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Belief inconsistency in conspiracy theorists¹

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Abstract

This study investigated the relationship between conspiratorial beliefs and doublethink. Particularly, it assessed whether conspiratorial ideation (beliefs and theories) was associated with proneness to belief incoherency (doublethink). In total, 257 adults completed online survey measures. Conspiratorial ideation was positively associated with belief incoherency. Study implications and limitations are considered.

A substantial minority of the general population explain significant social and political events in terms of conspiracy or a secret plot (Darwin, Neave, & Holmes, 2011; Swami, 2012; Brotherton, French, & Pickering, 2013). For example, 60% of the American population believe, contrary to official accounts, that Lee Harvey Oswald did not act alone when he assassinated President Kennedy (Goertzel, 1994; for a summary of Gallup poll data over the last 50 years, see Swift, 2013). Not only is endorsement of conspiracy theories substantial, but some evidence suggests it may increase with the passage of time following a referent event (Kroth, 2003). Even if this is not invariably the case, Stieger, Gumhalter, Tran, Voracek, and Swami (2013) noted that longitudinal trends in the endorsement of conspiracy theories may have theoretical significance.

Typically, endorsement of conspiratorial ideation manifests as the adoption of independent but related assumptions (i.e., the official account is incorrect, a powerful agency orchestrated the event, and the perpetrator possessed malign intent). The incidence of conspiratorial ideation thereby is of social significance because the underlying beliefs may be associated with behavioral consequences, such as a distrust of government services and institutions, a reluctance to vote in government elections, a decrease in the likelihood of donating to or volunteering for a charity, or a disinclination to take responsibility for one's carbon footprint (Einstein & Glick, 2014; Jolley & Douglas, 2014; van der Linden, 2015). The psychological bases of conspiratorial beliefs therefore warrant empirical scrutiny.

A growing body of research has addressed the psychological characteristics of people who are prone to endorse conspiracy theories (conspiracy theorists), and most of this research has focused on personality traits or attitudinal correlates (for general reviews, see Swami & Coles, 2010; Byford, 2011; Jolley, 2013). Thus, conspiracy theorists reportedly exhibit distrust or paranoia, schizotypal tendencies, a sense of powerlessness, low self-esteem, political cynicism, an active imagination, and general defiance of authority (e.g., Swami, Chamorro-Premuzic, & Furnham, 2010; Bruder, Haffke, Neave, Nouripanah, & Imhoff, 2013; Jolley & Douglas, 2014).

Contrastingly, cognitive correlates have received less attention. This represents an important gap in research because studies suggest that conspiracy theorists may demonstrate confirmation bias (McHoskey 1995; Leman & Cinnirella 2007). That is, after they form an inference about the causation of an event, they unwittingly devote attention to evidence supporting their interpretation and neglect or discount inconsistent information. More generally, some research points to the fundamental role of delusional ideation in the generation of conspiracy theories (e.g., Dagnall, Drinkwater, Parker, De-

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novan, & Parton, 2015). A few commentators have cautioned against any attempt to overpathologise conspiracy theorists (Raab, Ortlieb, Auer, Guthmann, & Carbon, 2013), and certainly delusion-related factors may not be sufficient in themselves to account for the formation of conspiracy theories (Swami & Coles, 2010), but they do warrant inclusion in any comprehensive model of this phenomenon. Reports of a delusional thinking style, in conjunction with observed associations between conspiratorial beliefs and personality characteristics such as schizotypy and paranoia (Darwin, et al., 2011; Barron, et al., 2014; Bruder, et al., 2015; van der Tempel & Alcock, 2015), therefore support a model that explicitly incorporates the role of cognitive processes independently identified to underlie the formation of delusions (for an instructive review, see O'Connor, 2009). One of the key elements of such a model must be the failure of some people to subject their beliefs and perceptions to rigorous reality testing; that is, conspiracy theorists would be deemed not to subject their beliefs to sufficient rational analysis. Indeed, the specific role of deficient reality testing in conspiracy theorists is documented by some earlier research (Drinkwater, Dagnall, & Parker, 2012).

Potentially germane to this context is an interesting study by Wood, Douglas, and Sutton (2012) that found people may endorse conspiracy theories even when some of the individual associated beliefs were mutually contradictory or logically incompatible (in the sense that if one of the beliefs held by the person is true, another belief cannot be). For example, Wood, et al. report that some of their participants simultaneously supported the contrasting beliefs that Princess Diana faked her own death and was murdered. This finding is accommodated very neatly by a theory that posits compromised reality testing in conspiracy theorists; if reality testing is deficient, the co-existence of beliefs that contradict one another seems likely. Wood, et al., on the other hand, concluded that the coherence of conspiratorial beliefs with higher-order beliefs (e.g., perceived deception by authority) was more important than the congruence of sub-beliefs. An account in terms of higher-order beliefs is certainly consistent with speculations by earlier commentators as to why conspiracy theorists typically embrace multiple conspiracy theories (e.g., Goertzel, 1994; Swami, et al., 2010), but under a model that stresses the role of compromised reality testing a more general explanation of the findings of Wood, et al. (2012) may be that people endorsing conspiracy theories simply have a stronger tendency to embrace mutually contradictory beliefs, including beliefs that are unrelated to the perceived conspiracy. This possibility was investigated in the present study as a logical alternative to the account proposed by Wood, et al. and as a partial test of a corollary of a general "delusional ideation" model of conspiratorial beliefs (e.g., Dagnall, et al., 2015).

Philosophers formally term the concurrent endorsement of mutually contradictory notions "incoherency of beliefs" (e.g., Bonjour, 1985). Western culture colloquially refers to this phenomenon as "doublethink," a word coined by George Orwell (1949) in his dystopian novel *Nineteen Eighty-Four*. Orwell defined doublethink as "the power of holding two contradictory beliefs in one's mind simultaneously, and accepting both of them" (Orwell, 1949, p. 270). Many philosophers deride the occurrence of belief inconsistency (e.g., Lehrer, 1990) because it violates an expectation of people to be rational (Bortollotti, 2003). Psychologists such as Kurzban (2010), on the other hand, observe that doublethink is a normal and probably universal feature of the human condition. Nonetheless, belief incoherency varies across individuals. In this context, it is legitimate to ask if conspiracy theorists are relatively prone to doublethink.

Relatively few empirical studies of doublethink or belief incoherency have been undertaken. Earlier work on tolerance for contradictory notions focused on dialectical reasoning as a facet of "holistic" rather than analytical thinking (e.g., Peng & Nisbett, 1999; Nisbett, Peng, Choi, & Norenzayan, 2001). In this context Hui, Fok, and Bond (2009) report that such dialectical reasoning is associated with lower emotional ambivalence; this finding is notable because people who embrace contradictory beliefs would normally be expected to experience considerable cognitive dissonance (Festinger, 1957). More recently, in his development of a measure of doublethink Rittik (2013) established a relationship between this construct and dogmatism ($r_{32} = .53, p < .001$). Irwin, Dagnall, and Drinkwater (2015, Study 2) also established associations between doublethink and two fundamental dimensions of paranormal belief, namely (non-religious) New Age Beliefs and Traditional Religious Beliefs (Irwin & Marks, 2013). These findings may have some bearing on the psychology of conspiratorial beliefs because such beliefs are often reported to be found in association with paranormal beliefs (Newheiser, Farias, & Tausch, 2011; Swami, et al., 2011; Drinkwater, et al., 2012; Brotherton, et al., 2013; Bruder, et al., 2013; Whitson, Galinsky, & Kay, 2015), raising the possibility of some common underlying cognitive mechanisms. The present paper explored the implication that like paranormal beliefs conspiratorial beliefs are associated with doublethink. In summary, the study sought both to document this association in its own right and thereby to clarify both the finding of Wood, et al. (2012) and the viability of one corollary of a "delusional thinking" approach to conspiratorial beliefs. It was predicted that belief inconsistency (doublethink) would correlate positively with conspiratorial ideation (endorsement of specific and general beliefs).

Method

Participants

The participant pool comprised 257 respondents. There were 60 men and 197 women. The mean age was 22.1 yr. ($SD=7.2$) with a range of 16–62 years. Respondents were recruited from the Manchester Metropolitan University (undergraduates, employees, and alumni) and by research students using snowball sampling (this involved encouraging contacts to participate in the study).

Measures

Participants completed two questionnaires, one addressing proneness to doublethink and the other belief in conspiracy theories. The survey inventory also included miscellaneous items on basic demographic characteristics. Scale order presentation was counterbalanced across respondents.

The questionnaire used to index doublethink was Rittik's (2013) Belief Inconsistency Scale (which he abbreviates as the BIC scale or BICS). The BICS comprises 16 statements of belief, and participants are asked to indicate their degree of endorsement of each statement on a 4-point scale (1: Strongly agree and 4: Strongly disagree). The 16 items comprise eight pairs of statements such that agreement with one item is logically inconsistent with agreement of the other item in the pair (e.g., Item 1: "We continue to exist in some immaterial form with our consciousness and senses intact long after our physical death," and Item 9: "Brain damage can render a person devoid of intelligence and various cognitive and perceptual abilities"). If a participant agrees (or, alternatively, disagrees) with both items of a pair, he or she is demonstrating doublethink. Responses to the second item of each pair are reversed scored, and the absolute difference between scores on the items for each pair is computed; the total BICS score is the sum of these differences across the eight pairs of items. BICS scores thus may range from 0 to 24, with higher scores signifying a stronger inclination to doublethink. Rittik (2013) found the BICS to correlate significantly with a recognised measure of dogmatism, an observation he proffers in support of the validity of the BICS. He also reported internal consistency of the BICS to be acceptable ($\alpha=.72$), although the corresponding value reported by Irwin, et al. (2015, Study 2) is only .47. The BICS is a recently developed measure and needs further psychometric documentation, but it is evidently the only index of doublethink currently available.

Conspiratorial ideation was assessed via the General Conspiratorial Belief (GCB) and Endorsement of Specific Conspiracy Theories (ESCT). High scores on both measures indicate strong endorsement of conspiratorial ideation. The GCB and ESCT correlate strongly with the Conspiracy Theory Questionnaire (CTQ; Bruder &

Manstead, 2009; see also Darwin, et al., 2011). While the CTQ and GCB provide valid assessment of the generic assumptions supporting belief in specific conspiracy theories, they reference a limited number of individual theories. For this reason, the present study preferred to assess general and particular beliefs separately (see also Dagnall, et al., 2015) with the GCB and ESCT, respectively.

The GCB is a five-item measure of global conspiracism. Participants use a 7-point scale (1: Strongly disagree, 4: Neither disagree nor agree, and 7: Strongly agree), to rate the extent to which they believe conspiracy theories in general accurately depict real-life events and contain truthful information (Drinkwater, et al., 2012). To control for response bias, the measure contains two reversed items. The GCB score is computed as the average rating given over the five items and thus may range from 1.00 to 7.00. Psychometric evaluation indicates that the GCB possesses adequate internal reliability ($\alpha=.79$).

The ESCT is an adapted version of the measure of attitudes towards historical events used by Drinkwater, et al. (2012) and contains 12 historical events (e.g., the assassination of John Fitzgerald Kennedy) selected randomly from lists of famous conspiracies (Vankin & Whalen, 2010). A conspiratorial statement follows each event, and participants using a 7-point scale (1: Strongly disagree, 4: Neither disagree nor agree, and 7: Strongly agree) indicate the extent to which they endorse each statement. Each participant's ESCT score is computed as the average rating over the 12 items and thus may range from 1.00 to 7.00. The scale has previously demonstrated adequate internal reliability ($\alpha=.79$).

Procedure

The questionnaire inventory was administered as an online survey on an electronic platform known as Bristol Online Surveys,² a system to which the host university subscribes. An invitation to participate was distributed via the university's internal email system and with a list of alumni and other associates of the university. People aged at least 18 years were said to be eligible to take part, and their participation was anonymous and voluntary, with withdrawal from the exercise permitted at any time. The need for frankness in responding was stressed. The system automatically prevented participation more than once by the same person. Recruitment was terminated shortly after the target sample of 250 had been achieved. The use of Internet-mediated research (IMR) has been criticised for producing biased samples, and the validity of collected data has been questioned (Schmidt, 1997; Whitehead, 2007). Despite these concerns, IMR samples have proved to be as representative as those generated with traditional sam-

²See <http://www.survey.bris.ac.uk>

pling methods (Hewson, 2003; Wiseman & Watt, 2004). The use of Internet-mediated research (IMR) in the present study enabled the testing of a large respondent pool and facilitated access to respondents who normally would not be able to participate in this type of research. IMR has additional advantages, particularly in enhancing disclosure (Weisband & Kiesler, 1996; Joinson, 2002) and in reducing social barriers (Valaitis & Sword, 2005).

Results

Preliminary inspection of the data showed the distribution of BICS scores was significantly skewed, so bivariate relationships therefore were indexed by Spearman's correlation coefficients, and multivariate analyses utilised bootstrapping; the latter is a procedure for using the original sample data to estimate a variable's distribution in the population and thereby avoids the need to meet the statistical requirement for a normal distribution (IBM Corporation, 2011). Multivariate analyses also included both age and gender as independent variables in order to control statistically for possible extraneous influences by these factors (e.g., see Goertzel, 1994; Stempel, Hargrove, & Stempel, 2007; Darwin, Neave, & Holmes, 2011).

Descriptive statistics for the study's variables are given in Table 1, together with Spearman correlations between conspiratorial beliefs (ESCT and GBC) and doublethink (BICS). Although the correlation coefficients are not used directly in the evaluation of the study's hypothesis, Bonferroni corrections have been applied to their significance levels.

A preliminary analysis was undertaken to assess the relationship between the two indices of conspiratorial beliefs, ESCT and GBC. The Spearman correlation between these two variables was .67 ($p < .001$). This coefficient certainly suggests the two indices to some extent tap a common domain, but with less than half of the common variance accounted for the size of the relationship confirms the authors' view that both the ESCT and the GBC warranted inclusion in the survey.

The study's hypothesis posited a relationship between conspiratorial beliefs and proneness to doublethink. This hypothesis was first tested through a multiple regression of ESCT scores on BICS, age, and gender with bootstrapping (1,000 samples with bias corrected

and accelerated analyses). The regression was significant ($F_{3,253} = 3.99, p < .01; \text{adj } R^2 = .03$), with an independently significant contribution made by the BICS (partial $r = .19, \beta = 0.19, p = .002$). In addition, the hypothesis was tested through a multiple regression of GBC scores on the BICS, age, and sex with bootstrapping. Again, the regression was significant ($F_{3,253} = 5.86, p = .001; \text{adj } R^2 = .07$), with independently significant contributions made by the BICS (partial $r = .17, \beta = 0.17, p = .01$) and (female) sex (partial $r = .17, \beta = 0.17, p = .01$). The hypothesis, therefore, was supported.

Discussion

The finding that belief in conspiracy theories is predicted by degree of doublethink indicates that conspiracy theorists are generally prone to endorse contradictory beliefs. This observation extends Wood, et al.'s (2012) finding that conspiracy theorists endorse conflicting conspiracy theories (e.g., the more participants believed that Osama Bin Laden was already dead, the more they believed he is still alive); evidently, the tendency to doublethink is rather broader than this specific context. The study's findings also are consistent with a general theory that the formation of conspiratorial beliefs implicates the role of cognitive processes associated with formation of delusions (Dagnall, et al., 2015). This is not to claim that conspiratorial beliefs are necessarily pathological; delusions have been well documented to occur in the non-clinical population (e.g., Larøi & van der Linden, 2005). Furthermore, there is no necessary implication that conspiratorial beliefs must be false; delusions are no longer defined symptomatically as invariably "false beliefs" (American Psychiatric Association, 2013).

The possible role of doublethink in the formation and maintenance of conspiratorial beliefs also raises further issues for research. For example, the argument by Nisbett, et al. (2001) that dialectical reasoning is associated with a "holistic" style of thinking suggests a need to investigate this thinking style in conspiracy theorists. That is, might our finding indicate a distinctive thought style among people who embrace conspiracy theories? Such an extension of our project may well help to broaden understanding of the cognitive processes associated with the formation of conspiracy theories. The study's findings also imply that proneness to double-

TABLE 1
Descriptive Statistics and Spearman Correlations Between Study Variables

Variable	<i>M</i>	<i>SD</i>	Range	α	Spearman ρ BICS
Conspiracy beliefs					
Endorsement of specific conspiracy theories	3.43	0.98	1.08–7.00	.85	.15*
General conspiratorial belief	3.64	1.11	1.00–6.60	.83	.14*
Doublethink					
Belief Inconsistency Scale	6.35	2.27	0–16	.55	

* $p < .05$ (with Bonferroni correction).

think at least partly mediates the relationship between deficient reality testing and the formation of conspiratorial beliefs; this inference warrants specific empirical scrutiny. More generally, research is needed on the possible role in conspiratorial ideation of other cognitive processes associated with the formation of delusions (see O'Connor, 2009). On the other hand, we must stress that the small effect size of the present finding cautions against any overstatement of the study's usefulness.

The correlational nature of the study's finding is further cause for caution. Although proneness to doublethink may be conducive to the formation of conspiracy theories, the causal relationship may well be in the opposite direction; that is, a person's acceptance of conspiracy theories may set up mechanisms to protect these beliefs from subsequent critical scrutiny, resulting in instances of doublethink. Another possibility is that the association between conspiracy theories and doublethink does not evidence a direct causal link; rather, there may be some other cognitive or personality characteristic that independently underlies both conspiracy theories and doublethink.

Limitations in the sample also must be acknowledged. The study is not likely to have recruited substantial numbers of habitual conspiracy theorists. Indeed, this view is supported by descriptive statistics for the two measures of conspiratorial ideation: on their 7-point scales (with 1 = Strongly disagree with a given conspiracy belief, 4 = Neither disagree nor agree, and 7 = Strongly agree), less than 10% of the sample scored over 5.0, and the means for the two measures indicated some skepticism among the participants ($M_s = 3.43$ and 3.64). The findings of the study, therefore, relate only to minor variations in conspiratorial ideation in the general population and not necessarily to conspiracy theorists as a distinct group. Future researchers might try to recruit participants from groups dedicated to redressing some perceived conspiracy that they believe has been foisted on society. Possibilities here include the Flat Earth Society; some UFO groups who allege the government has been suppressing reports of visits to Earth by extraterrestrial beings; and groups who want to probe even further the official account that President Kennedy was assassinated by one man and not by several people acting in collusion. Again, the members of such organizations should be accorded courtesy and respect; after all, some past claims of conspiracy have been vindicated.

Further interpretation of the study's finding is constrained also by the limited data on the neurocognitive bases of doublethink. It is feasible, under Kurzban's (2010) modular approach to cognition, that conspiracy theorists are relatively well-versed in representing contradictory beliefs in unconnected or dissociated cognitive modules. This serves to attenuate the level of cognitive dissonance (Festinger, 1957) that otherwise would arise under such circumstances. Again, a willingness to

tolerate mutually contradictory beliefs may be taken to suggest that conspiracy theorists are habitually disinclined to subject their beliefs to the processes of rigorous reality testing (Drinkwater, et al., 2012); this possibility certainly accords with reports that conspiracy theorists show elevated levels of schizotypy or a delusional thinking style (Bruder, et al., 2013; Dagnall, et al., 2015; van der Tempel & Alcock, 2015). This study may therefore open up interesting avenues for further investigation of the mental representation of conspiratorial beliefs.

At the same time, the authors acknowledge that the size of the effects educed here is small. The contribution of the doublethink phenomenon to the endorsement of conspiracy theories, therefore, should not be overstated, and practical applications of the findings of the study must await replication. The psychometric properties of the measure of doublethink also require considerable refinement; in our study the internal consistency of the BICS certainly was not strong (Cronbach's $\alpha = .55$). Additionally, as an anonymous referee has observed, several items in the current form of the BICS tend to have a spiritualistic or an authoritarian emphasis³, and a broader index of doublethink could resolve the possibility that the study's findings were a mere artifact of these variables, given that they also have been found to correlate with conspiracy beliefs (e.g., see Swami, et al., 2010; Newheiser, et al., 2011). The same referee also casts doubt on the view that some item pairs in the BICS necessarily were mutually contradictory. Psychometric enhancement of the BICS or, perhaps more pragmatically, the development of a completely new index of doublethink that avoids the shortcomings of the BICS⁴ should be undertaken in conjunction with further investigation of the cognitive bases of conspiratorial beliefs.

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³An anonymous referee has suggested the use of our own BICS data to explore this possibility, predicting a two- or three-factor structure in the data: one factor for doublethink, and relatively independent contributions of authoritarianism and/or religiosity. A principal component analysis of the 8 difference scores followed by Varimax rotation did yield three factors; but their identification with the three nominated factors was equivocal and, despite rotation, the factors still showed substantial overlap. Correlations of the conspiratorial belief measures with each of the 8 individual BICS item pairs were all non-significant and did not suggest any pattern to identify the differential operation of the above three item types. The potentially artifactual roles of spirituality and authoritarianism therefore remain to be ascertained.

⁴A new measure of doublethink ideally would have a much large number of paired items that addressed a broader range of topics, preferably ones that do not concern spiritual beliefs or attitudes toward authority. Greater care should be taken to ensure the items in each pair are truly contradictory. Finally, the emphasis of the BICS on highly philosophical beliefs also should be redressed.

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