British Journal of Psychology (2011), 102, 443–463

The British Psychological Society

www.wileyonlinelibrary.com

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

Viren Swami[1,2]*, Rebecca Coles[1], Stefan Stieger[3], Jakob Pietschnig[3], Adrian Furnham[4], Sherry Rehim[1] and Martin Voracek[3]

[1]Department of Psychology, University of Westminster, London, UK
[2]Department of Psychology, HELP University College, Kuala Lumpur, Malaysia
[3]Department of Basic Psychological Research, School of Psychology, University of Vienna, Vienna, Austria
[4]Department of Clinical, Educational, and Health Psychology, University College London, London, UK

Despite evidence of widespread belief in conspiracy theories, there remains a dearth of research on the individual difference correlates of conspiracist ideation. In two studies, we sought to overcome this limitation by examining correlations between conspiracist ideation and a range of individual psychological factors. In Study 1, 817 Britons indicated their agreement with conspiracist ideation concerning the July 7, 2005 (7/7), London bombings, and completed a battery of individual difference scales. Results showed that stronger belief in 7/7 conspiracy theories was predicted by stronger belief in other real-world conspiracy theories, greater exposure to conspiracist ideation, higher political cynicism, greater support for democratic principles, more negative attitudes to authority, lower self-esteem, and lower Agreeableness. In Study 2, 281 Austrians indicated their agreement with an entirely fictitious conspiracy theory and completed a battery of individual difference measures not examined in Study 1. Results showed that belief in the entirely fictitious conspiracy theory was significantly associated with stronger belief in other real-world conspiracy theories, stronger paranormal beliefs, and lower crystallized intelligence. These results are discussed in terms of the potential of identifying individual difference constellations among conspiracy theorists.

*Correspondence should be addressed to Dr. Viren Swami, Department of Psychology, University of Westminster, 309 Regent Street, London W1B 2UW, UK (e-mail: v.swami@wmin.ac.uk).

DOI:10.1111/j.2044-8295.2010.02004.x

Although there remains some debate as to its precise definition (see Bale, 2007; Swami & Coles, 2010; Sunstein & Vermeule, 2009), conspiracist ideation is usually described as a belief in the existence of a 'vast, insidious, preternaturally effective international conspiratorial network designed to perpetrate acts of the most fiendish character' (Hofstadter, 1966, p. 14). Defined in this way, conspiracy theories appear to be relatively widespread: recent surveys have shown, for example, that up to a quarter of respondents disbelieve official accounts of the September 11, 2001, and July 7, 2005, terrorist attacks in the United States and Britain, respectively (e.g., Hargrove & Stempel, 2006; Soni, 2007).

Given such figures, the lack of robust empirical research on the topic of conspiracy theories comes as a surprise (Swami & Coles, 2010). Early work in the area was heavily influenced by Hofstadter's (1966) essay on the 'paranoid style', in which the delusional nature of conspiracy theories was emphasized. Hofstadter (1966) further argued that conspiracy theories offered a voice to those who felt powerless or disadvantaged, particularly in the face of crisis and when mainstream accounts contained erroneous or unreliable information (see also Leman, 2007; Miller, 2002; Whitson & Galinsky, 2008). In this view, a conspiracy theory 'provides a convenient alternative to living with uncertainty' (Zarefsky, 1984, p. 72), and recent work has conceptualized conspiracist ideation as a logical response that arises because individuals have little access to accurate information (Hardin, 2002; Sunstein & Vermeule, 2009).

Building on Hofstadter's (1966) early work implicating powerlessness in the aetiology of conspiracy theories, other scholars have suggested that such ideation arises because of an inability to attain specific goals (Edelman, 1985; Inglehart, 1987) or because they afford a means of self-esteem maintenance (Robins & Post, 1997), coping with persecution (Combs, Penn, & Fenigstein, 2002), reasserting individualism (Davis, 1969; Melley, 2000), or expressing negative feelings (Ungerleider & Wellisch, 1979). Where Hofstadter (1966) argued that conspiracy theories stemmed from 'distorted' thinking, these recent conceptualizations generally concur that conspiracy theories are a rational attempt to understand complex phenomena and deal with associated feelings of powerlessness (see Sanders & West, 2003).

Beginning in the early 1990s, psychologists began to examine the socio-cognitive bases of conspiracy theories (e.g., Butler, Koopman, & Zimbardo, 1995; Douglas & Sutton, 2008). Clarke (2002), for example, discussed conspiracy theories in the context of the fundamental attribution bias: because of the general tendency to overestimate the importance of dispositional factors and underestimate situational factors, conspiracy theorists are more likely to blame conspiratorial agents even when there are adequate situational explanations of an event. This bias may be heightened when individuals experience intense emotions triggered by catastrophic events, which in turn aid the dissemination of conspiracy theories that provide a justification for those affective states (Sunstein & Vermeule, 2009).

McHoskey (1995) has likewise discussed conspiracy theories in the context of biased assimilation of information and attitude polarisation. Specifically, McHoskey (1995) showed that individuals tended to uncritically accept evidence that was supportive of their own argument, while discrediting contrary evidence. On the other hand, when participants were presented with mixed evidence, they tended to polarize in their attitudes, with greater acceptance of their original viewpoint rather than a reversal of their beliefs. More recently, Leman and Cinnirella (2007) showed that conspiracy theorists judged fictitious accounts of an assassination more plausible if it was consistent with their beliefs, a finding that was explained in terms of a 'confirmation bias'.

The latter finding links well with a small body of work that has focused specifically on the individual difference antecedents of conspiracist ideation. In a seminal study,

Goertzel (1994) argued that conspiracy beliefs form part of a 'monological belief system' in which a conspiratorial idea serves as evidence for other conspiracist ideation. Thus, for example, recent work has shown that respondents who more strongly endorsed conspiracy theories about the September 11, 2001 (9/11) terrorist attacks were more likely to believe in other, unrelated conspiracy theories (Swami, Chamorro-Premuzic, & Furnham, 2010). In Goertzel's (1994) view, monological belief systems afford believers accessible explanations for new phenomena that are difficult to explain or that threaten existing belief systems.

Other work on individual differences and conspiracy theories has generally supported sociological work on the topic (for a review, see Swami & Coles, 2010). For instance, some work has shown significant associations between conspiracist ideation and greater anomie, distrust in authority, political cynicism, powerlessness, and lower self-esteem (Abalakina-Paap, Stephan, Craig, & Gregory, 1999; Goertzel, 1994; Swami *et al.*, 2010). Related work has also shown that conspiracist beliefs are associated with a higher authoritarian tendency (Abalakina-Paap *et al.*, 1999; McHoskey, 1995), which has been explained as a function of the tendency among conspiracy theorists to blame outgroups for problems or crises experienced by the ingroup.

In perhaps the most robust empirical investigation to date, Swami *et al.* (2010) examined the individual difference correlates of 9/11 conspiracy theories among a representative sample of British respondents. They reported that belief in 9/11 conspiracy theories was strongly associated with belief in other conspiracy theories and exposure (either directly or vicariously) to 9/11 conspiracist ideation. In addition, they also reported significant associations between 9/11 conspiracist ideation and more negative attitudes towards authority, higher political cynicism, and greater support for democratic principles (SDP). Finally, Swami *et al.* (2010) also showed that there were significant associations between conspiracist ideation and the Big Five personality factors of Agreeableness (a negative association, explained as a function of the relationship between disagreeableness and suspicion and antagonism towards others) and Openness to Experience (a positive association, explained as a function of the relationship between openness and intellectual curiosity, active imagination, and proclivity for novel ideas).

Although the study by Swami *et al.* (2010) highlighted a number of significant antecedents of conspiracist ideation, the authors also pinpointed two important limitations to their study, which the present work sought to overcome. First, Swami *et al.* (2010) cautioned that they employed a British sample to study beliefs about an event in the United States, raising questions about the generalizability of their findings. In Study 1, therefore, we replicated and extended the study by Swami *et al.* (2010) by examining individual difference correlates of the July 7, 2005, London bombings among a British sample. Second, Swami *et al.* (2010) suggested that theirs was a preliminary study that did not exhaust the potential list of individual difference factors that may be associated with conspiracist ideation. In Study 2, therefore, we examined the association between an entirely fictitious conspiracy theory specific and a range of previously unexamined individual difference factors.

STUDY 1: 7/7 CONSPIRACIST IDEATION

The London bombings on July 7, 2005 (7/7) were a series of coordinated suicide attacks on London's public transport system, carried out by four British Muslim men who appeared to be motivated by Britain's involvement in the wars in Afghanistan and Iraq.

In the absence of a public inquiry into the bombings, however, a number of conspiracy theories have postulated alternative explanations of the events. Although there are a number of different variants of such conspiracy theories, most share the basic claim that the British public have not been told the whole truth about the 7/7 bombings and that the British government either perpetrated or allowed the attacks to happen in order to increase support for extending the wars in Afghanistan and Iraq and clamping down on civil liberties domestically (e.g., Obachike, 2007).

More specific claims include the suggestion that the bombers were patsies for British intelligence (based on inaccuracies about timings of trains between the bombers' point of departure and destination), claims of explosions under (rather than in) train carriages, and allegations of doctoring or faking of photographs of the bombers. Indeed, such claims appear to have relatively widespread mileage, as documented in the British Broadcasting Company's documentary series *The Conspiracy Files*. Moreover, a survey of 500 British Muslims reported that more than half of the respondents did not believe that the whole truth about the 7/7 events had been disclosed and that British intelligence services doctored evidence to convict terrorist suspects (Soni, 2007).

Clearly, then, there are important reasons for examining the individual difference correlates of beliefs in 7/7 conspiracy theories (see also Swami & Coles, 2010). The first aim of the present study, therefore, was to examine the associations, among a British sample, between 7/7 conspiracist ideation and a number of individual difference factors previously examined by Swami *et al.* (2010). Specifically, we hypothesised that there would be positive associations between 7/7 conspiracist ideation and belief in other real-world conspiracy theories, exposure to 7/7 conspiracist ideation, SDP, political cynicism, and the Big Five personality factor of Openness to Experience, and negative associations with attitudes towards authority and the Big Five factor of Agreeableness.

In addition, the present study also extended the work of Swami *et al.* (2010) by examining the associations between 7/7 conspiracist ideation and two variables neglected by Swami *et al.* (2010), namely self-esteem, and satisfaction with life. The latter two variables were included based on Hofstadter's (1966) argument that conspiracist ideation is more common among the disenfranchised or disadvantaged. More specifically, belief in conspiracy theories has been traced to self-esteem maintenance purposes (Robins & Post, 1997; Young, 1990), wherein believers are afforded a more positive self-image in relation to outgroups. In a similar vein, conspiracist ideation may be more common among individuals who are dissatisfied with their lives or who believe that malevolent actors prevent them from experiencing more fruitful lives. As such, we expected that there would be negative associations between 7/7 conspiracist ideation and self-esteem and satisfaction with life, respectively.

Finally, we also extended the work of Swami *et al.* (2010) by examining the association between conspiracist ideation and self-assessed intelligence (SAI). This part of the Study 1 was exploratory in nature, given that no previous work has examined associations between (either self-assessed or objective) intelligence and conspiracist ideation. Nevertheless, there are conceptual reasons why there may be a negative association between intelligence and conspiracist ideation. Specifically, based on the assumption that conspiracy theories offer simplified explanations of complex events (Hofstadter, 1966; Miller, 2002), it might be suggested conspiracy theories are more appealing to those with lower cognitive ability. In Study 1, therefore, we examined associations between 7/7 conspiracy beliefs and SAI, which has been shown to be moderately correlated with psychometrically measured intelligence quotient (IQ) (correlations ranging from .20 to .50) and academic achievement (see Chamorro-Premuzic & Furnham, 2006).

Method

Participants

Participants of Study 1 were 817 (445 women, 372 men) individuals recruited from the community in London. Participants had a mean age of 25.18 years ($SD = 9.47$, range 18–59 years) and the majority were of British White descent (82%; Asian = 15%, African Caribbean = 3%). In total, 45% of participants self-reported as being atheists, 34% as Christians, 9% as unsure of their religion, and 12% as being of some other religious background. In terms of highest educational qualifications, 8% had obtained General Certificates of Secondary Education (qualification generally taken by students aged 14–16 in secondary education), 38% had obtained Advanced-Level General Certificates of Education (part of the tertiary further education system), 42% had an undergraduate degree, 8% had a postgraduate degree, and 4% had some other qualification.

Measures

July 7, 2005 (7/7), conspiracist ideation

To measure 7/7 conspiracist ideation, we designed a novel 12-item scale. Items for inclusion in the scale were initially developed by the first and second authors based on a meticulous review of the 7/7 conspiracist literature and so as to represent the range of conspiracy theories in relation to the London bombings. Items were then carefully worded and redundancy was eliminated by agreement between the first and second authors. The final scale, which was rated on a 9-point Likert-type scale (1 = *completely false*, 9 = *completely true*), is shown in Table 1. Higher scores on this scale indicate stronger belief in 7/7 conspiracy theories. The factor structure and internal consistency of this scale is reported in the Results section.

Belief in conspiracy theories inventory (BCTI; Swami et al., 2010)

This is a 14-item scale consisting of items describing prominent conspiracy theories. The items were originally designed to be recognized by an international audience and were rated on a 9-point Likert-type scale (1 = *completely false*, 9 = *completely true*). Higher scores on this inventory indicate greater belief in a range of real-world conspiracy theories. In their study, Swami *et al.* (2010) reported that this scale had a unidimensional structure with high reliability ($\alpha = .86$) following the exclusion of one item. In the present study, this excluded item was replaced by a distinct item relating to conspiracist ideation concerning the September 11, 2001, terrorist attacks, which was also previously used by Swami *et al.* (2010). In the present study, Cronbach's α for the BCTI was .90.

7/7 conspiracist exposure (adapted from Swami et al., 2010)

We modified a previously used scale to measure exposure to 7/7 conspiracist ideation. Specifically, items were adapted to refer to 7/7 conspiracy theories, rather than 9/11 conspiracy theories. The scale consists of five items describing direct (public meetings or rallies, films or television programmes, books or articles, and websites) or vicarious (friends or family who disbelieve official accounts of 7/7 bombings) exposure to conspiracist ideation. The items were rated on a 9-point Likert-type scale (1 = *false*, 9 = *true*) and an overall score was computed by taking the mean of all items (higher scores indicate greater exposure). Cronbach's α for this scale was .79, which is consistent with previous work (Swami *et al.*, 2010).

Table 1. Items included in the 7/7 conspiracist ideation measure (Study 1) and factor loadings following Varimax rotation

Item	Factor 1	Factor 2
9. The bombers (two recent fathers, a university graduate, and a teacher of disabled children) do not fit the usual suicide bomber profile, suggesting they were not the real 7/7 bombers.	.84	.12
10. The images of the 7/7 bombers on the days of the bombing have been cropped and altered, suggesting that the story put out by the police is false.	.84	.30
11. The initial reporting, by the police, of the bombings as simultaneous 'power surges' suggests that they are covering up the real cause of the 7/7 bombings.	.82	.39
8. Several eyewitness accounts of the explosions on the underground speak of explosions under the floor of the train, indicating the bombs were planted and were not contained in backpacks.	.78	.26
12. British intelligence purposely failed to act on knowledge of the bomb plot in order to ferment anti-Muslim feeling.	.74	.28
4. The UK government allowed the 7/7 bombings to take place so that it would have an excuse to achieve foreign (e.g., extend wars in Afghanistan and Iraq) and domestic (e.g., attacks on civil liberties) goals that had been determined prior to the attacks.	.70	.21
7. The UK government allowed the 7/7 bombings to take place in order to rally the country around Tony Blair's faltering leadership.	.69	.34
3. The fact that the 7/7 bombers purchased return tickets and paid to park their cars at Luton suggests that the bombings were not planned as a suicide attack.	.68	.21
5. British government agencies, including the military and intelligence, dealt incompetently with the 7/7 bombings and sought to cover up its failures.	.44	.83
6. The fact that the UK government is withholding information about the 7/7 bombings is evidence of a cover-up.	.43	.75
1. British intelligence had knowledge of the 7/7 bomb plot as they had at least one of the bombers under their surveillance.	.42	.70
2. The 7/7 bombers were duped by British intelligence: they believed they were carrying dummy bombs and were participating in a training exercise testing London's defences against backpack bombers.	.41	.55

Support for democratic principles (Kaase, 1971)

The SDP is a 9-item scale measuring attitudes on a number of principles common to democratic systems, including basic democratic values. All items were rated on a 6-point Likert-type scale (1 = *complete rejection*, 6 = *full agreement*) and following reverse coding of several items, an overall score was computed by taking the sum of all items. Scores ranged from 9 (least democratic) to 54 (most democratic). Cronbach's α for this scale was .73.

Political cynicism scale (PCS; Citrin & Elkins, 1975)

This is a 13-item scale measuring concern for public interest, idealism, and political determination, with all items on an agree-disagree format (1 = *agree*, 2 = *disagree*).

Scores are summed and higher scores indicate greater political cynicism. The internal consistency of the scale was .82.

Attitudes to authority (AA) scale (Reicher & Emler, 1985)

Following Swami *et al.* (2010), we used a slightly modified, 10-item version of the AA to measure attitudes towards authority. Specifically, participants rated, on a 5-point Likert-type scale (1 = *strongly disagree*, 5 = *strongly agree*) items relating to institutional authority, bias by those in authority, and the absolute priority of rules, but not those relating to the fairness of school rules. An overall score was computed by taking the mean of all items, with higher scores reflecting more negative AA. The internal consistency of the AA in this study was .70.

Ten-item personality inventory (TIPI; Gosling, Rentfrow, & Swann, 2003)

The TIPI is a brief scale for assessing the Big Five personality factors, which shows adequate convergent and discriminant validity, test–retest reliability, and patterns of external correlates (Gosling *et al.*, 2003). Participants rated the extent to which a pair of traits applied to them on a 7-point Likert-type scale (1 = *disagree strongly*, 7 = *agree strongly*). Five items were reverse coded, and two items were averaged to arrive at scores for each of the Big Five personality factors. Cronbach's alpha coefficients were as follows: Extraversion .54, Agreeableness .52, Conscientiousness .58, Emotional stability .50, and Openness to Experience .51. Although these alphas are low, they were measured using only two items and are in line with norms (for a discussion, see Gosling *et al.*, 2003).

Rosenberg's self-esteem scale (RSES; Rosenberg, 1965)

Self-esteem was measured using the widely used RSES, a 10-item scale that taps self-worth. Items were rated on a 4-point scale (1 = *strongly disagree*, 4 = *strongly agree*), and an overall score was computed by taking the sum of all items, following reverse coding of five items (higher scores indicate greater self-esteem). Scores on the RSES have been shown to have high internal consistency and good convergent validity (Robinson & Shaver, 1973). In the present study, Cronbach's α for the RSES was .87.

Satisfaction with life scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985)

The SWLS is a brief, 5-item measure of subjective life satisfaction that has been shown to have good psychometric properties (e.g., Pavot & Diener, 2008). The five items are rated on a 5-point Likert-type scale (1 = *strongly disagree*, 5 = *strongly agree*), and an overall score is computed by taking the sum of all items (higher scores indicate greater satisfaction with life). Cronbach's α for this scale in the present study was .83.

Self-assessed intelligence (Furnham & Gasson, 1998)

This scale presents participants with a normal IQ distribution ($M = 100$, $SD = 15$), based on which participants were asked to estimate their overall intelligence by selecting an actual IQ score. Scores on this scale have been associated with psychometrically measured intelligence and academic achievement (Chamorro-Premuzic & Furnham, 2006).

Demographics

Participants provided their demographic details, consisting of sex, age, ethnicity, religion, and highest educational qualification.

Procedure

Once ethical approval for this study was obtained from the relevant university ethics committee, six experimenters recruited participants using a snowball sampling technique. A total of 1,000 individuals were invited to take part in the study, representing a response rate of 81.7%. Participants were initially recruited through personal contacts of experimenters and were asked to recruit further participants through their own networks of contacts. Participants who agreed to take part were provided with an information sheet about the study and provided informed consent. All participants completed paper-and-pencil questionnaires, in which the order of the scales described above was semi-randomized (demographics were always collected last). The questionnaires were completed individually and anonymously, and all participants took part on a voluntary basis. Once participants returned their completed questionnaires to their contact person, they were provided with a debrief sheet containing further information about the study and the experimenters' contact details.

Results

7/7 conspiracist beliefs

To examine the factor structure of the 7/7 conspiracist ideation measure, the 12 items were initially subjected to an exploratory factor analysis. The significance of Bartlett's test of sphericity, $\chi^2(66) = 7257.07$, $p < .001$, and the size of the Kaiser-Meyer-Olkin measure of sampling adequacy, KMO = .92, showed that the 12 items had adequate common variance for factor analysis (Tabachnick & Fidell, 2007). We, therefore, conducted an exploratory factor analysis using Varimax rotation. The number of factors to be extracted was determined by factor eigenvalues $\lambda > 1.0$, inspection of the scree plot (Cattell, 1966), and an extraction criterion of .40 (Kline, 1986).

Based on the above criteria, two factors emerged with eigenvalues $\lambda > 1.0$ after three iterations, with a decline between the first and second factors of the rotated solution ($\lambda = 5.11$ and 3.303, with 42.5% and 25.3% of the variance explained, respectively). However, the factor loadings showed that, based on the criterion established by Kline (1986), all items adequately loaded onto the first factor (see Table 1). Moreover, the two factors were very highly inter-correlated ($r = .84$). For these reasons, we chose to compute a single factor score for 7/7 conspiracist ideation by taking the mean of all 12 items. Cronbach's α for this measure was .93, suggesting very high internal reliability. An independent samples *t*-test revealed that women were more likely to endorse 7/7 conspiracist ideation than men (women $M = 3.44$, $SD = 1.47$; men $M = 3.16$, $SD = 1.64$), $t(815) = 2.62$, $p = .009$, $d = .18$.

Inter-scale correlations

Descriptive statistics (*M* and *SD*) for all variables of interest are reported in Table 2. Bivariate correlations between these variables showed that stronger belief in 7/7 conspiracy theories was significantly correlated with a stronger belief in general conspiracy theories, greater exposure to 7/7 conspiracist ideation, greater SDP, higher political cynicism, more negative AA, lower Agreeableness, higher Openness, lower self-esteem,

Table 2. Descriptive statistics and inter-scale correlations between all variables included in Study 1

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) 7/7 conspiracist ideation		.75**	.50**	.19**	.24**	.24**	−.04	−.11*	.01	.03	.14**	−.16**	−.19**	−.18**
(2) BCTI			.46**	.19**	.19**	.33**	−.02	−.07*	−.04	.07	.19**	−.20**	−.21**	−.18**
(3) Exposure				.11*	.10*	.34**	.04	−.17*	−.11*	−.02	.17*	−.21**	−.13**	−.15**
(4) SDP					−.02	−.13*	.03	.17*	.23*	−.04	.03	.02	−.02	−.10*
(5) PCS						−.14*	−.02	−.06	−.28**	−.04	.03	−.08*	−.25**	.11*
(6) AA							.01	−.33**	−.27**	−.23**	.10*	−.24**	−.24**	−.10*
(7) Extraversion								.08*	.03	.18*	.22**	.38**	.18**	.24**
(8) Agreeableness									.40**	.31**	.02	.26**	.24**	−.06
(9) Conscientiousness										.19**	.03	.32**	.17**	−.09*
(10) Emotional Stability											.02	.51**	.28**	−.05
(11) Openness												.08*	.02	.18**
(12) RSES													.50**	.04
(13) SWLS														−.07*
(14) SAI														
M	3.31	3.40	1.85	24.91	19.46	2.84	4.76	4.88	4.81	4.79	5.15	31.68	17.24	116.00
SD	1.55	1.42	1.42	4.53	1.73	.69	1.39	1.06	1.58	1.43	1.17	5.32	4.04	12.23

Note. *N*, 817. BCTI, belief in conspiracy theories inventory; Exposure, exposure to 7/7 conspiracist ideation; SDP, support for democratic principles; PCS, Political Cynicism Scale; AA, attitude to authority; RSES, Rosenberg's Self-Esteem Scale; SWLS, Satisfaction with Life Scale; SAI, self-assessed intelligence. *$p < .05$; **$p < .001$.

Table 3. Results of the multiple regression analysis for Study 1

Variable	β	*t*	*p*
Belief in general conspiracy theories	.61	22.52	<.001
Exposure to 7/7 conspiracy theories	.23	8.98	<.001
Political cynicism	.13	5.68	<.001
Support for democratic principles	.09	3.84	<.001
Attitude to authority	.09	3.46	.001
Self-esteem	−.08	−3.05	.002
Agreeableness	−.07	−2.86	.004
Self-assessed intelligence	−.03	−1.41	.160
Satisfaction with life	−.03	−1.25	.213
Openness to experience	.01	0.60	.550

lower satisfaction with life, and lower SAI. The same pattern of correlations was also found for belief in general conspiracy theories, suggesting that our results are robust.

Multiple regression

Although both belief in 7/7 conspiracy theories and belief in general conspiracy theories could be considered distinct criterion variables for analytic purposes, our intention in the present study was to predict the former. For this reason, we used belief in 7/7 conspiracy theories as a criterion variable in a multiple linear regression (enter method). Because three of the Big Five personality factors (Extraversion, Conscientiousness, and Emotional Stability) did not correlate with conspiracist ideation (consistent with previous work), we excluded these factors from our analysis. All remaining variables were included as predictor variables, namely belief in general conspiracy theories, exposure to 7/7 conspiracy theories, SDP, political cynicism, AA, Agreeableness, Openness, satisfaction with life, self-esteem, and SAI.

Results showed that the overall regression was significant, $F(10, 816) = 134.00$, $p < .001$, Adj. $R^2 = .62$. Of the variables entered into the model, the strongest predictor was clearly belief in general conspiracy theories. In addition, exposure to 7/7 conspiracy theories, political cynicism, SDP, AA, self-esteem, and Agreeableness emerged as significant predictors. SAI, satisfaction with life, and Openness did not emerge as significant predictors in this analysis (see Table 3 for standardised β values, *t*-values, and significance levels).

Discussion

The results of Study 1 both corroborate and extend previous work on the individual difference correlates of belief in conspiracy theories. First, we showed that the strongest predictor of belief in 7/7 conspiracy theories was belief in other, general conspiracy theories. This is consistent with the suggestion that conspiracist ideation forms part of a monological belief system (Goertzel, 1994), where one conspiratorial idea serves as evidence for other conspiracist ideation. In the case of the present study, it might be suggested that belief in a range of conspiracy theories provides a basis for comprehending and accepting 7/7 conspiracy theories.

The results of Study 1 also corroborate previous work (Swami *et al.*, 2010) in showing significant associations between 7/7 conspiracist ideation and greater exposure to 7/7

conspiracist ideation, either directly or vicariously. Furthermore, and consistent with previous research, our results showed significant associations between 7/7 conspiracist ideation and greater political cynicism, more negative AA, and greater SDP. As Swami *et al.* (2010) have argued, it is possible to explain this set of findings as a function of greater anomie among conspiracy theorists. That is, 7/7 conspiracy theorists appear to be individuals who are more disaffected with, or defiant of, the political system, but who want greater accountability.

The results of Study 1 also showed that Agreeableness was negatively associated with 7/7 conspiracist ideation. Previously, Swami *et al.* (2010) explained this association as a function of the relationship between disagreeableness and suspicion or antagonism towards others. In our study, we also showed that Openness to Experience as positively correlated with 7/7 conspiracist ideation, although this factor did not emerge as a significant predictor once other factors had been accounted for. Our results also showed that satisfaction with life and especially self-esteem was negatively associated with 7/7 conspiracist ideation. These results are consistent with the idea that conspiracist ideation is more common among the disenfranchised or disadvantaged (Abalakina-Paap *et al.*, 1999; Goertzel, 1994; Hofstadter, 1966) and that conspiracy theories may be involved in self-esteem maintenance (Robins & Post, 1997; Young, 1990).

Finally, our results also showed that there was a significant and negative correlation between 7/7 conspiracist ideation and SAI, although the latter did not emerge as a significant predictor in our multiple regression analysis. As we suggested above, conspiracy theories may be more appealing to those with lower cognitive ability, given the explanatory simplicity offered by such theories. However, an important limitation of our design was the use of a measure of SAI. Although this measure correlates with psychometrically measured intelligence and academic achievement (Chamorro-Premuzic & Furnham, 2006), reported associations have tended to be moderate at best. As such, it would be useful to explicitly examine the association between conspiracist ideation and psychometrically measured intelligence.

STUDY 2: BELIEF IN AN ENTIRELY FICTITIOUS CONSPIRACY THEORY

Study 2 builds on the results of Study 1 in two important ways. First, we sought to examine whether there would be an association between belief in an entirely fictitious conspiracy theory and belief in other, non-fictitious conspiracy theories. Specifically, we designed a novel scale designed to tap conspiracist ideation in relation to Red Bull. Red Bull was selected because the brand is well known in Austria (having been developed by an Austrian) and because its parent company is one of the most successful Austrian companies of past several decades. Both these aspects might be a good 'breeding ground' for a conspiracy theory, which led us to develop a novel scale tapping conspiracist ideation that the success of Red Bull was based on a conspiracy. Evidence of an association between belief in this entirely fictitious conspiracy theory and real-world conspiracy theories would provide strong evidence for a monological belief system in relation to conspiracist ideation (Goertzel, 1994).

Second, Study 2 also aimed to examine the associations between conspiracist ideation and as yet neglected variables, namely paranormal ideation, superstitious beliefs, psychometrically measured intelligence, and social conformity. In the first instance, paranormal ideation refers to beliefs in phenomena outside the explanatory power of mainstream science, such as astrology, belief in ghosts, extrasensory perception, and

psychic powers (e.g., Rice, 2003). Superstitious beliefs, on the other hand, refer to beliefs that luck or future events can be influenced by forces, rituals, or actions not directly related to those events (e.g., Wiseman & Watt, 2004). Although previous work has not considered possible associations between conspiracist ideation and paranormal and superstitious beliefs, respectively, we believe there are two main reasons to expect positive relationships.

First, conspiratorial, paranormal, and superstitious ideation may be predicated upon a common thinking style, as each largely rejects official mechanisms of information-generation and expert opinion, relying instead on lay experience for legitimation (in relation to paranormal thinking, see e.g., Irwin, 2009; Zusne & Jones, 1989). Moreover, paranormal and superstitious beliefs have been positively associated with intuitive (rather than analytical) thinking styles (Aarnio & Lindeman, 2005), and a similar argument may be adequately applied to conspiracist ideation (cf. Sunstein & Vermeule, 2009).

Second, paranormal and superstitious beliefs have been shown to correlate with low self-efficacy (e.g., Tobacyk & Shrader, 1991), external locus of control, and a tendency to believe personal outcomes are governed by other powerful individuals, institutions, forces, or luck (e.g., Irwin, 2009; Tobacyk, Nagot, & Miller, 1988). It might be argued, therefore, that paranormal, superstitious, and conspiracist ideation are all predicated on uncertainty in the face of everyday life or particular crises, which gives rise to a need for an illusion of control. As such, we expected to find significant and positive correlations between conspiracist ideation and paranormal and superstitious beliefs, respectively.

Study 2 also examined the association between conspiracist ideation and conformity, which has been defined as 'a characteristic willingness to identify with other and emulate them, to give in to others so as to avoid negative interactions, and generally, to be a follower rather than a leader' (Mehrabian, 2005, p. 2). Finally, we also included measures of self-esteem and psychometrically measured intelligence. The latter was included so as to overcome the limitations of using a measure of SAI, as discussed in Study 1. In terms of these factors, we expected significant and negative associations between conspiracist ideation and self-esteem and intelligence, respectively, and a positive association with conformity.

Method

Participants

The participants of Study 2 were 169 women and 112 men from Austria[1], all of whom were of European White descent. Participants ranged in age from 18 to 80 years ($M = 33.83$, $SD = 15.44$). Of the total sample, 5.8% had completed primary education, 24.2% had an apprentice diploma, 55.4% had completed secondary education, and 14.6% had a university degree.

Materials

Entirely fictitious red bull conspiracy theory

This is a novel 12-item scale devised for the present study and consisting of items describing completely fictititous conspiracist ideation *vis-à-vis* Red Bull in the Austrian

[1] *Twenty-three percent of participants were from southern parts of Germany, which are culturally very similar to Austria.*

Table 4. Items included in the entirely fictitious conspiracy theory measure (Study 2) and factor loadings following Varimax rotation

Item	Initial factor loadings		Final factor loadings
	Factor 1	Factor 2	
7. Regular consumption of Red Bull raises dopamine levels, which causes damage in the long term.	.78	.16	.75
9. In the beginning, Red Bull was illegal for minors in Austria, which raises questions as to its subsequent legalisation.	.75	.15	.71
10. Commercials in sports give the impression that Red Bull is healthy.	.75	−.07	.55
8. In 2001, the 23-year-old man Klaus Weber died of cerebral haemorrhage, caused by overly high consumption of Red Bull.	.70	.27	.69
2. Red Bull contains illegal substances that raise the desire for the product	.69	.38	.75
4. If a can of Red Bull is heated up to 40°C, it releases health-threatening substances.	.68	.39	.69
5. Subliminal messages in Red Bull television commercials make consumers believe that Red Bull improves one's health.	.65	.36	.67
11. The extract 'testiculus taurus' found in Red Bull has unknown side effects.	.57	.40	.68
6. The slogan 'Red Bull gives you wings' is used because in animal experiments, rats grew rudiment wings.	−.15	.79	-
1. The recipe of Red Bull, originally used as doping for soldiers, was bought from an American officer.	.41	.65	.61
3. The official inventor of Red Bull, Dietrich Mateschitz, pays 10 million Euros each year to keep food controllers quiet.	.50	.58	.73
12. The ban of Red Bull Cola in Germany was due to not paying enough bribe money to German politicians.	.45	.57	.69

context. The 12 items were initially developed by research assistants who were familiar with the nature of the study. Items were then critiqued and revised to eliminate redundancy and ensure ease of understanding. All items represent entirely fictititous aspects of a Red Bull conspiracy theory. The final list of items is reported in Table 4. Participants rated the extent to which they agreed that each of the final statements was true or false on a 9-point scale (1 = *completely false*, 9 = *completely true*), with higher scores indicating greater belief in this fictitious conspiracy theory. The factor structure and reliability of this scale are reported in the Results section.

Belief in conspiracy theories inventory (Swami et al., 2010)

This scale was identical to that used in Study 1. Cronbach's α for this scale in Study 2 was .87.

Australian sheep-goat scale (ASGS; Lange & Thalbourne, 2002; German translation: Voracek, 2009)

The ASGS is an 18-item measure of paranormal beliefs and experiences, where 'sheeps' refer to those who believe in the possibility of paranormal phenomena and 'goats' refer to disbelievers. Following Voracek (2009) and for consistency, the visual analogue

system format of the original ASGS was modified to a 6-point scale (0 = *totally disagree*, 5 = *totally agree*). Although the scale may contain three different subscales (relating to extrasensory perception, psychokinesis, and belief in the afterlife), subscale scores are highly correlated and most researchers (including those who developed the scale) derive an overall mean representing belief in paranormal phenomena (e.g., Thalbourne, 1995a, 1995b; Thalbourne, Dunbar, & Delin, 1995; Voracek, 2009). Cronbach's α for the ASGS in the present study was .94, which is identical to a previous study using this version of the scale (Voracek, 2009).

Superstitious beliefs (Wiseman & Watt, 2004; German translation: Voracek, 2009)
Superstitious beliefs were measured using a 6-item scale developed by Wiseman and Watt (2004), which measures agreement with both negative (e.g., walking under a ladder) and positive (e.g., touching wood) superstitions (0 = *totally disagree*, 5 = *totally agree*). Although it is possible to derive scores for negative and positive superstitious beliefs separately, previous work using the German version of this scale has shown that it best considered unidimensional (Voracek, 2009). In the present study, therefore, we computed an overall superstitious beliefs score by taking the mean of all 6 items. Cronbach's α for this scale in the present study was .86, which was similar to that reported in a previous study (Voracek, 2009).

Wortschatztest (German Vocabulary Test, WST; Schmidt & Metzler, 1992)
This is multiple-choice vocabulary test that provides a measure of crystallized (general) intelligence. The measure comprises 42 items, each of which consists of one target word plus five pseudo-word distractors. An overall score is computed by taking the sum of correctly answered items. The WST is frequently used for estimating cognitive functioning among German-speaking samples and has been shown to be correlated with other measures of cognitive ability (e.g., Merten, 2005).

Conformity scale (CS; Mehrabian, 2005)
This 11-item scale measures conformity on a 9-point scale (−4 = *very strong disagreement*, +4 = *very strong agreement*). A total score is computed by summing participants' responses to seven positively worded items and by subtracting this value from the sum of their responses to four negatively worded items. Because of this scoring technique, it is not possible to calculate Cronbach's α for this scale, although previous work has shown that the scale has good test–retest reliability and construct validity (Mehrabian & Stefl, 1995).

Rosenberg self-esteem scale (RSES; Rosenberg, 1965)
This scale was identical to the one used in Study 1, with the exception of coding (0 = *strongly disagree*, 3 = *strongly agree*). In the present study, Cronbach's α for this scale was .77.

Demographics
Participants provided their demographic details consisting of sex, age, and highest educational qualification.

Procedure

Unless stated above, three researchers (the third, fourth, and final authors) developed German translations of the scales listed above using the parallel blind technique (Behling & Law, 2000). This involved each researcher translating the questionnaire by himself. The translations were then compared against each other and disputed phrases or translations were settled by agreement between the researchers. Following questionnaire preparation, a multitude of data collectors directly recruited participants through their personal contacts using a snowball-sampling technique. As in Study 1, several experimenters each recruited participants through their personal contacts, who in turn were requested to recruit further participants through their own networks. All participants took part on a voluntary basis and were not remunerated for their participation. Participation was entirely anonymous and confidential, and all participants were debriefed once they had returned their questionnaire to the researchers.

Results

Entirely fictitious conspiracy theory

To examine the factor structure of the Red Bull conspiracy theories measure, the 12 items were initially subjected to an exploratory factor analysis. The significance of Bartlett's test of sphericity, $\chi^2(66) = 1264.44$, $p < .001$, and the size of the Kaiser-Meyer-Olkin measure of sampling adequacy, KMO = .90, showed that the 12 items had adequate common variance for factor analysis (Tabachnick & Fidell, 2007). We, therefore, conducted an exploratory factor analysis using Varimax rotation, and using the same criteria as delineated in Study 1.

Our results showed that there were two factors with eigenvalues $\lambda > 1.0$ after three iterations, with a steep decline between the first and second factors of the rotated solution ($\lambda = 5.27$ and 1.17, with 43.9% and 9.7% of the variance explained, respectively). The factor loadings showed that only one item did not load onto the first factor (item 6) (see Table 4). We, therefore, dropped this item and repeated the factor analysis. Results showed that there was a unidimensional solution with the 11 items, with $\lambda = 5.17$ and 47.0% of the variance explained (see Table 4 for factor loadings). Based on these results, we computed an overall score to represent agreement with the entirely fictitious conspiracy theory by taking the mean of the 11 retained items. Cronbach's α for this measure was .89. An independent samples *t*-test showed that women were more likely to endorse this entirely fictitious conspiracy theory than men (women $M = 3.88$, $SD = 1.47$; men $M = 3.48$, $SD = 1.43$), $t(276) = 2.26$, $p = .025$, $d = .27$.

Inter-scale correlations

Descriptive statistics for all variables (belief in the entirely fictitious conspiracy theory, belief in general conspiracy theories, paranormal beliefs, superstitious beliefs, crystallised intelligence, conformity, and self-esteem) are reported in Table 5. Bivariate correlations between these variables showed that stronger belief in the entirely fictitious conspiracy theory was significantly correlated with a stronger belief in general conspiracy theories, greater paranormal beliefs, greater superstitious beliefs, and lower self-esteem, but not with any of the other variables. In addition, a stronger belief in general conspiracy theories was significantly correlated with greater paranormal beliefs, lower self-esteem, and lower crystallised intelligence.

Table 5. Inter-scale bivariate correlations between all variables included in Study 2

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Red Bull conspiracy theories		.50**	.31**	.15*	−.03	.02	−.12*
(2) BCTI			.37**	.11	−.19**	.06	−.12*
(3) ASGS (paranormal beliefs)				.26**	−.23**	.02	.05
(4) Superstitious beliefs					−.18**	.16**	−.07
(5) WST (crystallised intelligence)						−.09	.06
(6) Conformity Scale							−.32**
(7) Self-esteem							
M	3.72	3.90	1.47	0.89	31.05	6.82	24.52
SD	1.46	1.43	1.10	1.05	5.52	11.37	4.25

Note. *N*, 281; *$p < .05$; **$p < .001$. BCTI, belief in conspiracy theories inventory; WST, *Wortschatztest*; ASGS, Australian Sheep-Goat Scale.

Table 6. Results of the multiple regression analysis for Study 2

Variable	β	*t*	*p*
Belief in general conspiracy theories	.45	8.08	<.001
Paranormal beliefs	.15	2.57	.011
Crystallised intelligence	−.11	−2.02	.044
Self-esteem	−.09	−1.61	.109
Superstitious beliefs	.08	1.51	.131
Conformity	−.05	−0.82	.415

Multiple regressions

As in Study 1, we computed a multiple linear regression (enter method) with belief in the entirely fictitious conspiracy theory as the criterion variable and belief in general conspiracy theories, paranormal beliefs, superstitious beliefs, crystallised intelligence, social conformity, and self-esteem as the predictor variables. Results showed that the overall regression was significant, $F(6, 277) = 18.59$, $p < .001$, Adj. $R^2 = .28$. Of the variables entered into the model, the only significant predictors were belief in general conspiracy theories, paranormal beliefs, and crystallised intelligence (see Table 6 for β values, *t*-values, and significance levels).

Discussion

The results of this study showed that the strongest predictor of belief in the entirely fictitious conspiracy theory was belief in other real-world conspiracy theories. This provides additional support for Goertzel's (1994) argument that a person who believes in one conspiracy theory is more likely to believe in others, including entirely fictitious ones perceived as real. In addition, however, the results of Study 2 showed that belief in the Red Bull conspiracy theory was predicted by paranormal beliefs. As we suggested above, this association may be predicated on the fact that both conspiracist and paranormal ideation are underpinned by similar thinking styles. Specifically, both these beliefs

may rely on intuitive cognisance or lay experience for legitimation, discounting official sources of information when evaluating specific claims.

Alternatively, it might be argued that, for some individuals, the uncertainty caused by crises results in a need to reassert control, making such occurrences comprehensible, and potentially controllable (Baigent, Leigh, & Lincoln, 1987). In this sense, it might be argued that conspiracist ideation provides an illusion of control, which is consistent with recent experimental work suggesting that participants who lack control are more likely to believe in conspiracy theories (Sullivan, Landau, & Rothschild, 2010; Whitson & Galinsky, 2008). The association between conspiracist ideation and paranormal beliefs thus becomes explicable, given that the latter has been associated with low self-efficacy (e.g., Tobacyk & Shrader, 1991), external locus of control, and a tendency to believe personal outcomes are governed by other powerful individuals, institutions, forces, or luck (e.g., Irwin, 2009; Tobacyk *et al.*, 1988).

The results of this study also extend the work in Study 1 by showing that Red Bull conspiracist beliefs were significantly associated with lower crystallized intelligence. We suggest that, to the extent that conspiracy theories offer simplified explanations of complex phenomena (Hofstadter, 1966; Miller, 2002), such beliefs may be more readily accepted by individuals with lower cognitive ability. However, it should also be noted that the association between conspiracist ideation and cognitive ability was relatively weak. Even so, this represents a novel area of research, and future work could extend the present results by more closely examining the association between conspiracist ideation and cognitive ability.

Our results suggest that there was no significant association between conspiracist ideation and social conformity. This is an interesting finding, given both the results of Study 2 and previous work (Swami *et al.*, 2010) showing that greater exposure to conspiracist ideation (including vicarious exposure) is associated with stronger conspiracist beliefs. It may be the case that conspiracist ideation begins as an individual decision-making process, although vicarious experience intensifies the move towards such ideation. Finally, the results of Study 2 also showed that superstitious beliefs were significantly correlated with conspiracist ideation, although this factor did not reach significance in our regression analyses.

GENERAL DISCUSSION

Taken together, the results of the present studies suggest that conspiracist ideation may initially begin as an individual process, in which a person tries to makes sense of some event perceived as threatening or calamitous. In such a scenario, a tendency towards conspiracist ideation may tend to be more prevalent among individuals who are politically cynical, show stronger SDP, have lower self-esteem, are more disagreeable, and possibly have lower crystallised intelligence. Systemic factors, such as discrepancies or ambiguities in mainstream explanations for an event, may also play a role in initially shaping conspiracist ideation (Hardin, 2002; Sunstein & Vermeule, 2009).

Once this process has been initiated, a confirmation bias and avoidance of cognitive dissonance may further the drive towards conspiracist ideation (Douglas & Sutton, 2008). However, our results also suggest that the strongest predictor of whether or not an individual will ultimately accept a conspiracy theory is the presence of earlier conspiracist ideation. This is entirely consistent with Goertzel's (1994) suggestion that conspiracy theories form part of a monological belief system, where conspiracist ideation

increases the chances that an individual will accept evidence of novel conspiracy theories. Such a system may allow individuals to easily comprehend new phenomena within existing belief systems, but communal reinforcement may also play a role in embedding conspiracy theories within particular social groups.

Interestingly, the results of the two studies here suggest this effect may also extend to belief in entirely fictitious conspiracy theories. That is, believing in real-world conspiracy theories appears to make it more likely that an individual will also be more accepting of fictitious conspiracy theories. In addition, the two studies reported here showed that women were more likely to endorse conspiracist ideation than men. This result may be explicable in terms of the specific findings of Study 2. Previous work has shown that women are more likely to hold paranormal beliefs than men (e.g., Rice, 2003; Vyse, 1997), which has been explained as a function of women thinking less analytically and more intuitively than men (Aarnio & Lindeman, 2005). Clearly, sex differences in conspiracist ideation are an area that requires further research.

The importance of the two studies reported here is that they identify a constellation of individual difference traits that are associated with conspiracist ideation. This, in turn, may assist policy makers identify instances where harmful conspiracy theories may develop. For example, some scholars have noted the positive roles played by conspiracy theories (e.g., offering individuals an opportunity to contest the credibility of socio-political actors), but also highlight the fact that conspiracy theories are often limited because their critiques of existing power structures are often highly simplistic (Fenster, 1999), succumbing to racist or exclusionary politics. In such cases, a focus on individual differences may be useful in assisting to stem harmful conspiracy theories at the root.

The main limitations of the two studies reported here are the correlational design, which means that causal relations cannot be clarified and the non-randomized samples, which means that results can only be generalized with caution. In addition, there are further individual difference traits that could legitimately be examined in future work, including locus of control, just world beliefs, and subjective happiness (Swami & Coles, 2010). Future research would also do well to more explicitly understand the context in which conspiracy theories arise; a task that may be more suited to qualitative research methods. Doing so will undoubtedly provide a more rounded picture of the functions that conspiracy theories serve as well as their effects (Waters, 1997).

Acknowledgements

We are grateful to Lisa Bower and Elisabeth Farr for assistance with data collection.

References

Aarnio, K., & Lindeman, M. (2005). Paranormal beliefs, education, and thinking styles. *Personality and Individual Differences*, *39*, 1227–1236.

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

Baigent, M., Leigh, R., & Lincoln, H. (1987). *The messianic legacy*. New York, NY: Henry Holt.

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

Behling, O., & Law, K. S. (2000). *Translating questionnaires and other research instruments: Problems and solutions*. Thousand Oaks, CA: Sage.

Butler, L. D., Koopman, C., & Zimbardo, P. G. (1995). The psychological impact of the film JFK. *Political Psychology*, *16*, 237–257.

Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research*, *1*, 245–276.

Chamorro-Premuzic, T., & Furnham, A. (2006). Self-assessed intelligence and academic performance. *Educational Psychology*, *26*, 769–779.

Citrin, J., & Elkins, D. J. (1975). *Political disaffection among university students: Contents, measurements and causes*. Berkeley, CA: University of California Press.

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

Combs, D. R., Penn, D. L., & Fenigstein, A. (2002). Ethnic differences in subclinical paranoia. *Cultural Diversity and Ethnic Minority Psychology*, *8*, 248–256.

Davis, D. B. (1969). *The slave power conspiracy and the paranoid style*. Baton Rouge, FL: Louisiana State University Press.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*, 71–75.

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. *The Journal of Social Psychology*, *148*, 210–222.

Edelman, M. (1985). *The symbolic use of politics* (2nd ed.). Urbana, IL: University of Illinois Press.

Fenster, M. (1999). *Conspiracy theories: Secrecy and power in American culture*. Minneapolis, MN: University of Minnesota Press.

Furnham, A., & Gasson, L. (1998). Sex differences in parental estimates of their children's intelligence. *Sex Roles*, *38*, 151–162.

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

Gosling, S. D., Rentfrow, P. J., & Swann Jr.,W. B. (2003). A very brief measure of the big-five personality domains. *Journal of Research in Personality*, *37*, 504–528.

Hardin, R. (2002). The crippled epistemology of extremism. In A. Breton, G. Galeotti, P. Salmon, & R. Wintrobe (Eds.), *Political extremism and rationality* (pp. 3–22). Cambridge: Cambridge University Press.

Hargrove, T., & Stempel III, G. H. (2006). *A third of U.S. public believes 9/11 conspiracy theory*. Scripps Howard News Service. Retrieved from: http://www.shns.com.

Hofstadter, R. (1966). The paranoid style in American politics. In R. Hofstader (Ed.) *The paranoid style in American politics and other essays* (pp. 3–40). New York, NY: Knopf.

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.

Irwin, H. J. (2009). *The psychology of paranormal belief: A researcher's handbook*. Hatfield, UK: University of Hertfordshire Press.

Kaase, M. (1971). Demokratische Einstellung in der Bundesrepublik Deutschland [Democratic opinions in Germany]. In R. Wildenman (Ed.), *Sozialwissenschaftliches Jahrbuch für Politik* (Vol. 2). Munich, Germany: Günter Olzog Verlag.

Kline, P. (1986). *A handbook of test construction*. London, UK: Methuen.

Lange, R., & Thalbourne, M. A. (2002). Rasch scaling paranormal belief and experience. Structure and semantics of Thalbourne's Australian Sheep-Goat Scale. *Psychological Reports*, *91*, 1065–1073.

Leman, P. J. (2007). The born conspiracy. *New Scientist*, *195*, 35–37.

Leman, P. J., & Cinnirella, M. (2007). A major event has a major cause: Evidence for the role of heuristics in reasoning about conspiracy theories. *Social Psychological Review*, *9*, 18–28.

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.

Mehrabian, A. (2005). *Manual for the Conformity Scale*. Monterey, CA: University of California, Los Angeles.

Mehrabian, A., & Stefl, C. A. (1995). Basic temperament components of loneliness, shyness, and conformity. *Social Behavior and Personality*, *23*, 253–264.

Melley, T. (2000). *Empire of conspiracy*. Ithaca, NY: Cornell University Press.

Merten, T. (2005). Factor structure of the Hooper Visual Organization Test: A cross-cultural replication and extension. *Archives of Clinical Neuropsychology*, *20*, 123–128.

Miller, S. (2002). Conspiracy theories: Public arguments as coded social critiques. *Argumentation and Advocacy*, *39*, 40–56.

Obachike, D. (2007). *The fourth bomb: Inside London's terror storm*. London, UK: Floran.

Pavot, W., & Diener, E. (2008). The Satisfaction with Life Scale and the emerging construct of life satisfaction. *The Journal of Positive Psychology*, *3*, 137–152.

Reicher, S., & Emler, N. (1985). Delinquent behaviour and attitudes to formal authority. *British Journal of Social Psychology*, *24*, 161–168.

Rice, T. (2003). Believe it or not: Religious and other paranormal beliefs in the United States. *Journal for the Scientific Study of Religion*, *42*, 95–106.

Robins, R. S., & Post, J. M. (1997). *Political paranoia*. New Haven, CT: Yale University Press.

Robinson, J. P., & Shaver, P. R. (1973). *Measures of social psychological attitudes* (2nd ed.). Ann Arbor, MI: Institute for Social Research.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Sanders, T., & West, H. (2003). Power revealed and concealed in the New World Order. In H. G. West & T. Sanders (Eds.), *Transparency and conspiracy* (pp. 1–37). London: Duke University Press.

Schmidt, K. H., & Metzler, P. (1992). *Wortschatztest* [German Vocabulary Test]. Weinheim, Germany: Beltz Test.

Soni, D. (2007). *Survey: 'Government hasn't told truth about 7/7'*. *Channel 4 News*. Retrieved from: www.channel4.com.

Sullivan, D., Landau, M., & Rothschild, Z. K. (2010). An existential function of enemyship: Evidence that people attribute influence to personal and political enemies to conpensate for threats to control. *Journal of Personality and Social Psychology*, *98*, 434–449.

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. (2010). The truth is out there: Belief in conspiracy theories. *The Psychologist*, *23*, 560–563.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Allyn & Bacon.

Thalbourne, M. A. (1995a). Further studies of the measurement and correlates of belief in the paranormal. *Journal of the American Society for Psychical Research*, *89*, 233–247.

Thalbourne, M. A. (1995b). Psychological characteristics of believers in the paranormal: A replicative study. *Journal of the American Society for Psychical Research*, *89*, 153–164.

Thalbourne, M. A., Dunbar, K. A., & Delin, P. S. (1995). An investigation into correlates of belief in the paranormal. *Journal of the American Society for Psychical Research*, *89*, 215–231.

Tobacyk, J., Nagot, E., & Miller, M. (1988). Paranormal beliefs and locus of control: A multidimensional examination. *Journal of Personality Assessment*, *52*, 241–246.

Tobacyk, J., & Shrader, D. (1991). Superstition and self-efficacy. *Psychological Reports*, *68*, 1387–1388.

Ungerleider, J. T., & Wellisch, D. K. (1979). Coercive persuasion (brain-washing), religious cults, and deprogramming. *American Journal of Psychiatry*, *136*, 279–282.

Voracek, M. (2009). Who wants to believe? Associations between digit ratio (2D:4D) and paranormal and superstitious beliefs. *Personality and Individual Differences*, *47*, 105–109.

Vyse, S. A. (1997). *Believing in magic: The psychology of superstition*. New York: Oxford University Press.

Waters, A. M. (1997). Conspiracy theories as ethnosociologies. *Journal of Black Studies*, *28*, 112–125.

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

Wiseman, R., & Watt, C. (2004). Measuring superstitious belief: Why lucky charms matter. *Personality and Individual Differences*, *37*, 1533–1541.

Young, T. J. (1990). Cult violence and the identity movement. *Cultic Studies Journal*, *7*, 150–159.

Zarefsky, D. (1984). Conspiracy arguments in the Lincoln-Douglas debates. *Journal of the American Forensic Association*, *21*, 63–75.

Zusne, L., & Jones, W. H. (1989). *Anomalistic psychology: A study of magical thinking* (2nd ed.). Hillsdale, NJ: Erlbaum.

Received 18 June 2010; revised version received 24 September 2010