Running Head: CONSPIRACY THEORIES

A major event has a major cause:

Evidence for the role of heuristics in reasoning about conspiracy theories

Patrick J. Leman & Marco Cinnirella

Royal Holloway University of London, UK

Address for correspondence - Patrick Leman, Department of Psychology, Royal Holloway

University of London, Egham, Surrey, TW20 0EX, United Kingdom; Tel. +44 1784

414406; Fax. +44 1784 434347; e-mail. Patrick.Leman@rhul.ac.uk

Keywords: conspiracy theory, causality, heuristics, knowledge, judgment

Abstract

Sixty-four participants were asked to read one of four variations on a vignette that reported the assassination or attempted assassination of a hypothetical President and then to rate the likelihood that each of 8 statements relating to the vignettes was accurate. Participants were more likely to endorse a conspiracy theory to account for events when the consequences were major (the President dies) rather than comparatively minor (the President survives). Levels of belief in real-world conspiracy theories did not relate to this inference-making process even though participants whose level of belief in conspiracy theories was high were more likely to doubt the veracity of the reported details of the event.

109 words

A major event has a major cause:

Evidence for the role of heuristics in reasoning about conspiracy theories

Beliefs in conspiracy theories are widespread and appear to be increasing. For instance, in the late 1960s around two thirds of Americans either disbelieved or were skeptical of the findings of the Warren Commission Report that identified Lee Harvey Oswald as the sole gunman involved in the assassination of President Kennedy. By the early 1990s that figure had risen to nine out of ten (Goertzel, 1994). Not only do conspiracy theories exist in many cultures (Groth, 1987), they also extend to many different domains of modern life – from alleged government cover-ups of meetings with aliens and UFO sightings (Peebles, 1994) to the supposed malevolent actions of large global organizations (Kramer, 1999).

Given the prevalence of these beliefs it is perhaps a little curious that, with some notable exceptions, relatively little social psychological work has sought to explore the factors that underpin beliefs in conspiracy theories (Graumann, 1987). Indeed, the work that there is indicates that there is much that psychology can offer to inform our understanding of the phenomenon. For a start we know that individuals are likely to adopt the political perspectives of those around them or that are consistent with a particular social identity (Guimond & Palmer, 1996). One might then expect that processes of identification and socialization could predispose people to adopt conspiratorial explanations for real-life events. Moreover, since conspiracies inevitably involve the perceived actions of a malevolent group or authority (Zonis & Joseph, 1994) it should come as no great surprise that social relational factors such as interpersonal trust (Wright & Arbuthnot, 1974) and powerlessness (Hamsher, Geller & Rotter, 1968; Hofstadter, 1965) have also been implicated in beliefs about conspiracy theories.

However, less is known about how socio-cognitive factors including, for instance, heuristics, may relate to beliefs in conspiracy theories. Kahneman and Tversky (1972) found that people tend to assume that causes and effects will occur in similar proportions to one another. In this sense we tend to infer that a major or significant event is more likely to have a major or significant cause whereas a relatively minor event will have a comparatively minor cause. McCauley and Jacques (1979) explored the ways in which this "major event-major cause" relationship might affect inference-making processes in reasoning about conspiracy theories. In a series of studies they asked participants to estimate the probability that the attempted assassination of a hypothetical president was the result of a conspiracy. The researchers compared participants' responses to two imaginary situations. In the first the president was shot and died. In the second the president was missed and survived the attack. Analysis of the responses showed that individuals were far more likely to endorse a conspiracy theory to explain events in the first situation than in the second.

In the present study we explore the role of socio-cognitive processes in reasoning about conspiracy theories. The present experimental design improves upon and extends the earlier work of MacCauley and Jacques (1979) concerning major event-major cause reasoning. The study has three main aims. The first aim is to establish whether a 'major event-major cause' heuristic is, indeed, associated with the inference of a conspiracy. McCauley and Jacques (1979) study suggested that this heuristic is a source of bias in the inference-making process. However, one problem with the study was that the two events that participants were asked to compare – 'President is hit and dies' or 'President is missed and survives' – contrast not one but two pieces of information relating to the event. For instance, in comparing the two statements it might be the case that participants

are not making a "major event-major cause" inference but rather a judgment about the competence of the assassin. Participants might infer that a more competent assassin is more likely to hit the President and that, in turn, a more competent assassin is more likely to be part of a conspiracy. So in the present study some participants were asked to rate a version of the event in which the 'President is hit and yet survives' the attempted assassination. A fourth version of the event was also included, namely the 'President is missed but nevertheless dies'. Examining responses to this would determine whether explicitly breaking the link between event and cause still induces "major event-major cause" reasoning - whether participants did indeed build reasoning back from a big event to seek a big cause or whether something in popular consciousness simply associates Presidential assassinations with conspiracies. More specifically, if participants still show major event-major cause reasoning and infer that the gunman is more likely to be part of a conspiracy even when the President does of an unrelated cause, we can deduce that participants are not making this inference based on assumptions of the gunman's competence.

The second aim was to examine the relevance of the ways in which participants regard the veracity of information reported to them. The ways in which individuals regard evidence or contest the facts of the matter contrast with the inferences that individuals might make. Gauging participants' responses evaluation of the accuracy of the information allows an exploration of the other element in the circular reasoning that might be associated with beliefs in conspiracy theories. Thirdly, the present study aimed to explore whether an individual's general or prior beliefs in conspiracy theories had any influence on process of inference and the evaluation of reported information.

In light of previous findings we made two predictions. First, if there are biases in the inference-making process the version of the event presented to participants ('President hit and dies', 'President missed and survives', 'President hit and survives', 'President missed and dies') will influence the likelihood with which participants endorse a conspiracy theory. Second, prior beliefs in conspiracy theories in general would have an effect on the extent to which participants endorse a conspiracy theory to explain the specific events presented to them. Since it was a new element introduced in the present study, no specific predictions were made about the role or evaluation of information relating to the event (the reporting of the facts).

<div align="center">Method</div>

Participants

Sixty-four undergraduate psychology students participated in the study. There were 55 women and 9 men who ranged in age from 18 to 44 years (average age, 23 years). The overwhelming majority of the sample was white (55) with relatively few participants coming from ethnic minority groups black (4), Indian (2) other (3). The vast majority (60) also described themselves as middle class and whilst no-one described themselves as upper class only very few (4) described themselves as working class. Participants were also asked to rate their political orientation by placing a cross on a continuous 100mm horizontal line-scale where 0mm represented left wing and 100 represented right wing. The mean rating here was center left (42.03, standard deviation 17.39).

Design and Procedure

Participants were asked to complete a brief questionnaire that was organized into 3 sections. The first section asked for various biographical details (date of birth, sex, self descriptions of social class and ethnic group and the rating of political orientation). The

second section asked participants to read a brief vignette in the form of an article from a newspaper and then to rate, by placing a cross on a continuous 0mm-150mm scale, how likely they felt it was that each of 8 statements was true. There were four separate versions of each of these vignettes (A, B, C and D) and participants were ascribed a version at random. See below and Appendix 1 for details of these vignettes.

The third section gauged participants' general belies in conspiracy theories. These are detailed in Appendix 2. In his survey of a large American sample, Goertzel (1994) found strong evidence suggesting that belief in conspiracies is a generalized ideological phenomenon. Following Goertzel, the current study also treated these beliefs as a generalized attitude or common set of beliefs. The current study established participants' level of belief in conspiracy theories by asking them to rate how far they strongly disagreed (0mm) or strongly agreed (150mm) with each of 6 statements, again by placing a cross on the scale. These statements related to specific incidents that have been associated with conspiracy theories – for instance, the assassination of US President John F. Kennedy or the death of Princess Diana. Ratings were calculated and summed to give a total score (between 0 and 900) relating to participants' general level of belief in conspiracies. Items used in the current study were based upon those used by Goertzel (1994), but there were some changes to update the scale and to make it appropriate for a British sample. Specifically, we removed items relating to conspiracies concerning Anita Hill and Judge Clarence Thomas, President Reagan, George Bush and the American hostages in Iran because they may have been unfamiliar to a British sample. We removed two further items (relating to the FBI's involvement in the assassination of Martin Luther King and that the American government deliberately places drugs in inner city communities) because these conspiracy theories may have had low levels of recognition

amongst a contemporary British sample. We compounded three questions concerning the possible manufacture of the AIDS virus into a single item to avoid superfluous repetition and changed the item "The Japanese are deliberately conspiring to destroy the American economy" to "The European Union is trying to take control of the United Kingdom" – to make it more relevant to a British contemporary sample. Finally, we included an item relating to the death of Princess Diana to make the questionnaire more contemporary.

After completing the questionnaires participants were thanked and fully debriefed as to the aims of the study. Scores were gauged by measuring the distance at which the cross was placed from the left end of each line. Measurements were made in millimeters. For his scale of beliefs in conspiracy theories, Goertzel reported reliability of $\alpha = .78$. Our belief in conspiracy theories index had moderate reliability (Cronbach's $\alpha = .62$).

Materials – Vignettes

There were four different versions of the vignettes. The guiding rationale behind these vignettes was to minimize the possible effects of context (for instance, source characteristics relating to individuals and knowledge of and memories for events). Our aim was to focus only on major event-major cause bias. These vignettes were as similar as possible on all but the key components namely whether the President died or survived and whether the bullets hit or missed. The vignettes were presented as articles from a newspaper. Key details (for example, the names of the President and the country involved) were obscured with a black pen to avoid any confounding influence that such information might have. All participants were asked to respond to the same set of statements relating to the vignettes.

The first two groups of participants received vignettes that were based loosely on those used by McCauley and Jacques (1979). The first vignette (A) reported that a hypothetical

President had been shot and killed. The second (B) reported that the President had been

shot at, but that the bullets had missed and he had survived. The other two groups of

participants received vignettes that were similar, but included important variations. The

vignette presented to group C reported that the President had been hit, but had survived.

Finally, group D was given a vignette reporting that the shots had missed the President

but that he had died from an unrelated cause.

After reading the vignettes participants were asked to rate how likely they felt it was

that each statement was a true reflection of events. There were two types of statement.

First there were those that related to factual information contained in the report. For

instance whether the statement, "The gunman is not 35 years old", is true is a matter of

the accuracy of the reported facts. Second there were statements that related to inferences

that there was a conspiracy (e.g. "the gunman was part of a conspiracy to assassinate the

President"). Inferential statements do not relate to the reported events but require

extrapolation beyond the events as reported in the vignettes.

Again, participants were asked to rate their responses on a continuous line scale

ranging from 0mm to 150mm. This method differed from McCauley and Jacques's

(1979) approach: they presented participants with a forced-choice response of different

odds (1:2, 1:1, 2:1 and so on). A potential problem with this approach is that those not

familiar with odds and ratios might well find this task difficult or unusual. So the current

study used a simpler method, which would glean a more detailed level of information, of

asking participants to rate the likelihood of a particular explanation on a continuous scale.

A total score was calculated for responses to the four factual and the four inferential

statements. Half the items (two factual and two inferential) were reverse scored – in other

words, a higher rating of likelihood for these statements indicated greater confidence in

the veracity of statement. So higher ratings for summed scores indicated that participants had greater confidence that the report was accurate (factual) or that a conspiracy explained the events (inferential). Internal consistency for the factual and inferential statements was good - Cronbach's α values for each type of statement were .83 and .86 respectively. Details of the statements are given in Appendix 1.

<div align="center">Results</div>

Beliefs in conspiracy theories

Participants' endorsement of specific conspiracy theories was assessed in terms of their responses to 6 statements. Scores could range from 0 (strongly disagree) to 150 (strongly agree). All statements offered conspiracy theories as explanations for certain recent or historical events. The summed scores for responses to all statements produced a final measure, belief in conspiracy theories. The higher the score on this measure, the more likely a participant was to believe in conspiracy theories in general. Mean ratings for individual and summed items are shown in Table 1.

On the basis of their summed score here participants were divided into two groups, dividing their scores either side of the mean (385.45). Thus two groups were created to distinguish those with higher levels of belief in the existence of conspiracy (N=27) theories from those with lower levels of belief in their existence (N=37).

<div align="center">--Insert Tables 1 and 2 about here--</div>

Inferential and factual reasoning

A 2-way ANOVA (group x belief) was performed to assess the effect of the vignettes and of general beliefs about conspiracy theories on participants' responses on each of the 8 statements relating to the stories. The independent variables (IVs) were the versions of the vignette that participants heard (Group A, B, C or D – see again appendix 1) and

participants' general beliefs in or endorsement of conspiracy theories (high or low, see above).

There were two types of dependent variable (DV). First there were the ratings given to each of the items which were calculated from measurements made on a continuous scale of 0 (event was very unlikely to have happened) to 150 (event was very likely to have happened). Table 2 shows ratings given for each question by vignette group. Second there were the scores, which were calculated from these, relating to (1) inferential (conspiracy) statements or (2) factual statements (relating to the reporting of the event).

Participants rated statements relating to factual matters as more likely as those relating to inferences. However for the first set of DVs the 2-way ANOVA revealed a significant effect of group on responses to statement 4 ("The gunman was part of a conspiracy to assassinate the President") $F(3, 60)=3.19$, $p<.05$, and statement 7 ("The bullets were fired by someone else [the arrested man was framed]") $F(3,60)=4.69$, $p<.01$. There was also a significant effect of group (vignette type) on participants' response to all inferential statements combined, $F(3, 60)=3.51$, $p<.05$. There were no similar effects in terms of responses to any of the factual statements.

Because inspection of the descriptive data suggested that responses from groups differed, a set of contrasts compared simultaneously and directly the responses of groups. The only contrasts to produce significant results set values for groups A (+1) and D(+1) against groups B(-1) and C(-1) – a contrast between vignettes where the President died and those where he survived. These contrast tests confirmed significant differences between these pairs of groups in all the above cases of significance; statement 4 ($t(60)$ =42.13, $p<.001$), statement 7 ($t(60)=44.56$), $p<.005$), and of inferential statements combined ($t(60)=75.81$, $p<.005$). In all three cases, participants in groups A and D (those

where the President had died) inferred that a conspiracy would be a more likely explanation for events than did participants in groups B and C (those where the President survived), see again Table 2.

Finally, the 2-way ANOVA revealed a main effect of belief in conspiracies on responses to factual stories which was unrelated to group ($F(1, 63)=4.83$, $p<.05$). Participants who had relatively high levels of belief in conspiracy theories in general were more doubting of the veracity of the reported facts (mean for factual statements combined=341.12) than those with lower levels of beliefs in conspiracy theories in general (mean for factual statements combined=303.24). There is no corresponding difference between responses to inferential (conspiracy) questions.

Discussion

The present study investigated inference bias in reasoning about conspiracy theories and its relationship with the evaluation of information or evidence and individuals' prior beliefs in conspiracies. The results confirm a first prediction and indicate that individuals show a "major event-major cause" bias in making inferences. This bias leads to a greater likelihood that an individual will endorse a conspiracy theory to explain a major event compared with a more minor event. However results failed to support a second prediction and instead indicate that prior beliefs in conspiracy theories have no effect on the inference-making process. Yet whilst they have no influence on the inference-making process, prior beliefs in conspiracy theories *do* affect participants' evaluation of the veracity or accuracy of the reported details. This discussion will address, in turn, the different elements implicated in reasoning about conspiracy theories. It will conclude by exploring possible explanations for the specific role played by prior beliefs on reasoning about facts and evidence.

We should not, perhaps, be surprised to find support for McCauley and Jacques's (1979) suggestion that a "major event-major cause" bias exists in the inference-making process. Biases and heuristics in human information processing are, after all, plentiful (e.g. Todd & Gigerenzer, 2000). And the phenomenon of a "major event-major cause" heuristic would appear to extend to reasoning about different types of event (Kahneman & Tversky, 1972). It is important to note that this phenomenon is not restricted to or influenced by an individual's prior beliefs. Those who had a high level of beliefs in conspiracy theories were equally susceptible to the major event-major cause effect. In fact, in this study the "major event-major cause" bias in inference-making cut across the level of an individual's prior beliefs in conspiracies. Thus it appears to be a feature of the inference-making process *per se*: it is not the case that those more inclined to believe in conspiracy theories employ the heuristic more than others with lower levels of belief in real world conspiracies.

Whilst prior beliefs in conspiracy theories do not influence the inference-making process, they *do* have an effect on the evaluation of non-inferential aspects of the reported events. Specifically, prior beliefs affect the credibility with which individuals regard the reporting of the evidence. Participants with higher levels of belief were less trusting of the accuracy of the reported details of the event than those with lower general levels of belief in conspiracy theories. Interestingly, low levels of interpersonal trust have been associated with higher levels of reasoning about conspiracy theories (Goertzel, 1994).

These results, taken together, point towards major event major cause bias affecting the attribution of a conspiracy theory. Moreover, the effects of this heuristic are felt by both those with high and low levels of belief in real world conspiracy theories. Of course, that is not to say that inferences are not grounded in any previous experiences, attitudes and

knowledge of the world – clearly they are and the application of "major event-major cause" reasoning is one example of such grounding. There are however clearly further factors involved in everyday beliefs about conspiracies. Aspects of an individual's personality and a sense of powerlessness, anomie and a lack of interpersonal trust have all been associated with beliefs in conspiracies (see Abalakina-Paap, Stephan, Craig & Gregory, 1999; Crocker, Luhtanen, Broadnax & Blaine, 1999). And whilst heuristics have been implicated in reasoning about conspiracy theories, it would be unwise to assume that all beliefs in conspiracy theories inevitably lack the characteristics of systematic thinking. Indeed, many conspiracy theories demonstrate such a marked attention to details concerning events and individuals' intentions and plans that it would be difficult to describe them as resting on mental "short-cuts" or probabilistic thinking (Harrison & Thomas, 1997). Thus it seems unlikely that it is merely a case of heuristic (as opposed to systematic –see Eagly & Chaiken, 1984; 1993) reasoning that lies at the root of many beliefs in conspiracy theories but also that there is some circularity in reasoning (McHoskey, 1995) as well as the systematic processing of information (evidence) that is not impartial.

Moreover, the current study addressed only the reported details of events and no versions of the report speculated on the ultimate causes (conspiracy or not) of events. So reported details need to be distinguished from endorsements of a particular explanation for events. If, for example, the reports had proposed a conspiracy theory to explain events, or had advanced a particular account, we might indeed have seen polarization of existing attitudes or some effect of prior beliefs on the inferences made (c.f. Butler, Koopman & Zimbardo, 1995; McHoskey, 1995).

In the present study we identified major event-major cause reasoning for our hypothetical assassination scenario. This form of reasoning cuts across levels of belief in real world conspiracy theories. Further research in the area can help to extend our understanding of the role of socio-cognitive factors in reasoning about conspiracy theories, and also to explore how these processes tie in with broader social and cultural correlates of beliefs in real-world conspiracy theories.

References

Abalakina-Paap, M., Stephan, W. G., Craig, T. & Gregory, W. L. (1999). Beliefs in conspiracies. *Political Psychology, 20(3),*637-647.

Butler, L. D., Koopman, C. & Zimbardo, P. G. (1995). The psychological impact of the film JFK – emotions, beliefs, and political behavioral intentions. *Political Psychology, 16(2),* 237-257.

Crocker, J., Luhtanen, R., Broadnax, S. & Blaine, B. E. (1999). Belief in US government conspiracies against blacks among black and white college students: powerlessness or system blame? *Personality and Social Psychology Bulletin, 25(8)*, 941-953.

Eagly, A. H. & Chaiken, S. (1993). *The psychology of attitudes*. San Diego: Harcourt Brace Jovanovich.

Eagly, A. H. & Chaiken, S. (1984). 'Cognitive theories of persuasion'. In L. Berkowitz (Ed.), *Advances in Experimental Social psychology* (Vol. 17, pp.268-359). New York: Academic Press.

Goertzel, T. (1994). Belief in conspiracy theories. *Political Psychology, 15(4)*, 731-742.

Graumann, F. (1987). Conspiracy: history and social psychology. In C. F. Graumann & S. Moscovici (Eds.), *Changing conceptions of conspiracy*, pp.245-252. New York: Springer-Verlag.

Groth, D. (1987). The temptation of conspiracy, or why do bad things happen to good people? In C. F. Graumann & S. Moscovici (Eds.), *Changing conceptions of conspiracy*, pp.1-14. New York: Springer-Verlag.

Guimond, S. & Palmer, D. L. (1996). Political socialization of commerce and social science students: epistemic authority and attitude change. *Journal of Applied Social Psychology, 26(22),* 1985-2013.

Hamsher, J. H., Geller, J. D. & Rotter, B. D. (1968). Interpersonal trust, internal-external control and the Warren commission report. *Journal of Personality and Social Psychology, 26(9)*, 210-215.

Harrison, A. A. & Thomas, J. M. (1997). The Kennedy assassination, unidentified flying objects and other conspiracies: psychological and organizational factors in the perception of "cover-up", *Systems Research and Behavioral Science, 14(2)*, 113-128.

Hofstadter, R. (1965). *The paranoid style in American politics and other essays*. New York: Knopf.

Kahneman, D. & Tversky, A. (1972). Subjective probability: a judgement of representativeness. *Cognitive Psychology, 3*, 430-439.

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

McCauley, C. & Jacques, S. (1979). The popularity of conspiracy theories of presidential assassination: a Bayesian analysis. *Journal of Personality and Social Psychology, 37 (5)*, 637-644.

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(3)*, 395-409.

Peebles, C. (1994). *Watch the skies! A chronicle of the flying saucer myths*. Washington, DC: Smithsonian Institution Press.

Todd, P. M. & Gigerenzer, G. (2000). Précis of 'Simple heuristics that make us smart'. *Behavioral and Brain Sciences, 23*, 727-780.

Wright, T. L. & Arbuthnot, J. (1974). Interpersonal trust, political preference and

   perception of the Watergate affair. *Personality and Social Psychology Bulletin, 1(1)*,

   168-170.

Zonis, M. & Joseph, C. (1994). Conspiracy thinking in the Middle East. *Political

   Psychology, 15,* 443-459.

Appendix 1 – Assassination vignettes and questions

A – President is shot and dies

The small nation of XXX was thrown into civil chaos last night following the assassination of President XXX. The newly-elected President, who had won 54% of the votes in last month's general election, was shot as he climbed down from the stage at the end of a speech to supporters in the capital, XXX. Although medics were quickly on the scene, one bullet had penetrated the President's heart – he died almost instantly. XXX police were yesterday giving no details of their investigation. But it is widely believed that a 35 year-old man, detained shortly after the incident and suspected to be the gunman, is currently being held in custody.

B – President is missed and survives

The small nation of XXX was breathing a collective sigh of relief last night following the failure of an assassination attempt on President XXX. The newly-elected President, who had won 54% of the votes in last month's general election, was shot at as he climbed down from the stage at the end of a speech to supporters in the capital, XXX. The shots missed, but medics reported that XXX had stumbled following the shooting and sustained a minor wound to the shoulder – he will wear a sling for the next two weeks. XXX police were yesterday giving no details of their investigation. But it is widely believed that a 35 year-old man, detained shortly after the incident and suspected to be the gunman, is currently being held in custody.

C – President hit but survives

The small nation of XXX was breathing a collective sigh of relief last night following the failure of an assassination attempt on President XXX. The newly-elected President, who had won 54% of the votes in last month's general election, was shot as he climbed down

from the stage at the end of a speech to supporters in the capital, XXX. By pure chance, it appears a single bullet narrowly missed the President's heart. Medics reported that XXX had been released from hospital last night suffering only a minor wound to the shoulder – he will wear a sling for the next two weeks. XXX police were yesterday giving no details of their investigation. But it is widely believed that a 35 year-old man, detained shortly after the incident and suspected to be the gunman, is currently being held in custody.

D – President missed but dies

The small nation of XXX was thrown into civil chaos last night following the death of President XXX. The newly-elected President, who had won 54% of the votes in last month's general election, was shot at as he climbed down from the stage at the end of a speech to supporters in the capital, XXX. However, last night medics indicated that the President did not die from the gunshot. Instead it appears that he died from a massive heart attack brought on, in part, by his rigorous schedule in the weeks preceding the election. The President is known to have suffered from a heart complaint for some time. XXX police were yesterday giving no details of their investigation. But it is widely believed that a 35 year-old man, detained shortly after the incident and suspected to be the gunman, is currently being held in custody.

Statements

Factual (accurate reporting) statements

The gunman is not 35 years old

The President did not win the election

The President was speaking to supporters (-)

Someone has been detained (-)

<u>Inferential (conspiracy) statements</u>

The gunman was a madman, acting alone (-)

The gunman was acting alone but was perfectly sane (-)

The gunman was part of a conspiracy to assassinate the President

The bullets were fired by someone else (the arrested man was framed)

 (-) indicates reversed direction for scoring

Appendix 2 – Measure of general beliefs in conspiracy theories

Statements

There was a conspiracy behind the assassination of US President John F Kennedy

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

Princess Diana's death was not accidental but was a case of murder

Governments are suppressing evidence of the existence of aliens

The AIDS virus was created in a laboratory

The government covers up the existence of toxins in the food supply

Table 1. Mean ratings and standard deviations for items relating to general beliefs in conspiracy theories (0= strongly disagree, 150=strongly agree), N=64

Question	Mean	Std. Dev.
There was a conspiracy behind the assassination of US President John F Kennedy	86.05	(19.76)
The European Union is trying to take control of the United Kingdom	59.56	(29.01)
Princess Diana's death was not accidental but was a case of murder	57.42	(28.70)
Governments are suppressing evidence of the existence of aliens	49.45	(28.33)
The AIDS virus was created in a laboratory	37.67	(26.55)
The government covers up the existence of toxins in the food supply	95.30	(26.51)
Beliefs in conspiracy theories (total)	385.45	(69.83)

Table 2. Mean ratings for likelihood of statements being true accounts of events (0=very unlikely, 150=very likely), standard deviations in parentheses

	Vignettes (group)				
Question	A	B	C	D	Total

Factual statements

The gunman is not 35 years old	47.19	51.85	49.25	56.31	51.14
	(27.55)	(27.08)	(25.10)	(21.14)	(24.97)
The President did not win the election	30.00	29.44	38.69	38.38	34.13
	(22.18)	(21.39)	(28.76)	(26.95)	(24.81)
The President was speaking to	78.25	86.06	85.00	86.81	84.03
supporters	(31.29)	(22.65)	(21.08)	(17.49)	(23.36)
Someone has been detained	78.69	94.44	87.50	82.81	85.86
	(32.47)	(20.42)	(24.38)	(24.07)	(25.78)
Factual (accurate reporting)	319.75	339.25	324.56	314.94	324.62
statements combined	(66.53)	(71.01)	(64.98)	(60.91)	(66.21)

Inferential statements

The gunman was a madman, acting	42.19	41.19	43.25	51.12	44.44
alone	(28.32)	(28.23)	(26.21)	(25.17)	(26.66)
The gunman was acting alone but was	40.56	48.63	39.00	49.06	44.31
perfectly sane	(31.52)	(24.75)	(21.00)	(31.58)	(27.31)
The gunman was part of a conspiracy	77.13	51.88	57.00	73.88	64.97
to assassinate the President	(28.44)	(27.84)	(27.96)	(26.86)	(29.19)
The bullets were fired by someone	56.63	38.19	35.56	61.69	48.02
else (the arrested man was framed)	(23.67)	(20.69)	(19.32)	(31.12)	(26.17)
Inferential (conspiracy) statements	291.00	240.25	250.31	275.38	264.23
combined	(65.11)	(34.51)	(40.94)	(51.83)	(52.35)