



Analytic thinking reduces belief in conspiracy theories



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ARTICLE INFO

Article history:

Received 8 May 2014

Revised 7 August 2014

Accepted 8 August 2014

Available online 18 September 2014

Keywords:

Conspiracy theories

Analytic thinking

Experiential thinking

Open-mindedness

Thinking dispositions

ABSTRACT

Belief in conspiracy theories has been associated with a range of negative health, civic, and social outcomes, requiring reliable methods of reducing such belief. Thinking dispositions have been highlighted as one possible factor associated with belief in conspiracy theories, but actual relationships have only been infrequently studied. In Study 1, we examined associations between belief in conspiracy theories and a range of measures of thinking dispositions in a British sample ($N = 990$). Results indicated that a stronger belief in conspiracy theories was significantly associated with lower analytic thinking and open-mindedness and greater intuitive thinking. In Studies 2–4, we examined the causal role played by analytic thinking in relation to conspiracist ideation. In Study 2 ($N = 112$), we showed that a verbal fluency task that elicited analytic thinking reduced belief in conspiracy theories. In Study 3 ($N = 189$), we found that an alternative method of eliciting analytic thinking, which related to cognitive disfluency, was effective at reducing conspiracist ideation in a student sample. In Study 4, we replicated the results of Study 3 among a general population sample ($N = 140$) in relation to generic conspiracist ideation and belief in conspiracy theories about the July 7, 2005, bombings in London. Our results highlight the potential utility of supporting attempts to promote analytic thinking as a means of countering the widespread acceptance of conspiracy theories.

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1. Introduction

Conspiracy theories can be described as “a subset of false beliefs in which the ultimate cause of an event is believed to be due to a plot by multiple actors working together with a clear goal in mind, often unlawfully and in secret” (Swami & Furnham, 2014, p. 220). For example, conspiracy theories relating to the disappearance of Amelia Earhart and Fred Noonan propose that, rather than crashing at sea, the Japanese military downed their aircraft as

they were spying on the Japanese in the Pacific at the request of the Roosevelt administration (Swami & Furnham, 2012). Such conspiracy theories are widespread: using four nationally representative surveys, sampled between 2006 and 2011, Oliver and Wood (2014a) reported that half of the American public endorsed at least one conspiracy theory. From this perspective, a conspiratorial worldview appears to be a relatively widespread tendency across ideological spectra, rather than the aberrant expression of political extremists or the outcome of psychopathological minds (for a review, see Swami & Furnham, 2014).

In addition to being widespread, conspiracy theories have negative social, health, and civic outcomes. For example, although belief in conspiracy theories may foster

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greater political transparency (Swami & Coles, 2010) and allow actors to challenge dominant ideological structures (Sapountzis & Condor, 2013), there is also evidence that exposure to conspiracy theories reduces intention to engage in politics, to reduce one's carbon footprint (Jolley & Douglas, 2014a), to vaccinate (Jolley & Douglas, 2014b; Kata, 2010), and to engage in positive health behaviours (Oliver & Wood, 2014b). In addition, belief in conspiracy theories has been associated with riskier sexual attitudes and behaviours in diverse samples (e.g., Ford, Wallace, Newman, Lee, & Cunningham, 2013; Gaston & Alleyne-Green, 2013; Hutchinson et al., 2007), less egalitarian human rights attitudes (Swami et al., 2012), racist attitudes (Baer, 2013; Swami, 2012), and political violence (Bilewicz, Winiewski, Kofta, & Wójcik, 2013).

Given these issues, understanding the psychosocial origins of belief in conspiracy theories remains an important task for scholars. To this end, a small body of work has examined the form and content of conspiracy theories (e.g., Bost & Prunier, 2013; Raab, Auer, Ortlieb, & Carbon, 2013; van Prooijen & Jostmann, 2013), the context in which conspiracy theories flourish (e.g., Grzesiak-Feldman, 2013; Warner & Neville-Shepard, 2014), and the linguistic styles of conspiracy theorists (e.g., Wood & Douglas, 2013). Concurrently, a larger body of research has focused on individual difference correlates of belief in conspiracy theories, overturning an earlier approach that attempted to pathologise such beliefs (e.g., Groh, 1987; Robins & Post, 1997). This perspective is based on the notion that it is possible to measure conspiracist ideation as an individual difference trait (Brotherton, French, & Pickering, 2013; Bruder, Haffke, Neave, Nouripanah, & Imhoff, 2013), which in turn will be correlated with other psychological antecedents.

Thus, studies have reported relatively reliable associations between stronger belief in conspiracy theories and a number of psychological constructs, such as greater distrust in authority, higher political cynicism, lower self-esteem, greater authoritarianism, and paranormal beliefs (Abalakina-Paap, Stephan, Craig, & Gregory, 1999; Brotherton et al., 2013; Bruder et al., 2013; Imhoff & Bruder, 2013; Stieger, Gumhalter, Tran, Voracek, & Swami, 2013; Swami, 2012; Swami, Chamorro-Premuzic, & Furnham, 2010; Swami & Furnham, 2012; Swami et al., 2011). In addition, several studies have examined associations between belief in conspiracy theories and the Big Five personality domains, but results have been equivocal with some studies reporting significant associations with Openness to Experience and Agreeableness (Furnham, 2013; Swami & Furnham, 2012; Swami et al., 2010, 2011, 2013) and others reporting weak or no significant associations (Brotherton et al., 2013; Bruder et al., 2013; Imhoff & Bruder, 2013).

Another class of studies has focused on reasoning biases and heuristics in conspiracist ideation (McHoskey, 1995). Clarke (2002), for example, proposed that belief in conspiracy theories could be explained in terms of the fundamental attribution error: conspiracy theorists, he suggested, are more likely to make a dispositional inference about personified actors, even when adequate situational explanations are available. Other scholars have reported that

conspiracist beliefs may be a product of a representativeness heuristic, that is, a tendency to accept explanations that are proportional to the consequences of an event (Leman & Cinnirella, 2007). Most recently, Brotherton and French (2014) found that belief in conspiracy theories was associated with susceptibility to the conjunction fallacy, that is, an error of probabilistic reasoning where individuals overestimate the likelihood of co-occurring events.

These studies point to reasoning biases as a possible antecedent of belief in conspiracy theories, but it is also possible they reflect broader associations with cognitive ability. For example, some research has indicated that performance on tasks of heuristics and biases is modestly related cognitive ability (e.g., Stanovich & West, 1999, 2000); cognitive ability, in turn, is associated with belief in conspiracy theories (Swami et al., 2011; see also Swami & Furnham, 2012), which hints at a possible mediatory link. Another possibility is that the association between susceptibility to biases and heuristics and conspiracist ideation is underpinned by thinking dispositions that shape how individuals seek, interpret, and contest the legitimacy of evidence (Leman, 2007). Certainly, performance on tasks of heuristics and biases have been found to be modestly correlated with thinking dispositions (e.g., West, Toplak, & Stanovich, 2008), but associations between the latter and conspiracist ideation have been infrequently studied.

In one study, Leman and Cinnirella (2013) examined associations between belief in conspiracy theories and need for cognitive closure (i.e., a preference for order and structure, closed-mindedness, and discomfort with ambiguity), but reported no significant correlation ($r = -.05$, $N = 30$). On the other hand, there is evidence that those aspects of schizotypy that mirror disorganised thought processes and a rejection of analytic information generation are significantly associated with belief in conspiracy theories (Barron, Morgan, Towell, Altemeyer, & Swami, 2014; Darwin, Neave, & Holmes, 2011). Relatedly, a growing body of evidence suggests that belief in conspiracy theories is associated with the rejection of scientific findings, particularly but not limited to climate change (e.g., Lewandowsky, Gignac, & Oberauer, 2013; Lewandowsky, Oberauer, & Gignac, 2013), as well as belief in contradictory statements (Wood, Douglas, & Sutton, 2012). Other work has shown that analytic, cognitively-focused inoculation messages are effective at reducing the effectiveness of conspiracy theories (Banas & Miller, 2013). More broadly, commentators have highlighted the importance of different thinking dispositions – particularly the ability to think critically – as a means of helping individuals recognise, understand, and avoid prioristic conspiracist messages (e.g., Blair, 2012).

Thus, while thinking dispositions may seem to be, conceptually at least, a plausible antecedent of belief in conspiracy theories, evidence of associations to date have been equivocal and piecemeal. In the present study, then, we adopted two complementary strategies to examine whether individual differences in thinking dispositions are associated with belief in conspiracy theories. Study 1 was a correlational study with British participants, in which we examined associations between belief in

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