REALITY TESTING, CONSPIRACY THEORIES, AND PARANORMAL BELIEFS

By Ken Drinkwater, Neil Dagnall, and Andrew Parker

ABSTRACT: This study investigated the relationship between conspiracist beliefs, reality testing, belief in the paranormal, and related anomalistic beliefs (urban legends). Attitudes toward general conspiracist beliefs and endorsement of specific conspiracy theories correlated with reality testing deficits and belief in the paranormal. High reality testing deficit scores were associated with less critical ratings of conspiracy theories and increased belief in the paranormal. Regression analysis indicated that reality testing and belief in the paranormal predicted attitudes toward general conspiracist beliefs. Partial correlation revealed that reality testing and belief in the paranormal explained similar amounts of variance; both measures were similarly associated with attitudes toward general conspiracist beliefs. Conspiracist beliefs positively correlated with related anomalistic beliefs (urban legends). Correlations were found between attitudes toward general conspiracist beliefs, conspiracy theory endorsement, and individual conspiracy theory ratings; general attitudes were associated with specific theory endorsement, and belief in one conspiracy theory was associated with belief in others. These findings are discussed in the context of recent research.

Keywords: reality testing, conspiracy theory, paranormal belief

There is no single definition of the term "conspiracy theory." The idiom has been used in several contexts and generally refers to a minority theory (Moscovici, 1987), or alternative (reasoned) explanation (Vankin & Whalen, 1999; Hofstadter, 1965). Conspiracy theories frequently proffer evidence (scientific research) that questions conventional wisdom (Soukup, 2008). Critical authors, however, simply depict conspiracy theories as fallacies (Miller, 2002), or distorted, simplified views of the social and political world (Zonis & Joseph, 1994). More specifically, conspiracies have been described as pejorative fringe theories (lay beliefs) that are attributed to the concealment of an event (current or historical) from public knowledge (Barkun, 2003; Zonis & Joseph, 1994).

Conspiracy theories are frequently endorsed when there is no definitive explanation for an event, or the official account is considered to be deficient (Aaronovitch, 2009). Indeed, Knight (2006) contends that conspiracy theories arise from the need to understand the causation and consequences of significant events. This notion is supported by Goertzel, (1994), who believes that conspiracy theories form part of a monological belief system that enables individuals to comprehend new or threatening phenomena. This explains why significant events are frequently accompanied by elaborate explanations (Bethell, 1975).

For example, conspiracists suggest that the assassination of President John Fitzgerald Kennedy (November, 1963) was orchestrated by several perpetrators rather than a lone assassin (McCauley & Jacques, 1979; Summers, 1998). Similarly, conspiracy theories are often linked with powerful individuals or groups in positions of authority (e.g., governments) and involve intricate plots/cover-ups (e.g., the 9/11 terrorist attacks on the World Trade Centre; Moscovici, 1987). In this context, conspiracy theories can be viewed as rhetorical mechanisms that appeal to the general public's emotions (Goertzel, 2010).

Conspiracist beliefs cover a breadth of topics (e.g., mind control, faked moon landings; Vankin & Whalen, 1999; Ramsay, 2006) and are generally attractive and appealing (Byford & Billig, 2001; Swami, Chamorro-Premuzic, & Furnham, 2009). Their availability and accessibility have increased with developments in the mass media (e.g., internet sites/books/podcasts). For example, "Loose Change" (http://www.loosechange911.com/), an internet site concerning the 9/11 attacks, has been reported to be one of the most viewed movies on the internet (Curiel, 2006).

The popularity of conspiracy theories has been demonstrated by several reports. Notably, surveys have established that more than a quarter of respondents believe the U.S. government knew in advance (Zogby international, 2004), participated in, or took no action to stop the 9/11 attacks (Hargrove & Stemple III, 2006). Such beliefs are not restricted to the West (Swami & Coles, 2010). Comparable results have been found in several Muslim countries, where 4/5ths of respondents did not believe the 9/11 attacks were carried out by Arabs (Gentzkow & Shapiro, 2004).

Recent studies indicate that conspiracy theories are continuing to flourish and belief in them remains robust despite strong evidence against the facts underlying them (Aaronovitch, 2009; Ramsay, 2006). In addition, consistency has been demonstrated across conspiracist beliefs; stronger belief in conspiracy theories (7/7 attacks in London) was predicted by stronger belief in other conspiracy theories (Swami et al., 2011).

Examination of conspiracist ideation suggests considerable commonality with paranormal beliefs (cf. Irwin's, 2009, definition of paranormality). Particularly, conspiracy theories are generated within the nonscientific community, they are rarely subjected to scientific scrutiny, and they are frequently endorsed by people who might normally be expected by their society to be capable of rational thought. In addition to this, conspiracy theories are an attractive stimulus material in the context of the present paper because they test official explanations for important/historical events, are frequently plausible, and the veracity of conspiracy theories is dubious. The important point here is not that official explanations are wholly satisfactory, but that they are based on prevailing interpretations of current evidence. Thus, they reflect the official, generally held account. In contrast, conspiracy theories are based on alternative readings of evidence that are less established, or less commonly accepted.

Reality testing refers to the inclination to test critically the logical plausibility of beliefs (Irwin, 2003a, 2004). This definition is based on the work of Langdon and Coltheart (2000), who postulated that delusions and pathological beliefs arise in part from the failure to subject individual explanations of sensory experience to critical evaluation.

Nonpathological belief generation occurs when the veracity of self-generated hypotheses (causal attributions) are critically assessed. According to this approach, paranormal beliefs are associated with an over-reliance upon intuitive-experiential processing and the absence of analytical-rational processing (reality testing; Irwin, 2009). Such beliefs are maintained over time because individuals fail to test rigorously their self-generated interpretations of anomalous events (Goode, 2000; Irwin, 2004; Zusne & Jones, 1982).

Irwin (2003a, 2004) found that reality-testing deficits play an important role in the formation and maintenance of paranormal beliefs. Extending this finding further, it could be hypothesized that reality testing will play a similarly important role with regard to the development of related anomalous beliefs. There is, however, a potential caveat. Particularly, it could be argued that intuitive-experiential processing is more likely to occur when individuals are not motivated to think deeply about a topic or process information in a rapid, automatic, subconscious fashion (Denes-Raj & Epstein, 1994; Epstein, 1994; Epstein, Pacini, Denes-Raj, & Heier, 1996; Pacini & Epstein, 1999). Conspiracists often devote considerable time and effort to the consideration of their favourite conspiracies and process them centrally in an analytical, rational style (Epstein, 1994). In this context, it may be that individuals use a central/cognitive/rational mode of processing without the application of effective reality testing. This noted, individuals may have a consistent preference for one reasoning style. Particularly, paranormal and pseudoscientific beliefs have been found to be associated with a tendency to favour the intuitive experiential style (Lindeman, 1998).

In this context, contrary evidence is ignored and paranormal beliefs are perceived as reassuring (Singer & Benassi, 1981; Wiseman & Smith, 2002). The current research investigated whether endorsement of conspiracy theories could similarly be explained by reality testing deficits. Particularly, the authors examined Swami et al.'s (2009) contention that adoption of conspiracist beliefs arises in part from the inability of individuals to exercise critical judgment (Bale, 2007). On this basis it was anticipated that reality-testing deficits would predict belief in conspiracy theories.

Additionally, the authors expected to find that endorsement of conspiracy theories would be positively correlated with belief in the paranormal because the theories share key common features. Ramsay (2006) reported a link between an interest in conspiracy theories and paranormality (the paranormal, the occult, and strange phenomena). Ramsay (2006) postulates that individuals who believe in unorthodox explanations in one

context (paranormal) are likely to endorse them in other contexts (e.g., conspiracy theories). On this basis it was anticipated that respondents' ratings of conspiracy theories would be related to other anomalous beliefs, specifically, urban legends. (Dagnall et al., 2010d).

It was also hypothesised that conspiracy theory endorsement rates would be positively correlated; belief in one conspiracy would indicate belief in others (Swami et al., 2011). This prediction is consistent with Goertzel's (1994) assertion that conspiracy theories form part of a monological belief system; evidence for one conspiratorial belief provides evidence for others. Finally, it was hypothesised that general conspiracist beliefs would be related to endorsement of specific conspiracy theories.

Method

Participants

One hundred thirty-six respondents participated in this study. There were 48 males with a mean age of 33.04 years (SD = 17.39), range of 16–78 years; and 88 females with a mean age of 29.24 years (SD = 12.23), range of 16–67 years. Overall mean age was 30.58 years (SD = 14.32), range of 16–78 years.

The sample was composed of undergraduates and employees from the Manchester Metropolitan University (MMU) and volunteers from the wider community; 54% were students and 46% were nonstudents. The proportion of students versus nonstudents for males was 42% for students and 58% for nonstudents; for females it was 60% for students and 40% for nonstudents.

Respondents were recruited from several sources: local colleges, undergraduate and postgraduate classes, community colleges, local clubs (e.g., badminton, Taekwon-do classes), and contacts at local amenities (e.g., local hospital, shopping centres). Participation was voluntary, and respondents could terminate their participation at any time during the study.

The current research used self-report measures, which have a number of advantages: They enable a large and diverse pool of respondents to be recruited, enhance disclosure, and allow respondents to complete the measures in a comfortable and controlled environment at their own pace. This approach has been successfully utilized in the past to test anomalistic beliefs (Dagnall, Munley, Parker, & Drinkwater, 2010b; Dagnall, Munley, Parker, & Drinkwater, 2010c; Dagnall, Parker, Munley, & Drinkwater, 2010a).

Measures

Participants were asked to complete a booklet containing the following: a conspiracy theory questionnaire, paranormal belief measures

(Lange, Irwin, & Houran, 2000; Thalbourne & Delin, 1993; Tobacyk, 1988; Tobacyk, 2004; Tobacyk & Milford, 1983), the Urban Legends Scale (Dagnall et al., 2010d; Fox Tree & Weldon, 2007), and the Reality Testing subscale of the Inventory of Personality Organization (IPO-RT; Lenzenweger, Clarkin, Kernberg, & Foelsch, 2001). Questionnaire order was counterbalanced to control for order effects.

Conspiracy theories. Belief in conspiracy theories (CT) was measured in two ways: general belief and attitudes toward significant historical events. The historical events were selected on the basis of their inclusion within several conspiracy theory sources: *70 Greatest Conspiracy Theories of All Time* (Vankin & Whalen, 1999), the wikipedia/online database of conspiracy theories (http://www.conspiracytheories.com), and "The World's Greatest Conspiracy Theories" from a television programme highlighting the top 10 conspiracies (derived from a survey of conspiracy theory websites).

Ten of the top 15 conspiracy theories were randomly selected: John F. Kennedy assassination, Apollo 11 moon landings, the death of Elvis Presley, Roswell**,** the death of Diana the Princess of Wales, the suicide of Marilyn Monroe, the New World Order (a secretive power elite with a globalist agenda that conspires to rule the world through a dictatorial world government), the death of Adolf Hitler, global warming, and the terrorist attacks on the World Trade Centre (WTC).

For each historical event, the official explanation was presented together with a statement indicating that alternative explanations/theories exist. Each event was followed by two questions. The first asked respondents to indicate the degree to which they believed the official explanation to be true; this was measured on a 7-point Likert scale (1 was "definitely not true" and 7 was "definitely true"). The second question asked respondents to indicate the extent to which they believed alternative explanations to be more truthful; this was also measured on a 7-point Likert scale (1 was "strongly agree" and 7 was "strongly disagree").

General belief in the veracity of conspiracy theories was assessed via five questions. These assessed the degree to which respondents believe that conspiracy theories accurately depict real-life events and contain truthful information. Responses were measured on a 7-point Likert scale (1 indicated "strongly disagree" and 7 "strongly agree"). Low scores on these two scales (Belief in official explanations vs. Belief in alternative explanations) would suggest support for conspiracists belief, while a high score on these scales would indicate endorsement of established more official accounts**.** Two of the five items were reversed to control for response bias.

Paranormal belief measures. Belief in the paranormal was assessed by the Revised Paranormal Belief Scale (R-PBS; Lange et al., 2000; Tobacyk, 1988, 2004) and the Australian Sheep-Goat Scale (ASGS; Thalbourne & Delin, 1993). The R-PBS is a modified form of the Paranormal Belief Scale developed by Tobacyk and Milford (1983). It is the most commonly used self-report measure of paranormal belief (Irwin, 2004).

The R-PBS contains 26 items assessing seven factors of paranormal belief: traditional religious belief, psi, witchcraft, superstition, spiritualism, extraordinary life forms, and precognition. Items are presented as statements (e.g., "Black magic really exists") and participants respond on a Likert scale ranging from: 1 ("strongly disagree") to 7 ("strongly agree"); higher scores reflect greater paranormal belief. All items with the exception of item 23 ("Mind reading is *not* possible") are positively scored.

The R-PBS measures overall paranormal belief via summated item totals. Alternatively, scores for each factor can be calculated. Recent work correcting for differential item functioning (gender and age bias) has identified a two-factor solution: New Age Philosophy (NAP) and Traditional Paranormal Belief (TPB; Lange et al., 2000). NAP (11 items) assesses belief in psi, reincarnation, altered states, and astrology, while TPB (5 items) evaluates belief in concepts such as the devil and witchcraft (Irwin, 2004).

The two-factor solution can be purified to correct for item bias by Rasch scaling the subscale totals; this produces scores ranging from 6.85 to 47.72 on NAP, and 11.16 to 43.24 on TPB (Andrich, 1988). Despite theoretical concerns over the factorial structure of paranormal belief, as measured by the R-PBS (Lawrence, 1995a, 1995b; Lawrence, Roe, & Williams, 1997; Tobacyk & Thomas, 1997), the measure has been found to be conceptually and psychometrically satisfactory. Notably, the R-PBS has demonstrated good test-retest reliability (Tobayck, 2004) and been shown to possess adequate validity (Thalbourne, 1995a, 1995b; Tobacyk, 2004). In line with Irwin (2004), we used the two-factor solution suggested by Lange et al. (2000).

In addition to the R-PBS, the ASGS (Thalbourne & Delin, 1993) was employed as a measure of belief in psychic ability (Thalbourne, 1995a, 1995b; Thalbourne, Dunbar, & Delin, 1995). The ASGS measures belief in, and alleged experience of, the paranormal by focusing on the subset of core beliefs studied by parapsychology (extrasensory perception, psychokinesis, and life after death (Wiseman & Watt, 2010). It contains 18 items and participants are asked to respond in one of three ways: "False" (scored as zero), "?" ("don't know" scored as 1), and "True" (scored as 2). The ASGS has also been submitted to Rasch scaling (Lange & Thalbourne, 2002). The ASGS has established reliability and validity (Thalbourne, 1995a).

Urban legends. Belief in urban legends was assessed via five items interspersed within the R-PBS. Items were scored using the same 7-point Likert scale as the R-PBS. Two of the items were reverse-scored (e.g., "when I hear urban legends I feel that they are untrue"). These questions were derived from Dagnall et al. (2010d) and Fox, Tree, and Wheldon (2007).

Reality testing. Reality testing was assessed using the IPO-RT (Lenzenweger et al., 2001), a unidimensional self-report measure designed to measure "the capacity to differentiate self from non-self, intrapsychic from external stimuli, and to maintain empathy with ordinary social criteria of reality" (Kernberg, 1996, p. 120). It is consistent with Langdon and

Coltheart's (2000) account of belief generation, placing an emphasis upon information-processing style rather than psychotic symptomology (e.g., "I have heard or seen things when there is no apparent reason for it").

The IPO-RT contains 20 items, with responses being recorded on a 5-point Likert scale (1 "never true" to 5 "always true"); scores range from 20 to 100, with low scores indicating high reality-testing ability. The IPO-RT has demonstrated good psychometric integrity: it is internally consistent, temporally stable with nonclinical populations, and possesses construct validity and good retest reliability ($r = .73$; Lenzenweger et al., 2001).

Procedure

Respondents were informed that the questionnaire/booklet was concerned with belief in paranormal phenomena. Respondents were also told that they must answer all questions and that there was no time limit for completing the questionnaire.

Results

Reliability and Scale Descriptives

The internal reliability of measures was assessed using Cronbach's alpha (α). The R-PBS (α = .94), ASGS (α = .91) and IPO-RT (α = .92) demonstrated excellent internal reliability. The two Rasch scale factors of paranormal belief (Lange et al., 2000), New Age Philosophy, NAP (α = .88) and Traditional Paranormal Belief, TPB (α = .83), possessed good internal reliability. The scales measuring belief in Urban Legends, UL (α = .75) and Conspiracy Theories, CT (α = .72), exhibited adequate internal reliability. Internal reliability prior to the removal of one of the Urban Legends (UL) items was (α = .67). Endorsement ratings for Official, OE (α = .79) and Alternative, AE (α = .79) explanations demonstrated adequate/good reliability. Descriptives for the survey measures are presented in Table 1.

Conspiracy Theory Descriptives and Conspiracy Theories Intercorrelations

Mean endorsement rates for the OE and AE theories are presented in Table 2. Overall means for OE and AE were skewed above the midscale point, indicating respondents' tendency to believe that OEs were true ($M = 4.71$, $SD = 1.05$), while AEs were considered less true ($M = 4.41$, $SD = 1.07$).

For OE, scores ranged from Roswell ($M = 4.20$, $SD = 1.57$) to WTC ($M = 5.33$, $SD = 1.92$). For AE, scores ranged from Roswell ($M = 4.14$, $SD = 1.60$ to Apollo 11 ($M = 4.63$, $SD = 1.88$). Overall ratings of OE and AE were found to be positively correlated, $r(134) = .47$, $p < .001$); endorsement of OE was associated with denial of AE and vice versa. (Item wording was

manipulated to ensure belief consistency and to prevent response bias.) Next, correlations were conducted on OE and AE endorsement ratings. (When *r* is used as an indicator of effect size, coefficients above .10 represent a small effect size, .30 a medium effect size, and .50 a large effect size.)

Table 1
Summary Statistics for the Reality Testing (IPO-RT), Paranormal Belief (R-PBS and ASGS), Urban Legends (UL) and Conspiracy Theories (CT) Measures

		M	*SD*	α
R-PBS		51.48	30.27	.94
	NAP	21.38	5.25	.88
	TPB	21.70	5.59	.83
ASGS		9.32	7.68	.91
UL		3.28	1.16	.75
CT		3.76	0.94	.72
	OE	4.71	1.05	.79
	AE	4.40	1.07	.79
IPO-RT		40.24	12.98	.92

Table 2
Conspiracy Theories: Individual Descriptives

	Endorsement Rate			
	Official Explanation		Alternative Explanation	
	M	*SD*	*M*	*SD*
JFK	4.33	1.54	4.37	1.57
Apollo 11	4.90	1.84	4.63	1.88
Elvis	5.19	1.63	4.49	1.90
Roswell	4.20	1.57	4.14	1.60
Diana	4.49	2.13	4.44	2.05
Monroe	4.61	1.73	4.24	1.75
Government	4.29	1.83	4.28	1.79
Hitler	4.87	1.64	4.44	1.71
Global warming	4.90	1.77	4.54	1.74
WTC	5.33	1.92	4.41	2.14

Consideration of the OE correlation matrix reveals positive correlations within conspiracies (see Table 3). No correlation was found between Monroe and WTC. Similarly, positive correlations were found across AE (see Table 4). No significant correlations were found for the following: Hitler and JFK, Government and Elvis, Government and Monroe, Global

Warming and Government. Overall, the endorsement ratings indicate that participants responded consistently across conspiracy theories.

Table 3
Correlations: Reality Testing, Paranormal Belief, and Conspiracy Theories

		1	2	3	4	5	6	7	8	9
1	R-PBS									
2	NAP	.86**								
3	TPB	.89**	.74**							
4	ASGS	.77**	.71**	.70**						
5	UL	.55**	.42**	.48**	.38**					
6	CT	.38**	.28**	.31**	.34**	.31**				
7	OE	-.33**	-.31**	-.30**	-.28**	-.17*	-.52**			
8	AE	-.25**	-.13	-.15*	-.19*	-.10	-.42**	.47**		
9	IPO-RT	.50**	.48**	.44**	.54**	.33**	.37**	-.15*	-.16*	

* $p < .05$; ** $p < .01$ (all probabilities one-tailed)

Table 4
Correlations: Conspiracy Theories (Truthfulness of OE)

	1	2	3	4	5	6	7	8	9	10
JFK										
Apollo 11	.24**									
Elvis	.29**	.33**								
Roswell	.29**	.32**	.30**							
Diana	.23**	.39**	.25**	.38**						
Monroe	.34**	.19*	.28**	.32**	.38**					
Gov't	.30**	.39**	.32**	.26**	.46**	.20*				
Hitler	.19*	.30**	.48**	.30**	.22**	.21**	.25**			
Global warming	.27**	.28**	.24**	.19*	.17*	.16*	.27**	.22**		
WTC	.35**	.39**	.21**	.23**	.31**	.11	.30**	.21**	.25**	

* $p < .05$; ** $p < .01$ (all probabilities one-tailed)

Conspiracy Theories, Paranormal Belief, Urban Legends, and Reality Testing Correlations

The relationships between measures of conspiracy theory, paranormal belief, and reality testing were examined using correlations (see Table 5).

Table 5
Correlations: Conspiracy Theories (Truthfulness of AE)

	1	2	3	4	5	6	7	8	9	10
JFK										
Apollo 11	.27**									
Elvis	.30**	.32**								
Roswell	.25**	.32**	.22**							
Diana	.21**	.34**	.21**	.37**						
Monroe	.22**	.29**	.31**	.20*	.40**					
Gov't	.17*	.20**	.09	.19*	.39**	.01				
Hitler	.11	.24**	.39**	.24**	.30**	.39**	.29**			
Global warming	.19*	.41**	.44**	.38**	.20**	.30**	.11	.25**		
WTC	.42**	.38**	.42**	.24**	.25**	.25**	.25**	.25**	.17*	

* $p < .05$; ** $p < .01$ (all probabilities one-tailed)

Significant positive correlations were found between measures of conspiracy theory endorsement (general attitudes to conspiracy theories, CT; OE and AE), measures of paranormal belief (R-PBS, ASGS, and UL), and reality testing (IPO-RT). No significant correlations were found for AE and NAP, and AE and UL.

CT was found to negatively correlate with OE, $r(134) = -.52$, $p < .001$; and AE, $r(134) = -.42$, $p < .001$. Higher beliefs in conspiracy theories were associated with lower endorsement of official explanations and higher belief in the truthfulness of alternative explanations.

Attitudes toward conspiracy theories were found to positively correlate with general paranormal belief; R-PBS, $r(134) = .38$ $p < .001$; and ASGS, $r(134) = .34$, $p < .001$. Similarly, OE and AE negatively correlated with general paranormal belief: OE and R-PBS, $r(134) = -.33$, $p < .001$; OE and ASGS, $r(134) = -.28$, $n = 136$, $p < .001$); AE and R-PBS, $r(134) = -.25$, $p = .002$; and AE and ASGS, $r(134) = -.19$, $p = .016$. Belief in the paranormal was associated with endorsement of conspiracist beliefs.

Looking at specific facets of paranormal belief, positive correlations were found between CT and the two dimensions of the R-PBS: NAP, $r(134) = .28$, $p = .001$; and TPB, $r(134) = .31$, $p < .001$. For OE and AE, negative correlations were found between OE and NAP, $r(134) = -.31$, $p < .001$; OE and TPB, $r(134) = -.30$, $p < .001$; and AE and TPB, $r(134) = -.15$, $n = 136$, $p = .038$). No significant correlation was found between AE and NAP.

Belief in UL was found to positively correlate with both measures of general paranormal belief: R-PBS, $r(134) = .55$, $p < .001$; ASGS, $r(134) = .38$, $p < .001$; and with measures of conspiracist beliefs: CT, $r(134) = .31$, $p < .001$; and OE, $r(134) = -.17$, $p < .025$. However, no significant correlation was found between belief in UL and AE, $r(134) = -.10$, $p = .122$.

Regressions

Multiple regression analyses were performed to determine the extent to which endorsement of conspiracist beliefs (CT) was predicted by paranormal belief (R-PBS and ASGS) and reality testing (IPO-RT). As a consequence of the differing content of the R-PBS and ASGS, a separate regression was performed on each (see Tables 6 and 7).

Forward selection was used because it enters predicator variables one at a time in an order determined by strength of relationship between predictor and criterion. This enables the additive effects of subsequent variables to be identified. Prior to multiple regression, multicollinearity was assessed using the variance inflation factor (VIF; Mansfield & Helms, 1982). The observed VIF values for IPO-RT–ASGS (1.417) and IPO-RT–R-PBS (1.331) were within recommended tolerance; if VIF is larger than 5, then acute multicollinearity exists (Haan, 2002).

Table 6
Factors Predicting Conspiracist Beliefs (R-PBS and IPO-RT)

	R^2	*B*	*B (SE)*	β	*t*	*p*
Step 1						
Constant		3.153	0.149			
R-PBS	0.135	0.012	0.002	0.376	4.704	< .001
Step 2						
Constant		0.804	0.912			
R-PBS	0.171	0.008	0.003	0.259	2.865	= .005
IPO-RT		1.603	0.615	0.236	2.607	= .010

When R-PBS and IPO-RT were entered as predictors of CT it was found that R-PBS was a significant predictor, $F(1, 134) = 22.13$, $p < .001$, explaining 14% of the variance. The partial correlation between R-PBS and CT, controlling for IPO-RT, was significant, $r(133) = .24$ $p = .002$. Adding IPO-RT to the model yielded $F(2, 133) = 14.94$, $p < .001$, accounting for more variance. Explained variance increased to 17%; for the change, $R^2 = .04$, $F(1, 133) = 6.80$, $p = .01$. The partial correlation between IPO-RT and CT, controlling for R-PBS, was found to be significant, $r(131) = .22$, $p = .005$. Both R-PBS and IPO-RT were significant predictors of CT.

Table 7
Factors Predicting Conspiracist Beliefs (ASGS and IPO-RT)

	R^2	*B*	*B (SE)*	β	*t*	*p*
Step 1						
Constant		-1.71	0.869			
IPO-RT	0.127	2.481	0.547	0.365	4.536	< .001
Step 2						
Constant		0.76	0.966			
IPO-RT	0.148	1.749	0.643	0.257	2.721	= .007
ASGS		0.024	0.012	0.198	2.098	= .038

ASGS and IPO-RT were entered as predictors of CT. IPO-RT was a significant predictor, $F(1, 134) = 20.51$, $p < .001$, explaining 13% of the variance. The partial correlation between IPO-RT and CT, controlling for ASGS, was significant, $r(133) = .23$, $p = .004$. The addition of ASGS to the model, $F(2, 133) = 12.75$, $p < .001$, accounted for more of the variance. Explained variance increased to 15%; for the change, $R^2 = .03$, $F(1, 133) = 4.40$, $p = .038$. The partial correlation between ASGS and CT, controlling for IPO-RT, was found to be significant, $r(133) = .18$, $p = .019$. Both IPO-RT and ASGS were significant predictors of CT.

Discussion

The present study found that endorsement of general conspiracist beliefs was predicted by reality testing and belief in the paranormal. In the context of specific theories, reality testing scores and belief in the paranormal were associated with less critical ratings of conspiracy theories, lower truthfulness ratings for official explanations, and more positive evaluations of alternative explanations. In addition, conspiracist beliefs and urban legend ratings were found to be positively correlated. These findings support the work of Dagnall et al. (2010d) to the extent that reality testing

scores were fundamentally implicated in the formation and maintenance of anomalous beliefs such as urban legends.

As predicted, conspiracy theory endorsement rates were found to be positively correlated; belief in one conspiracy was associated with belief in others (Swami et al., 2011). In addition, endorsement of specific conspiracy theories was related to general belief in the veracity of conspiracist beliefs. These findings are consistent with Goertzel's (1994) assertion that conspiracy theories form part of a monological belief system and that they explain novel events/phenomena that would otherwise threaten existing belief structures. Thus, belief in one conspiracy provides evidence for other general conspiratorial beliefs (Swami et al., 2009). For instance, the notion of a government cover-up in a specific circumstance (e.g., political assassination) generalises to other incidences (e.g., UFO activity, alien visitation, terrorist attacks) and suggests a general pattern of action (e.g., governments engage in deception; Goertzel, 1994).

While reality testing scores were found to predict endorsement of conspiracist beliefs, the IPO-RT predicted only 13% of the variance. This suggests other cognitive-perceptual and personality factors also play an important role in the formation and maintenance of conspiracist beliefs. For example, Darwin et al. (2011) found that paranoid ideation and schizotypy were positively associated with conspiracy theories. In addition, Swami et al. (2009) found that 9/11 conspiracist beliefs were positively associated with belief in other conspiracy theories, exposure to 9/11 conspiracist ideas, political cynicism, defiance of authority, and agreeableness. Clearly, further research is required to identify the best predictors of conspiracist beliefs.

Examination of the relationships between conspiracy theory endorsement and individual paranormal factors (NAP and TPB) and ratings of urban legend veracity revealed a similar pattern of correlations. Associations were observed between official explanations, general conspiracist beliefs, and the paranormal factors. However, endorsement of alternative explanations was found to correlate only with TPB; no significant relationships were reported for NAP or urban legends. This result can be explained in two ways: Either the relationship between endorsement of alternative explanations and facets of paranormal belief differs from the pattern observed for official explanations and general conspiracist beliefs, or the measure is less reliable.

Consideration of these options reveals the latter proposition to be more logical. While individual conspiracy theory measures correlated, weaker relationships were observed between endorsement of alternative explanations and other measures. This may be because the phrasing of the item was less clear than for the other conspiracy theory measures. Particularly, the wording suggests that other explanations may be more truthful than the official account. This is not necessarily the case: While respondents may have doubts about the veracity of the official explanation, they may

also not be convinced by alternatives. Believing that an official explanation is flawed does not guarantee the correctness of other solutions.

This point was considered during the design phase of the study, when it was decided to avoid stating specific alternatives, because if respondents did not believe the stated alternative was credible, they may reject it as untruthful even though they would endorse other nonofficial accounts. The general approach employed in the present study was used because the researchers intended to look at a range of conspiracy theories rather than one event in detail, such as 9/11 conspiracist beliefs (e.g., Swami et al., 2009). Clearly, future studies could extend the current research by presenting several of the most commonly cited/endorsed conspiracy theories alongside official explanations.

Despite several important contributions (Goertzel, 1994; Swami et al., 2009; Darwin et al., 2011), there remains only limited understanding of the cognitive processes that produce conspiracist beliefs. One reason for this may be that conspiracist beliefs and conspiracy theories have typically been viewed pejoratively; they are poorly regarded and often associated with psychopathology (Darwin et al., 2011). This view is overly simplistic and ignores the critical processes associated with some "conspiracist beliefs." The ability to question the authenticity of official explanations based upon selective evidence and or biased interpretations demonstrates a degree of effective analytical-rational processing (Epstein, 1994). In this context, individuals appear to use a central/cognitive/rational mode of processing without the effective application of reality testing.

Problems arise not when official explanations are rejected but when alternatives are accepted without adequate evidence. For example, questioning the legitimacy of the official Roswell, 1947 account does not support the supposition that an alien vessel crash-landed. This is a clear example of a conjunctive fallacy, where the perceived inadequacy of the government account is wrongly considered to provide evidence for alien visitation (Nickell, 2009; Thomas, 1995). Logical fallacies (arguments from ignorance) may also be important: this is the presumption that a conspiracy theory is true because the official explanation is flawed (Copi & Cohen, 1990; Walton, 1992).

The failure to extend critical evaluation from mainstream to alternative explanations may in part explain the relationship between reality testing deficits and conspiracist beliefs. Particularly, conspiracy theories are adopted because individuals place an over-reliance upon intuitive-experiential processing to the detriment of analytical-rational processing (reality testing; Irwin, 2009). In this context, the degree to which people endorse inadequate explanations/theories is a key factor in the formation of maladaptive beliefs. Problems arise when alternative theories are adopted without adequate evidence or critical evaluation. For this reason, it may be worthwhile to consider the relationship between conspiracy theories (endorsement and rejection) and probabilistic reasoning (i.e., perception

of randomness, use of base-rate information, the conjunction fallacy, and derivation of expected value).

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Manchester Metropolitan University
Faculty of Health, Psychology & Social Care
Hathersage Road
Manchester, England M13 0JA
k.drinkwater@mmu.ac.uk

Abstracts in Other Languages

Spanish

PRUEBA DE LA REALIDAD, TEORÍAS
DE CONSPIRACIÓN, Y CREENCIAS PARANORMALES

RESUMEN: Este estudio investigó la relación entre las creencias conspiracionistas, la prueba de la realidad, la creencia en lo paranormal y creencias anómalas semejantes (leyendas urbanas). Actitudes favorables hacia creencias generales conspiracionistas y el endoso de teorías de conspiración específicas correlacionaron con déficits en la prueba de realidad y creencia en lo paranormal. Déficits marcados en la prueba de realidad estuvieron asociados con menos evaluación crítica de las teorías de conspiración y con puntuaciones elevadas en la creencia de lo paranormal. Un análisis de regresión indicó que la prueba de la realidad y la creencia en lo paranormal predijeron las actitudes favorables hacia las creencias conspiracionistas en general. La correlación parcial reveló que la pruebas de la realidad y la creencia en lo paranormal explicaron una cantidad similar de la varianza; ambas medidas estuvieron asociadas de manera similar con las actitudes hacia las creencias conspiracionistas generales. Las creencias conspiracionista correlacionaron positivamente con las creencias anómalas semejantes (leyendas urbanas). Hubieron correlaciones entre las actitudes hacia las creencias generales conspiracionistas, el endoso a la teoría de la conspiración, y puntuaciones específicas sobre teorías de conspiración; las actitudes generales estuvieron asociadas con el endoso específico de teorías específicas, y la creencia en alguna teoría de la conspiración se asoció con la creencia en otras. Estos hallazgos se discuten en el contexto de la investigación reciente.

French

TEST DE LA REALITE, THEORIES DE LA CONSPIRATION ET CROYANCES PARANORMALES

RESUME: Cette étude porte sur la relation entre les croyances conspirationnistes, le test de la réalité, la croyance au paranormal, et les croyances anomalistiques connexes (légendes urbaines). Les attitudes envers les croyances conspirationnistes générales et le soutien de théories conspirationnistes spécifiques se corrèlent avec des déficits dans le test de la réalité et la croyance au paranormal. Des scores de déficit élevé dans le test de la réalité étaient associés avec des évaluations moins critiques des théories conspirationnistes et une croyance accrue au paranormal. Une analyse de régression a indiqué que le test de réalité et la croyance au paranormal prédisaient les attitudes envers les croyances conspirationnistes générales. Une corrélation partielle a révélé que le test de la réalité et la croyance au paranormal expliquait des quantités similaires de la variance ; ces deux mesures étaient associées de façon similaire avec des attitudes envers les croyances conspirationnistes générales. Les croyances conspirationnistes se corrélaient positivement avec les croyances anomalistiques associées (légendes urbaines). Des corrélations furent trouvées entre les attitudes envers les croyances conspirationnistes générales, le soutien d'une théorie conspirationniste, et l'évaluation d'une théorie conspirationniste individuelle ; les attitudes générales étaient associées avec le soutien d'une théorie spécifique, et la croyance dans une théorie conspirationniste fut associée avec la croyance dans d'autres théories. Ces résultats sont discutés dans le contexte de la recherche récente.

German

REALITÄTSÜBERPÜFUNG, VERSCHWÖRUNGSTHEORIEN UND PARANORMALE EINSTELLUNGEN

Diese Studie untersuchte den Zusammenhang zwischen Verschwörungsneigungen, Realitätsüberprüfung, dem Glauben an das Paranormale und verwandten anomalistischen Beliefsystemen (modernen Legenden). Einstellungen in Bezug auf Verschwörungsneigungen und das Fürwahrhalten bestimmter Verschwörungstheorien korrelierten mit Defiziten der Realitätsüberprüfung und dem Glauben an das Paranormale. Hohes Abschneiden bei mangelhafter Realitätsüberprüfung ging einher mit einer verringerten Kritik an Verschwörungstheorien und einem erhöhten Glauben an das Paranormale. Eine Regressionsanalyse deutete darauf hin, dass Realitätsüberprüfung und Glaube an das Paranormale Einstellungen in Bezug auf allgemeine Verschwörungsneigungen vorhersagte. Eine partielle Korrelation ergab, dass Realitätsüberprüfung

und Glaube an das Paranormale ähnliche Varianzanteile erklärte; beide Werte zeigten Ähnlichkeiten mit Einstellungen in Bezug auf allgemeine Verschwörungsneigungen. Diese korrelierten positiv mit verwandten anomalistischen Beliefsystemen (modernen Legenden). Korrelationen wurden gefunden zwischen Einstellungen in Bezug auf allgemeine Verschwörungsneigungen, dem Fürwahrhalten von Verschwörungstheorien und der Einschätzung einzelner Verschwörungstheorien: Allgemeine Einstellungen traten zusammen mit dem Fürwahrhalten spezifischer Theorien auf, und der Glaube an eine bestimmte Verschwörungstheorie ging mit dem Glauben an andere einher. Diese Befunde wurden im Kontext neuerer Forschungen diskutiert.