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Anger, Internet Memes and Belief

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Abstract

The relationship of anger, the tendency to believe in conspiracies, and the tendency to believe a short statement accompanied by a related image was investigated. The Generic Conspiracist Belief (GCB) scale and the Spielberger State-Trait Anger Scale (STAS) were presented to 154 participants, including 125 females and 28 males, before the presentation of 12 statements of fact which were each accompanied by images related to the statements. The belief in conspiracy scores and the trait anger scores significantly predicted the tendency to believe the statements accompanied by images, explaining 55% of the variance (R^2=.553, F(2,151)=95.77, p<.01). These findings suggest that a tendency to react with anger and a tendency to believe conspiracy theories are strong predictors of how a person will respond to dramatic combinations of statements of fact and images.

Keywords: internet meme, trait anger, conspiracist ideation

Anger, Internet Memes, and Belief

Factual claims encountered in the media are often so complex that the average person does not have command of the information needed to evaluate the claims. For instance, few people have read or are able to understand the implications of the original research that relates to climate change or the relationship between playing violent video games and violent behavior, but such relationships are often cited in popular media. Most people must rely on the summaries of information found in the various forms of media and in informal discussions with peers. When presented with conflicting sources of information, a person must make an independent evaluation of the accuracy of the claims.

How can a person confidently choose one group of experts, one information source over another? It has been suggested that:

> We ignore complexity by overestimating how much we know about how things work, by living life in the belief that we know how things work even when we don't. We tell ourselves that we understand what's going on, that our opinions are justified by our knowledge, and that our actions are grounded in justified beliefs even though they are not. We tolerate complexity by failing to recognize it. That's the illusion of understanding. (Sloman & Fernback, 2017, p. 34).

There are some assertions in which one opinion is supported by a large majority while the minority maintains a vigorous defense of the opposing position. When the minority views seem to ignore commonly accepted ideas of cause and effect, those views are sometimes referred to as 'conspiracy theories' (Brotherton et al., 2013). When a person who maintains an opinion about these theories seems to be basing the belief on something other than a logical evaluation of the available information, the opinion is referred to as 'conspiracist ideation'. One implication is

that a person who engages in conspiracist ideation keeps looking for explanations after finding the commonly accepted explanation for an event to not be emotionally satisfying (Brotherton & French, 2014).

If people feel confident in a decision for which they had incomplete information, it could be because they have been influenced by rhetorical devices, past emotional associations, or information processing shortcuts. A clever play on words, alliteration, or dramatic, emotional messages may be lacking in factual content, but they still may affect the information processing and decision making processes. One heuristic which may underlie confidence ratings is the Availability Heuristic. It suggests that overestimating the frequency judgement may inflate confidence judgements. Anything that makes a fact more memorable may unconsciously impact the evaluation of accuracy (Tversky & Kahneman, 1973; Braga & Ferreira, 2013)

Existing emotional associations with the topic under consideration is another factor that may have an impact on the decision to believe one set of assertions over another. Rusting (1998) discusses the network theory of affect in which emotions activate emotion-related memories and cognitive processes. The Speilberger State Trait Anger Scale (STAS) provides one measure of a person's tendency to react to stimuli with anger. State Anger (SA) is defined as "an emotional state or condition that consists of subjective feelings of tension, annoyance, irritation, fury and rage, with concomitant activation or arousal of the autonomic nervous system" and Trait Anger (TA) is defined "in terms of individual differences in the frequency that S-Anger was experienced over time" (Spielberger et al., 1983). Parrott et al., (2005) compared groups high in TA to those low in TA. In a lexical decision task, those in the high TA group processed anger words more quickly than any other type. For those in the low TA group, there were no differences between any word type groups. This indicates that, in contrast to those who score

low on the TA scale, those who are predisposed to react with anger process words related to anger differently than other types of words.

There is a style of online posting of information in which a short text statement is accompanied by a related photo. This social media posting style will be referred to in this context as an 'Internet Meme' (IM). The concept of meme was popularized by Dawkins (1976). Blackmore (1999) pointed out that, while it may seem that a meme contributes to the success of a person or group, the success is entirely a result of competition among memes. The continued transmission of a meme is based largely on the characteristics of the meme that causes it to be copied and transmitted. The Parrot et al., (2005) finding that words related to anger are processed more quickly than other words suggests that an IM containing words that are associated with anger would have an advantage when it comes to the competition between memes. This would mean a greater likelihood of the meme being copied and spread.

Any regular consumer of popular media encounters many presentations of information every day and they are received in formats that are easy to copy and then send to multiple recipients. A person who sends information that they have recently received may be reinforced by seeing responses to their posts or seeing that people forward the information to others, increasing the impact. Characteristics of the information which are relevant to the likelihood of a meme's success may include length, topic, and visual impact. The text component of an IM is often short. A simple phrase or sentence could be read in a second or two, almost automatically, so they would be more likely than longer passages to be processed completely (Mano et al., 2016; Rawson & Middleton, 2009; Schneider & Shiffrin, 1977). The fact that the text is accompanied by an image makes it visually distinctive, making it easier to recall, and, according to the Availability Heuristic, more likely to be judged to be true (Tversky & Kahneman, 1973;

Braga et al., 2012). Both the text and the image may contribute to an emotional response, as suggested by Beall and Herbert (2008) who found that faces that displayed emotion were processed more automatically than words with emotional content. Kintch (1988) discusses how, in the course of understanding of discourse, the proposition must be combined with knowledge about the world, making it a richer knowledge structure. It is common for an IM to use images designed to elicit an emotional response. If an emotionally charged image is processed first, it may set up a biasing context for the text.

Kintch's (1988) concept of knowledge structures is consistent with Bartlett's original conception of schema which included the idea that a schema was a structure that interacted with the environment (Bartlett, 1995; McVee et al., 2005). This makes any schema a product of both the person's cognitive structures and the environmental stimuli. The finding that those high on TA are more likely to respond with anger to any given stimulus (Speilberger et al., 1983) and that those high on TA processed the anger-related words more quickly (Parrott et al., 2005) would seem to be consistent with the concept of an interactive schema in which images may influence the perceived meaning of the associated text. Stevens et al., (2018) found that both TA and Magical Ideation were significant predictors of scores on the Generic Conspiracist Belief (GCB) scale (Brotherton et al., 2013).

It was hypothesized that those who tend to believe in conspiracies, as measured by the GCB scale, and those high on TA will be more likely to believe the truth of statements presented in the form of an IM. In addition, it was predicted that TA scores would be positively correlated with the assessment of the truth of IM statements, while State Anger (SA) would not, as the SA measure would be assessing the degree to which the ongoing participation in the study aroused anger.

Method

Participants

Students (125 females, 28 males, and 1 who declined to respond to the question about gender, M_{age} = 20.02 years, range: 18-51, 8 Native American, Asian/Pacific Islander, 51 Black or African American, 85 White/Caucasian, 10 Multiple Ethnicity) were recruited from undergraduate psychology classes at a small, southern university. Participating instructors provided a link to their classes which would allow them to access the study using an online survey service, constituting a convenience sample. Students who participated in the study were eligible for extra credit in the classes from which they were recruited.

Materials

Conspiracist ideation was assessed using the GCB scale (Brotherton, French, & Pickering, 2013), a 59-item questionnaire designed to assess the general tendency to endorse theories which are unlikely to be true. Participants were presented with a 5-point scale with the choices of, "1: definitely not true, 2: probably not true, 3: not sure/cannot decide; 4: probably true; 5: definitely true. SA and TA were assessed using the STAS (Spielberger, Jacobs, Russell, & Crane, 1983) which is comprised of 30 questions, 15 to assess SA and 15 to assess TA. The SA questions address the current state of the respondent, such as, "I am mad". The possible responses were, "1 = not at all, 2 = Somewhat, 3 = Moderately so, 4 = Very much so". The TA questions address the general tendency to respond in certain ways, such as, "I have a fiery temper". The meme confidence task was comprised of 12 images each associated with a short statement and the opportunity to rate each one on a scale of 1 (Least Confident) to 7 (Most

Confident). The images were created for this task and were based on memes found online (see Appendix).

Procedure

The information was collected using a commercial online survey service. Upon accessing the link to the study, after responding to the consent form, each participant was asked to answer a short set of demographic questions, followed by the GCB, the STAS, and the assessment of confidence for each of 12 meme images.

Results

As shown in Table 1, the confidence ratings of the meme images (IM) correlated significantly with each of the other three measures. TA (M = 27.57, SD = 8.22) was significantly correlated with CGB (M = 194.90, SD = 40.74).

Table 1

Correlations Among IM, TA, SA, and GCB

Variable Pairings		Pearson's r	p-value
IM	GCB	r(152)=.725	<.01
IM	TA	r(152)=.269	<.001
IM	SA	r(152)=.209	<.001
TA	GCB	r(152)=.220	.006
SA	GCB	r(152)=.035	.669

A step-wise multiple regression analysis was performed to determine the degree to which CGB scores, TA scores, and SA (M = 21.10, SD = 8.67) scores predict the belief in the accuracy of the statements presented in the IM task (M = 38.44, SD = 15.43). It was found that GCB scores and TA scores significantly predicted performance on the IM scores, explaining 55% of the variance (R^2=.553, F(2,151)=95.77, p<.001). It was found that the scores on the GCB

significantly predicted IM scores (β = .718, p<.001), as did TA scores (β = .18, p<.001). SA scores did not contribute significantly to the model.

Discussion

The question of why a small minority of seemingly normal people maintain views that contrast distinctly with the majority view may be relevant to understanding the belief in what people commonly call conspiracy theories. Why people assert the truth of unlikely theories is surely a complex phenomenon with many contributing causes. This study addressed the impact that IMs have on the tendency to believe an assertion of fact.

The fact that the GCB scores correlated significantly with endorsement of the truth of statements presented in the IM with was not surprising as both the GCB questions and the text component of the IM judgements were related to the acceptance of assertions that would generally be considered to be minority opinions. Spielberger's conception of TA (Spielberger, Jacobs, Russell, & Crane, 1983) is that it measures a tendency for an individual to react to stimuli with anger. The correlation of TA with the IM measure suggests that, when viewing the same stimuli, those who tend to react with anger are more likely to accept what is being asserted. This impact on belief that is not based in information content could be an important factor in understanding the impact of our current information environment.

The general purpose of this line of research is to understand the factors that influence people when they make decisions about complex issues based on incomplete information, which is often the case in complex societal issues. The fact that both the scores on the GCB and the TA correlated positively suggests that a person who is predisposed to believe in conspiracies and who is also predisposed to react with anger is the type of person most likely to accept the truth of a statement accompanied by an image that provides an anger-inducing context. This study

suggests that a tendency to react with anger and a tendency to accept theories that are not commonly accepted predisposes a person to accept the truth of controversial statements presented with related images. Given the number of statements on social media that are presented in the IM fashion, the characteristics of media as well as the characteristics of the consumers of media are important to investigate when attempting to understand the public reaction to many complex social issues.

Conclusion

The correlation between GCB and TA scores indicates that those who tend to react to stimuli with anger also tend to endorse ideas that a majority finds unlikely. The regression model in which GCB and TA predicted the belief in the statements which were associated with images (IM) indicates that, while correlated, both variables make unique contributions to the prediction. A person high in TA is predisposed to react to stimuli with anger (Spielberger et al., 1983). Parrott et al., (2005) found that people high in TA "displayed facilitative biases in the processing of semantic anger-related stimuli" and the current study has extended that finding to stimuli that combine imagery and text. The fact that the GCB made a significant contribution to the prediction of the reaction to the memes indicates that it is due to cognitive processes not related to anger.

Stevens et al., (2018) found a correlation between the GCB and a measure of Magical Ideation (MI). Eckblad and Chapman (1983) described MI as belief in the causal relationship of events which the dominant view in the person's culture to be that the events cannot be causally related. These might include psychokinetic effects, good luck charms, or the presence of secret messages in the environment. While the relationship of TA and belief in conspiracy theories points to an emotional component, the correlation between MI and the GCB suggest thinking

processes not driven by emotion. The statement, “The Magical Ideation Scale is, therefore, a reasonable measure to use in attempts to predict future psychosis” (Eckblad & Chapman, 1983, p. 223) suggests that those high in MI might have basic failures in logical processing. There are surely many factors that contribute to the belief in conspiracy theories, both emotional and based in failures of logical processing.

References

Bartlett, F. C. (1995). *Remembering.* New York: Cambridge University Press. (Original work published 1932)

Beall, P. M., & Herbert, A. M. (2008). The face wins: Stronger automatic processing of affect in facial expressions than words in a modified Stroop task. *Cognition and Emotion*, 22(8), 1613–1642. https://doi.org/10.1080/02699930801940370

Blackmore, S. (1999). *The Meme Machine*. New York: Oxford University Press.

Braga, J. N., Ferreira, M. B., & Sherman, S. J. (2015). The Effects of Construal Level on Heuristic Reasoning: The Case of Representativeness and Availability. *Decision,* 2(3), p. 216-277.

Braga, J. P. N., Ferreira, M. B., and Sherman, S. J. (2013). Disentangling Availability from Representativeness: Gambler's Fallacy Under Pressure. In Andrade, C., Garcia, D., Fernandes, T., Silva, V., Monteiro, M. B., and Castro, P. *Research Directions in Organizational and Social Psychology.* Edicoes:Silabo.

Brotherton, R., French, C. C., & Pickering, A. D. (2013). Measuring belief in conspiracy theories: The generic conspiracist beliefs scale. *Frontiers in Psychology*, *4*(MAY), 1–15. doi.org/10.3389/fpsyg.2013.00279

Brotherton, R., & French, C. C. (2014). Belief in Conspiracy Theories and Susceptibility to the Conjunction Fallacy. *Applied Cognitive Psychology*, *28*(2), 238–248. doi.org/10.1002/acp.2995

Dawkins, R (1976, 2006). *The Selfish Gene*. Oxford University Press, Oxford.

Eckblad, M., & Chapman, L. (1983). Magical Ideation as an Indicator of Schizotypy. *Journal of Consulting and Clinical Psychology, 51(2), 215-225.*

Kintsch, W. (1988). The Role of Knowledge in Discourse Comprehension: A Construct-Integration Model. *Psychological Review*. *95*(2), 163–182.

Mano, Q. R., Williamson, B. J., Pae, H. K., & Osmon, D. C. (2016). Stroop interference associated with efficient reading fluency and prelexical orthographic processing. *Journal of Clinical and Experimental Neuropsychology*, *38*(3), 275–283. doi.org/10.1080/13803395.2015.1107029

McVee, M. B., Dunsmore, K., & Gavelek, J. R. (2005). Schema theory revisited. *Review of Educational Research*. SAGE Publications Inc. https://doi.org/10.3102/00346543075004531

Parrott, D. J., Zeichner, A., & Evces, M. (2005). Effect of trait anger on cognitive processing of emotional stimuli. *Journal of General Psychology*, *132*(1), 67–80. doi.org/10.3200/GENP.132.1.67-80

Rawson, K. A., & Middleton, E. L. (2009). Memory-Based Processing as a Mechanism of Automaticity in Text Comprehension. *Journal of Experimental Psychology: Learning Memory and Cognition*, 35(2), 353–370. https://doi.org/10.1037/a0014733

Rusting, C. L. (1998). Personality, Mood, and Cognitive Processing of Emotional Information. *Psychological Bulletin*, *124*(2), 165–196. https://doi.org/10.1037/0033-2909.124.2.165

Schneider, W., & Shiffrin, R. M. (1977). Controlled and automatic human information processing: I. Detection, search, and attention. *Psychological Review*, *84*(1), 1–66. doi.org/10.1037/0033-295X.84.1.1

Sloman, S. & Fernbach, P. (2017). *The Knowledge Illusion*. New York: Riverhead Books.

Spielberger, C., Jacobs, G., Russell, S., and Crane, R. (1983). Assessment of Anger: The State-Trait Anger Scale. In Butcher, J. N. (Ed.), *Advances in Personality Assessment* (pp. 161-189). Routledge:London.

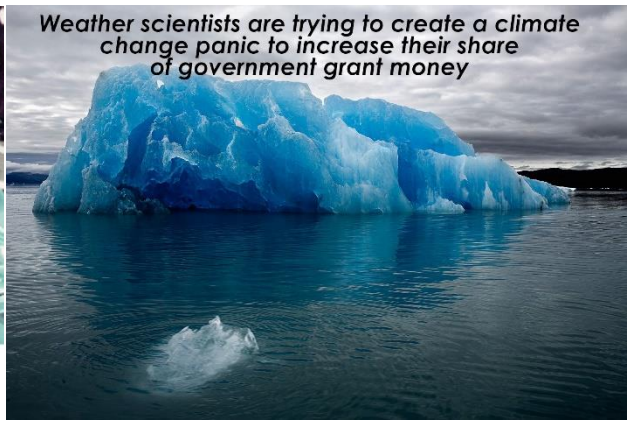
Stevens, R., Poudel, G., & Scott, D. (2018, May). *Magical Ideation and Trait Anger Predicts Belief in Conspiracies.* Poster presented at the meeting of the Association for Psychological Science.

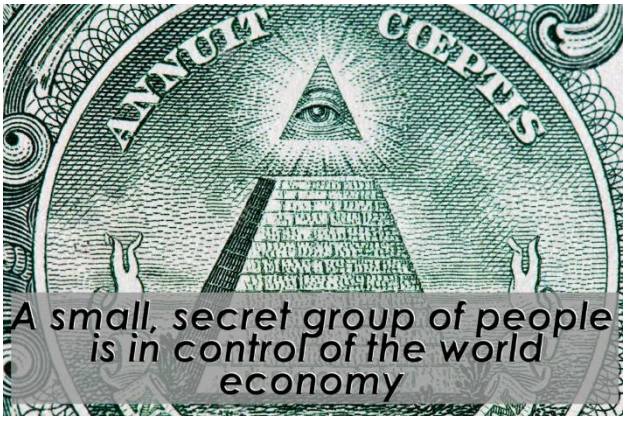
Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology*, 5(2), 207–232. https://doi.org/10.1016/0010-0285(73)90033-9

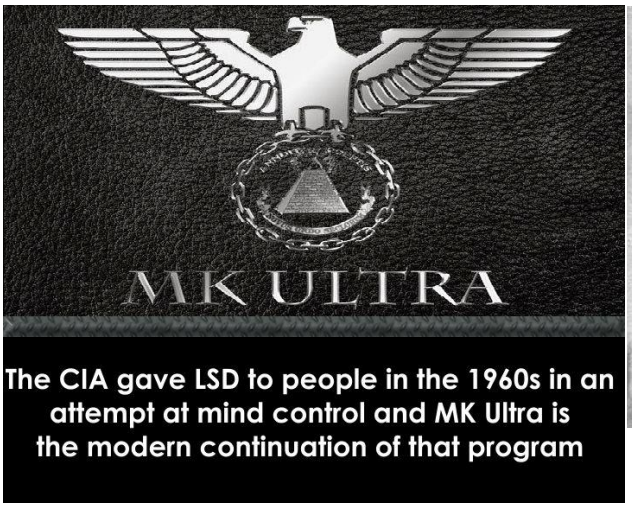
Appendix

Meme Stimuli

We may never know who shot JFK because the Warren Commission was a government cover-up





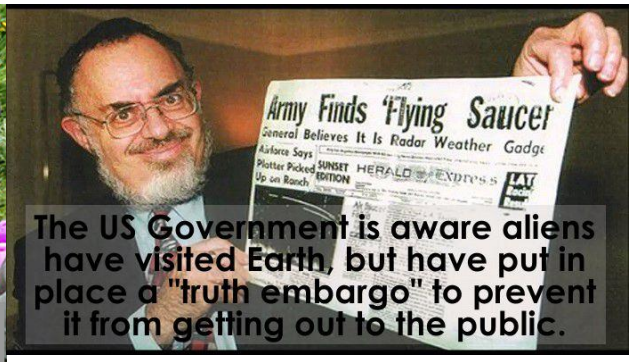

MK ULTRA
The CIA gave LSD to people in the 1960s in an attempt at mind control and MK Ultra is the modern continuation of that program


It's common knowledge that the Jews control the media


Pharmaceutical companies hide their research on vaccines because they think that it would cost too much to make safe ones
POISON


MONSANTO
BIOTECHNOLOGY
innovation – collaboration – speed
NaturalNews.com
GMO scientists just created "doomsday crops" containing RNA fragments that intentionally cause mass infertility


Chemicals like dichloramine and trichloramine are put in the water supply in order to control the population


Army Finds "Flying Saucer
General Believes It Is Radar Weather Gadge
Airforce Says Plotter Picked Up on Ranch
SUNSET EDITION
HERALD EXPRESS
The US Government is aware aliens have visited Earth, but have put in place a "truth embargo" to prevent it from getting out to the public.


Benghazi بنغازي
Jeudi 15 septembre 2011
The government allows some terrorist activities to continue to justify their spending on homeland security and the military


Certain celebrities faked their own deaths in order to escape the spotlight