does not appear to be enough to bring their agreement on par with conventional explanations. To do so may necessitate a distinct rhetorical approach .We now turn to an examination of one such approach, which combines a lack of detail with

the explicit promotion of mistrust and suspicion.

Study 7

While the most plausible explanation for Study 6 appears to involve varying levels of congruence between additional details and higher-order beliefs, the possibility of a role of suspicion and counterargument merits examination. One method of arousing suspicion and prompting mistrust of officialdom is known in internet debating terminology as the Just Asking Questions (JAQ) approach, named for the response it allows when challenged: 'I'm not saying it was necessarily a conspiracy; I'm just asking questions' (e.g. Rowe, Bermas, Brown, & Avery, 2005). Anti-conspiracist activists have characterized it humourously as a form of intellectual masturbation (RationalWiki, 2009; emphasis in original):

> **JAQing off** is the act of cowardly [sic] spouting accusations while cowardly hiding behind the claim of '**J**ust **A**sking **Q**uestions'. The strategy is to keep asking leading questions in an attempt to influence listeners' views; the term is derived from the frequent claim by the denialist that they are 'just asking questions', albeit in a manner much the same as political push polls.

JAQ, as a type of argument by insinuation, is perhaps one of the most extreme forms of the vagueness in conspiracy advocacy identified by Clarke (2007). Not only does it avoid specific claims of perpetrators and motives, it even avoids explicitly stating the existence of a conspiracy at all. JAQ is exemplified by the 9/11 conspiracy film Loose Change (Rowe *et al.*, 2005). A representative section of the film presents an analysis of the aircraft debris inside the Pentagon and asks the viewer, 'Why is the damage to the Pentagon completely inconsistent with a Boeing 757?' The implication, of course, is that whatever hit the Pentagon was not a Boeing 757 – but that claim is never explicitly

made in the film, nor do the filmmakers allege outright that the attacks were perpetrated by the American government. While this is clearly the message of Loose Change, it is conveyed almost entirely through clever editing, sinister musical cues, strategic pauses, and leading questions. The number of direct accusations of conspiracy in the 65-minute-long film can be counted on one hand, and is dwarfed by the number of oblique suggestions and innuendoes.

Much like the more general construct of vagueness, JAQ may be a highly persuasive tactic for CT advocacy. Rather than providing a coherent theory that can be argued against or disagreed with in its particulars, it seeks to sow distrust in officialdom, cast doubt upon official narratives, and lead the audience to conspiracy explanations. It keeps the argument vague, and therefore, as shown in Study 6, more plausible than if it were elaborated in any great detail. Moreover, the use of innuendo rather than direct accusations of impropriety may help to mitigate the effect of source credibility: even when the source of a particular accusation is seen as unreliable or sensationalistic, the implications of innuendo-type arguments tend to be readily accepted (Wegner, Wenzlaff, Kerker, & Beattie, 1981). This is important given the inherent stigma of conspiracy theorising indicated by the effects found in Study 5. Rather than making direct accusations of conspiracy, which may induce incoherence between the hypothesis and the widely-held higher-order belief that CTs are generally untrue (Bratich, 2008; Coady, 2006), JAQ frames itself as simple questioning without any agenda other than uncovering the truth. Finally, JAQ aims to arouse suspicion and promote mistrust of official narratives. This mistrust should generalise to all available information, prompting counterarguments against a well-specified official story while a poorly specified CT might remain immune (Schul *et al.*, 2004).

We resolved to test the effectiveness of JAQ by attempting to persuade people

that a real-world event, rather than a fictional scenario, had a conspiracy behind it. We predicted that it would be more effective in doing so than direct, unambiguous advocacy of a CT, even when the same supporting evidence was presented.

Method

Participants

One hundred and fifty-eight University of Kent students and staff participated in exchange for a randomised reward: either a small snack or £1-£2, determined by a dice roll. Of these, six were excluded from data analysis for not answering all questions or otherwise failing to follow instructions, leaving a total of 152 data points.

Materials, procedure, and design

In early 2010, the Deepwater Horizon oil rig exploded and sank in the Gulf of Mexico, causing a massive oil leak and a large-scale environmental disaster. At the time there were many conspiracist accounts of the event circulating around the internet, though for the most part they had not received a significant amount of mainstream media attention. In Study 7, which took place shortly after the oil spill, we attempted to convince participants of one such CT: that the US Government sabotaged the oil rig in order to demonize the oil industry and create support for carbon taxes and harsher environmental regulations.

Participants first read a one-paragraph summary of the events of the oil spill and the official story. Next, they read a list of claims about the events surrounding the spill, some true, some distorted versions of the truth, and some entirely fictitious. The claims were presented as facts and were intended to give strong support to the idea that the oil spill was indeed the result of a government conspiracy. For instance:

- Halliburton, a contracting firm with substantial connections to the US

government, bought an oil cleanup firm about a week before the spill happened. *[partially true; Halliburton acquired an oil well service firm 11 days before the explosion, but the company in question was largely associated with safety services rather than cleanup]*

- Some of the surviving rig workers claim they heard a small explosion just before the large one that ultimately destroyed the rig. *[untrue; this was adapted from similar claims regarding the 9/11 attacks and the possibility of controlled demolition charges being in the building]*
- Goldman Sachs, an investment company with close ties to high-ranking members of the U.S. government, dumped much of its BP stock shortly before the spill. *[true; Goldman Sachs did sell some of their shares in BP in the first quarter of 2010]*

Following this list of 'facts', participants read a short transcript of a radio interview with an 'independent researcher'. The content of the interview varied between participants: in the control condition, the researcher simply talked about the severity of the spill:

> The whole Gulf of Mexico is in danger, not just in the short term, but in the long term too – we could see twenty, maybe thirty years before a real recovery of the ecosystem. We knew right from the beginning that they were trying to play down the importance, to make it not seem as bad as it was, but the truth is that it's actually worse than it seems. This is a real catastrophe, and I don't think anyone who's informed on the subject is satisfied with the way BP and the American government are conducting the cleanup. Whether it's because of greed or just incompetence, the spill and its after effects are going to be much worse than they ought to be.

In two different direct advocacy conditions, the interviewee directly accused the

American government of conspiracy. In one version, he was vague about how it was accomplished:

> The American government is in trouble. They're low on money, so they need to tax American corporations to keep themselves – keep their heads above water. So what do they do? They decide that they need a disaster. I don't think this so-called oil spill was an accident. I really don't. I think that the oil rig was bombed, and that the bombing was perpetrated by agents of the United States government.

In the other version, the interviewee was more specific about how the conspiracy was carried out:

> The American government is in trouble. They're low on money, so they need to tax American corporations to keep themselves – keep their heads above water. So what do they do? They decide that they need a disaster. So they sabotage an oil rig with a little bomb, and distract the Coast Guard with a bogus terrorism drill so they can't put out the fire, and blame it on evil negligent corporations. They make even more money off it through their cronies in Goldman Sachs and Halliburton, and they freeze out the media, they don't let them investigate the oil rig. Anyone who suspects what went on, like the workers, they intimidate or bribe or just kill. And it worked perfectly. We all fell for it.

In the JAQ condition, he implied the existence of a conspiracy but refused to say as much outright, instead promoting distrust of authorities and doubt in the official story:

> There are too many problems, too many inconsistencies, too many connections to powerful people who have an interest in a disaster like this. And so there are questions that need to be raised, because there's more to

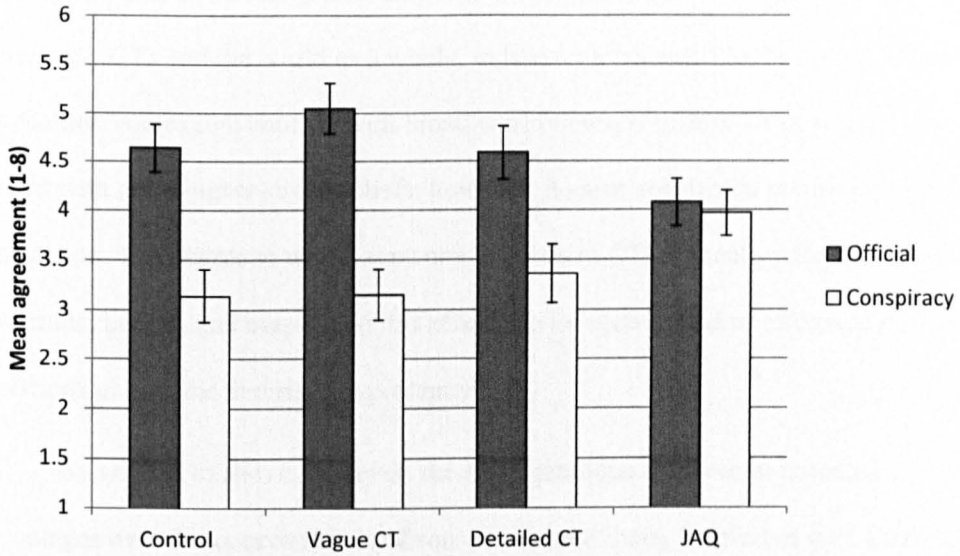
this than meets the eye. But I don't want to speculate on what really caused the oil spill. I want people to go and do the research and draw their own conclusions about what really happened.

Finally, participants were presented with three statements: 'The official story is basically true', 'The oil spill was an accident', and 'The oil spill was the result of a government conspiracy'. As in Study 6, we asked participants to rate their agreement with each statement on a 1-8 Likert scale, along with the degree to which they found the statements to be plausible, convincing, worth considering, interesting, and coherent. This resulted in a 2 (explanation type: official story vs. CT; within-participants) x 4 (advocacy strategy: control, vague, specific, and JAQ; between-participants) mixed factorial design. A sample questionnaire is included in Appendix G.

Results and discussion

Planned comparisons by condition revealed no significant differences between agreement with the official story and agreement that the oil spill was an accident, so only the accident results are analysed here for the sake of brevity. A 2 (explanation type; within-participants) x 4 (advocacy strategy; between-participants) mixed ANOVA with agreement as the dependent variable revealed a significant main effect of explanation type such that participants generally expressed more agreement with the official story ($M = 4.60$) than with the CT ($M = 3.40$), $F(1,148) = 32.06$, $MSE = 3.32$, $p < .001$, partial $\eta^2 = 18$. This was qualified by a significant interaction, $F(3,148) = 3.36$, $MSE = 3.32$, $p = .02$, partial $\eta^2 = .06$. Pairwise comparisons using the LSD error correction showed significantly greater agreement with the official story than with the CT in the control, detailed CT, and vague CT conditions (all $ps < .01$) but not in the JAQ condition, $p = .80$ (see Figure 12).

Figure 12. Agreement with official story and CT over different persuasive styles in Study 7. Error bars represent standard error of the mean.



This result is in line with our hypotheses: participants generally expressed scepticism about the conspiracist explanation of the oil spill, agreeing more with the official explanation. The only exception was in the JAQ condition, where a CT was advocated through suggestion and innuendo rather than explicitly. As alluded to above, the strength of JAQ may lie in the fact that the idea of conspiracy is never raised explicitly as an argument, which helps to minimise incoherence between the conspiracist explanation and the anti-conspiracist views held by the majority of observers. Instead, the focus is on the perceived inadequacy of the official explanation and some pieces of evidence that point to something vaguely sinister. In the direct approach, however, the CT is well-defined and can end up as a target for counterarguments provoked by the suspicion and distrust engendered by accusations of conspiracy (Schul *et al.*, 2004).

Along with Study 6, the findings of Study 7 indicate that CTs are most

believable when they are simple and never explicitly stated. Providing details, or even being explicit about the existence of a conspiracy, seems to have a deleterious impact. We propose that this effect is primarily due to background knowledge and beliefs concerning CTs and the world as a whole, in line with extended MBS theory. When a proposition comes into conflict with broad worldviews, it suffers for it; when it is in accord with one's higher-order beliefs, however, it gains substantial credibility from the association. The degree to which someone believes in CTs is greatly affected by their own traits, beliefs, and biases, and this effect can be accentuated or mitigated through variations in how the theories are presented.

As alluded to above, however, the JAQ technique has several potential advantages over direct accusations of conspiracy, and Study 7 does not give a strong indication of which one is at work. While JAQ is indeed vague and likely provokes suspicion, it may also be more convincing than direct advocacy because it insulates the substance of a pro-conspiracist argument from the potentially damaging stigma surrounding CTs in general. We examine this possibility in Study 8.

Study 8

Extended MBS theory would explain Study 7's JAQ effect with recourse to the way in which it minimises contact between the particulars of the CT and other components of the perceiver's potentially non-conspiracist worldview. However, this is not the only possible interpretation of the results. The results of Study 5 suggest that CTs suffer from an intellectual stigma. This may prevent people from giving due consideration to hypotheses that appear to be conspiratorial (Bale, 2007; Bratich, 2008; Keeley, 1999). JAQ may therefore serve as a way of disguising CTs as non-conspiratorial questioning of received explanations: rather than directly conveying CTs to the reader through explicit presentation, JAQ's use of innuendo and advocacy of

questioning authority and independently coming to one's own conclusions may help to mitigate the effect of this stigma. To understand why, it is necessary to describe in some detail the elaboration likelihood model of persuasion (ELM).

The ELM is a dual process model proposing that persuasive messages are processed in different ways depending on the perceiver's ability and inclination to think about the matter in depth (Petty & Cacioppo, 1986). A perceiver who is likely to think critically about the content of a particular persuasive communication is said to have high elaboration likelihood, and will be more convinced by good arguments than by bad ones. This is the *central route* to persuasion: a thoughtful evaluation of the contents of a persuasive message, with the result depending largely on the strength of the arguments. A perceiver who is either unable or unwilling to give much thought to the substance of the argument is said to have low elaboration likelihood, and is more likely to rely on peripheral cues such as the perceived expertise or attractiveness of the source. Accordingly, this method is known as the *peripheral route*: evaluating a message on the basis of external cues rather than on the quality of the message itself. While the strength of an argument has a measurable effect on central route persuasion due to the primary importance of thoughtful evaluation of the message, the success of peripheral route persuasion is mostly unrelated to the strength of the arguments themselves. Conversely, peripheral cues such as source attractiveness have a stronger effect under conditions of low elaboration likelihood (Petty & Cacioppo, 1984).

This distinction is important when considering CTs' negative reputation. Bale (2007) has suggested that because of the stigma surrounding CTs, people generally do not bother to distinguish between genuine and bogus conspiratorial hypotheses – in a reversal of the pattern we found in Chapter 2, while conspiracists entertain CTs simply because they are CTs, non-conspiracists reject them for the exact same reason. In this

view, peripheral-route consideration of CTs by non-conspiracists would put the CTs at a disadvantage. However, increasing elaboration likelihood would help to mitigate the impact of the social stigma of conspiracy theorising. Intellectual orthodoxy's distaste for CTs is not based solely on rational considerations of incoherence with broader views of the world – it is affective as well as cognitive (Bratich, 2008). Therefore, pro-CT persuasive communications under conditions of high elaboration likelihood should depend less on congruence with broader worldviews and more on the strength of the argument itself. Since JAQ distances itself from allegations of conspiracy, emphasises the importance of critical thinking, and encourages the reader to participate in making conspiratorial inferences, it may well contribute to more central processing of conspiracist arguments than direct accusations would (c.f. Petty, Cacioppo, & Heesacker, 1981).

Study 8 was designed to test the elaboration likelihood explanation for the JAQ effect. When elaboration likelihood increases, so too does the effect of argument quality – stronger arguments are more convincing the more thought they are given, while the opposite is true of weaker arguments (e.g. Petty & Cacioppo, 1984). Therefore, Study 8 constituted an experiment in which argument technique and argument quality both varied between participants. The evidence in favour of the CT was either strong or weak, and the rhetorical argument constituted either direct accusations of conspiracy, JAQ, or a control condition. If the JAQ effect is due to increased elaboration likelihood, we should see a stronger effect of argument quality. In other words, we predicted that while stronger arguments would be more convincing for all participants, this effect would be more pronounced when the arguments were delivered in a JAQ-style message than when delivered in a more straightforward manner.

Method

Participants and design

We recruited one hundred and eighty-four participants for Study 8, all undergraduate and postgraduate students at the University of Kent. In exchange for their participation, participants were given a randomised prize of either sweets or £1-£2. Participants were randomly assigned to one of four conditions: they would either be presented with a strong straightforward argument, a strong JAQ argument, a weak straightforward argument, or a weak JAQ argument. As such, the study followed a 2 (evidence quality) x 2 (argument style) between-participants factorial design.

Materials and procedure

The materials used in Study 8 were similar to those used in Study 7. As before, participants were presented with a brief summary of the events surrounding the Deepwater Horizon oil spill, followed by a list of leading 'facts' (mostly fabricated) and a brief interview with a fictitious researcher. In Study 7, however, the list of facts had two separate versions: one in which they were designed to be convincing, and one in which they were designed to be unconvincing. The subject matter was still roughly the same, but the degree to which the facts pointed to a conspiracy varied systematically between participants. For instance, one 'strong' item was:

> On the day of the spill, the US Coast Guard were busy participating in a large-scale anti-terror drill and had a delayed response as a result. This kind of drill happens only once each year.

And the equivalent 'weak' item:

> On the day of the spill, the US Coast Guard were busy participating in a large-scale anti-terror drill and had a delayed response as a result. This kind

of drill is conducted about twice a month.

This was the general pattern for the argument quality manipulation: weaker arguments were more likely to be attributable to coincidence or misperception, whereas stronger arguments were more definite and contained clearer implications of conspiracy. The relative quality of each argument was assessed in a brief pilot study, which confirmed that the high-quality arguments were generally viewed as more convincing than the low-quality ones were.

We manipulated argument style by varying the content of the interview at the end. The JAQ interview was the same as in Study 7, and the straightforward interview was a word-for-word copy of the direct conspiracy condition in Study 7. Finally, participants were presented with two statements, 'The official story is basically true' and 'The Gulf of Mexico disaster was the result of a government conspiracy', followed by the same 8-point Likert scales used in Study 7. A sample of the questionnaire used in Study 8 is included in Appendix H.

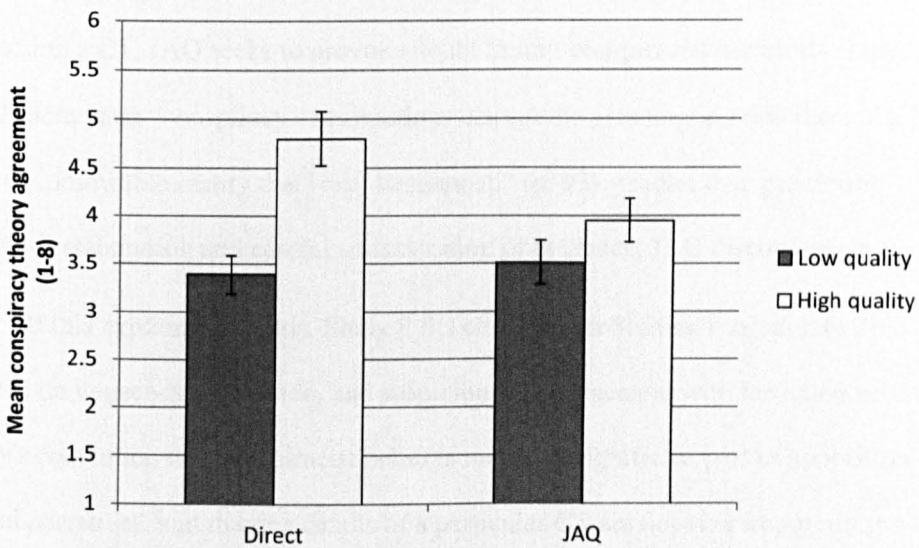
Results

A 2 (evidence quality) x 2 (argument style) between-participants ANOVA revealed a significant effect of evidence quality such that participants given strong evidence in favour of CTs agreed less with the official story, $F(1,180) = 8.49$, $MSE = 2.61$, $p < .01$, partial $\eta^2 = .05$. However, there was no main effect of argument style, $F(1,180) = .016$, $MSE = 2.61$, $p = .90$, partial $\eta^2 < .01$, nor was there any interaction between the two variables, $F(1,180) = .147$, $MSE = 2.61$ $p = .70$, partial $\eta^2 < .01$.

Another ANOVA, this time with agreement with the CT as the dependent variable, showed the equivalent effect of evidence quality: participants who were exposed to strong arguments agreed more with the CT, $F(1,174) = 15.54$, $MSE = 2.48$, $p < .001$, partial $\eta^2 = .08$. There was no main effect of argument style, $F(1,174) = 2.37$,

$MSE = 2.48$, $p = .13$, partial $\eta^2 = .01$, but there was a significant interaction, $F(1,174) = 4.27$, $MSE = 2.48$, $p = .04$, partial $\eta^2 = 02$. While there was no simple effect of argument style when the provided evidence was low-quality, $F(1,174) = .14$, $MSE = 2.48$ $p = .71$, partial $\eta^2 < .01$, there was a significant simple effect in the high-quality condition, $F(1,174) = 6.50$, $MSE = 2.48$, $p = .01$, partial $\eta^2 = .04$. Specifically, agreement with the CT was lower for high-quality JAQ arguments ($M = 3.95$) than it was for high-quality explicit arguments ($M = 4.80$) (see Figure 13).

Figure 13. Mean CT agreement as determined by argument quality and argument style in Study 8. Error bars represent standard error of the mean.



Discussion

While we found an argument quality effect in Study 8, it was the opposite of the one hypothesised. If the JAQ technique is effective because it increases elaboration likelihood, it should have been more persuasive than direct arguments when the

arguments were high-quality. Instead, direct arguments were much more persuasive in the high-quality condition. This directly contradicts the hypothesis that JAQ works by increasing elaboration likelihood.

There are several potential reasons for this unexpected finding. Firstly, the effect of JAQ might be the opposite of what was hypothesised – it is possible that JAQ actually decreases elaboration likelihood instead of increasing it. Rather than engaging directly with the evidence by attempting to fit it into a coherent narrative, JAQ might encourage a cursory surface examination of the evidence and a vague sense of suspicion while resisting any attempt to shape it into an alternative account of what might have happened. Making such a detailed argument invites counterargument (Schul et al., 2004), while JAQ shuts down any attempts at such by its very nature – rather than advocating a CT, JAQ seeks to provoke doubt in non-conspiracist narratives. Dean (2002) noted that "conspiracy's insinuations disrupt the presumption that there is a coherent, knowable reality that [can] be mapped" (p. 93) – rather than promoting conscious elaboration and careful consideration of evidence, JAQ discourages it.

If this explanation holds, Study 8 fits closely with Studies 1 through 6. The reliance on vagueness, innuendo, and suspicion is in agreement with the extended MBS theory's contention that conspiracist belief is rooted in significant part in opposition to official narratives, and that the details of a particular CT are not very important. As shown in Study 5, conspiracists focus less on the details of CTs and more on perceived flaws in the competing mainstream explanations. Finally, Study 6 showed that including additional details when presenting CTs is in fact a disadvantage: the less detailed a CT is, the less it diverges from most people's established knowledge about the world and the more plausible it seems. JAQ may decrease elaboration likelihood by shifting the focus from the details of the CT to the inadequacies of the official story.

However, if it is indeed true that JAQ serves to reduce elaboration likelihood, participants who received a JAQ-style argument should have been more convinced by the low-quality arguments than those who received a more explicit argument were (Petty & Cacioppo, 1984). We did not find such an effect. This naturally casts doubt upon the validity of the decreased elaboration likelihood explanation. Alternatively, the arguments used might have been too strong and/or too weak. The weak arguments may have been seen as extremely unpersuasive, and it could be that even adding a peripheral-route approach in the form of JAQ does not do much to improve them. Participants may have found the interviewee to be overly smug and disingenuous in the high-quality JAQ condition, or overconfident and unbalanced in the low-quality explicit condition. Alternatively, the issue may have been one of power – it is possible that there was a difference in low-quality arguments' effectiveness according to how they were presented, but the sample size was insufficient to detect it. A post-hoc power analysis shows that for an effect with partial $\eta^2 = .01$ and an alpha level of .05, a sample size of 184 would give $1-\beta$ of only 0.27.

Study 7 also presents a problem for one important reason: Study 8 did not replicate its predecessor's JAQ effect. In the high-quality condition JAQ produced the opposite effect, apparently causing a drop in conspiracy agreement relative to explicit arguments; in the low-quality condition, there was no simple effect of argument style on agreement with the CT – in other words, JAQ did nothing at all. This failure to replicate the effect of Study 7 makes any interpretation of the JAQ effect based on Study 8's results problematic. It could be that the strong arguments were simply too strong and the weak arguments too weak, and the JAQ technique only produces a salutary effect when there is some amount of uncertainty regarding the plausibility of a CT. Indeed, van Prooijen & Jostmann (in press) showed that some pro-conspiracy interventions work

only under conditions of uncertainty. Alternatively, Study 7 was conducted while the Deepwater Horizon oil spill was still in progress and therefore fresh in participants' minds, and when a number of actual CTs regarding the spill were circulating on the Internet (e.g. Humint Events Online, 2010). Study 8 took place several months later, when the flow of oil (along with major media coverage of the incident) had stopped, and opinions about the causes of the incident may have solidified in participants' minds before the study began.

There are therefore several possibilities that could explain the unexpected results of Study 8. Due to the failure to replicate the JAQ effect from Study 7 and the lack of an effect between JAQ and direct statement conditions for low-quality arguments, the most probable interpretation seems to be that the suspicion and mistrust aroused by JAQ provoked counterarguments to the lists of facts in both conditions. In the strong condition, this attenuated the persuasive effect; in the weak condition, the arguments were already weak enough that any potential salutary effect of JAQ did not make much of a difference.

Moreover, across both JAQ and explicit argument conditions the lists of facts remained the same, and it could be argued that this list of facts in itself constituted the main body of the argument being put forth. The section at the end which instantiated the argument style manipulation was really more of an appendix, a section which presented no new evidence and instead summarised what had already been said along with offering some rather substance-free opinions and moral judgements. Would taking a consistent rhetorical approach throughout the argument, rather than solely at the end, lead to a more faithful representation of that approach's effects? We pursued this question in Study 9 by extending different rhetorical approaches to the presentation of the evidence as well as to the summary at the end.

Study 9

Whatever the ultimate explanation for the results of Study 8, the findings are not conclusive. The results are nearly the opposite of what one would expect to see if JAQ worked by increasing elaboration likelihood, but are not exactly a match for the opposite proposition either, despite that option's higher degree of concordance with previous results and with the extended MBS framework. While it is possible that the effects of the manipulations were attenuated by divorcing the substance of the arguments – the facts of varying quality – from their style, this still does not provide a coherent interpretation of the observed differences.

As such, Study 9 was devised as a follow-up meant to more closely couple the style and substance of the arguments used. Unlike Studies 7 and 8, we designed Study 9 so that each leading 'fact' about the Deepwater Horizon oil spill was accompanied by either no additional information, an interpretation that challenged the official story's ability to account for the fact, additional text that painted the fact as supporting a CT, or both derogation of the official story and support for the CT. In this sense, Study 9 parallels Study 5, in which we found that CTs tend to make JAQ-style arguments that derogate official narratives but fail to provide a clear alternative. Based on this finding, and on the results of Studies 6 and 7 which indicate that poorly specified and vaguely presented CTs are generally seen as being more plausible than those which are more specific and well-elaborated, we predicted that while presenting evidence as a contradiction of official narratives would produce an increase in agreement with a CT, presenting the same evidence as supporting a specific CT would either have no effect or reduce CT agreement.

Method

Participants and design

We recruited one hundred and sixty participants from the University of Kent's Canterbury campus for Study 9, compensating them for their time with a randomised prize of sweets or £1-£2. Of these, nine were eliminated due to copying one another's answers, failing to read instructions, or being under the age of 18. The remaining 151 participants (65% female) had a mean age of 23.9. Study 9 followed a 2 (promotion of CT) x 2 (derogation of official story) between-participants design, and participants were randomly assigned to each of the four conditions.

Materials and procedure

Study 9, like its two immediate predecessors, consisted of a paper questionnaire containing information regarding the Deepwater Horizon oil spill and two items meant to assess participants' beliefs in CTs and in the official account of the incident. It diverged from Studies 7 and 8 in three important ways, however. First, the list of facts changed once again, attempting to strike a balance between the weak and strong argument conditions of Study 8 in order to achieve a middle ground that would promote uncertainty about the official story but still leave some doubt as to whether the oil spill was indeed the product of a deliberate conspiracy. Second, the interview at the end was eliminated. In its place, each 'fact' was accompanied by one of several different postscripts. Each fact was followed by a sentence presenting it as difficult to explain using the official story, a sentence presenting it as explainable by a CT, both, or neither. For example, one (fabricated) fact was as follows:

- At the time of the explosion, the US Coast Guard were participating in a major anti-terror drill, which delayed their response and may have worsened the effects of the spill.

The sentence implying that the official story cannot explain this was as follows:

- This kind of drill is only conducted on only three days out of every year, meaning that the odds of such a coincidence are less than one percent.

And the sentence claiming that this fact supports a CT:

- If someone wanted to create a major disaster in the Gulf of Mexico, it would be necessary to get the Coast Guard out of the way with just such a drill.

The final divergence from Studies 7 and 8 was in the form of the framing device used. The editorialising that accompanied the facts and the absence of an interview necessitated the reframing of the text as a summary of a documentary film on the oil spill by an environmental watchdog group. This did not vary between conditions, and text relating to it was only present in the introductory paragraphs.

The dependent measures consisted of two 1 ('*Strongly Disagree*') – 6 ('*Strongly Agree*') 6-point Likert scale items at the end of the questionnaire. The statements were identical to those used in Study 8. We elected to use a simplified scale in Study 9 rather than the composite endorsement items used in Studies 6, 7, and 8 as the agreement items are more interpretable and have consistently given similar or identical results to the composite endorsement measures. A sample of the questionnaire used in Study 9 is included in Appendix I.

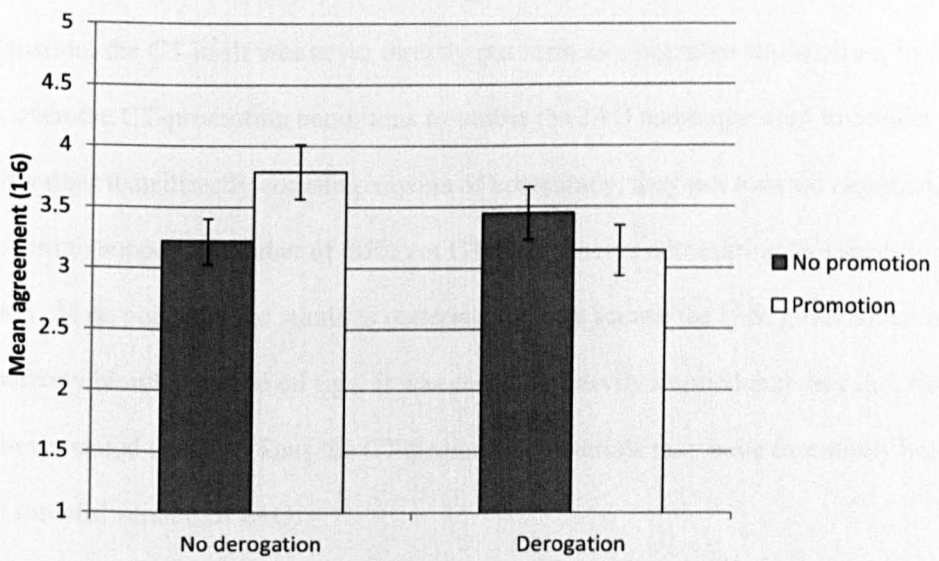
Results

A 2 (promotion of CT) x 2 (derogation of official story) between-participants ANOVA with conspiracy agreement as the dependent variable revealed no main effect of official-story derogation, $F(1,146) = 1.01$, $MSE = 1.66$, $p = .32$, partial $\eta^2 = .01$, and no main effect of CT promotion, $F(1,146) = .40$, $MSE = 1.66$, $p = .53$, partial $\eta^2 < .01$. There was, however, an interaction between the two, $F(1,146) = 4.35$, $MSE = 1.66$, p

= .04, partial η^2 = .03 (see Figure 14).

Simple main effects analyses revealed that when the materials directly promoted the CT there was a significant effect of derogation, $F(1,146) = 4.72$, $MSE = 1.66$, $p = .03$, partial $\eta^2 = 03$. This effect was such that participants who were given both anti-official-story and pro-CT information ($M = 3.14$) agreed less with the CT than those who only received information supporting the CT did ($M = 3.80$). In the absence of CT promotion, however, agreement with the CT was no different between the derogation ($M = 3.45$) and no-derogation ($M = 3.22$) conditions, $F(1,146) = .591$, $MSE = 1.66$, $p = .44$, partial $\eta^2 < .01$. When no derogation was used, there was a marginal simple effect of promotion, $F(1,146) = 3.69$, $MSE = 1.66$, $p = .06$, partial $\eta^2 = .03$; in the presence of derogation, however, adding CT promotion produced no significant difference, $F(1,146) = 1.06$, $MSE = 1.66$, $p = .31$, partial $\eta^2 = .01$.

Figure 14. Agreement with proposed oil spill CT in Study 9 according to whether the official story was derogated and/or the CT was explicitly promoted. Error bars represent standard error of the mean.



Discussion

The effects found in Study 9 are contrary to what was predicted. Emphasising the inadequacies of the official account had no significant effect on agreement on its own, and when derogation was added to a text that also promoted the CT directly it actually made the argument less convincing. Though we found no significant differences between doing nothing, promoting the CT directly without derogating the official story, and criticising the official story without promoting the CT, there was a marginal trend toward promotion providing an advantage over giving no additional information. This effect is surprising, given the pattern found in Study 5 whereby pro-conspiracist arguments tended to focus more on highlighting perceived inadequacies in the official account than on promoting specific alternative theories. The ineffectiveness of official-story derogation in Study 9 further calls into question Study 7's finding that the JAQ technique – which is essentially official-story derogation with some rhetorical flourishes – is more effective than direct conspiracy advocacy.

However, one potential factor that was overlooked in the design of Study 9 was the fact that the CT was never explicitly spelled out. While the CT-promotion conditions did contain information which argued that a CT was the most reasonable explanation, the CT itself was never directly put forth as a potential explanation. In this way, even the CT-promotion conditions resemble the JAQ technique used in Studies 7 and 8: rather than directly accusing anyone of conspiracy, they put forward arguments that seem to support a number of different CTs while never committing to a specific version. At no point did the stimulus materials directly accuse the U.S. government of deliberately blowing up the oil rig – it was certainly heavily implied that they did, but it was never stated outright. Thus the CT-promotion materials may have essentially been a more forceful version of JAQ.

Why, then, did including both promotion and derogation lead to lower agreement than promotion alone? The answer to this may lie in the result of Study 6, wherein the more details about a CT were provided, the less plausible it seemed. While the additional stimulus materials did not provide additional evidence per se, they did contain additional information about how unusual some of the alleged occurrences were. Combined with the more (but still not entirely) direct accusations of conspiracy from the CT-promotion condition, this may have increased the amount of detail enough that the implied conspiracy began to seem implausible. In this view, JAQ on its own provokes a generalised feeling of distrust, which feeds into the extended MBS via the higher-order belief that officials and official explanations are generally untrustworthy. When combined with specific details of a CT, however, the distrust created by JAQ generalises and causes reactance, inducing participants to generate counterarguments to the CT itself (Schul *et al.*, 2004). When the details of the CT are left unspecified, there is very little of a CT to argue against and the counterarguments are confined to the official account, to the benefit of the CT.

If this interpretation is accurate, then the results of Studies 6-9 would indicate that the key to successful CT persuasion lies in striking a balance between providing too much information and providing too little. There must be sufficient grounds to arouse distrust in the audience, thereby provoking counterarguments against the official account and feeding into the anti-authoritarian elements of the conspiracist belief system, but not so much information that the CT is either directly stated or too heavily implied, as this provokes the audience into generating counterarguments against the CT as well. JAQ, with its suspicion-provoking innuendo and inherent vagueness, has the potential to balance the two concerns very well. However, there is one aspect of JAQ that we have not yet addressed: the use of questions. Canonically, although not in the

materials we have used in Studies 7 and 8, JAQ consists at least partially of leading rhetorical questions. Leading questions have been shown to have unique effects in persuasion, and may play an important role in the popularity of the JAQ technique. As such, Study 10 examined the effect of using leading questions on conspiracy persuasion.

Study 10

JAQ, as exemplified by the style of argumentation used by conspiracy advocates such as the makers of the 9/11 conspiracy documentary Loose Change (Rowe *et al.*, 2005), uses vagueness and insinuation to its advantage, but – perhaps crucially – also engages in leading rhetorical questions. For instance, why was the debris at the Pentagon inconsistent with a passenger jet? Was the US military given a 'stand down' order by Vice-President Cheney during the attacks?

Leading questions such as these can have powerful effects on their audience. While innuendo of any kind can help to alleviate the effects of negative source perceptions on the persuasiveness of a message, leading questions have a particularly strong effect in this regard (Swann, Giuliano, & Wegner, 1982; Wegner *et al.*, 1981). Past research has demonstrated that rhetorical questions can increase message processing and persuasion, particularly when the audience has a low degree of involvement in the subject at hand or is already amenable to persuasion (Blankenship & Craig, 2006; Burnkrant & Howard, 1984). Leading questions may also have the effect of insulating the questioner from criticism – they allow deniability such that the speaker, if challenged, can deny that they are making any accusations at all. An advantage might lie here, and in the fact that questions tend to be misremembered as statements (Pandalaere & Dewitte, 2006), as well as in any unique persuasive advantage to questions in and of themselves.

All else being equal, what is the difference between a conspiracist argument that

asks questions and one that uses statements? If there is in fact a difference, it probably depends upon the specificity of the accusation being made. Studies 6-9 have all pointed in the direction of more detailed accusations of conspiracy being generally less plausible, as the generalised distrust produced by reading pro-conspiracist arguments causes counterarguments to be generated against any propositions stated coherently enough to allow them (Schul *et al.*, 2004). Since leading questions have been shown to increase elaboration likelihood and thoughtful processing of persuasive messages, as well as the generation of attitude-congruent counterarguments (Blankenship & Craig, 2006; Burnkrant & Howard, 1984), they may also encourage the generalised counterargumentation naturally provoked by a specific approach to accusations of conspiracy. In this view, asking a question, rather than simply giving a statement, would prompt effortful thought and intensify the generation of counterarguments. When accusations of conspiracy are too vague to argue against, these counterarguments would target only the official story; when they are specific, however, the CT would suffer a decline in plausibility.

In order to investigate the role of questions versus statements in conspiracist persuasion, we conducted a study in which a list of evidence suggesting a CT was followed by a statement that was either devoid of content or contained vague or specific accusations of conspiracy. The statement was either declarative or interrogative. On the basis of the idea that leading questions can promote the generation of counterarguments and that such counterargumentation is one of the disadvantages of a specific approach to conspiracy persuasion, we predicted that there would be an interaction between specificity and argument style such that leading questions reduce CT plausibility when the CT is well-specified but increase it when the CT is vague. In addition, we expected that when there were no accusations of conspiracy at all, suspicion would not be

aroused and there would be no effect of rhetorical style.

Method

Participants and design

Two hundred and four undergraduate students (84% female, mean age 19.6) at the University of Kent participated in Study 10 for course credit. Of these, eight were eliminated from analysis due to spending less than 45 seconds on the task, leaving 196 useable data points. Study 10 used a 2 (argument style: interrogative vs. declarative) x 3 (information content: empty, vague, or specific) between-participants factorial design, and accordingly each participant was randomly assigned to one of the resulting 6 groups.

Materials and procedure

After providing demographic information, participants were presented with a short persuasive text regarding the Gulf of Mexico oil spill of 2010, framed as an article on a website run by a former oil industry executive. The first three paragraphs were the same for all participants, and gave a brief summary of the oil spill followed by two of the suspicious 'facts' used in Study 9. The final sentence varied according to both the style in which it was presented (interrogative or declarative) and its information content (empty, vague, or specific). For example, the interrogative/empty condition read:

How did the oil spill really happen?

The interrogative/vague condition:

Was the destruction of the oil rig deliberately engineered?

And the interrogative/specific condition:

Was the destruction of the oil rig deliberately engineered by agents of the US government?

Except for the declarative/empty condition (which had no additional text), the declarative conditions used sentences that had the same content, rephrased as statements rather than as questions – for instance, in the declarative/vague condition:

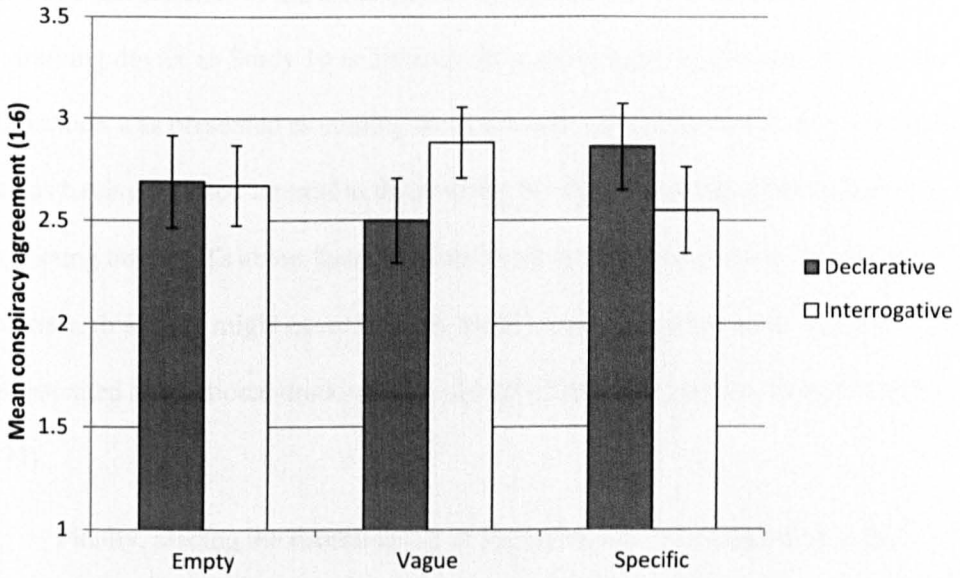
The destruction of the oil rig was deliberately engineered.

Participants were then presented with four statements regarding the oil spill and were asked to indicate to what degree they agree or disagree on a 6-point Likert scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The statements were 'The oil spill was either an accident or the result of negligence', 'There was a plot to create the oil spill', 'The oil spill was intentionally planned and carried out', and 'Some information about the oil spill is being intentionally covered up'. The dependent measure was the total of the agreement scores for both conspiracy items ('There was a plot to create the oil spill' and 'The oil spill was intentionally planned and carried out'). A sample copy of the questionnaire used in Study 10 is included in Appendix J.

Results and discussion

The data were analysed using a 2x3 between-participants ANOVA, which revealed that there was no main effect on CT agreement of either style, $F(1,188) = .001$, $MSE = 1.34$, $p = .98$, partial $\eta^2 < .001$, or specificity, $F(2,194) = .002$, $MSE = 1.34$, $p > .99$, partial $\eta^2 < .001$. In addition, there was no significant interaction between style and specificity, $F(2,194) = 1.60$, $MSE = 1.34$, $p = .20$, partial $\eta^2 = .02$ (see Figure 15).

Figure 15. CT agreement in Study 10 across empty, vague, or specific accusations of conspiracy phrased as a question (interrogative) or a statement (declarative). Error bars represent standard error of the mean.



Contrary to our predictions for Study 10, phrasing a conspiracy accusation in the form of a question rather than a declarative statement gave no persuasive advantage or disadvantage regardless of whether the accusation itself was vague, specific, or nonexistent. Why did we not find an interaction between detail and argument style? One explanation suggests itself from our rationale for the effects of the past set of studies. We have reasoned that it is important to fall between two extremes in specificity: a persuasive conspiracist message must be detailed enough to provoke distrust, but vague enough to avoid provoking counterarguments against the proposed conspiracy itself. If this reasoning holds, there are two possible reasons for our failure to find an effect. First, it is possible that both conditions are too detailed – the invariant text that all conditions were exposed to simply says too much, so adding even more specific accusations of conspiracy at the end does not give participants any more of a basis for

disagreement than otherwise. If this were true, however, we would still expect to see a main effect of argument style. The other possibility is that both conditions are too vague. This seems more immediately plausible, since the text used in Study 10 bears more of a resemblance to the official-story derogation conditions in Study 9. However, the framing device in Study 10 is different from those used in previous studies – the information was presented as coming from a former oil industry executive. He could be seen as having a vested interest in discrediting his former colleagues in the industry by concocting bogus CTs about them. If participants had their suspicions aroused by the materials, this angle might occur to them readily, since suspicion leads to more sophisticated attributional thinking than normal (Fein, 1996; Hilton, Fein, & Miller, 1993).

Finally, placing the manipulation at the end of the text, rather than at the beginning as was the case for Burnkrant and Howard (1984), may have attenuated the effect. Rather than having the rhetorical question in mind when looking at the rest of the evidence, the effect came in only at the end and may not have been able to affect the procedural generation of counterarguments sufficiently to produce a significant effect. Thus, there are several possible explanations for the null effects found in Study 10, and without further investigation it is difficult to pinpoint which is most plausible.

General discussion

Studies 6-10 present a challenge to interpret consistently. While Studies 6 and 7 appeared to show that CTs are more plausible when they are vague and presented in a manner that uses innuendo rather than direct accusations, Study 8 was unable to replicate the innuendo effect, and Study 10 showed no differences between vague and specific accusations, whether they were phrased as statements or questions. Moreover, Study 9 found no advantage for arguing against the official story over arguing in favour

of a CT, despite Study 5's finding that this method of argumentation dominates conspiracist discourse in news website comment sections and the apparent congruence between the official-story derogation approach and the innuendo-laden JAQ technique examined in Study 7.

How can we reconcile the results of Studies 8-10 with those of Studies 6 and 7? The chain of reasoning that we have followed throughout this chapter proposes that the JAQ and specificity effects are a natural consequence of a generalised mistrust that is provoked by the conspiracist mistrust of official narratives and officialdom in general. This mistrust manifests itself as reactance against any sufficiently specific arguments the participant reads, such that well-specified CTs tend to generate their own counterarguments while vague CTs are largely immune due to the lack of any substantive information about them. When it works, the JAQ technique works because it serves to maximise mistrust and suspicion. Under this interpretation, Study 6 found that providing additional details about CTs decreases their plausibility because of the additional raw material for counterarguments, Study 7 demonstrated that using JAQ with a poorly-specified CT is more convincing than directly arguing for it; Study 8 showed that JAQ attenuates the effect of high-quality arguments since they carry with them a much more obvious and suspicion-provoking implication of conspiracy, which then invites counterarguments; and Study 9 showed that the JAQ-type tactic of arousing suspicion by arguing against the official story interacted poorly with providing details about a CT (operationalised by arguing in favour of it). Study 10's null result may have simply been due to a lack of statistical power, insufficient variance in specificity between conditions, or simply a misguided choice of the placement of the manipulation within the stimulus materials.

On the whole, we believe that this account provides a more coherent account of

the data at hand than the idea that Studies 6 and 7 were simply statistical flukes. This is extremely unlikely on the simple basis of the inferential statistical results obtained in the first two studies. Moreover, consistent with the mistrust-based interpretation, the rhetoric used in Study 6's JAQ condition contained much mistrust-provoking rhetoric:

> There are too many problems, too many inconsistencies, too many connections to powerful people who have an interest in a disaster like this. And so there are questions that need to be raised, because there's more to this than meets the eye.

Not only is mistrust a previously determined correlate of conspiracist belief (and a proposed element of the extended conspiracist MBS; e.g. Abalakina-Paap *et al.*, 1999), it provokes counterarguments against any arguments that are coherent and accessible, whether congruent with the initial target of mistrust or not (Schul *et al.*, 2004). This line of reasoning matches several findings in the literature on interpersonal suspicion: Fein (1996) showed that interpersonal suspicion provoked by the possibility of ulterior motives tends to generalise, such that the resultant effortful, rational attributional thinking and consideration of evidence (Hilton *et al.*, 1993; Sinaceur, 2010) is applied to actors quite separate from the originally suspicious ones.

An important distinction here is that in the attribution literature, interpersonal suspicion is usually conceptualised as a state in which multiple plausible hypotheses about actors' motivations are entertained at once, rather than a single one being settled upon (Kramer, 1998; Sinaceur, 2010; though see Kalichman, 2009). This may provide another explanation for the divergent results found in this chapter: in Study 7, the effect of the JAQ condition was such that it was the only one where the conventional and conspiracy explanations were on equal footing. In other words, participants appeared to suspend judgement as to which hypothesis was more plausible. In Study 8, JAQ actually

had a similar effect – while in the high-quality explicit condition the CT was found to be more plausible than the official story, both possibilities elicited the same level of agreement in the high-quality JAQ condition. Study 9's unexpected effect in which official-story derogation appeared to reduce CT agreement actually put CT agreement more in line with official story agreement compared to the promotion-only condition. The strange effects in these studies, then, might be an artefact of the initial differences in agreement. Given that most CTs are generally less popular than the opposing official explanations, JAQ would generally confer an advantage by putting the competing explanations on equal ground – it is only in the fairly rare cases where the CT is believed more than the official story that JAQ confers a disadvantage.

If JAQ indeed generates suspicion, the reason for the effects found in this chapter is probably a combination of counterargument generation and judgement-suspension. If participants can generate counterarguments equally well for both conspiratorial and conventional hypotheses (because both are well-elaborated), they will end up suspending judgement. If not, then the one which is better-elaborated will provoke more counterarguments and finish at a disadvantage. However, this explanation is post-hoc, and more research would be required to determine whether it can accurately predict novel effects as well as explaining old ones. Probably the most straightforward test of the suspicion-counterargument hypothesis would be to directly induce interpersonal suspicion in one group of participants through an essay-writing manipulation similar to that used by Whitson and Galinsky (2008), and have a second group write a control essay. Both groups would then fill out the same questionnaire as in Study 9. The control group should show the same results found here: an increase in agreement with the CT in the condition in which the CT is advocated but the official story is not derogated. If the suspicion-counterargument hypothesis holds, the suspicion

essay group should not show this effect – since they are already suspicious, they should generate anti-CT counterarguments regardless of the presence or absence of official story derogation. There are many such studies that could be conducted to examine this account, and further research could indeed clarify some of the ambiguous results found in Chapter 4.

Finally, how does this line of reasoning match up with extended MBS theory? Study 6 supports the theory, in that it shows an asymmetry in how CTs and conventional explanations work. The contingent effect of complexity is explainable as a consequence of how the different kinds of theories match up with higher-order beliefs: since most people do not hold conspiracist worldviews, more complex CTs on average seem less plausible. It might be informative to explore this effect by seeing if the opposite effect can be obtained for pro-conspiracists, but as there was no individual-differences measure of conspiracism in Study 6, such an analysis would require a new study. Studies 7 through 10, however, are less direct in their support for extended MBS theory. We hypothesise that the driving force behind the effects found in these studies is the tendency to generate counterarguments against any sufficiently well-specified explanations when suspicion or mistrust is aroused (Schul *et al.*, 2004; Sinaceur, 2010). Therefore, under conditions of suspicion and mistrust, producing a well-specified CT provokes the audience into generating anti-conspiracist arguments, which makes the CT seem less plausible. The connection to extended MBS theory in these studies is the role of suspicion or mistrust, which, as outlined in previous chapters, are two of the hypothesised higher-order components of the conspiracist MBS. Indeed, we hypothesise that some of the suspicion and mistrust experienced by participants in these studies was the result of spreading activation – in other words, reading sufficiently explicit persuasive conspiracist messages caused the activation of related higher-order beliefs,

suspicion and mistrust included. These then generalised to produce the paradoxically anti-conspiracist effects found in the latter half of the chapter. In this sense, the results are consistent with extended MBS theory, though they do not constitute unequivocal support.

Chapter 5: Implications and Future Research

Abstract

In this final chapter, we summarise our findings, review the theoretical and practical implications for future research and policy, and outline potential limitations. Although the results of the present research are not unequivocal, and some of the effects obtained can be given alternative explanations, the general pattern points strongly toward the utility of extended MBS theory as both a unifying framework for previous results and a theory that allows novel predictions to be made. The research reported here suggests several potential avenues for future investigation, including cross-cultural comparisons, psychologically justified conspiracy theory classification schemes, a more detailed examination of the social stigma surrounding conspiracism, and potential interventions against harmful conspiracist beliefs.

The central point of this thesis has been a specification and subsequent evaluation of the extended monological belief system theory of conspiracism, a proposed successor to Goertzel's (1994b) original MBS theory. Goertzel, having found significant correlations between seemingly unrelated CTs (as well as a highly coherent, near-unitary factor structure), theorised that for many people CTs form a belief system that is monological in character – in other words, it explains nearly everything that happens without stepping outside of its core assumptions. For a monological thinker, every problem is explained as having the same single cause: "the conspiracy of the Jews, the capitalists, the patriarchy, the communists, the medical establishment, or whatever" (Goertzel, 1994b, p. 741). This explains the correlations in beliefs in different CTs: the Jews being behind the JFK assassination makes it seem more likely that they are also behind both World Wars, the financial crisis of 2008, the ongoing cover-up of flying saucers, and so on. Goertzel's idea of monological belief has much in common with Barkun's (2006) idea of a superconspiracy – a conspiracy of conspiracies, whereby individual events are caused by smaller conspiracies that are themselves part of a large, world-spanning conspiratorial plot. However, it has never been clear that many people really believe in these superconspiracies, and it seems unlikely that a belief held by only a small percentage of the population could account for the substantial shared variance between unrelated CTs (in Study 1, they were generally in the .30-.40 range).

The present research project fills a need that was also recognised by Newheiser *et al.* (2011) as the first studies of this project were coming to fruition: the necessity of including higher-order knowledge structures in any model of conspiracist belief. The importance of cognitive consistency between CT beliefs and other beliefs has been largely ignored until the past few years, and the extended MBS theory was initially designed to explain correlations between unrelated conspiracy beliefs as a product of the

need for consistency and to link this literature with the substantial body of research on individual differences. In Chapter 1, we proposed four major components to the theory:

1. Beliefs can be represented as nodes in a feedforward connectionist network.
2. Belief in a particular CT has excitatory and inhibitory connections with beliefs in other CTs and with conventional (non-conspiracist) explanations: contradictory beliefs inhibit one another, while those which directly support each other are bridged by excitatory connections.
3. Beliefs in individual explanations also share connections with higher-order beliefs: broader assumptions and ideas about how the world works in general. These higher-order beliefs can constitute any general approach or opinion, such as a negative perception of a particular group, a generalised mistrust of people, or the idea that conspiracies are common.
4. Higher-order beliefs generally play a more important role in binding together conspiracist beliefs than beliefs in individual theories do.

The first and second points of extended MBS theory allow the theory to be evaluated directly via computational connectionist modelling, while the third and fourth make empirically testable predictions about the sorts of patterns that ought to emerge in studies of conspiracist belief. Potential candidates for the higher-order beliefs that hold the system together have included generalised mistrust, anomie, an external locus of control or feeling of lacking control, and more specific beliefs regarding the proposed conspirators. The ten studies presented in this thesis have examined the utility of extended MBS theory as specified here in predicting and meaningfully explaining patterns of cognition unique to conspiracist belief.

Study 1 served in part as a replication of previous work on correlations between

unrelated CTs (e.g. Goertzel, 1994b; Swami *et al.*, 2010; Swami *et al.*, 2011), demonstrating that reliable positive correlations can be found between CTs that have no overt connection to one another. The novel component of Study 1 consisted of the finding that the more participants believed that Princess Diana had been assassinated, the more they also believed that she had faked her own death and is still alive somewhere – a positive correlation in beliefs in two clearly contradictory theories. Likewise, the more they believed that she had been killed by a rogue cell of MI6, the more they believed that she had been killed by Mohamed Al-Fayed's business enemies. These correlations are difficult to explain, because the possibilities are mutually exclusive: Diana cannot be dead and alive at the same time, nor can she have been independently killed by two entirely different parties. The extended MBS framework is able to explain this by positing that the various Diana CTs, as well as CTs in general, are held together by higher-order beliefs whose shared variance among various alternative accounts tend to overshadow contradictions at the local level. One flaw in Study 1 was an apparent floor effect: very few people seemed to believe that Diana faked her own death, so the correlations between that particular idea and others ended up being rather small, and in one case only marginally significant.

Study 2 replicated the pattern of contradictory correlations by demonstrating a significant positive correlation between endorsement of CTs proposing that Osama bin Laden is still alive and CTs proposing that he has been dead for many years. The extended MBS framework, via the fourth point, would predict that these correlations can be attributed to shared higher-order beliefs such as a generalised suspicion of authority, the perception of a cover-up, and so on. In support of this prediction, Study 2 showed that the contradictory correlation was fully explained by belief that a cover-up had taken place (although the correlation did not become negative, indicating that other

higher-order beliefs possibly contributed as well). One weakness of Study 2 was that the correlation did not manifest in agreement, but only in a broader measure of composite endorsement. This measured not just the degree to which participants agreed with the statement in question, but also the degree to which they found it plausible, convincing, worth considering, and coherent. To some degree this makes it less intuitively surprising that contradictory theories should show a positive correlation, since there is no contradiction in finding two different possibilities to be equally plausible or equally worthy of consideration. In any case, however, the pattern persists in the form of composite endorsement, and it is still explained by extended MBS theory.

Study 3 sought to combine the findings of Studies 1 and 2 with the first two components of extended MBS theory. It constituted an experiment that presented evidence favouring one of several explanations for a fictitious event. We used simulations based on the ECHO instantiation of Thagard's (1989) explanatory coherence framework to model the responses that extended MBS theory would predict, and found that they were generally a good match to the data. Specifically, the model made the counterintuitive prediction that in conditions where the evidence favoured one CT, the other CT would still be preferred to the conventional explanation – and indeed, the data matched this prediction. Two results were not predicted by ECHO, however – in the anti-conspiracy condition participants agreed with all possibilities equally, and in each condition other than that favouring a government conspiracy, participants tended to agree more with the idea of a corporate conspiracy. We argue that since the anti-conspiracy condition was the only one in which the conventional explanation was on equal footing with the CTs, this is consistent with ECHO's prediction plus a general bias toward the CTs that the model did not predict, and could be accounted for by the effects of analogy or unaccounted-for higher order beliefs. One example might be an analogy

between the journalist scenario used in Study 3 and existing CTs or similar occurrences in popular fiction. Popular CTs allege that many apparent suicides, including those of Kurt Cobain and Dr David Kelly, were actually cleverly disguised murders. Crime television shows commonly feature plots in which an apparent suicide turns out to have been a homicide. If participants believed in these CTs or were fans of murder mysteries, the suicide verdict might seem less plausible due to the similarities between the situations. The general preference for corporate over government CTs can be explained in more or less the same way. For instance, participants may have had a general belief that local governments are less competent than multinational corporations, and therefore that conspiracies are more likely to stem from the latter than from the former.

Study 3 also replicated the contradictory correlation findings from Studies 1 and 2 with a fictitious (rather than veridical) CT, allowing us to factor out any specific preconceptions about the CT that participants may have brought with them and thereby reducing the amount of noise in the relationships involved. The contradictory correlation was strongest in the condition in which a higher-order belief in the existence of a cover-up was reinforced by evidence, further solidifying our confidence in the pattern of results pointing to the primary importance of higher-order beliefs in conspiracism, although the correlation was only marginal in one of the pro-conspiracy conditions. In some of the conditions, as in Study 2, belief in a cover-up accounted entirely for the contradictory correlation, while in others it only partially explained it.

Finally, Study 4 sought to determine whether conspiracist beliefs were distinct from non-conspiracist beliefs in their ability to intercorrelate in spite of contradictions. Although contradictory conventional explanations showed a tendency to intercorrelate in some conditions, they did not do so in a control condition without persuasive evidence one way or another, while contradictory CTs did. In addition, neither class of

explanation showed contradictory correlations in the conditions which presented evidence backing one of the conventional theories, further implying that there is a fundamental asymmetry in the structure of conspiracist and non-conspiracist beliefs. Moreover, there was a strong rank-order correlation between the predictions of ECHO simulations and the empirical results in each condition. However, caution is due in interpreting the results of Study 4, as the manipulations did not seem to have the desired effect – in each condition which favoured a particular interpretation, that interpretation was not agreed with any more than it was in the control condition.

The above studies constituted the first empirical chapter, as they can all be grouped together under the common themes of contradiction and simulation. In general they provide strong, though not unqualified, support for the predictions of the extended MBS model of conspiracist belief. The contradictory correlations cannot be satisfactorily explained by a belief model that takes only CTs and the direct connections between them into account, such as the original formulation of MBS theory as proposed by Goertzel (1994b) and elaborated upon by Swami and colleagues (Swami *et al.*, 2010; Swami *et al.*, 2011). Any coherent explanation for these correlations seems to require acknowledging the contribution of higher-order beliefs that make CTs as a class of explanation more or less plausible in general. This explanation is reinforced by the findings of Studies 2 and 3 that higher-order beliefs account for much, and in some cases all, of the variance shared between contradictory CTs that show a positive zero-order correlation. Moreover, Studies 3 and 4 showed that Thagard's explanatory coherence model (Thagard, 1988) provides a promising avenue for further exploration in the computational modelling of belief systems in general, and of conspiracist belief systems in particular.

Following in the footsteps of Byford and Billig's (2001) dialogical analysis of

anti-Semitic CTs in the former Yugoslavia, Study 5 used quantitative archival methods to examine the differences between conspiracist and non-conspiracist belief systems suggested by the results of Studies 1-4. Specifically, we examined whether these differences would manifest themselves in online discourse regarding 9/11 CTs between pro- and anti-conspiracy advocates in news website comment sections. Consistent with our contention that the conspiracist extended MBS includes as a major component a reflexive rejection of received explanations for events, results showed that pro-conspiracist comments were far more likely than anti-conspiracist comments to attack perceived weaknesses in the opposing argument and less likely to advance arguments that supported their own point. Study 5 also provided further support for the interrelatedness of unrelated CTs within the conspiracist MBS, as pro-conspiracist comments were more likely to mention unrelated CTs as being true while anti-conspiracist comments were more likely to mention unrelated CTs as being false. The results also provided further confirmation for the idea, put forward by many philosophers and other observers of the conspiracy world, that "conspiracy theorist" is an unflattering label that many seek to avoid (e.g. Bale, 2007; Bratich, 2002, 2008). Finally, an analysis of the hostility of pro- and anti-conspiracist comments revealed that pro-conspiracist arguments tend to be less hostile than anti-conspiracist ones.

Some caution is due in the interpretation of Study 5, as the inter-rater reliability was, in some cases, not sufficiently high. In fact, one analysis (regarding whether a specific explanation was put forward in each comment) had to be dropped because there was so little agreement between raters. While archival analyses of online conspiracy belief have significant potential as a future investigative method, particularly given the vast amount of raw material, reliable ratings may be a problem. Many of the comments used sarcasm and irony, and it was often challenging to interpret them in a consistent

manner.

In Study 6, we began a related line of research by investigating the degree to which vague accusations of conspiracy are more convincing than specific ones. Indeed, the more detailed a CT, the less believable it was; for conventional explanations, the opposite was true. This suggests that pro-conspiracist advocates' tendency to keep focus on the implausibility of the conventional narrative, as demonstrated in Study 5, may have real utility: due to CTs' divergence from the assumptions of non-conspiracist belief systems, additional detail renders them less plausible to most people, while the opposite is true of conventional explanations – additional details bring them more in line with what is expected, raising their plausibility by way of the availability heuristic (Tversky & Kahneman, 1974). In addition, the lack of detail in a CT may make it hard to generate counterarguments against it, and distrust, a major proposed component of the conspiracist MBS, tends to provoke fairly indiscriminate counterargument generation (Schul *et al.*, 2004).

Study 7 followed up Study 6's investigation of vagueness versus detail with a targeted examination of the popular "Just Asking Questions" (JAQ) technique of argumentation, which focuses on promoting doubt and mistrust in the absence of specific proposals. Leading questions and innuendo also feature prominently. In the first of many studies centred around attempting to convince participants that the 2010 Gulf of Mexico oil spill was the result of a sinister conspiracy, Study 7 showed that JAQ is an effective persuasive tactic, and was alone among several other techniques in bringing CT belief up to the same level of agreement as the opposing conventional explanation. We explain this effect with in a similar manner to Study 6 – the JAQ technique relies on raising vague suspicions and mistrust regarding the fairly well-specified official account while failing to provide a coherent conspiracist alternative. This provokes a generalised

mistrust and leads to spontaneous counterargument generation, for which all well-specified arguments suffer. Study 8 explored an alternative possibility, that of increased elaboration likelihood, reasoning that JAQ may have served to increase central processing and soften the impact of the stigma of CTs. Contrary to this possibility, Study 8 showed that in fact JAQ presented a disadvantage when the CT was obvious from the evidence, which is consistent with the generalised mistrust interpretation.

In a more or less direct follow-up to Study 5, Study 9 investigated the effectiveness of using the same evidence to promote a CT versus to derogate the official story. While there was no main effect of either promotion or derogation, an interaction resulted in which promotion alone was significantly more effective than when the two were combined. We interpret this finding as further confirmation of the counterargument-generation effect: official-story derogation serves to generate doubt, mistrust, and suspicion, which when combined with the otherwise effective direct CT promotion strategy results in counterarguments being generated in response to each otherwise believable conspiracist point (Schul *et al.*, 2004).

Finally, Study 10 examined the role of phrasing conspiracist arguments as questions versus statements and the amount of content of conspiracist accusations. Unlike in previous studies in the final empirical chapter, the amount of content in the final accusation had no effect. Whether the accusation was declarative or interrogative also made no difference. We are cautious in our interpretation of this final study, as the amount of actual conspiracist content did not vary substantially between conditions – the manipulated section was quite brief, and as such the effect may have been attenuated. However, the lack of an effect of interrogative versus declarative style eliminates another potential explanation for the apparent effectiveness of the JAQ technique that, as its name implies, often implies the use of leading questions to make

its point.

In general, the findings of the empirical studies reported here indicate that extended MBS theory provides a solid base from which to examine the psychology of conspiracy belief. The theory predicted the correlations between contradictory conspiracy beliefs, something its predecessor cannot account for – in this formulation, people hold the higher-order beliefs that govern beliefs in individual CTs to a greater or lesser extent. This leads to a reliable correlation because increased activation of these higher-order beliefs leads to a generalised increase in conspiracy belief. Those with a low level of congruent higher-order belief find CTs mostly implausible simply because they are CTs, and those whose belief systems are more in line with a conspiracist worldview find CTs generally plausible for the same reason. While Studies 6-10 are more difficult to interpret, the most consistent interpretation of this series involves provocation of suspicion, which is a hypothesised higher-order component of the conspiracist MBS.

Practical implications

The empirical findings of this thesis, along with the postulates of extended MBS theory, have obvious utility for officials and policy-makers. Conspiracist belief is not harmless; it discourages pro-environmental behaviours and engagement with politics and society (Butler *et al.*, 1995; Jolley & Douglas, in press), and may help to reinforce some of the higher-order beliefs identified above, such as feelings of powerlessness and mistrust (Read *et al.*, 2003; Simon *et al.*, 2004). The associated construct of paranoid social cognition can disrupt organisations, promote interpersonal suspicion, create hostile work environments, and hamper productivity (Kramer, 1999). Other researchers have emphasised the need for a strategy to reduce public belief in CTs, often by having authorities combat them through either open or clandestine "cognitive infiltration" of

conspiracist groups (Sunstein & Vermeule, 2009).

The present research, however, suggests that this approach may be misguided. The empirical studies detailed in this thesis have supported the central contention of extended MBS theory: that belief in a particular CT is determined less by the particulars of the theory than by broader beliefs about the world. Government conspiracies seem more likely when the perceiver does not trust the government (Goertzel, 1994), conspiracies by ethnic or religious minorities seem more likely when the person in question is authoritarian and sees the group in question as highly entitative (Grzesiak-Feldman & Suszek, 2008; Grzesiak-Feldman & Izrycka, 2009), and conspiracies in general seem more likely when the world seems like an untrustworthy and unknowable place that quashes any sense of personal control (Wright & Arbuthnot, 1974). Arguing against individual CTs seems unlikely to be very productive when these higher-order beliefs remain intact – if conspiracist belief really has a monological character to it, it should have no trouble rejecting contradictory evidence as part of the conspiracy. Indeed, this is a well-observed tendency among conspiracists (e.g. Keeley, 1999). If CT belief is a problem is to be addressed, it may be more productive to address the underlying beliefs about the world that make conspiracism as a worldview seem plausible than to attack individual beliefs that are ultimately of little consequence in maintaining the overall coherence of the belief network.

That said, many of the underlying causes of conspiracist belief are probably due to either individual differences or broader social concerns such as economics, immigration, and the vagaries of the political system (Willman, 2002). If this is so, then addressing them would be outside the purview of smaller organisations or individuals who might be the targets of CTs themselves. In this case, a more direct and focussed approach might be beneficial, and in fact the present research provides some instructive

insights into tactics for direct argumentation with conspiracists. Study 5 has demonstrated that conspiracists prefer to attack official narratives rather than to advocate directly for CTs, Study 6 has shown that more specific CTs are less plausible, and Studies 7-10 all point to the conclusion that highly elaborated CTs can be self-defeating because the suspicion and distrust that pro-conspiracist arguments generate is indiscriminate enough that it turns on the CTs as well. When arguing against a CT, anti-conspiracists may be best served by prompting their opponents to put forward a specific theory (or by attempting to construct one themselves) rather than 'just asking questions' or focusing on perceived weaknesses in non-conspiracist narratives.

This tactic may have the effect of bringing to light the utility of the connectivity principle – the scientific idea that a new theory must be able to account for existing data as well as whatever evidence disconfirms the old one (Stanovich, 2003). In spite of the fact that the explanatory coherence model accurately models both scientific and lay cognition (Schank & Ranney, 1992), the connectivity principle remains poorly understood in the general public (Stanovich, 2003). Tactics like JAQ and arguing against conventional explanations as a way of arguing for a CT without really arguing for it can be seen as a way of side-stepping the connectivity principle: a vague CT may explain selected bits of evidence very well but struggle in producing a coherent account of the entire event in question. For example, one popular 9/11 CT is the idea that the aircraft that hit the Pentagon was not a passenger jet, as the official story would have it, but a drone or missile fired by the U.S. Military. This idea is brought forward to explain several alleged anomalies, such as an apparent lack of significant debris at the crash site and an unclear image of the aircraft on CCTV footage (Kay, 2011). Debating the validity of these points keeps the focus on the official story, but attempting to weave the remaining evidence into a conspiracist narrative begins to present a problem, as this

necessitates constructing a coherent account of the ultimate fate of the hijacked passenger jet, the source of eyewitness accounts purporting to see a passenger jet, the lamp posts which appeared to have been broken off at the level of the jet's wings, and so on. Bringing these aspects to the foreground by attempting to construct a comprehensive alternative account essentially emphasises the importance of the connectivity principle. Even in cases where a CT ends up being true, or at least a more coherent account than competing conventional explanations, promoting the development of a coherent alternative account can only be a good thing.

Theoretical implications and directions for future research

Practical implications aside, what implications does extended MBS theory and this series of studies have for further research into the psychology of conspiracy belief? The theory was devised not only as a continuation of MBS theory, but as a framework that has the potential to unify several disparate results in the field. As noted in Chapter 1, the majority of the psychological literature on conspiracy belief has historically focused on individual differences: factors like mistrust (Wright & Arbuthnot, 1974), locus of control (Hamsher *et al.*, 1968), openness to experience (Swami *et al.*, 2010), anomie (Swami *et al.*, 2011) and authoritarianism (Abalakina-Paap *et al.*, 1999; but see McHoskey, 1995) have all been linked with conspiracy belief. Extended MBS theory is a novel addition to the field in that it provides a unitary mechanism by which these factors could exert their influence on the degree to which someone believes in CTs. They can either be construed as beliefs in themselves which affect how the person in question thinks about CTs, or they can lead to beliefs and attitudes that could do so in their place. For instance, a low level of interpersonal mistrust could be represented by the belief that people are untrustworthy. This would cohere with many CTs, given that CTs almost invariably involve sinister actions on the part of powerful others. An

external locus of control could also be represented as a higher-order belief that one's life is ruled over by forces outside of any possible control, which matches the structure of conspiracist beliefs particularly well. Openness to experience is more complex, but a high degree of openness could reflect a value orientation toward open-mindedness, which, if represented as a belief node, could help to generally mitigate the effect of conspiracism's intellectual stigma.

Extended MBS theory also has the potential to account for some apparently conflicting results in the conspiracy belief literature. Authoritarianism provides an instructive example. Yelland and Stone (1996) found that high authoritarians were more susceptible to persuasive messages alleging that the Holocaust was a hoax, Grzesiak-Feldman and Izrycka (2009) and Swami (2012) found a positive correlation between right-wing authoritarianism and conspiracy beliefs about Jews and other minorities, and Abalakina-Paap *et al.* (1999) showed a positive correlation between right-wing authoritarianism and specific conspiracy beliefs. However, Leman and Cinnirella (2007a) found no correlation between conspiracist ideation and authoritarianism, McHoskey (1995) found that authoritarians are less likely to accept JFK assassination CTs, and Swami *et al.* (2010) showed that 9/11 conspiracy beliefs are associated with negative attitudes toward authority. Extended MBS theory can account for this diversity of results by referencing the specific properties of the CTs involved. Authoritarianism, for instance, is a cluster of traits and beliefs that tend to intercorrelate – the three that have stood up to analysis since Adorno *et al.* (1950) first described the authoritarian personality are authoritarian submission, authoritarian aggression, and conventionalism (Altemeyer, 2006). Though not completely orthogonal to one another, these three represent distinct facets of authoritarianism. The observed correlations between CT belief and authoritarianism may differ because different aspects of the construct interact

in distinct ways with conspiracy belief: for instance, authoritarian aggression, instantiated in an extended MBS as a higher-order belief that aggression against deviants or outgroups is a moral imperative, may have a high degree of coherence with CTs which implicate minority groups such as Jews (e.g. Yelland & Stone, 1996). Perhaps the perceiver's antipathy toward the outgroup makes it seem more likely that that group has done something to deserve it, or perhaps it is a case of projection, a psychological process already implicated in conspiracist belief (Douglas & Sutton, 2011).

In contrast, the findings that conspiracists tend to be anti-authoritarian may apply to a different set of CTs, particularly those that implicate authorities directly in the conspiracies themselves. Anti-authoritarian attitudes would certainly cohere with the idea that authorities are untrustworthy, are actively plotting harm against the people they govern, and are conspiring to cover up the truth about their sinister activities. Moreover, authoritarian conventionalism would most likely militate against unconventional beliefs. This would make sense of the negative correlation found by Swami *et al.* (2010), and given that CTs usually implicate U.S. government agencies in the JFK assassination, can explain McHoskey's (1995) finding as well. If this rationale is accurate, we should be able to see consistent associations between the nature of CTs and their correlations with higher-order beliefs, traits, attitudes, and tendencies such as the three primary facets of the authoritarian personality.

This method of breaking down seemingly conflicting correlates into their constituent parts and examining those parts' coherence with individual theories is not unique to extended MBS theory, but it suggests itself as a natural outgrowth of the idea that the system is driven by sub-networks of coherence and incoherence. One caveat is that while throughout this thesis we have referred to the relevant higher-order

knowledge structures as beliefs and the systems they belong to as belief systems, there is more to the picture than belief – attitudes, values, and biases are no doubt relevant to CT belief as well. Indeed, Heider's (1958) concept of balance, on which much of the cognitive consistency literature (and therefore extended MBS theory) is based, described networks not of belief and disbelief but of liking and disliking. For the sake of using computational models to portray the cognitive context of a particular CT it makes sense to simplify somewhat by grouping all of these constructs under the "belief" label and their interrelationships as coherence or incoherence, or by only examining the beliefs that one would expect to be associated with particular values, attitudes, and so on. However, this assumption should be examined at some point in the future, particularly in regard to the influence of implicit attitudes and perceptions (e.g. Greenwald, McGhee, & Schwartz, 1998).

The extended MBS theory's interpretation of the apparently inconsistent results regarding authoritarianism seems straightforward. But it raises an interesting question, one which has only received cursory treatment in the psychological literature: can CTs be separated into meaningfully distinct categories? For Barkun (2006), the question is one of scale: conspiracies are either event-based, such as a particular assassination, terrorist attack, or similar occurrence; systemic, such as the idea that the banking system is controlled by Jews or that pharmaceutical corporations are deliberately making people ill in order to sell more drugs; or superconspiracies, such as the idea that all individual CTs simply describe elements of a centuries-spanning plot to bring about a New World Order. Byford (2002) characterised CTs as belonging to one of two categories: pseudo-mystical conspiracies such as the ones concerning the Jews, the Masons, and various occult groups, thought to be an outgrowth of medieval witch panics and pogroms; and world-elite conspiracies, which are a more modern and secular

development and usually concern small, tight-knit groups of conspirators working to exert material dominance over others. While these schemes certainly have a descriptive validity to them, it is not clear that the distinctions which they draw are psychologically meaningful. Extended MBS theory could be used to create a psychologically useful typology: one that partitions CTs into discrete categories that correlate with different higher-order beliefs. If our interpretation of the authoritarianism literature holds, Byford's typology may be a good starting point – as reviewed above, world-elite CTs generally seem to be believed more by anti-authoritarians, whereas pseudo-mystical CTs, particularly those involving minorities, appeal more to authoritarians. Different CTs also depend on different sets of beliefs that are more common in different cultures or subcultures, such as the cluster of medicine-related CTs generally believed by African-Americans, generally thought to be a consequence of the Tuskegee syphilis experiments (e.g. Bogart & Thorburn, 2005; Crocker *et al.*, 1999; Simmons & Parsons, 2005), or the climate-change CTs which appear to be largely restricted to political conservatives and libertarians (Lewandowsky *et al.*, 2012).

One aspect of CTs that has made itself apparent a few times in the course of the present research is the associated social stigma. Study 5 showed that conspiracists are reluctant to classify their own beliefs as CTs or themselves as "conspiracy theorists," often attempting to turn the label around on those who would apply it to them. This confirms earlier theorising by observers of the conspiracy world, who caution against over-applying the term because of the risk that it could be used as a pejorative in order to attack unorthodox views of history and politics (Bratich, 2002, 2008; Willman, 2002) – it is easy to dismiss something by accusing it of being "just a conspiracy theory." Study 5 represents the first direct empirical confirmation of the idea that conspiracy theorising is stigmatised, and opens the door for further research into the subject. Does

the common stereotype of conspiracists as being paranoid and deluded (c.f. Hofstadter, 1964; Kalichman *et al.*, 2010; Kay, 2011) present an obstacle to conspiracist belief – in other words, do people avoid conspiracist beliefs because they do not want to appear paranoid? If so, how do conspiracists overcome this obstacle?

Another area of future research suggested by the results of Study 5 concerns the status of CTs as a minority opinion and conventional explanations as a majority opinion (in most cases). Viewed in this way, conspiracists could be seen as an active minority attempting to make headway against a contrary majority, which opens up the social influence literature as a potential avenue for explaining differences in conspiracist and anticonspiracist behaviour, as well as reactions to different methods of persuasion (Latané, 1981). For instance, the success of minority influence depends in part upon the minority presenting a united and consistent front (Moscovici & Nemeth, 1974), which may present a problem for conspiracists given the diversity of mutually contradictory opinions regarding the truth of a particular event. By the same token, good minority influencers must be likeable, which could present a further problem if conspiracists are negatively stereotyped. Social influence theory can also present alternative explanations for previous findings in the conspiracy belief literature; for example, the finding of Douglas and Sutton (2008) that people underestimate the degree to which they were influenced by conspiracist material has some parallels in the social influence literature. Social cryptoamnesia is the process by which the source of attitude change toward a minority viewpoint is forgotten: the new attitude seems as though it were always the case, and the source of the attitude change is largely forgotten (Perez, Papastamou, & Mugny, 1995).

Finally, Study 5's usage of online discourse data and Chapter 4's examination of the JAQ technique, a popular online debating tactic, suggest that examining common

elements of online discourse may be fruitful ground for further research. For example, the social influence literature suggests that deviant ingroup members can be more persuasive in presenting minority opinions than members of an outgroup (e.g. Maass & Clark, 1984). This mirrors the online tactic of 'concern trolling':

> In a situation where there exist mutually exclusive positions A and B, a concern troll is someone who supports A but professes to support B around genuine supporters of B. However, they express their "concerns" about aspects of position B in order to sow doubt and uncertainty amongst genuine supporters of B. (UrbanDictionary, 2011).

This tactic, among others, provides an interesting basis for further research. Naturally this is not restricted to debates regarding CTs, but could constitute part of a more general investigation into the tactics and tropes of online discourse.

Potential limitations

In invoking higher-order beliefs to explain the results of Studies 6-10, we run into a problem of specificity. While trust is perhaps the most well-established individual-differences contributor to conspiracy belief, and is therefore a prime candidate for a major higher-order component of any conspiracist belief network (Abalakina-Paap *et al.*, 1999; Goertzel, 1994; Hamsher *et al.*, 1968; Inglehart, 1987; Kramer, 1998; Leman & Cinnirella, 2007a; Mirowsky & Ross, 1983; Simmons & Parsons, 2005; Wright & Arbuthnot, 1974; Yelland & Stone, 1996), its adoption as an explanation for the effects of Studies 6-10 was post-hoc. This raises an important issue if extended MBS theory is to be used in future research: to what extent can we expect to define the relevant higher-order beliefs a priori, and is it a problem for the theory if the beliefs themselves are vaguely defined?

On one hand, the theory does not explicitly specify which higher-order belief structures a conspiracist belief system must contain. There is likely some individual variation in which beliefs contribute most to the coherence of the belief system – as Goertzel (1994b) theorised, one person might believe that world events are tightly controlled by one of Barkun's (2006) superconspiracies, such as a Jewish/Masonic plot to destroy Christianity, while another might have a generally low opinion of politicians and the other power brokers of society and believe that they are essentially corrupt, self-serving, and power-hungry. The former person would likely have their belief system held together largely by constructs such as right-wing authoritarianism and beliefs in the proposed conspirators' entitativity (Abalakina-Paap *et al.*, 1999; Grzesiak-Feldman & Suszek, 2008), while the belief system of the latter might draw more of its shared variance from feelings of mistrust, powerlessness, and anomie (Hamsher *et al.*, 1968; Mirowsky & Ross, 1983; Swami *et al.*, 2011). It seems counterproductive to commit to a predetermined set of higher-order beliefs rather than adapting the specifics of the theory according to the variation that can be expected between individuals and cultures (cf. Swami, 2012).

On the other hand, extended MBS theory should avoid ad-hoc explanations whenever possible. Unlike CTs, scientific theories cannot be advocated through vague proposals, denigration of opposing explanations, and "just asking questions." In order to make meaningful predictions the theory must in principle be falsifiable, and this probably requires some minimal specification of the central components of conspiracist belief systems in general. Mistrust, as specified above, is almost certainly a component of the belief system: the idea that people cannot be trusted and will look to serve their own ends through sinister, secretive means is an inextricable part of conspiracy theorising. Other elements that likely bind together conspiracist belief systems, as

outlined here, include powerlessness, anomie, an external locus of control, extreme political opinions, and so on. However, these are not straightforward predictions of extended MBS theory – rather, they are postdictions, previous findings that the theory purports to be able to explain. What would constitute a more straightforward test of extended MBS theory?

One approach would be to examine belief systems at the individual level. A study of individual conspiracist beliefs could be based around structured interviews in which people describe how they come to a conclusion on the validity or invalidity of particular CTs. The contents of these interviews could then be used to create Thagardian belief system models in a computational instantiation of the explanatory coherence model such as 'Convince Me' (Schank & Ranney, 1992). As shown in the total lack of overt comments relating to powerlessness in Study 5, people cannot be expected to talk about every higher-order belief that may be relevant to conspiracist belief, so some higher-order beliefs could potentially be added to the interview-based networks based on standardised measures of trust, powerlessness, anomie, and so on. If extended MBS theory holds, adding these elements to the interview-based belief networks should result in a substantial increase in explanatory power.

Another potential future research project to test the predictions of extended MBS theory could centre around experimentally manipulating higher-order beliefs. While we have made some initial steps in this direction with Studies 3 and 4, wherein we manipulated the evidence for a cover-up, the results were mixed – while Study 3 showed the expected effect, in Study 4 the manipulation check failed to show any statistically significant difference between the cover-up condition and the control condition. Some previous research could also be seen as fitting into this mould, particularly Whitson and Galinsky (2008), who showed that manipulating feelings of

control led to an increase in conspiracy belief. If extended MBS theory is indeed an accurate model of conspiracist cognition, we should be able to find more effects like this one.

The interrelatedness of CTs could potentially be accounted for by an alternative explanation that relates to another element of Thagard's (1989) model of explanatory coherence. One of the principles instantiated by the model is that of analogy. When two or more propositions are joined by a relationship that is congruent with a relationship between a separate but similar set of propositions, the equivalents in each group are joined by excitatory links. For instance, consider two separate CTs, one alleging that JFK was killed by a conspiracy within the US government and another alleging that Princess Diana was killed by a conspiracy within the British government. If the person in question believes in the JFK CT, the Diana CT will seem more plausible since the situations are basically analogous. Just as JFK was assassinated by elements within his own government, so was Diana assassinated by elements within hers; just as the French Revolution was orchestrated by Freemasons and Jews, so was the Second World War. Analogical reasoning could therefore serve to induct people into a conspiracist worldview: believing one CT leads to similar ones seeming more plausible, leading to a sort of ripple effect. While this explanation certainly sounds plausible, and analogy most likely plays some role in convincing people of CTs, it is not clear how it would account for the paradoxical positive correlations between contradictory theories shown to exist in Studies 1-4, much less the finding that the magnitudes of these correlations tend to be much reduced when selected higher-order beliefs are taken into account. No explanation other than extended MBS theory that can adequately explain this pattern of results has presented itself.

Through the course of this thesis we have provided substantial support for the

idea that beliefs in CTs can be part of a broad belief system that is governed by certain clusters of conspiracy-friendly higher-order beliefs. However, one aspect that we have not explored in any great depth is the 'M' in 'MBS'. To what degree are conspiracist beliefs really monological? Goertzel's (1994a) original distinction between dialogical and monological beliefs proposed that monological beliefs are essentially divorced from reality, and are not amenable to change from outside. They explain everything in terms of what is already known or believed, and very rarely accommodate new views or contradictory information without waving it away somehow. Saying that conspiracist beliefs form an MBS could in some ways be seen as a caricature of conspiracism that does not do the majority of conspiracists justice – even Goertzel noted that this extreme form of closed-minded cognition is more associated with clinical paranoid delusions than with everyday CT belief (Wulff, 1987). It may make more sense to think of the monological/dialogical distinction as more of a spectrum than a hard distinction. Our results here, particularly those of Study 4, would therefore suggest that CT belief is more monological, on average, than non-conspiracist belief is. In other words, conspiracist beliefs, while not entirely closed off to outside evidence, tend to hold a higher degree of monologicality than conventional beliefs do.

Concluding remarks

In this thesis we have proposed and tested the extended MBS theory, a novel framework for understanding the structure of conspiracist belief systems. The theory, based in part on Goertzel's (1994b) contention that CTs can form a monological belief system, essentially proposes that CT beliefs are held together by mutual coherence with a set of higher-order beliefs, attitudes, and general assumptions about how the world works. This belief network is amenable to computational modelling as a feedforward connectionist network based on the principles of cognitive constraint satisfaction, and

can serve as a unifying framework for much of the existing research into the psychology of conspiracy belief. Our findings indicate that the monological nature of conspiracism manifests itself in various ways: in paradoxically positive correlations in belief between overtly contradictory ideas; in a generalised suspicion of authoritative explanations for events; and in a fine balance between CTs being presented in so much detail as to be implausible and so vaguely as to be vacuous. These trends are observable not just in questionnaires but also in behaviour in natural settings, as seen in Study 5's examination of online discussion.

Conspiracism's status as an extended monological belief system is both a strength and a weakness. It is a strength because it allows seemingly self-contradictory worldviews to persist with a minimum of actual internal conflict. The opposition to officialdom that lies at the heart of conspiracism leads to the populist, anti-authoritarian messages of groups like the 9/11 Truth Movement, an ideology that comports well with the ideals of Western democracy. It is a weakness, however, because the very suspicion that on which conspiracism is built causes potential converts to the conspiracist worldview to be suspicious of CTs themselves. At their most convincing, CTs are more ephemeral than concrete: there is little in the way of development of coherent alternative narratives. The stereotype of conspiracy theorists laying out their beliefs in voluminous, Byzantine flowcharts does not reflect the reality for most people who hold conspiracist views. Rather, the conspiracist worldview is defined by suspicion, mistrust, and amorphous ideas about sinister control from behind the scenes. CTs are at their most effective when given only a cursory examination, and at their least convincing when they are looked at in detail.

Perhaps the most important outcome of the present thesis is the idea that conspiracism can be usefully seen as a worldview or an ideology, albeit one defined

more by negative belief than by positive belief. Conspiracists do not trust authority, do not believe received explanations, and do not accept mainstream expert sources. The idea of conspiracism as ideology is in some ways radically different from the views advanced by early researchers in the 1960s and 1970s, who likened beliefs in conspiracy theories to clinical paranoia. It is an outcome of more recent efforts showing that these beliefs are the result of a complex interaction between internal psychological processes, external stimuli, and sociocultural context.

Conspiracy theories, as a rule, propose that the world as we know it is a lie, and that the real causes of events hide in the shadows for fear of discovery. Yet conspiracy theories rarely shine a light into the shadows that purportedly hide the truth about the world. They draw a silhouette of the darkness and proclaim that there be dragons, but an honest search for truth must examine what lurks within the shadow – or not – rather than just tracing its outlines.

References

Abalakina-Paap, M., Stephan, W.G., Craig, T., & Gregory, W.L. (1999). Beliefs in conspiracies. *Political Psychology, 20*, 637-647.

Adorno, T.W., Frenkel-Brunswik, E., Levinson, D.J., & Sanford, R.N. (1950). *The authoritarian personality*. Oxford, England: Harpers.

Altemeyer, B. (2006). *The authoritarians*. Lulu.com. Available from http://members.shaw.ca/jeanaltemeyer/drbob/TheAuthoritarians.pdf

Barkun, M. (2006). *A culture of conspiracy: Apocalyptic visions in contemporary America*. Berkeley, California: University of California Press.

Bale, J.M. (2007). Political paranoia v. political realism: On distinguishing between bogus conspiracy theories and genuine conspiratorial politics. *Patterns of Prejudice, 41*, 45-60.

Blankenship, K.L., & Craig, T.Y. (2006). Rhetorical question use and resistance to persuasion: An attitude strength analysis. *Journal of Language and Social Psychology, 25*, 111-128.

Bogart, L. M., Galvan, F. H., Wagner, G. J., & Klein, D. J. (2011). Longitudinal association of HIV conspiracy beliefs with sexual risk among black males living with HIV. *AIDS and Behavior, 15*, 1180-1186.

Bogart, L.M., & Thorburn, S. (2005). Are HIV/AIDS conspiracy beliefs a barrier to HIV prevention among African Americans? *Journal of Acquired Immune Deficiency Syndromes, 38*, 213-218.

Bratich, J.Z. (2002). Injections and truth serums: AIDS conspiracy theories and the politics of articulation. In Knight, P. (Ed.) *Conspiracy nation: The politics of paranoia in postwar America* (133-156). New York University Press.

Bratich, J.Z. (2008). *Conspiracy panics: Political rationality and popular culture*. New York: State University of New York Press.

Burnkrant, R.E., & Howard, D.J. (1984). Effects of the use of introductory rhetorical questions versus statements on information processing. *Journal of Personality and Social Psychology, 47*, 1218-1230.

Butler, L.D., Koopman, C., & Zimbardo, P.G. (1995). The psychological impact of viewing the film JFK: Emotions, beliefs, and political behavioral intentions. *Political Psychology, 16*, 237-257.

Byers, S. (2011, November 24). Wake up, America! *Pravda.* Retrieved from http://english.pravda.ru/opinion/feedback/24-11-2009/110699-wake_up_america-0/

Byford, J. (2002). Anchoring and objectifying 'neocortical warfare': re-presentation of a biological metaphor in Serbian conspiracy literature. *Papers on Social Representations, 11*, 1-14.

Byford, J., & Billig, M. (2001). The emergence of antisemitic conspiracy theories in Yugoslavia during the war with NATO. *Patterns of Prejudice, 35*, 50-63.

Campbell, C. (1972). The cult, the cultic milieu, and secularization. In M. Hill (Ed.), *A sociological yearbook of religion in Britain, 5*. London: SCM Press.

Clarke, S. (2002). Conspiracy theories and conspiracy theorizing. *Philosophy of the Social Sciences, 32*, 131-150.

Clarke, S. (2007). Conspiracy theories and the Internet: Controlled demolition and arrested development. *Episteme: A Journal of Social Epistemology, 4*, 167-180

Coady, D. (2006). Conspiracy theories: The philosophical debate. Aldershot: Ashgate Publishing.

Concern Troll (2011). In UrbanDictionary. Retrieved 1st February, 2012 from http://www.urbandictionary.com/define.php?term=concern+troll .

Crane, I.R. (Producer & Director) (2008). *The path to a new reality: Engaging in the game* [Motion picture]. Available from http://www.ianrcrane.co.uk/index.php?act=viewProd&productId=51

Crocker, J., Luhtanen, R., Broadnax, S., & Blaine, B. E. (1999). Belief in US Government conspiracies against Blacks among Black and White college students: Powerlessness or system blame? *Personality and Social Psychology Bulletin, 25*, 941–953.

Darwin, H., Neave, N., & Holmes, J. (2011). Belief in conspiracy theories: The role of paranormal belief, paranoid ideation, and schizotypy. *Personality and Individual Differences, 50*, 1289-1283.

Dean, J. (2002). If anything is possible. In Knight, P. (Ed.) *Conspiracy nation: The politics of paranoia in postwar America* (85-106). New York University Press.

Donner, R. (Producer & Director). (1997). *Conspiracy theory* [Motion picture]. United States: Warner Bros.

Douglas, K.M. (2012). Examining the monological nature of conspiracy theories. Paper presented at Power, Politics, and Paranoia meeting, held at Felix Meritis, Amsterdam.

Douglas, K.M., McGarty, C., Bliuc, A.M., & Lala, G. (2005). Understanding cyberhate: Social competition and social creativity in online white supremacist groups. *Social Science Computer Review, 23*(1), 68-76.

Douglas, K.M., & Sutton, R.M. (2008). The hidden impact of conspiracy theories: Perceived and actual influence of theories surrounding the death of Princess

Diana. *Journal of Social Psychology, 148*, 210-222.

Douglas, K.M., & Sutton, R.M. (2011). Does it take one to know one? Endorsement of conspiracy theories is influenced by personal willingness to conspire. *British Journal of Social Psychology, 50*, 544-552.

Douglas, K.M., Sutton, R.M., & Stathi, S.(2010). Why I am less persuaded than you: People's intuitive understanding of the psychology of persuasion. *Social Influence, 5*, 133-148.

Downs, J.S., Bruine de Bruin, W., & Fischhoff, B. (2008). Parents' vaccination comprehension and decisions. *Vaccine, 26*, 1595-1607.

Farr, R.M. (1987.) Self/other relations and the social nature of reality. In C.F. Graumann & S. Moscovici (Eds.), *Changing conceptions of conspiracy* (pp. 203-217). New York: Springer-Verlag.

Fat, M. J. L., Sell, E., Barrowman, N., & Doja, A. (2012). Public perception of Tourette Syndrome on YouTube. *Journal of Child Neurology, 27*, 1011-1016.

Fein, S. (1996). Effects of suspicion on attributional thinking and the correspondence bias. *Journal of Personality and Social Psychology, 70*, 1164-1184.

Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, IL: Row, Peterson.

Fleiss, J.L., & Cohen, J. (1973). The equivalence of weighted kappa and the intraclass correlation coefficient as measures of reliability. *Educational and Psychological Measurement, 33*, 613-619.

Friestad, M., & Wright, P. (1999). Everyday persuasion knowledge. *Psychology and Marketing, 16*, 185-194.

Goertzel, B. (1994a). *Chaotic logic: Language, thought, and reality from the perspective of complex systems science*. Plenum Press.

Goertzel, T. (1994b). Belief in conspiracy theories. *Political Psychology, 15*, 731–742.

Goertzel, T. (2010). Conspiracy theories in science. *EMBO Reports, 11*, 493-499.

González-Bailón, S., Banchs, R.E., & Kaltenbrunner, A. (2012). Emotions, public opinion, and US presidential approval rates: A 5-year analysis of online political discussions. *Human Communication Research, 38*, 121-143.

Graumann, C. F. (1987). Conspiracy: History and social psychology—A synopsis. In C.F. Graumann & S.Moscovici (Eds.), *Changing conceptions of conspiracy* (pp. 245-251). New York: Springer-Verlag.

Greenwald, A.G., McGhee, D.E., & Schwartz, J.K.L. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology, 74*, 1464-1480.

Grzesiak-Feldman, M., & Suszek, H. (2008). Conspiracy stereotyping and perceptions of group entitativity of Jews, Germans, Arabs and homosexuals by Polish students. *Psychological Reports, 102*, 755-758.

Grzesiak-Feldman, M., & Izrycka, M. (2009). Right-wing authoritarianism and conspiracy thinking in a Polish sample. *Psychological Reports, 105*, 389-393.

Hamsher, J.H., Geller, J.D., & Rotter, J.B. (1968). Interpersonal trust, internal-external control, and the Warren Commission report. *Journal of Personality and Social Psychology, 9*, 210-215.

Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.

Hilton, J.L., Fein, S., & Miller, D.T. (1993). Suspicion and dispositional inference. *Personality and Social Psychology Bulletin, 19*, 501-512.

Ho, A.K. (Producer), & Stone, O. (Director) (1991). *JFK* [motion picture]. United States: Warner Bros.

Hofstadter, R. (1964, November). The paranoid style in American politics. *Harper's Magazine*, 77-86.

Humint Events Online (2010, 27th May). Deepwater Horizon was an inside job. Available from http://covertoperations.blogspot.co.uk/2010/05/deepwater-horizon-was-inside-job.html

Icke, D. (2012). David Icke – A Programmed Reality – Wake Up ... Wake Up ... Wake Up! Retrieved from http://www.davidicke.com/headlines/69538-david-icke-a-programmed-reality-wake-up--wake-up--wake-up/

Inglehart, R. (1987). Extremist political positions and perceptions of conspiracy. In C.F. Graumann & S. Moscovici (Eds.), *Changing conceptions of conspiracy* (pp. 231–244). New York: Springer-Verlag.

JAQing off. (2009). In RationalWiki. Retrieved July 27th, 2011, from http://rationalwiki.org/wiki/JAQing_off

Jolley, D., & Douglas, K.M. (in press). The social consequences of conspiracism: Exposure to conspiracy theories decreases the intention to engage in politics and to reduce one's carbon footprint. *British Journal of Psychology.*

Kata, A. (2012). Anti-vaccine activists, Web 2.0, and the postmodern paradigm – an overview of tactics and tropes used online by the anti-vaccination movement. *Vaccine, 30*, 3778-3789.

Kay, J. (2011). *Among the truthers: A journey through America's conspiracist underground.* New York: HarperCollins.

Kalichman, S.C. (2009). *Denying AIDS: Conspiracy theories, pseudoscience, and human tragedy.* New York: Springer.

Kalichman, S.C., Eaton, L., & Cherry, C. (2010). 'There is no proof that HIV causes

AIDS': AIDS denialism beliefs among people living with HIV/AIDS. *Journal of Behavioral Medicine, 33*, 32-440.

Keeley, B.L. (1999). Of conspiracy theories. *The Journal of Philosophy, 96*(3), 109-126.

Kingsley, P., & Jones, S. (2011, May 5). Osama bin Laden death: The conspiracy theories. The Guardian. Retrieved from http://www.guardian.co.uk/world/2011/may/05/osama-bin-laden-conspiracy-theories

Kofta, M., & Sedek, M. (2005). Conspiracy stereotypes of Jews during systematic transformation in Poland. *International Journal of Sociology, 35*(1), 40-64.

Kramer, R.M. (1998). Paranoid cognition in social systems: Thinking and acting in the shadow of doubt. *Personality and Social Psychology Review, 2*, 251-275.

Kramer, R.M. (1999). Trust and distrust in organizations: Emerging perspectives, enduring questions. *Annual Review of Psychology, 50*, 569-598.

Kruglanski, A. W. (1987). Blame-placing schemata and attributional research. In C.F. Graumann & S. Moscovici (Eds.), *Changing conceptions of conspiracy*. 219-229. New York: Springer-Verlag.

Landis, J.R., & Koch, G.G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33*, 159-174.

Latané, B. (1981). The psychology of social impact. *American Psychologist, 36*, 343-356.

Leman, P.J., & Cinnirella, M. (2007a). Beliefs in conspiracy theories and need for cognitive closure. Unpublished manuscript.

Leman, P.J., & Cinnirella, M. (2007b). A major event has a major cause: Evidence for

the role of heuristics in reasoning about conspiracy theories. *Social Psychological Review, 9*, 18-28.

Lewandowsky, S., Cook, J., Oberauer, K., & Hubble, M. (2013). Recursive fury: Conspiracist ideation in the blogosphere in response to research on conspiracist ideation. *Frontiers in Psychology, 4*. Available from http://www.frontiersin.org/personality_science_and_individual_differences/10.3389/fpsyg.2013.00073/abstract

Lewandowsky, S., Oberauer, K., & Gignac, G. (in press). NASA faked the moon landing—therefore (climate) science is a hoax: An anatomy of the motivated rejection of science. *Psychological Science.*

Loke, J. (2012). Public expressions of private sentiments: Unveiling the pulse of racial tolerance through online news readers' comments. *Howard Journal of Communications, 23*, 235-252.

Maass, A., & Clark, R. D. (1984). Hidden impact of minorities: Fifteen years of minority influence research. *Psychological Bulletin, 95*, 428-450.

Mason, F. (2002). A poor person's cognitive mapping. In Knight, P. (Ed.) *Conspiracy nation: The politics of paranoia in postwar America* (40-56). New York University Press.

McCauley, C. & Jacques, S. (1979). The popularity of conspiracy theories of presidential assassination. *Journal of Personality and Social Psychology, 37*, 637–644.

McCrae, R.R., & Costa, P.T. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*, 81–90.

McHoskey, J.W. (1995). Case closed? On the John F. Kennedy assassination: Biased assimilation of evidence and attitude polarization. *Basic and Applied Social Psychology, 17*, 395-409.

Melley, T. (2002). Agency panic and the culture of conspiracy. In Knight, P. (Ed.) *Conspiracy nation: The politics of paranoia in postwar America* (57-81). New York University Press.

Mirowsky, J., & Ross, C.E. (1983). Paranoia and the structure of powerlessness. *American Sociological Review, 48*, 228-239.

Moscovici, S., & Nemeth, C. (1974). Social influence II: Minority influence. In C. Nemeth (Ed.), *Social psychology: Classic and contemporary integrations* (pp. 217– 249). Chicago: Rand-McNally.

Newheiser, A.K., Farias, M., & Tausch, N. (2011). The functional nature of conspiracy beliefs: Examining the underpinnings of belief in the Da Vinci Code conspiracy. *Personality and Individual Differences, 51*, 1007-1011.

Novella, S. (2009, April 27). Anomaly hunting. Retrieved from http://theness.com/neurologicablog/index.php/anomaly-hunting/

Pandelaere, M., & Dewitte, S. (2006). Is this a question? Not for long. The statement bias. *Journal of Experimental Social Psychology, 42*, 525-531.

Perez, J.A., Papastamou, S., & Mugny, G. (1995). 'Zeitgeist' and minority influence - where is the causality: A comment on Clark (1990). *European Journal of Social Psychology, 25*, 703-710.

Petty, R.E., & Cacioppo, J.T. (1984). The effects of involvement on responses to argument quantity and quality: Central and peripheral routes to persuasion. *Journal of Personality and Social Psychology, 46*, 69-81.

Petty, R.E., & Cacioppo, J.T. (1986). The elaboration likelihood model of persuasion. In L.Berkovitz (Ed.), *Advances in experimental social psychology* (Vol. 19; pp. 123-205). New York: Academic Press.

Petty, R.E., Cacioppo, J.T., & Heesacker, M (1981). Effects of rhetorical questions on persuasion: A cognitive response analysis. *Journal of Personality and Social Psychology, 40*, 432-440.

Pigden, C. (1995). Popper revisited, or what is wrong with conspiracy theories? *Philosophy of the Social Sciences, 25*, 3-34.

Poland, G.A., & Jacobson, R.M. (2011). The age-old struggle against the antivaccinationists. *New England Journal of Medicine, 364*, 97-99.

Poliakov, L. (1987). The topic of the Jewish conspiracy in Russia (1905-1920), and the international consequences. In C. F. Graumann and S. Moscovici (Eds.), *Changing conceptions of conspiracy* (pp. 105-113). New York: Springer-Verlag.

Pruitt, D.G. (1987). Conspiracy theory in conflict escalation. In C. F. Graumann & S. Moscovici (Eds.), *Changing conceptions of conspiracy* (pp. 191-202). New York: Springer-Verlag.

Randi, J. (1982). *Flim-Flam! Psychics, ESP, Unicorns, and Other Delusions*. Amherst, New York: Prometheus Books.

Read, S.J. (1987). Constructing causal scenarios: A knowledge structure approach to causal reasoning. *Journal of Personality and Social Psychology, 52*, 288-302.

Read, S.J., & Marcus-Newhall, A. (1993). Explanatory coherence in social explanations: A parallel distributed processing account. *Journal of Personality and Social Psychology, 65*, 429-447.

Read, S.J., & Miller, L.C. (1993). Rapist or 'regular guy': Explanatory coherence in the

construction of mental models of others. *Personality and Social Psychology Bulletin, 19*, 526-540.

Read, S.J., & Miller, L.C. (2005). Explanatory coherence and goal-based knowledge structures in making dispositional inferences. In B. Malle & S. Hodges. *Other minds*. New York: Guilford Press.

Read, S.J., & Montoya, J.A. (1999). An autoassociative model of causal reasoning and causal learning: Reply to Van Overwalle's (1998) critique of Read and Marcus-Newhall (1993). *Journal of Personality and Social Psychology, 76*, 728-742.

Read, S.J., Snow, C.J., & Simon, D. (2003). Constraint satisfaction processes in social reasoning. In *The Proceedings of the Twenty-fifth Annual Cognitive Science Society Conference*.

Robbins, J. M., & Krueger, J. I. (2005). Social projection to ingroups and outgroups: A review and meta-analysis. *Personality and Social Psychology Review, 9*, 32-47.

Roberts, M., Wanta, W., & Dzwo, T. H. D. (2002). Agenda setting and issue salience online. *Communication Research, 29*, 452-465.

Rosenberg, J., & Egbert, N. (2011). Online impression management: Personality traits and concerns for secondary goals as predictors of self-presentation tactics on Facebook. *Journal of Computer-Mediated Communication, 17*, 1-18.

Rowe, K. (Producer), Bermas, J. (Producer), Brown, M. (Producer), & Avery, D. (Director) (2005). *Loose change* [Motion Picture]. United States: Microcinema International.

Roxby, P. (2011, 27 May). Measles outbreak prompts plea to vaccinate children. *BBC News*. Available from http://www.bbc.co.uk/news/health-13561766

Russell, S.L., Katz, R.V., Wang, M.Q., Lee, R., Green, B.L., Kressin, N.R., & Claudio,

C. (2011). Belief in AIDS origin conspiracy theory and willingness to participate in biomedical research studies: Findings in Whites, Blacks, and Hispanics in seven cities across two surveys. *HIV Clinical Trials*, *12*(1), 37-47.

Sagan, C. (1995). *The demon-haunted world: Science as a candle in the dark.* New York: Random House.

Samarapungavan, A., & Wiers, R.W. (1997). Children's thoughts on the origin of species: A study of explanatory coherence. *Cognitive Science: A Multidisciplinary Journal*, *21*, 147-177.

Schank, P., & Ranney, M. (1992). Assessing explanatory coherence: A new method for integrating verbal data with models of on-line belief revision. In *Proceedings of the Fourteenth Annual Conference of the Cognitive Science Society* (pp. 599-604).

Scharkow, M., & Vogelgesang, J. (2011). Measuring the public agenda using search engine queries. *International Journal of Public Opinion Research*, *23*, 104-113.

Schul, Y., Mayo, R., & Burnstein, E. (2004). Encoding under trust and distrust: the spontaneous activation of incongruent cognitions. *Journal of Personality and Social Psychology*, *86*, 668-679.

Seitz-Wald, A. (2013, January 14). Sandy Hook truther-reporter? A popular local Fox-TV anchor says there's 'good reason to question this whole narrative'. Salon.com. Retrieved from http://www.salon.com/2013/01/14/is_it_okay_for_reporters_to_question_the_official_narrative_of_sandy_hook/

Simmons, W.P., & Parsons, S. (2005). Beliefs in conspiracy theories among African Americans: A comparison of elites and masses. *Social Science Quarterly*, *86*,

582–598.

Simon, D., Snow, C.J., & Read, S.J. (2004). The redux of cognitive consistency theories: Evidence judgments by constraint satisfaction. *Journal of Personality and Social Psychology, 86,* 814-837.

Sinaceur, M. (2010). Suspending judgment to create value: Suspicion and trust in negotiation. *Journal of Experimental Social Psychology, 46,* 543-550.

Sisask, M., Mark, L., & Värnik, A. (2012). Internet comments elicited by media portrayal of a familicide-suicide case. *Crisis: The Journal of Crisis Intervention and Suicide Prevention, 33,* 222-229.

Shermer, M. (1997). *Why people believe weird things.* New York: Henry Holt and Company.

Smith, T.C., & Novella, S.P. (2007). HIV denial in the Internet era. *PLoS Medicine,* 4, 1312-1316.

Stanovich, K.E. (2003). *How to think straight about psychology.* Allyn & Bacon.

Stewart, K. (1999). Conspiracy theory's worlds. In G.E. Marcus (Ed.), *Paranoia within reason: A casebook on conspiracy as explanation.* University of Chicago Press.

Sunstein, C.R., & Vermeule, A. (2009). Conspiracy theories: Causes and cures*. *Journal of Political Philosophy, 17,* 202-227.

Swami, V., Chamorro-Premuzic, T., & Furnham, A. (2010). Unanswered questions: A preliminary investigation of personality and individual difference predictors of 9/11 conspiracist beliefs. *Applied Cognitive Psychology, 24,* 749-761.

Swami, V., Coles, R., Stieger, S., Pietschnig, J., Furnham, A., Rehim, S., & Voracek, M. (2011). Conspiracist ideation in Britain and Austria: Evidence of a monological belief system and associations between individual psychological

differences and real-world and fictitious conspiracy theories. *British Journal of Psychology, 102*, 443-463.

Swami, V., Pietschnig, J., Tran, US, Nader, I., Stieger, S., & Voracek, M. (2012). Lunar lies: The impact of informational framing and individual differences in shaping conspiracist beliefs about the moon landings. *Applied Cognitive Psychology, 27*, 71-80.

Swann, W.B., Giuliano, T., & Wegner, D.M. (1982). Where leading questions can lead: The power of conjecture in social interaction. *Journal of Personality and Social Psychology, 42*, 1025-1035.

Thagard, P. (1989). Explanatory coherence. *Behavioral and Brain Sciences, 12*, 435-467.

Thagard, P. (1997). javaECHO: A Java implementation of ECHO. Available from http://cogsci.uwaterloo.ca/JavaECHO/jecho.html

Thagard, P. (2004). Causal inference in legal decision making: Explanatory coherence vs. Bayesian networks. *Applied Artificial Intelligence, 18*, 231-249.

TruthMove.org (2007). Disinformation: Infiltration, misinformation, disruption. Retrieved from http://www.truthmove.org/content/disinformation/

Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology, 4*, 207-232.

Vancouver Sun (2013, January 16). Conspiracy theorists claim Sandy Hook tragedy is elaborate government hoax. *The Vancouver Sun*. Retrieved from http://www.vancouversun.com/news/Conspiracy+theorists+claim+Sandy+Hook+tragedy+elaborate+government/7822502/story.html

van Prooijen, J.W., & Jostmann, N.B. (in press). Belief in conspiracy theories: The

influence of uncertainty and perceived morality. *European Journal of Social Psychology*.

Vogel, T., Kutzner, F., Fiedler, K., & Freytag, P. (2010). Exploiting attractiveness in persuasion: Senders' implicit theories about receivers' processing motivation. *Personality and Social Psychology Bulletin, 36*, 830-842.

Waller, W.S., & Zimbelman, M.F. (2003). A cognitive footprint in archival data: Generalizing the dilution effect from laboratory to field settings. *Organizational Behavior and Human Decision Processes, 91*, 254-268.

Wegner, D.M., Wenzlaff, R., Kerker, R.M., & Beattie, A.E. (1981). Incrimination through innuendo: Can media questions become public answers? *Journal of Personality and Social Psychology, 40*, 822-832.

Whitson, J.A., & Galinsky, A.D. (2008). Lacking control increases illusory pattern perception. *Science, 322*, 115-117.

Willman, S. (2002). Spinning paranoia: The ideologies of conspiracy and contingency in postmodern culture. In Knight, P. (Ed.) *Conspiracy nation: The politics of paranoia in postwar America* (21-39). New York University Press.

Wood, J. (2009). The journal of 9/11 research and 9/11 issues. Retrieved from http://drjudywood.com

Wood, M.J., Douglas, K.M., & Sutton, R.M. (2012). Dead and alive: Beliefs in contradictory conspiracy theories. *Social Psychological and Personality Science, 3*, 767-773.

WorldPublicOpinion.org (2008, September 10). No consensus on who was behind 9/11. Retrieved from http://worldpublicopinion.org/pipa/articles/international_security_bt/535.php?lb

=btot&pnt=535&nid=&id=

Wright, T.L., & Arbuthnot, J. (1974). Interpersonal trust, political preference, and perception of the Watergate affair. *Personality and Social Psychology Bulletin, 1*, 168-170.

Wulff, E. (1987). Paranoic conspiratory delusion. In Graumann C. F., Moscovici S. (Eds.), *Changing conceptions of conspiracy* (pp. 171–190). New York: Springer-Verlag.

Yelland, L.M., & Stone, W.F. (1996). Belief in the Holocaust: Effects of personality and propaganda. *Political Psychology, 17*, 551-562.

Zonis, M., & Joseph, C.M. (1994). Conspiracy thinking in the Middle East. *Political Psychology, 15*, 443-459.

Appendix A: ECHO Models

Introduction: murder example

javaECHO code

data(E1,E2)

explain((P1),E1)

explain((P1),E2)

explain((D1),E1)

explain((D2),E2)

contradict(P1,D1)

contradict(P1,D2)

Equilibrium node activations

P1, 0.55602

D2, -0.18329757

D1, -0.1832976

Study 2: Osama bin Laden network

javaECHO code

data(E1)

explain((C1),E1)

explain((C2),E1)

explain((O1),E1)

explain((U1),C1)

explain((U1),C2)

contradict(C1,C2)

contradict(C1,O1)

contradict(C2,O1)

Equilibrium node activations

C2, 0.38758534

C1, 0.38758534

U1, 0.37638092

O1, -0.32045186

Study 3: Control condition

javaECHO code

data(evidence)

explain((suicide),evidence)

explain((mayor),evidence)

explain((pharm),evidence)

explain((coverup),pharm)

explain((coverup),mayor)

contradict(suicide,mayor)

contradict(suicide,pharm)

contradict(pharm,mayor)

Equilibrium node activations

pharm, 0.38758534

mayor, 0.38758534

coverup, 0.37638092

suicide, -0.32045186

Study 3: Anticonspiracy condition

javaECHO code

data(momsayssuicide, evidence)

explain((suicide),evidence)

explain((mayor),evidence)

explain((pharm),evidence)

explain((suicide),momsayssuicide)

explain((coverup),pharm)

explain((coverup),mayor)

contradict(suicide,mayor)

contradict(suicide,pharm)

contradict(pharm,mayor)

Equilibrium node activations

suicide, 0.5523042

pharm, -0.17126873

mayor, -0.17126872

coverup, -0.20001075

Study 3: Government conspiracy condition

javaECHO code

data(mayornote, evidence)

explain((suicide),evidence)

explain((mayor),evidence)

explain((pharm),evidence)

explain((mayor),mayornote)

explain((coverup),pharm)

explain((coverup),mayor)

contradict(suicide,mayor)

contradict(suicide,pharm)

contradict(pharm,mayor)

Equilibrium node activations

pharm, 0.348019

mayor, 0.55603

coverup, 0.4143633

suicide, -0.38301957

Study 3: Corporate conspiracy condition

javaECHO code

data(corpnote, evidence)

explain((suicide),evidence)

explain((mayor),evidence)

explain((pharm),evidence)

explain((corp),corpnote)

explain((coverup),pharm)

explain((coverup),mayor)

contradict(suicide,mayor)

contradict(suicide,pharm)

contradict(pharm,mayor)

Equilibrium node activations

suicide, -0.38301957

pharm, 0.55603

mayor, 0.348019

coverup, 0.4143633

Study 3: Coverup condition

javaECHO code

data(caseclosed, evidence)

explain((suicide),evidence)

explain((mayor),evidence)

explain((pharm),evidence)

explain((coverup),caseclosed)

explain((coverup),pharm)

explain((coverup),mayor)

contradict(suicide,mayor)

contradict(suicide,pharm)

contradict(pharm,mayor)

Equilibrium node activations

pharm, 0.43173033

mayor, 0.43173033

coverup, 0.52780026

suicide, -0.36319575

Study 4: Free Knights of the Cross and Al-Sharuq conditions

N.B.: The Free Knights version is shown here; the Al-Sharuq version has identical code and output, with only the names swapped.

javaECHO code

// Evidence

// poisongas = the facts of the news story common to all conditions: there was a poison gas incident at a US government building

// Conventional theories

// alsharuq = the attack was perpetrated by the Islamist terror group Al-Sharuq

// freeknights = the attack was perpetrated by the white supremacist militia group Free Knights of the Cross

```
// Conspiracy theories

// chemlab = the attack was actually an accident at a secret chemical weapons lab

// insidejob = the attack was secretly perpetrated by the US government

// coverup = there's some kind of coverup going on


// The conventional theories explain the evidence

explain((alsharuq),poisongas)

explain((freeknights),poisongas)


// So do the conspiracy theories

explain((chemlab),poisongas)

explain((insidejob),poisongas)


// Either conspiracy theory involves a coverup

explain((coverup),chemlab)

explain((coverup),insidejob)


// The theories all contradict one another

contradict(alsharuq,freeknights)

contradict(alsharuq,chemlab)
```

contradict(alsharuq,insidejob)

contradict(freeknights,chemlab)

contradict(freeknights,insidejob)

contradict(chemlab,insidejob)

// The evidence is taken at face value

data(poisongas)

Equilibrium node activations

freeknights, 0.49392635

insidejob, -0.005622344

alsharuq, -0.122794636

chemlab, -0.0056223837

Study 4: Inside job and chemical weapons facility conditions

N.B.: The chemical weapon lab version is shown here. The inside job version has identical code and output, with only the names swapped.

javaECHO code

// Evidence

// poisongas = the facts of the news story common to all conditions: there was a poison gas incident at a US government building in Georgia

// chemstuff = witnesses saw chemistry equipment being removed from the building after the attack

```
// Conventional theories

// alsharuq = the attack was perpetrated by the Islamist terror group Al-Sharuq

// freeknights = the attack was perpetrated by the white supremacist militia group Free
Knights of the Cross


// Conspiracy theories

// chemlab = the attack was actually an accident at a secret chemical weapons lab

// insidejob = the attack was secretly perpetrated by the US government

// coverup = there's some kind of coverup going on


// The conventional theories explain the evidence

explain((alsharuq),poisongas)

explain((freeknights),poisongas)


// So do the conspiracy theories

explain((chemlab),poisongas)

explain((insidejob),poisongas)

explain((chemlab),chemstuff)


// Either conspiracy theory involves a coverup

explain((coverup),chemlab)
```

explain((coverup),insidejob)

// The theories all contradict one another

contradict(alsharuq,freeknights)

contradict(alsharuq,chemlab)

contradict(alsharuq,insidejob)

contradict(freeknights,chemlab)

contradict(freeknights,insidejob)

contradict(chemlab,insidejob)

// The evidence is taken at face value

data(poisongas)

data(chemstuff)

Equilibrium node activations

insidejob, 0.4300904

chemlab, 0.58536595

freeknights, -0.29558215

alsharuq, -0.29558215

Study 4: Control condition

javaECHO code

// Evidence

// poisongas = the facts of the news story common to all conditions: there was a poison gas incident at a US government building

// Conventional theories

// alsharuq = the attack was perpetrated by the Islamist terror group Al-Sharuq

// freeknights = the attack was perpetrated by the white supremacist militia group Free Knights of the Cross

// Conspiracy theories

// chemlab = the attack was actually an accident at a secret chemical weapons lab

// insidejob = the attack was secretly perpetrated by the US government

// coverup = there's some kind of coverup going on

// The conventional theories explain the evidence

explain((alsharuq),poisongas)

explain((freeknights),poisongas)

// So do the conspiracy theories

explain((chemlab),poisongas)

explain((insidejob),poisongas)

// Either conspiracy theory involves a coverup

explain((coverup),chemlab)

explain((coverup),insidejob)

// The theories all contradict one another

contradict(alsharuq,freeknights)

contradict(alsharuq,chemlab)

contradict(alsharuq,insidejob)

contradict(freeknights,chemlab)

contradict(freeknights,insidejob)

contradict(chemlab,insidejob)

// The evidence is taken at face value

data(poisongas)

Equilibrium node activations

insidejob, 0.42998624

chemlab, 0.42998624

freeknights, -0.23345856

alsharuq, -0.23345856

Study 4: Coverup condition

javaECHO code

// Evidence

// poisongas = the facts of the news story common to all conditions: there was a poison gas incident at a US government building in Georgia

// tapestaken = government confiscates or destroys all CCTV footage related to the attack

// Conventional theories

// alsharuq = the attack was perpetrated by the Islamist terror group Al-Sharuq

// freeknights = the attack was perpetrated by the white supremacist militia group Free Knights of the Cross

// Conspiracy theories

// chemlab = the attack was actually an accident at a secret chemical weapons lab

// insidejob = the attack was secretly perpetrated by the US government

// coverup = there's some kind of coverup going on

// The conventional theories explain the evidence

explain((alsharuq),poisongas)

explain((freeknights),poisongas)

// So do the conspiracy theories

explain((chemlab),poisongas)

explain((insidejob),poisongas)

```
// Either conspiracy theory involves a coverup

explain((coverup),chemlab)

explain((coverup),insidejob)

explain((coverup),tapestaken)


// The idea of a coverup contradicts the official story

contradict(coverup,alsharuq)

contradict(coverup,freeknights)


// The theories all contradict one another

contradict(alsharuq,freeknights)

contradict(alsharuq,chemlab)

contradict(alsharuq,insidejob)

contradict(freeknights,chemlab)

contradict(freeknights,insidejob)

contradict(chemlab,insidejob)


// The evidence is taken at face value

data(poisongas)

data(tapestaken)
```

Equilibrium node activations

insidejob, 0.4743046

chemlab, 0.4743046

freeknights, -0.2678255

alsharuq, -0.2678255

Study 6: Basic 9/11 conspiracy model

javaECHO code

data(collapse)

explain((fires),collapse)

explain((demolition),collapse)

contradict(fires,demolition)

Equilibrium node activations

fires, 0.16213098

demolition, 0.16213098

Study 6: Pro-conspiracist belief network

javaECHO code

data(collapse,evil)

explain((fires),collapse)

explain((demolition),collapse)

explain((cia),collapse)

explain((cia),demolition)

explain((evil),cia)

contradict(fires,demolition)

contradict(fires,cia)

Equilibrium node activations

cia, 0.6667775

demolition, 0.6129706

fires, -0.5072288

Study 6: Anti-conspiracist belief network

javaECHO code

data(collapse,good)

explain((fires),collapse)

explain((demolition),collapse)

explain((cia),collapse)

explain((cia),demolition)

contradict(good,cia)

contradict(fires,demolition)

contradict(fires,cia)

Equilibrium node activations

fires, 0.60691226

cia, -0.6113152

demolition, -0.48508105

Appendix B – Study 1 Sample Questionnaire

Please indicate how much you agree with each statement by selecting a number from 1 (strongly disagree) to 7 (strongly agree).

One or more rogue 'cells' in the British Secret Service constructed and carried out a plot to kill Princess Diana.

strongly disagree 1 2 3 4 5 6 7 strongly agree

The European Union is trying to take control of the United Kingdom.

strongly disagree 1 2 3 4 5 6 7 strongly agree

Scientists are creating panic about climate change because it is in their interests to do so.

strongly disagree 1 2 3 4 5 6 7 strongly agree

There was an official campaign by MI6 to assassinate Princess Diana, sanctioned by elements of the establishment.

strongly disagree 1 2 3 4 5 6 7 strongly agree

There was no conspiracy involved in the assassination of John. F. Kennedy.

strongly disagree 1 2 3 4 5 6 7 strongly agree

"Climate change" is a myth promoted by the government as an excuse to raise taxes and curb people's freedom.

strongly disagree 1 2 3 4 5 6 7 strongly agree

Princess Diana's death was an accident.

strongly disagree 1 2 3 4 5 6 7 strongly agree

The AIDS virus was created in a laboratory.

strongly disagree 1 2 3 4 5 6 7 strongly agree

The attack on the Twin Towers was not a terrorist action but a governmental conspiracy.

strongly disagree 1 2 3 4 5 6 7 strongly agree

The "science" behind climate change is at least dubious.

strongly disagree 1 2 3 4 5 6 7 strongly agree

Business enemies of Dodi Fayed and his father Mohammed Al Fayed assassinated Dodi, with the death of Princess Diana a cover up for their operation.

strongly disagree 1 2 3 4 5 6 7 strongly agree

The American moon landings were faked.

strongly disagree 1 2 3 4 5 6 7 strongly agree

Princess Diana had to be killed because the British government could not accept that the mother of the future king was involved with a Muslim Arab.

strongly disagree 1 2 3 4 5 6 7 strongly agree

A government exercise was behind the suicide at Jonestown.

strongly disagree 1 2 3 4 5 6 7 strongly agree

The idea that the world is headed for catastrophic climate change is a fraud.

strongly disagree 1 2 3 4 5 6 7 strongly agree

Princess Diana faked her own death so she and Dodi could retreat into isolation.

strongly disagree 1 2 3 4 5 6 7 strongly agree

Governments are suppressing evidence of the existence of aliens.

strongly disagree 1 2 3 4 5 6 7 strongly agree

Appendix C – Study 2 Sample Questionnaire

MEDIA TRIVIA

1. What's John McClane's repeated catchphrase in the *Die Hard* films?

2. What was the name of the masked killer in the *Halloween* horror film series?

3. Which *EastEnders* character was brought back to the show 14 years after his apparent death?

4. Complete this dialogue from the film *Goldfinger*:

   JAMES BOND: Do you expect me to talk?
   AURIC GOLDFINGER: No, Mr. Bond! _____

5. Name a film or TV show in which a character uses the phrase "it's quiet... too quiet!"

6. In *The Lord of the Rings: The Fellowship of the Ring*, what does Gandalf say as he confronts the Balrog near the end?

7. When a character in a film is attempting to defuse a bomb, they often have to choose between which of two coloured wires to cut. What are the usual colours of the wires?

8. What was the name of Wes Craven's popular film series which parodied the clichés of the horror genre?

9. In which film did a character played by Harrison Ford famously leap off a dam?

10. In *Kill Bill Volume 2*, how did the Bride escape from being buried alive?

11. If you're a character in a horror film, what's a good way to get yourself killed?

12. List as many Arnold Schwarzenegger one-liners as you can think of.

Please indicate how much you agree or disagree with each of the following statements, and keep in mind that there are no right or wrong answers.

1. The best way to handle people is to tell them what they want to hear.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2. People suffering from incurable diseases should have the choice of being put painlessly to death.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3. If something is a threat to you, you need to make absolutely sure that it's eliminated.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. It's wisest not to believe anything until you see it with your own eyes.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

5. The biggest difference between most criminals and other people is that the criminals are stupid enough to get caught.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. Never tell anyone the real reason you did something unless it is useful to do so.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

7. Much of what we are told in the news is simply made up.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8. It is safest to assume that all people have a vicious streak and it will come out when they are given a chance.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

On 2 May 2011, President Barack Obama of the United States announced that Osama bin Laden had been shot and killed in Pakistan in a raid by a Navy SEAL team, after being tracked to a compound near Islamabad by U.S. intelligence. According to the President, bin Laden was buried at sea shortly after the raid, and therefore the body could not be examined independently. In the following days, Obama's administration also refused to release photographs of the body, saying that their gruesome appearance might provoke retaliation against the U.S. and its allies.

Some commentators have alleged that bin Laden was not actually killed in the raid. They suspect that the announcement was in fact a publicity stunt, meant to improve Obama's flagging approval ratings among voters in advance of the 2012 election.

What do you think?

1. "Osama bin Laden was killed in the American raid."

To what degree do you agree with this idea?

(strongly disagree) 1 2 3 4 5 6 7 (strongly agree)

To what degree do you think this idea is:

Plausible?	(not at all)	1	2	3	4	5	6	7 (very much)
Convincing?	(not at all)	1	2	3	4	5	6	7 (very much)
Worth considering?	(not at all)	1	2	3	4	5	6	7 (very much)
Interesting?	(not at all)	1	2	3	4	5	6	7 (very much)
Coherent?	(not at all)	1	2	3	4	5	6	7 (very much)

If you were in the position of the Obama administration, and bin Laden was not actually killed in the raid, would you falsely claim that he was?

(not under any circumstances) 1 2 3 4 5 6 7 (probably, yes)

2. "Osama bin Laden is still alive."

To what degree do you agree with this idea?

(strongly disagree) 1 2 3 4 5 6 7 (strongly agree)

To what degree do you think this idea is:

Plausible?	(not at all)	1	2	3	4	5	6	7 (very much)
Convincing?	(not at all)	1	2	3	4	5	6	7 (very much)
Worth considering?	(not at all)	1	2	3	4	5	6	7 (very much)
Interesting?	(not at all)	1	2	3	4	5	6	7 (very much)
Coherent?	(not at all)	1	2	3	4	5	6	7 (very much)

If you were in the position of the Obama administration, and knew that bin Laden was still alive, would you withhold that information from the public and claim to have killed him?

(not under any circumstances) 1 2 3 4 5 6 7 (probably, yes)

(TURN THE PAGE)

3. "When the raid took place, Osama bin Laden was already dead."

To what degree do you agree with this idea?

(strongly disagree) 1 2 3 4 5 6 7 (strongly agree)

To what degree do you think this idea is:

Plausible?	(not at all)	1	2	3	4	5	6	7 (very much)
Convincing?	(not at all)	1	2	3	4	5	6	7 (very much)
Worth considering?	(not at all)	1	2	3	4	5	6	7 (very much)
Interesting?	(not at all)	1	2	3	4	5	6	7 (very much)
Coherent?	(not at all)	1	2	3	4	5	6	7 (very much)

If you were in the position of the Obama administration, and knew that bin Laden had died long before the raid, would you withhold that information from the public and stage a fake raid as a publicity stunt?

(not under any circumstances) 1 2 3 4 5 6 7 (probably, yes)

4. "The actions of the Obama administration indicate that they are hiding some important piece of information about the raid."

To what degree do you agree with this idea?

(strongly disagree) 1 2 3 4 5 6 7 (strongly agree)

To what degree do you think this idea is:

Plausible?	(not at all)	1	2	3	4	5	6	7 (very much)
Convincing?	(not at all)	1	2	3	4	5	6	7 (very much)
Worth considering?	(not at all)	1	2	3	4	5	6	7 (very much)
Interesting?	(not at all)	1	2	3	4	5	6	7 (very much)
Coherent?	(not at all)	1	2	3	4	5	6	7 (very much)

If you were in the position of the Obama administration, and there was some embarrassing or damaging fact regarding the raid that you didn't want released, would you attempt to cover it up?

(not under any circumstances) 1 2 3 4 5 6 7 (probably, yes)

THANK YOU FOR PARTICIPATING!

Appendix D – Study 3 Sample Questionnaire

Below is an article from an American national newspaper.

Please read it carefully before going on to the next page.

Speculation Into Cause of Utah Journalist's Death

Ethan Dunbar, an investigative journalist working for the Salt Lake City Tribune, was found dead in his apartment last week. Though Dunbar's death was quickly ruled a suicide by the local police, Dunbar's colleagues remain uncertain about the true cause of his death.

"Look, I know Ethan was found hanging as though he'd committed suicide, and there was a suicide note," said another writer for the newspaper, speaking on condition of anonymity. "But I knew him, and I know he wouldn't have killed himself like that. Look at what he was working on when he died, and tell me the timing of his death isn't suspicious at all."

At the time of his death, Dunbar was pursuing two separate investigations. In one, he was investigating allegations of cronyism and corruption by the mayor of Salt Lake City, who stands accused of granting lucrative building contracts to close associates. In the other, he was looking into complaints that Glickman Pharmaceuticals, a multi-billion-dollar drug company with a powerful influence in local politics, was conducting highly unethical drug trials in Uganda.

Suspicion about the circumstances of Dunbar's death has intensified this week since an explosive document was leaked from the Salt Lake City mayor's office. In the memorandum, dated a week prior to the apparent suicide, the mayor characterised Dunbar's investigation as "extremely damaging" and urged his staff to oppose the journalist's efforts "by any means necessary."

Representatives for the mayor's office have attempted to downplay the significance of the document, but that has done little to stop growing calls for an independent investigation. "Enough of the lies," demands JusticeForEthan.com, a website set up by Dunbar's friends and colleagues. "It's time Ethan had justice."

Please read the following statements regarding the death of the journalist Ethan Dunbar and answer the questions that come after each.

"Ethan Dunbar committed suicide."

	Strongly Disagree				**Strongly Agree**
To what degree do you agree with this idea?	○	○	○	○	○

To what degree do you think this idea is...

	Not at all						**Very much**
Plausible?	○	○	○	○	○	○	○
Convincing?	○	○	○	○	○	○	○
Worth considering?	○	○	○	○	○	○	○
Interesting?	○	○	○	○	○	○	○
Coherent?	○	○	○	○	○	○	○

"Ethan Dunbar was killed because of his investigation into corruption in the mayor's office."

	Strongly Disagree				**Strongly Agree**
To what degree do you agree with this idea?	○	○	○	○	○

To what degree do you think this idea is...

	Not at all						**Very much**
Plausible?	○	○	○	○	○	○	○
Convincing?	○	○	○	○	○	○	○
Worth considering?	○	○	○	○	○	○	○
Interesting?	○	○	○	○	○	○	○
Coherent?	○	○	○	○	○	○	○

"Ethan Dunbar was killed because of his investigation into the pharmaceutical company."

	Strongly Disagree				Strongly Agree
To what degree do you agree with this idea?	○	○	○	○	○

To what degree do you think this idea is...

	Not at all						Very much
Plausible?	○	○	○	○	○	○	○
Convincing?	○	○	○	○	○	○	○
Worth considering?	○	○	○	○	○	○	○
Interesting?	○	○	○	○	○	○	○
Coherent?	○	○	○	○	○	○	○

"The true circumstances of Ethan Dunbar's death are being covered up."

	Strongly Disagree				Strongly Agree
To what degree do you agree with this idea?	○	○	○	○	○

To what degree do you think this idea is...

	Not at all						Very much
Plausible?	○	○	○	○	○	○	○
Convincing?	○	○	○	○	○	○	○
Worth considering?	○	○	○	○	○	○	○
Interesting?	○	○	○	○	○	○	○
Coherent?	○	○	○	○	○	○	○

Appendix E – Study 4 Sample Questionnaire

Below is an article from an American national newspaper.

Please read it carefully before going on to the next page.

NERVE GAS ATTACK IN SOUTHERN USA CLAIMS 17 LIVES

In what officials are calling one of the worst terrorist attacks in America in recent years, a cloud of deadly Sarin gas spread through a U.S. Government building near Athens, Georgia, killing 17 employees and sending over 50 more to hospital. The gas attack has been contained and much of the building isolated.

The building, located on the edge of the city, housed offices of the Internal Revenue Service and the Bureau of Alcohol, Tobacco, and Firearms, among other federal agencies.

Some were immediately suspicious of the characterization of the incident as a terrorist attack, calling it a deliberate lie meant to cover up a more sinister and damaging truth. Many local residents, who have long been suspicious about the true purpose of the government building in Athens, have proposed that the building housed a secret chemical weapons facility and that the "terrorist attack" story is nothing more than a cover-up for a laboratory accident. Much online discussion has centered on the idea that the incident was a "false flag attack," secretly carried out by the U.S. government in order to stir up public hatred against religious groups and create support for harsh anti-terrorism laws. Proponents of both ideas continue to call for an independent investigation – at press time, an online petition demanding an independent inquiry has gathered over 100,000 signatures.

No one has yet claimed responsibility for the attack, and there is some disagreement among authorities as to the likely culprit. Federal officials claim to have reliable information indicating that the attack was carried out by the Yemen-based Islamic extremist group "Al-Sharuq" as part of what they see as an ongoing war between Islam and the West. Local authorities disagree, however; the Georgia State Police claim to have evidence that the attack was perpetrated by a local far-right white supremacist militia group known as "Free Knights of the Cross." The group has declared the U.S. Government "an enemy of the people" for various reasons including immigration, excessive taxation, and gun control.

When asked about the possibility that the two organizations somehow cooperated in the attack, there was general agreement among experts that it was not possible. "These two groups absolutely despise each other," said Jack Wasserman, a professor of terrorism studies at Georgia State University. "One believes in the supremacy of evangelical Christianity, the other in the strictest interpretation of Sunni Islam. Pigs would fly before they'd consider working together."

Workers in the building reported that the toxic gas came through the central ventilation system, covering many areas of the building. This struck many employees as odd, given recently increased security in the building's maintenance areas. "Just yesterday Homeland Security had a team down in the boiler room," said one maintenance worker in the building, speaking on condition of anonymity. "They said they were putting in some fancy new security down there. If that's so, then how in the hell did this happen?" Officials have declined to comment, saying only that the investigation is ongoing.

"The poison gas incident was the result of an attack by Al-Sharuq."

	Strongly Disagree				Strongly Agree
To what degree do you agree with this idea?	○	○	○	○	○

To what degree do you think this idea is...

	Not at all						Very much
Plausible?	○	○	○	○	○	○	○
Convincing?	○	○	○	○	○	○	○
Worth considering?	○	○	○	○	○	○	○
Interesting?	○	○	○	○	○	○	○
Coherent?	○	○	○	○	○	○	○

"The poison gas incident was the result of an attack by Free Knights of the Cross."

	Strongly Disagree				Strongly Agree
To what degree do you agree with this idea?	○	○	○	○	○

To what degree do you think this idea is...

	Not at all						Very much
Plausible?	○	○	○	○	○	○	○
Convincing?	○	○	○	○	○	○	○
Worth considering?	○	○	○	○	○	○	○
Interesting?	○	○	○	○	○	○	○
Coherent?	○	○	○	○	○	○	○

"The poison gas incident was the result of an accident at a secret chemical weapons facility."

	Strongly Disagree				Strongly Agree
To what degree do you agree with this idea?	○	○	○	○	○

To what degree do you think this idea is...

	Not at all						Very much
Plausible?	○	○	○	○	○	○	○
Convincing?	○	○	○	○	○	○	○
Worth considering?	○	○	○	○	○	○	○
Interesting?	○	○	○	○	○	○	○
Coherent?	○	○	○	○	○	○	○

"The poison gas incident was deliberately perpetrated by agents of the U.S. Government."

	Strongly Disagree				Strongly Agree
To what degree do you agree with this idea?	○	○	○	○	○

To what degree do you think this idea is...

	Not at all						Very much
Plausible?	○	○	○	○	○	○	○
Convincing?	○	○	○	○	○	○	○
Worth considering?	○	○	○	○	○	○	○
Interesting?	○	○	○	○	○	○	○
Coherent?	○	○	○	○	○	○	○

Appendix F – Study 6 Sample Questionnaire

DEMOGRAPHIC INFORMATION

For the purposes of confidentiality, we would like you to generate a secret identification code. Please write the last two letters of your mother's maiden name, followed by the date of your birthday. For example, if your mother's maiden name is Smith and your birthday is the 3rd of July, write TH03.

If you wish to withdraw your data from the study in the future, simply contact the researcher and provide your identification code.

Identification code: _____

Age: _____

Gender: _____

On the following pages you will find three scenarios. Each scenario describes a chain of events, and is followed by a series of explanations which you will be asked to evaluate. Please read the scenarios and explanations carefully before answering, and do not go back and edit your answers later.

Turn the page when you are ready to begin.

NUCLEAR PLANT SCENARIO

An explosion at a nuclear power plant released dangerous amounts of radiation into the surrounding area, killing several people and causing environmental damage.

Explanations

1. **The explosion was the result of an accident.**

To what extent do you agree with this explanation?

strongly disagree	1	2	3	4	5	6	7	strongly agree

To what extent do you think that this explanation is:

plausible?	not at all	1	2	3	4	5	6	7	very much
convincing?	not at all	1	2	3	4	5	6	7	very much
worth considering?	not at all	1	2	3	4	5	6	7	very much
interesting?	not at all	1	2	3	4	5	6	7	very much
coherent?	not at all	1	2	3	4	5	6	7	very much

2. **The explosion was the result of an accident caused by a defective valve in the coolant system. The plant workers did not have the skills to stop the explosion.**

To what extent do you agree with this explanation?

strongly disagree	1	2	3	4	5	6	7	strongly agree

To what extent do you think that this explanation is:

plausible?	not at all	1	2	3	4	5	6	7	very much
convincing?	not at all	1	2	3	4	5	6	7	very much
worth considering?	not at all	1	2	3	4	5	6	7	very much
interesting?	not at all	1	2	3	4	5	6	7	very much
coherent?	not at all	1	2	3	4	5	6	7	very much

3. **The explosion was the result of an accident caused by a defective valve in the coolant system. The plant workers did not have the skills to stop the explosion and poor management meant that the workers were understaffed.**

To what extent do you agree with this explanation?

strongly disagree	1	2	3	4	5	6	7	strongly agree

To what extent do you think that this explanation is:

plausible?	not at all	1	2	3	4	5	6	7	very much
convincing?	not at all	1	2	3	4	5	6	7	very much
worth considering?	not at all	1	2	3	4	5	6	7	very much
interesting?	not at all	1	2	3	4	5	6	7	very much
coherent?	not at all	1	2	3	4	5	6	7	very much

4. **The explosion was the result of an accident caused by a defective valve in the coolant system. The plant workers did not have the skills to stop the explosion and poor management meant that the workers were understaffed. They were further hindered by inefficient crisis-situation staff.**

To what extent do you agree with this explanation?

strongly disagree	1	2	3	4	5	6	7	strongly agree

To what extent do you think that this explanation is:

plausible?	not at all	1	2	3	4	5	6	7	very much
convincing?	not at all	1	2	3	4	5	6	7	very much
worth considering?	not at all	1	2	3	4	5	6	7	very much
interesting?	not at all	1	2	3	4	5	6	7	very much
coherent?	not at all	1	2	3	4	5	6	7	very much

ASSASSINATION SCENARIO

The President of a developing nation was moving through a crowd of supporters to his limousine when a man with a knife rushed forward out of the crowd and stabbed him. Paramedics and bodyguards rushed to help, but the President died at the scene.

Explanations

1. **The assassination was the result of a political disagreement.**

To what extent do you agree with this explanation?

strongly disagree	1	2	3	4	5	6	7	strongly agree

To what extent do you think that this explanation is:

plausible?	not at all	1	2	3	4	5	6	7	very much
convincing?	not at all	1	2	3	4	5	6	7	very much
worth considering?	not at all	1	2	3	4	5	6	7	very much
interesting?	not at all	1	2	3	4	5	6	7	very much
coherent?	not at all	1	2	3	4	5	6	7	very much

2. **The assassination was the result of a political disagreement. The assassin was inspired by the arguments of a radical dissident group.**

To what extent do you agree with this explanation?

strongly disagree	1	2	3	4	5	6	7	strongly agree

To what extent do you think that this explanation is:

plausible?	not at all	1	2	3	4	5	6	7	very much
convincing?	not at all	1	2	3	4	5	6	7	very much
worth considering?	not at all	1	2	3	4	5	6	7	very much
interesting?	not at all	1	2	3	4	5	6	7	very much
coherent?	not at all	1	2	3	4	5	6	7	very much

3. **The assassination was the result of a political disagreement. The assassin was inspired by the arguments of a radical dissident group. The bodyguards were unable to spot the assassin due to the large size of the crowd.**

To what extent do you agree with this explanation?

strongly disagree	1	2	3	4	5	6	7	strongly agree

To what extent do you think that this explanation is:

plausible?	not at all	1	2	3	4	5	6	7	very much
convincing?	not at all	1	2	3	4	5	6	7	very much
worth considering?	not at all	1	2	3	4	5	6	7	very much
interesting?	not at all	1	2	3	4	5	6	7	very much
coherent?	not at all	1	2	3	4	5	6	7	very much
coherent?	not at all	1	2	3	4	5	6	7	very much

4. **The assassination was the result of a political disagreement. The assassin was inspired by the arguments of a radical dissident group. The bodyguards were unable to spot the assassin due to the large size of the crowd, and the paramedics couldn't save the President because his injuries were too severe.**

To what extent do you agree with this explanation?

strongly disagree	1	2	3	4	5	6	7	strongly agree

To what extent do you think that this explanation is:

plausible?	not at all	1	2	3	4	5	6	7 very much
convincing?	not at all	1	2	3	4	5	6	7 very much
worth considering?	not at all	1	2	3	4	5	6	7 very much
interesting?	not at all	1	2	3	4	5	6	7 very much
coherent?	not at all	1	2	3	4	5	6	7 very much

INVENTION SCENARIO

A team of medical researchers held a press conference to announce a breakthrough in cancer treatment: an inexpensive vaccine that could prevent many types of cancer from occurring. Two weeks later, the lead researcher called another press conference to announce that the vaccine did not work after all.

Explanations

1. **The announcement was retracted because the data were inaccurate.**

To what extent do you agree with this explanation?

strongly disagree 1 2 3 4 5 6 7 strongly agree

To what extent do you think that this explanation is:

plausible?	not at all	1	2	3	4	5	6	7 very much
convincing?	not at all	1	2	3	4	5	6	7 very much
worth considering?	not at all	1	2	3	4	5	6	7 very much
interesting?	not at all	1	2	3	4	5	6	7 very much
coherent?	not at all	1	2	3	4	5	6	7 very much

2. **The announcement was retracted because the data were inaccurate. There was an error in the researchers' data analysis that led to the wrong conclusion.**

To what extent do you agree with this explanation?

strongly disagree 1 2 3 4 5 6 7 strongly agree

To what extent do you think that this explanation is:

plausible?	not at all	1	2	3	4	5	6	7 very much
convincing?	not at all	1	2	3	4	5	6	7 very much
worth considering?	not at all	1	2	3	4	5	6	7 very much
interesting?	not at all	1	2	3	4	5	6	7 very much
coherent?	not at all	1	2	3	4	5	6	7 very much

3. **The announcement was retracted because the data were inaccurate. There was an error in the researchers' data analysis that led to the wrong conclusion. The senior researchers were careless in double-checking their results.**

To what extent do you agree with this explanation?

strongly disagree 1 2 3 4 5 6 7 strongly agree

To what extent do you think that this explanation is:

plausible?	not at all	1	2	3	4	5	6	7 very much
convincing?	not at all	1	2	3	4	5	6	7 very much
worth considering?	not at all	1	2	3	4	5	6	7 very much
interesting?	not at all	1	2	3	4	5	6	7 very much
coherent?	not at all	1	2	3	4	5	6	7 very much

4. **The announcement was retracted because the data were inaccurate. There was an error in the researchers' data analysis that led to the wrong conclusion. The senior researchers were careless in double-checking their results and the junior researchers were afraid to speak up about the errors.**

To what extent do you agree with this explanation?

strongly disagree	1	2	3	4	5	6	7	strongly agree

To what extent do you think that this explanation is:

plausible?	not at all	1	2	3	4	5	6	7 very much
convincing?	not at all	1	2	3	4	5	6	7 very much
worth considering?	not at all	1	2	3	4	5	6	7 very much
interesting?	not at all	1	2	3	4	5	6	7 very much
coherent?	not at all	1	2	3	4	5	6	7 very much

MACH IV SCALE

Please circle the number representing the degree to which you agree with each of the following statements.

	Strongly disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. Never tell anyone the real reason you did something unless it is useful to do so.	1	2	3	4	5	6
2. The best way to handle people is to tell them what they want to hear.	1	2	3	4	5	6
3. One should take action only when sure it is morally right.	1	2	3	4	5	6
4. Most people are basically good and kind.	1	2	3	4	5	6
5. It is safest to assume that all people have a vicious streak and it will give out when given the chance.	1	2	3	4	5	6
6. Honesty is the best policy in all cases.	1	2	3	4	5	6
7. There is no excuse for lying to someone else.	1	2	3	4	5	6
8. Generally speaking, people won't work hard unless they are forced to do so.	1	2	3	4	5	6
9. All in all, it is better to be humble and honest than to be important and dishonest.	1	2	3	4	5	6
10. When you ask someone to do something for you, it is better to give the real reasons for wanting it rather than giving reasons that carry more weight.	1	2	3	4	5	6
11. People who want to get ahead in the world lead clean, moral lives.	1	2	3	4	5	6
12. Anyone who completely trusts others is asking for trouble.	1	2	3	4	5	6
13. The biggest difference between criminals and others is that the criminals are stupid enough to get caught.	1	2	3	4	5	6

	Strongly disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
14. Most people are brave.	1	2	3	4	5	6
15. It is wise to flatter important people.	1	2	3	4	5	6
16. It is possible to be good in all respects.	1	2	3	4	5	6
17. Barnum was wrong when he said that there's a sucker born every minute.	1	2	3	4	5	6
18. It is hard to get ahead without cutting corners.	1	2	3	4	5	6
19. People suffering from incurable diseases should have the choice of being put painlessly to death.	1	2	3	4	5	6
20. Most people forget more easily the death of their father than the loss of their property.	1	2	3	4	5	6

Appendix G – Study 7 Sample Questionnaire

The following is a brief summary of the official account of the Gulf of Mexico oil spill.

The Deepwater Horizon oil rig, maintained by Transocean and under contract to BP, was drilling an exploratory well in the Gulf of Mexico when it unexpectedly hit a pocket of methane gas. The gas made its way up to the platform itself, causing a massive explosion that killed 11 workers and set the entire rig on fire. Efforts to extinguish the fire were in vain, and the rig eventually sank, causing a massive oil leak. The explosion was later blamed on a series of negligent actions by BP and Transocean, including poor maintenance of safety systems and inadequate precautions taken in the exploratory well to prevent a blowout.

The facts listed below came to light in the days and weeks following the spill. Some claim that they cast doubt upon the official story.

- Goldman Sachs, an investment company with close ties to high-ranking members of the U.S. government, dumped much of its BP stock shortly before the spill.
- Halliburton, a contracting firm with substantial connections to the U.S. government, bought an oil cleanup firm about a week before the spill happened.
- Media access to the wreck site was blocked by U.S. government officials.
- Some of the surviving rig workers claim they heard a small explosion just before the large one that ultimately destroyed the rig.
- Some of the surviving workers claim that they have been followed after the incident, and their homes broken into (though in each case, nothing seemed to have been stolen).
- On the day of the spill, the U.S. Coast Guard were busy participating in a large-scale anti-terror drill and had a delayed response as a result. This kind of drill happens only twice each year.
- Daniel Whitman, a senior engineering lecturer at a prestigious American university, has written a detailed analysis claiming that the methane captured by the oil rig could not have exploded on its own.
- Shortly after the spill, the American government renewed its efforts to pass new taxes on industries that can cause environmental damage, using the oil spill as a justification.

The following is an excerpt from a radio interview with Jason Noory, an independent journalist and a sceptic of the official story.

INTERVIEWER: "So what do you think really happened with the, the Deepwater Horizon spill?"

NOORY: ""Well, nobody wants to acknowledge it, but it – I think it's obvious. The American government is in trouble. They're low on money, so they need to tax American corporations to keep themselves – keep their heads above water. So what do they do? They decide that they need a disaster. I don't think this so-called oil spill was an accident. I really don't. I think that the oil rig was bombed, and that the bombing was perpetrated by agents of the United States government. This is the sort of thing that people really need to know about – we need to make it an issue, and I'm just trying to wake people up about this so that they start asking some tough questions."

1. ***"The official story is basically true."***

To what extent do you agree with this idea?									
	strongly disagree	1	2	3	4	5	6	7	8	strongly agree
To what extent do you think that this idea is:									
plausible?	not at all	1	2	3	4	5	6	7	8	very much
convincing?	not at all	1	2	3	4	5	6	7	8	very much
worth considering?	not at all	1	2	3	4	5	6	7	8	very much
interesting?	not at all	1	2	3	4	5	6	7	8	very much
coherent?	not at all	1	2	3	4	5	6	7	8	very much

2. ***"The Gulf of Mexico disaster was an accident."***

To what extent do you agree with this idea?									
	strongly disagree	1	2	3	4	5	6	7	8	strongly agree
To what extent do you think that this idea is:									
plausible?	not at all	1	2	3	4	5	6	7	8	very much
convincing?	not at all	1	2	3	4	5	6	7	8	very much
worth considering?	not at all	1	2	3	4	5	6	7	8	very much
interesting?	not at all	1	2	3	4	5	6	7	8	very much
coherent?	not at all	1	2	3	4	5	6	7	8	very much

3. ***"The Gulf of Mexico disaster was the result of a government conspiracy."***

To what extent do you agree with this idea?									
	strongly disagree	1	2	3	4	5	6	7	8	strongly agree
To what extent do you think that this idea is:									
plausible?	not at all	1	2	3	4	5	6	7	8	very much
convincing?	not at all	1	2	3	4	5	6	7	8	very much
worth considering?	not at all	1	2	3	4	5	6	7	8	very much
interesting?	not at all	1	2	3	4	5	6	7	8	very much
coherent?	not at all	1	2	3	4	5	6	7	8	very much

Appendix H – Study 8 Sample Questionnaire

The following is a brief summary of the official account of the recent Gulf of Mexico oil spill.

The Deepwater Horizon oil rig, maintained by Transocean and under contract to BP, was drilling an exploratory well in the Gulf of Mexico when it unexpectedly hit a pocket of methane gas. The gas made its way up to the platform itself, causing a massive explosion that killed 11 workers and set the entire rig on fire. Efforts to extinguish the fire were in vain, and the rig eventually sank, causing a massive oil leak. The explosion was later blamed on a series of negligent actions by BP and Transocean, including poor maintenance of safety systems and inadequate precautions taken in the exploratory well to prevent a blowout.

The facts listed below came to light in the days and weeks following the spill. Some claim that they cast doubt upon the official story.

- One of the companies contributing to the oil cleanup was a subsidiary of Halliburton, a contracting firm with substantial connections to the U.S .government.
- Some of the surviving oil rig workers claim to have had a distinct feeling that something was about to go wrong in the days before the explosion.
- Members of the press were allowed to inspect the wreck site for only a short period of time.
- One of the survivors claimed to have seen something suspicious on the oil rig, and was invited onto a weekly TV news programme to discuss it. He appeared extremely agitated during the interview and refused to go into specifics.
- On the day of the spill, the U.S. Coast Guard were busy participating in an anti-terror drill and had a delayed response as a result. This kind of drill is conducted about twice a month.
- Ian Bell, an American radio presenter, devoted an episode of his weekly programme to the claim that the methane captured by the oil rig could not have exploded on its own, and instead must have been detonated by a small explosive charge.

The following is an excerpt from a radio interview with Jason Noory, an independent journalist and a sceptic of the official story.

INTERVIEWER: "So what do you think really happened with the, the Deepwater Horizon spill?"

NOORY: "Well, nobody wants to acknowledge it, but it – I think it's obvious that the official story can't possibly be true. There are too many problems, too many inconsistencies, too many connections to powerful people who have an interest in a disaster like this. And so there are questions that need to be raised, because there's more to this than meets the eye. But I don't want to speculate on what really caused the oil spill. I want people to go and do the research and draw their own conclusions about what really happened. This is the sort of thing that people really need to know about – we need to make it an issue, and I'm just trying to wake people up about this so that they start asking some tough questions."

1. "The official story is basically true."

To what extent do you agree with this idea?									
	strongly disagree	1	2	3	4	5	6	7	8	strongly agree
To what extent do you think that this idea is:									
plausible?	not at all	1	2	3	4	5	6	7	8	very much
convincing?	not at all	1	2	3	4	5	6	7	8	very much
worth considering?	not at all	1	2	3	4	5	6	7	8	very much
interesting?	not at all	1	2	3	4	5	6	7	8	very much
coherent?	not at all	1	2	3	4	5	6	7	8	very much

2. "The Gulf of Mexico disaster was the result of a government conspiracy."

To what extent do you agree with this idea?									
	strongly disagree	1	2	3	4	5	6	7	8	strongly agree
To what extent do you think that this idea is:									
plausible?	not at all	1	2	3	4	5	6	7	8	very much
convincing?	not at all	1	2	3	4	5	6	7	8	very much
worth considering?	not at all	1	2	3	4	5	6	7	8	very much
interesting?	not at all	1	2	3	4	5	6	7	8	very much
coherent?	not at all	1	2	3	4	5	6	7	8	very much

Appendix I – Study 9 Sample Questionnaire

To ensure that your data will remain anonymous, we would like you to generate a secret identification code. This is made up of the last two letters of your mother's maiden name, plus the day of your birthday. So for example, if your mother's maiden name is Smith and you were born on 29th July, your code would be TH29.

Enter your code here: _____

Please enter your age and gender below:

Age: _____

Gender: _____

When you are ready to begin, turn to the next page.

On April 20, 2010, a methane explosion on the "Deepwater Horizon" deep-sea oil rig in the Gulf of Mexico led to a massive oil leak. The leak from the BP-owned platform continued for three full months, and the resulting devastation to the ocean and nearby coastline has made it one of the worst environmental disasters of the past decade.

The official explanation for the spill has implicated a faulty concrete seal on the well and an unexpected pocket of methane in the oil field. However, nearly two years after the spill, some new facts have been brought to light by American oil industry analyst George Whitman, president of the watchdog group Clean Coastlines. In his newly released documentary film, *Spilling the Beans: The Deepwater Horizon Incident,* Whitman uses news footage, interviews with oil rig workers and industry insiders, and many other sources of information to challenge the conventional wisdom about the causes of the spill.

Here are a few of the points made in the documentary:

- The official report on the incident by the National Institute of Standards and Technology was unable to pinpoint any source of ignition for the leaking methane that led to the explosion. This casts doubt on the official explanation, which proposes a spontaneous, accidental explosion. Some observers have proposed that the methane was in fact intentionally detonated.

- Goldman Sachs, an investment company with close ties to high-ranking members of the U.S. government, sold nearly 85% of its BP shares in the two weeks leading up to the spill. Selling this much stock is rather unusual, and the timing was extremely fortunate for Goldman Sachs. Such convenient timing suggests that Goldman Sachs knew in advance that there would be an oil spill.

- Halliburton, a contracting firm with substantial ties to the U.S. Government, bought a major oil-spill cleanup corporation about a week before the spill happened. This was a very unusual acquisition for Halliburton, who mostly work with the military. Could Halliburton have known in advance that the Deepwater Horizon incident was going to happen?

- At the time of the explosion, the U.S. Coast Guard were participating in a major anti-terror drill, which delayed their response and may have worsened the effects of the spill. This kind of drill is only conducted on only three days out of every year, meaning that the odds of such a coincidence are less than one percent. If someone wanted to create a major disaster in the Gulf of Mexico, it would be necessary to get the Coast Guard out of the way with just such a drill.

- Several of the surviving workers claim to have been followed in the weeks after the spill, and their homes broken into (though in each case, nothing seemed to have been stolen). It is unlikely that this was done by simple burglars given that nothing was taken, and there is no sign that the break-ins were perpetrated by curious members of the news media. This can only be an intimidation campaign, meant to scare the workers into staying silent about what they saw.

- Shortly after the spill, the American government renewed their efforts to impose carbon taxes and stricter environmental regulations on the domestic oil industry, using the oil spill as a justification. The timing could not have been better, as the U.S. Government, suffering from substantial budget deficits, was in dire need of additional revenue. They had a powerful motive to deliberately create a disaster in order to benefit from it.

Please read the following statements regarding the oil spill and rate how much you agree with each.

The official account of the Deepwater Horizon oil spill is basically correct.

1	2	3	4	5	6
Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree

The Deepwater Horizon oil spill was deliberately planned and executed.

1	2	3	4	5	6
Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree

Appendix J – Study 10 Sample Questionnaire

Please enter your UKC username (e.g. mw337) so that you can be given credit for participating.

Please enter your current age.

Please enter your gender.

Please carefully read the text below before moving on to the next page.

The following is a brief excerpt from an article that appeared on *Oil Industry Watch*, a website run by a former oil executive dedicated to news regarding the petrochemical industry.

We all know about the BP Gulf of Mexico oil spill back in 2010, even if people don't think about it very much these days. It was a huge environmental catastrophe, and consumers and producers of oil also felt the shock. The cleanup is still going on, and the ocean is probably not going to recover for many years.

Now I've heard people talk about the cleanup and how that went, but why did the spill happen in the first place? The U.S. government and BP tell us that the oil rig unexpectedly hit a pocket of methane during deep drilling operations. The methane travelled up the drill to the surface, where it exploded and caused a fire that eventually destroyed the rig and led to the spill.

There are some problems with this story, though. For example, reporters were barred from taking detailed photographs of the site of the incident until well after the wreckage sank, so we don't have any hard evidence that the damage was consistent with an accidental methane explosion. What's more, right before the spill, the investment firm Goldman Sachs suddenly sold off most of their stock in BP. This was a very unusual move, and as we all know, the higher-ups at Goldman Sachs are unusually well-connected with government and industry.

Was the destruction of the oil rig deliberately engineered by agents of the U.S. government?

Please read the following statements regarding the oil spill and rate how much you agree with each.

The oil spill was either an accident or the result of negligence.

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
To what degree do you agree with this statement?	○	○	○	○	○	○

There was a plot to create the oil spill.

	Strongly Disagree	*Somewhat* Disagree	*Slightly* Disagree	Slightly Agree	Somewhat *Agree*	Strongly *Agree*
To what degree do you agree with this statement?	○	○	○	○	○	○

The oil spill was intentionally planned and carried out.

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
To what degree do you agree with this statement?	○	○	○	○	○	○

Some information about the oil spill is being intentionally covered up.

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
To what degree do you agree with this statement?	○	○	○	○	○	○