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The Generality of Belief in Unsubstantiated Claims

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We tested the hypothesis that people show generality in their endorsement of unsubstantiated claims, employing more types of measures than used in previous studies. We found that measures of generic conspiracist ideation, specific fictitious conspiracy theory and false conspiracy theory beliefs were all strongly and positively intercorrelated. A multiple regression analysis revealed that the measures of specific false and fictitious conspiracy theories both significantly predicted generic conspiracist ideation. A second broader test of the generality hypothesis showed that these measures of false and fictitious conspiracy belief were positively intercorrelated with measures of psychological misconceptions, pseudoscience, poorly-supported psychological practices, and paranormal beliefs. However, the measures of misconceptions and pseudoscience displayed substantially lower correlations. The results provide support for the generality of acceptance of a wider variety of unsubstantiated claims

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than used in previous studies, but also suggest differences in the types endorsed based on the kind of knowledge and content measured.

INTRODUCTION

In recent years, large swaths of the general public have maintained belief in various poorly supported claims. For example, popular conspiracy theories in the U.S. include the false claim that former President Barack Obama was not born in the U.S. and that the 9/11/01 attacks involved collusion of American government officials. Four large, nationally representative surveys of people in the U.S between 2006 and 2011 revealed that half of the respondents endorsed at least one conspiracy theory (Oliver & Wood, 2014). Likewise, an alarming number of people believe the pseudoscientific claim that childhood immunizations cause autism spectrum disorder (autism) despite numerous well-controlled scientific studies showing that no relationship exists. Paranormal beliefs have long had a toehold in the general population, with 42% believing in ghosts, to take merely one example (Harris Polls, 2013). Moreover, studies have consistently shown that people maintain a diverse assortment of misconceptions regarding the mind and behavior (Lilienfeld et al., 2010). For example, in a sample of psychology students, Author and Lilienfeld (2015) found that 96% believed that raising self-esteem improves academic performance and 90% believed that matching teaching style to students' learning styles improves learning; neither of these beliefs has been consistently supported by controlled studies.

The pervasiveness of belief in such claims raises the important, but insufficiently examined, question of whether there is a general tendency to endorse diverse unsubstantiated, epistemic claims. More specifically, does the tendency to endorse one type of scientifically unsupported claim generalize to acceptance of other types of claims that lack support from high- quality evidence? For example, are people who hold paranormal beliefs also likely to

endorse false conspiracy theories, pseudoscientific claims, superstitions, and psychological misconceptions?

Determining the generality of endorsement of such claims is important. For example, psychological misconceptions and paranormal beliefs have often impeded the public's understanding of matters better explained by science (Author & Lilienfeld, 2017). Pseudoscientific claims have led people to use ineffective, sometimes dangerous treatments (Lilienfeld, 2007); and endorsement of conspiracy theories can lead to inaction in the face of a serious existential threat, as in accepting the belief that anthropogenic global warming is a hoax (Van der Linden, 2015). Therefore, knowing the degree to which people are broadly susceptible to accepting unsubstantiated claims could help educators and policy makers better understand the scope of the problem in their efforts to dispel such claims. Moreover, the psychological understanding of the generality of acceptance of various unsubstantiated claims could advance knowledge of factors that influence accurate and inaccurate belief. To this end, one important goal of applied cognitive psychology should be to understand the generality of people's acceptance of unfounded claims, which is the primary aim of this article.

Complicating efforts to understand the generality of endorsement of unsubstantiated claims is the fact that different types of claims tend to lack clearly differentiating features. Although labels for different unsubstantiated claims such as "conspiracy theory" and "pseudoscience" may imply that they are qualitatively different, these unsubstantiated claims often share overlapping features. For instance, people who endorse the conspiracy theory that the 1969 moon landing was a hoax are also endorsing a pseudoscientific claim that has been refuted by robust scientific evidence from moon rocks and verified photographs of the earth from the moon (Author, 2018). Moreover, pseudoscientists sometimes invoke conspiracy theories to explain skeptics' resistance to their claims (Lobato et al., 2014).

Similarly, measures of unsubstantiated beliefs often show considerable overlap in the classes of claims they are intended to measure. For example, the widely-used Revised Paranormal Belief Scale (RPBS; Tobacyk, 1993) contains items about paranormal abilities, such as telepathy, but also items about the existence of the Loch Ness monster, an unsupported claim advanced by some cryptozoologists. Other RPBS items describe superstitions, such as the belief that the number 13 is unlucky, which is highly implausible in light of modern science and mathematics.

Ontological category errors have been proposed to be a common feature of unsubstantiated beliefs. Such errors occur when a belief from one ontological category, such as a psychological category, is applied mistakenly to a different category, such as a physical or biological category. For instance, Lindeman and Aarnio (2007) found that believers in the paranormal were more likely than nonbelievers to accept a claim that mentalizes matter, such as "When summer is warm, flowers want to bloom" (Lindeman & Aarnio, 2007, p. 736). For instance, acceptance of the paranormal claim of astral projection or "soul travel," a belief often classified as a psychological misconception (Lilienfeld et.al., 2010), entails an ontological category error, because mind-body dualists who endorse this view often assume that the mind or soul is immaterial and can co-exist outside of the physical body. This dualistic interpretation of the out-of-body experience is at odds with the growing body of scientific evidence demonstrating that the (physical) brain is involved in producing the subjective experience of the mind leaving the body (Blanke, 2007). As believers in astral projection continue to resist the more plausible scientific explanation, their belief perseverance suggests that they are endorsing a pseudoscientific claim, not merely an isolated paranormal claim. This overlap in classifying astral projection as a paranormal belief associated with an ontological category error, and as a pseudoscientific claim and a psychological misconception illustrates the challenges in classifying this phenomenon.

Yet, not all unsubstantiated beliefs are associated with ontological category errors. For instance, the belief that catharsis or the venting of anger is an effective way to reduce aggression is typically contradicted by psychological research (Lilienfeld et al., 2010). It is thus a misconception by virtue of its inconsistency with scientific data, but it is not a category error. Likewise, the paranormal claim and superstition that objects can bring good luck does not necessarily reflect an ontological category error but rather an error in understanding the role of probability in random events. Many conspiracy theories concerning hidden governmental forces controlling important historical events are explained in political rather than in paranormal or supernatural terms. Nevertheless, although conspiracy theories often do not involve ontological category errors, belief in conspiracy theories is significantly predicted by CORE, a measure of ontological category errors and paranormal belief; but in one study, CORE did not significantly predict scores on the pseudoscience subscale (Lobato et al., 2014).

This analysis suggests that no single attribute seems to be shared by all of these types of unsubstantiated claims reviewed except the obvious, tautological, one: They all lack compelling evidentiary support. Moreover, these different types of unsubstantiated claims differ in how they are unwarranted. Some lack support from rigorous controlled studies, whereas others are disconfirmed by the historical record, mathematical theory, logical criteria, and other modes of inquiry. This analysis raises the question of whether differences in the content of unsubstantiated claims and the methods for evaluating them places limits on the generality of their endorsement.

Despite differences in content and in the warrant for such claims, many studies have revealed positive correlations among beliefs across a variety of domains of unsubstantiated claims, supporting the generality hypothesis. In the next sections, we review research on the generality of people's responses to measures of different types of unsubstantiated beliefs, as

well as research on the limits on this generality. Then, we report the results of a study intended to extend testing of the generality hypothesis by employing more measures designed to assess a larger variety of unsubstantiated claims than used in previous studies. Specifically, we examined whether scores on measures of conspiracy theories would all be intercorrelated along with psychological misconceptions, paranormal and superstitious beliefs, and knowledge of pseudoscientific and poorly-supported psychological practices.

The Generality of Conspiracy Theory Endorsement

Scientific evidence has provided consistent support for the generality of conspiracist claims. Conspiracy theories are alternative explanations that are offered in opposition to conventional and well-supported explanations of events (McCaffrey, 2012). Regardless of the specific details, they typically propose hidden forces colluding for nefarious reasons to deceive the general public. Conspiracy theories may be either correct or incorrect accounts of events; for example, the September 11th, 2001 attacks reflected a conspiracy on the part of Al Qaida terrorists, but not a conspiracy on the part of the United States government. Nevertheless, in recent years, the term 'conspiracy theory' has taken on the negative connotation of a false narrative that makes unnecessary assumptions.

Results from studies using a variety of methods have confirmed this generality of acceptance of conspiracies, a phenomenon attributed to "conspriacist ideation" (Moscovici, 1987) or "conspiracist mentality" (Swami et al., 2011). Although studies have shown that endorsement of specific conspiracy theories differs across cultures, various conspiracy theories are strongly intercorrelated within cultures (Swami et al, 2011; Wood, 2017). Goertzel (1994) found that belief in one conspiracy theory statistically predicted belief in others, and he described conspiracist thinking as *monological*, meaning that it is related to one narrow point of view, without considering other frames of reference and positions that are inconsistent with it.

Recently, three studies have approached the generality question by developing instruments that conceptualize belief in conspiracy theories as a generic construct. Brotherton, French, and Pickering (2013) developed the Generic Conspiracist Belief scale (GCB), a measure of generic conspiracist ideation. The GCB scale contains 15 statements that do not mention specific conspiracies but rather ask respondents to rate how true they consider different general themes found in specific theories. Brotherton et al. found that the GCB was positively correlated with endorsement of a 14-item measure of specific conspiracy theories, two other prominent conspiracy theories, and a fictitious conspiracy theory.

Adopting a different approach to developing a generic instrument, Wood (2017) constructed 17 generic statements that could be filled in with specific content from different conspiracies. For instance, one statement reads, "There is something very suspicious about the things the public has been told about _____"; and another reads, "People need to wake up and start asking questions about _____" (p. 522). Wood found that whether he filled in the 17 statements with "9/11" or with "vaccine safety," scores on the generic measures were strongly correlated with measures of 9/11 and vaccine conspiracy theories. Moreover, the scores on the two generic measures were strongly correlated.

Bruder et al. (2012) constructed the Conspiracist Mentality Questionnaire (CMQ), a 5-item, generic conspiracy theory measure that asks respondents to estimate the likelihood that each generally-stated, conspiracist-themed statement is true without mentioning any alleged conspiracy or conspirators. Bruder et al. found that the CMQ scores correlated positively (r = .58) with belief in 33 specific conspiracy theories. Swami et al. (2017) found that the CMQ showed moderately strong, positive correlations with two other measures of generic conspiracist ideation. Moreover, factor analytic studies of conspiracy theory measures have often found that a single factor accounts for the covariation among items (Brotherton & French, 2017).

Still other studies suggest that conspiracist ideation is a generic mode of thought that follows certain common themes without regard for differences in content. Wood, Douglas, and Sutton (2011) found that British participants who endorsed conspiracy theories regarding the death of Princess Diana often endorsed very different, even mutually exclusive theories about her death. Some who endorsed nefarious explanations regarding the causes of her death endorsed the belief that she was still alive. In a second study, Wood et al. found that those who endorsed a conspiracy theory about whether the U.S. military had killed Osama bin Laden in a raid in Pakistan were willing to endorse the mutually exclusive statements that he was already dead before the raid *and* that he was still alive. These results suggest that many people who endorse false conspiracy theories do not discriminate between the content of substantially different conspiracy theories. Instead, strongly held, overarching worldviews can be sufficient for participants to endorse even logically inconsistent conspiracy theories, overwhelming differences in their content.

Consistent with the idea that those who endorse conspiracy theories pay little attention to the specific content of such theories, Wood (2015) found a positive correlation between false conspiracy theories and statements describing true conspiracy theories, i.e., conspiracies that have been documented to have occurred. Other participants who rejected false conspiracy theories also tended to be skeptical of true conspiracy theories.

Another promising strategy for examining acceptance of conspiracist claims is to create fictitious conspiracy theories and assess their frequency of endorsement. This approach not only extends the form that a conspiracy theory might take, it also partly circumvents the problem that the truth value of some popular conspiracies is controversial. Swami et al. (2011) found that belief in a fictitious conspiracy theory about the energy drink Red Bull was significantly positively correlated with a measure of specific conspiracy theories and a measure of paranormal belief.

Taken together, these findings of a positive correlation between generic and specific conspiracies and the tendency of conspiracy believers to support fictitious and even logically inconsistent accounts raise the possibility that a general conspiracy mentality or conspiracist ideation exists. This general conspiracy mentality may partly reflect a disposition to only superficially consider differences in the content of specific conspiracies and may be triggered when a believer encounters the theme of a powerful entity colluding to deceive unsuspecting people.

Generality of Associations with Other Measures

Several studies have revealed that endorsement of conspiracy theories and general conspiracist ideation is related to endorsement of additional types of unsubstantiated epistemic claims. For example, belief in conspiracy theories is positively correlated with belief in the paranormal (e.g., Darwin, Neave, & Holmes, 2011; Douglas et al., 2016; Drinkwater, Dagnall, & Parker, 2012; Stähl & van Prooijen, 2018) and superstition (Steiger et al., 2013). Darwin et al. (2011) found that belief in conspiracy theories was significantly correlated with an overall measure of paranormal belief; however, a confirmatory factor analysis found that a model that omitted paranormal belief and contained paranoid ideation, schizotypy, and conspiracy beliefs showed a better fit than models with it. Bruder et al., (2013) found that scores on the CMQ, their generic conspiracist ideation scale, were positively correlated with scores on the Paranormal Belief Scale (PBS) of Tobacyk and Milford (1983), although the correlation was stronger with scores on the psi beliefs subscale than with the superstition subscale.

Lobato, Mendoza, Sims, and Chin, (2014) added pseudoscientific claims to the testing of endorsement of conspiracy theories and paranormal claims. Their survey included "science" items, with the false science items overlapping substantially with pseudoscientific claims, poorly-supported practices, and psychological misconceptions. For instance, they

labeled the misconception that the full moon causes people to behave abnormally a paranormal item. Lobato et al. acknowledged the overlap among the three kinds of unsubstantiated beliefs in their 37-item survey and found that the claims were positively intercorrelated. Specifically, paranormal belief items were positively correlated with conspiracy theory items (r = .52) and with endorsement of pseudoscience items (r = .36) while conspiracy theory items were also positively correlated with pseudoscience items (r = .49). In a hierarchical regression analysis, they found that along with CORE, scores on the conspiracy theory subscale and pseudoscience subscale were the most important predictors of scores on the paranormal subscale. Along with CORE, scores on the pseudoscience and paranormal subscales were the most important predictors of conspiracy theory subscale scores.

The Lobato et al. (2014) study used *a priori* criteria to identify paranormal beliefs, pseudoscientific claims, scientific claims, and conspiracy theories as unsubstantiated. In the present study, we accepted the received views of what experts in the respective fields have identified as unsubstantiated based on peer-reviewed scientific literature. Although the Lobato et al. study advanced support for the generality of endorsement of paranormal beliefs, pseudoscientific claims, and conspiracy theories, their 37-item inventory contained only three items that would be classified as psychological misconceptions. Consequently, neither it nor any other study has rigorously examined whether people who endorse conspiracy theories also tend to endorse more psychological misconceptions. Moreover, it is not known whether separate measures of misconceptions, paranormal belief, pseudoscience, and conspiracy theories are positively intercorrelated.

Psychological Misconceptions

Although the endorsement of conspiracy theories has not been explicitly studied in relation to psychological misconceptions, some studies have examined psychological

misconceptions in relation to paranormal beliefs, superstition, and pseudoscience. Psychological misconceptions are commonsense beliefs about behavior and mental processes that are contradicted by scientific research. For example, in a study using these terms in an overlapping way, Lindeman and Saher (2007) proposed that superstitious people would show ontological confusions, which they described as misconceptions related to a belief in vitalism. They compared a superstitious group scoring high on the PBS with a group of skeptics scoring low on their tendency to make ontological confusions and on their endorsement of complementary and alternative medicine (CAM) techniques, such as reflexology, homeopathy, and magnet therapy. Lindeman and Saher found that superstitious people showed more ontological confusions and scored higher on the CAM measure than did skeptics.

Author (2014) assessed psychological misconceptions, along with paranormal belief and poorly supported and pseudoscientific practices. They administered the Test of Psychological Knowledge and Misconceptions (TOPKAM), in which participants are asked to distinguish evidence-based findings from corresponding psychological misconceptions. In addition, they administered the Revised Paranormal Belief Scale (RPBS), the Knowledge of Fields Inventory (KOFI) to measure the ability to distinguish knowledge of pseudoscientific from scientific fields, and the Test of Evidence-based Theories and Practices (TEBTP) to measure the ability to distinguish well-supported from poorly-supported and pseudoscientific practices.

Author et al. (2014) found positive and significant intercorrelations among the scores on the KOFI pseudosciences scale, the TEBTP poorly-supported/pseudoscience scores, the RPBS, and TOPKAM scores. Specifically, RPBS scores were positively albeit modestly correlated with TOPKAM misconceptions (r = .22), and KOFI pseudoscience scores were positively and strongly correlated with TOPKAM misconceptions (r = .50), while TEBTP

poorly-supported/pseudoscience scores were strongly positively correlated with TOPKAM misconceptions (r = .51). Although KOFI pseudoscience scores and TEBTP poorly-supported/pseudoscience scores significantly predicted TOPKAM scores in a multiple regression analysis, RPBS scores did not. Nevertheless, RPBS scores did significantly predict TOPKAM scores when they were entered into another regression analysis along with full-scale KOFI and TEBTP scores, which also predicted TOPKAM scores. These results provide more support for the generality of endorsement of unsubstantiated claims by including new measures of psychological misconceptions and pseudoscience, but they suggest that paranormal belief may be less strongly associated with endorsement of misconceptions.

Tests of Hypotheses

To more fully test the generality hypothesis than in previous studies, we used more measures of specific unsubstantiated beliefs, testing two related forms of this hypothesis. To test the first general conspiracist mentality hypothesis, we administered the GCB and a new measure that assessed belief in three different varieties of specific conspiracy theories: true or historically verified conspiracies, fictitious conspiracies created for this study, and false conspiracies or ones generally considered by experts to be false. Based on research showing substantial correlations between general measures of conspiracy theories and specific conspiracy theories (Brotherton et al., 2013; Wood, 2017), we expected that a measure of generic conspiracist ideation, the GCB, would be positively intercorrelated with specific false conspiracy theories and with specific fictitious conspiracy theories. Furthermore, we expected that endorsement of fictitious and false conspiracy theories would predict endorsement of generic conspiracist ideas on the GCB.

We tested the second, more inclusive, hypothesis regarding the generality of endorsement of unsubstantiated claims by administering measures of psychological misconceptions, pseudoscience, paranormal and superstitious belief, along with specific false

and fictitious conspiracy beliefs. We predicted that all of these measures would be positively and robustly intercorrelated based on studies supporting the generality in belief in unsubstantiated claims. We chose more and different instruments designed to assess specific unsubstantiated claims in contrast to the Lobatto et al. (2014) study, which used a single measure designed to assess multiple different unsubstantiated claims. Thus, our results have the potential to broaden support for the generality hypothesis.

Finally, to investigate and clarify the structure of the knowledge and patterns of endorsements of unsubstantiated claims, we conducted an additional exploratory factor analysis of all of the measures of unsubstantiated claims examined in the earlier analyses. Previous research has seldom examined the structure of relationships among various measures of unsubstantiated beliefs. These analyses could reveal differences in types of unsubstantiated beliefs and the knowledge associated with each that could imply limits on the generality of endorsement of unsubstantiated claims. Specifically, one might expect the measures of conspiracy theories to converge on a single factor, but it is not known whether the other measures of unsubstantiated claims would also converge onto that factor or onto a different factor or factors.

METHOD

Participants

We tested 309 students in six sections of a general psychology course at a small, comprehensive, mid-Atlantic university. To handle missing data, we developed exclusion criteria based on participants' errors or unresponsiveness. Specifically, a participant's data was excluded if he or she was missing complete data, answered the same number (e.g., 3 on every response) on more than two measures, consistently completed measures incorrectly (e.g., answered with check marks instead of numbers), or did not answer more than three questions. If a participant provided the same number for every response on one measure, did

not entirely complete a measure, or did not follow directions in completing one measure, data from only that one measure was excluded on a pairwise basis. After applying our exclusion criteria, we were left with 286 participants for the primary analyses.

This sample included 55.4% females and 43.9% males with a mean age of 18.61 (*SD* = 1.07) years. The sample consisted primarily of freshmen (69.8%), but also contained 17.2% sophomores, 8.8% juniors, and 4.2% seniors. Participants' ethnic backgrounds were 46.7% African American, 37.9% White, 5.7 % Latino/Hispanic, 1.1% Asian, and 8.8% reporting "other."

Measures

The following measures of unsubstantiated claims comprised the set administered in this study, but we also administered three measures of thinking dispositions, the results of which we report elsewhere.[1]

Generic Conspiracy Belief (GCB)

The GCB scale is a 15-item scale containing statements describing conspiracies in general terms that are rated on a 5-point Likert-type scale ranging from 1 = *Definitely not true* to 5 = *Definitely true*. Statements contain general themes commonly found in conspiracy theories, such as secret groups colluding to wield power and hide events, secret technologies that have been used on the public, and scientists manipulating evidence to conceal the truth. For instance, item 8 states, "Evidence of alien contact is being concealed from the public," item 9 states, "Technology with mind control capacities is used on people without their knowledge," and item 12 states, "Certain significant events have been the result of the activity of a small group who secretly manipulate world events." See Brotherton et al., (2013, p. 15). In the present study, the internal consistency (Cronbach's alpha) of the GCB was .90.

Specific Conspiracist Belief (SCB)

We constructed the SCB, a 30-item inventory to assess endorsement of statements describing specific conspiracies on the same 5-point Likert-type scale as used in the GCB. The SCB contains three scales: 10 false conspiracy theories (ones that are contradicted by received explanations of events), 10 true conspiracies (historical ones, verified to have occurred), and 10 fictitious conspiracy theories (ones fabricated for this study). Each of the three types of conspiracy theories corresponds to a generic statement from the GCB scale but expressed in specific form. For instance, a false SCB item, "Alien ships crashed near Roswell, New Mexico in 1947 and the U.S. government has covered it up", corresponds to GCB item 8 mentioned earlier. A true SCB item, "The U.S. Central Intelligence Agency oversaw research on mind-control techniques using LSD and electro-shock therapy on U.S. citizens without their consent," corresponds to GCB item 9. A fictitious SCB item states, "A group of international bankers secretly crashed the world's financial markets to produce the 2008 economic collapse so they could buy up more of the world's assets once they were devalued," corresponds to GCB item 12. The SCB items are quasi-randomized in blocks of three each. In the present study, the internal consistency (Cronbach's alpha) of the SCB full scale was .91.

Test of Psychological Knowledge and Misconceptions (TOPKAM)

We administered the TOPKAM of Author which contains 40 questions presented in a forced-choice, two-response format for assessing both factual knowledge of psychology and susceptibility to common psychological misconceptions (Author, 2016). The TOPKAM samples 40 of the 50 misconceptions discussed in the essays reviewing literature on psychological misconceptions in Lilienfeld et al. (2010), including myths about the brain, perception, aging, memory, intelligence, learning, consciousness, emotion, interpersonal behavior, personality, mental illness, psychology and the law, and psychological treatments.

Each TOPKAM item begins with "Which is most true...". For example, one question asks, "Which is most true about the Rorschach (inkblot) Test?" followed by two response options: "a. It is like a 'psychological X-ray' because it can penetrate the unconscious mind and tell a great deal about personality" versus "b. It can detect marked thinking disturbances but is not effective in detecting depression or anxiety disorders." The "b" option is correct based on studies showing that many or most indices of the Rorschach test lack adequate construct validity for detecting most psychiatric diagnoses (Wood, Nezworski, Lilienfeld, & Garb, 2003). All TOPKAM items are quasi-randomized with an equal number of "a" and "b" response options assigned to misconceptions versus correct statements. In the present study, which focused on beginning psychology students, the internal consistency Kuder Richardson-20 (equivalent to Cronbach's *alpha* for dichotomous items*)* was *KR*-20 = .50, somewhat lower than when measured on more advanced psychology students, *KR*-20 = .74 (Author et al, 2014).

Test of Evidence-based Theories and Practices (TEBTP)

To assess endorsement of poorly-supported and pseudoscientific practices, we administered the TEBTP-revised of Author (2016). The TEBTP contains 40 items, one for each of 40 therapies, treatments, or practices. Half of the items correspond to poorly-supported and/or pseudoscientific practices, based on the research literature (Lilienfeld, Lynn, & Lohr, 2014) and a Delphi study of clinicians rating poorly supported practices (Norcross, Koocher, & Garafalo, 2006). The other 20 correspond to well-supported treatments supported by high-quality outcome research summarized by Chambless and Ollendick (2001) and others.

TEBTP instructions ask respondents to rate each practice on how well it is supported by high-quality scientific research on a 5-point Likert-type scale: 1 = *not at all well supported* to 5 = *very well supported.* The internal consistency of both subscales (poorly-supported and

evidence-based practices) was Cronbach's *alpha* = .82 on a sample of undergraduate and graduate psychology students, with seniors and graduate students being significantly more accurate than beginning majors (Author et al., 2014). In the present study, Cronbach's *alpha* = .82 for the TEBTP poorly-supported scale, and Cronbach's *alpha* = .84 for the evidence-based scale.

Knowledge of Fields Inventory (KOFI)

To assess the ability to distinguish pseudoscientific from scientific fields, participants completed the 14-item KOFI, rating the scientific status of each of 14 fields on a 5-point Likert scale: 1 = *not at all scientific* to 5 = *very scientific* (Author, 2016). The KOFI contains two scales, one for pseudosciences (7 items) and one for sciences (7 items). Respondents rated the seven scientific fields and approaches (astronomy, chemistry, cognitive behavior therapy, evolutionary biology, neuroscience, physics, and psychology) as significantly more scientific than the pseudosciences (alchemy, astrology, creation science-intelligent design, Freudian psychoanalysis, parapsychology, phrenology, and Scientology) as reported in Author (2016). In the present study, the internal consistency of the KOFI pseudosciences scale was Cronbach's *alpha* = .77 and for sciences scale, Cronbach's *alpha* = .84.

Revised Paranormal Belief Scale (RPBS)

To assess paranormal belief, participants completed a 30-item version of the RPBS, a commonly used measure of paranormal belief that has displayed promising internal consistency and construct validity in a number of investigations (Tobacyk, 2004). We adapted the RPBS to include more superstition (luck) items, reversed some of the positively phrased items and omitted two items concerning the existence of the Loch Ness monster and Bigfoot because we deemed these items to assess claims made in the pseudoscience cryptozoology. Each item describes a different paranormal phenomenon rated on a 7-point Likert scale: 1 = *strongly disagree* to 7 = *strongly agree*. Internal consistency of the adapted

RPBS in the present study was Cronbach's *alpha* = .83. The correlation between the new RPBS luck scale and the adapted RPBS without the superstition/luck items was r (283) = .51, $p < .01$.

Student Opinion Scale (SOS)

To assess students' test-taking motivation, participants completed the 10-item SOS of Sundre (2007). Each SOS item is answered on a scale with five categorical response options ranging from A = *Strongly disagree* to C = *Neutral* to E = *Strongly agree*. The SOS contains two factors, the effort expended in completing the measure and the importance of the assessment to them, with Cronbach's *alpha* ranging from .80 to .89 in a sample of over 15,000 students (Sundre & Moore, 2002). We transformed SOS scores to numeric values, (e.g., A = 1 to C = 3 to E = 5). Cronbach's *alpha* for total SOS scores in this sample was .75. Analysis of total SOS scores in this sample showed that test-taking motivation was moderate (M = 3.43, SD = .0.60) but significantly greater than the neutral value of 3, $t(283) = 12.16$, $p < .001$).

Procedure

The measures were assembled into a booklet with the consent form first, followed by the TOPKAM, and then either the GCB or the SCB depending on the counterbalanced order of the two forms. Following the conspiracy theory measure was the adapted RPBS, the REI, the TEBTP, the Skepticism Scale, the KOFI, the GCB or SCB, the Cynicism Scale, the SOS, and finally the demographics form.

The first author tested students during a regularly scheduled class session as part of a learning outcomes assessment study for the university. Lab assistants and graduate students distributed the booklets to participants who were randomly assigned to the two orders. As part of securing consent, the first author instructed the students in general terms about the study, informing them that their data would be kept secure and confidential. He also told

them that although the assessment was not part of their permanent record, it was important to the department, urging them to do their best and answer honestly. He further informed them that they would receive partial course credit for their participation. After attendance was taken and consent was secured, the first author read the TOPKAM instructions, and the participants were allowed the remainder of the 75-minute class period to complete the booklet.

RESULTS

Analyses of Conspiracy Theory Measures

We first tested whether scores on the GCB and the SCB scales differed for the two orders of presentation, using independent samples *t*-tests. Table 1 shows that there was no order effect on GCB scores, but all three SCB scales showed significant effects of order. For both of the SCB fictitious and false scales, receiving the GCB scale first (order 1) was associated with higher scores than when the SCB scales were presented first (order 2). Because of these order effects, we next report results of correlational analyses of the SCB scales overall and then report any results that differed for the two orders.

To test the generality of endorsement of conspiracy theory beliefs, we calculated the correlations between the GCB Scale and the SCB fictitious conspiracies scale and the SCB false conspiracies scale. The correlation between the GCB and SCB false conspiracy theories was significant and large in magnitude, $r(273) = .77$, $p < .001$ as was the correlation between GCB and SCB fictitious conspiracy theories, $r(273) = .74$, $p < .001$. The correlation between SCB false conspiracy theories, and SCB fictitious conspiracy theories was also significant and substantial, $r(281) = .86$, $p < .001$. All three correlations remained significant following a conservative Bonferroni correction. To further investigate the correlation of the three conspiracy theory measures, we calculated the correlation of these measures with SCB true

conspiracies and found that SCB true conspiracy theory scores were also positively correlated with the GCB, r = .51, with SCB false, r = .45, and with SCB fictitious, r = .43.

To further test the generality of conspiracy theory endorsement, we conducted a simultaneous multiple regression, predicting GCB scores from false SCB scores and fictitious SCB scores. The overall analysis was significant, $F(2,273) = 218.16$, $p < .001$, with the model accounting for 62% of the variance, adjusted $R^2 = 61$. SCB false conspiracy theories scores significantly predicted GCB scores, $B = .50$, $t(273) = 6.85$, $p < .001$. Also, fictitious SCB scores significantly predicted GCB scores, $B = .50$, $t(273) = 4.23$, $p < .001$. Although the SCB measures were strongly correlated, the VIF statistic for the SCB subscales regression was 3.84, well below 10, and tolerance was .26, well above 0.1, indicating that multicollinearity was not a problem.

Additional multiple regression analyses for the two orders showed similar results for order 2, but the analysis for order 1 produced somewhat different results, $F(2,136) = 115.87$, $p < .001$, with the model accounting for 63% of the variance; adjusted $R^2 = 63$. Although SCB false scores significantly predicted GCB scores, $B = .67$, $t(136) = 6.15$, $p < .001$, fictitious SCB scores did not predict GCB scores for order 1, $B = .14$ $t(136) = 1.33$, $p = .19$. Overall, these results support the hypothesis that specific unsubstantiated conspiracy theories are good predictors of a measure of generic conspiracist ideation but fictitious SCB scores are not as good when the measure appears after the GCB.

Correlations of Measures of Unsubstantiated Beliefs

To more fully test the generality of endorsement of unsubstantiated claims, we examined the correlations among three other measures of unsubstantiated beliefs in addition to the two measures of unsubstantiated conspiracy theory beliefs. Table 2 shows that all six measures were positively intercorrelated, with 12 correlations at $p < .001$. Following Bonferroni correction, only two of the correlations were no longer significant: those between

SPB fictitious conspiracy theories scores and TEBTP non-evidence-based and KOFI pseudoscience sum. Likewise, the correlations for order 1 between SCB fictitious conspiracy theories scores and TEBTP non-evidence-based and KOFI pseudoscience sum were no longer significant. For order 2, the correlations between TEBTP non-evidence-based scores and KOFI pseudoscience sum and TOPKAM misconceptions were no longer significant. To further extend the test of the generality hypothesis, we calculated the correlations of the superstition/luck subscale (in place of the full RPBS) with each of the other five measures of unsubstantiated claims. After applying Bonferonni correction, nine correlations remained significant, whereas the three correlations of TEBTP poorly-supported scale scores with TOPKAM, SCB fictitious conspiracies, and RPBS luck scores did not.

Further analyses of the correlations in Table 2 suggest that differences in the relations between variables may contribute to uneven support for the generality of endorsement of unsubstantiated claims. For instance, the correlation between specific conspiracy theories and fictitious conspiracy theories was very large (r = .86), accounting for 74% of the total variance in the two variables; whereas, the correlation between KOFI pseudoscience and TOPKAM and fictitious conspiracy theories was small (r = .17), accounting for only 3% of the variance; and the correlation between TOPKAM misconceptions and RPBS was small to medium (r = .37), accounting for 13.7% of the total variance in the two variables. To better quantify and understand these differences, we conducted factor analyses of the measures, exploring possible structural differences in the how different types of measures are organized.

Factor Analysis of Measures of Unsubstantiated Claims

To better understand the structure and organization of responses across the six different measures of unsubstantiated beliefs, we conducted an exploratory factor analysis of scores on the measures using the principal axis procedure to extract factors. Examination of both the Kaiser criterion (eigenvalue > 1.0) and the scree plot strongly suggested a two-factor

solution. This analysis identified two factors accounting for 63.2% of the variance, with factor 1 accounting for 45.7% and Factor 2 accounting for 17.5% of the variance. The eigenvalues for factors three and four were 0.81 and 0.75, respectively.

Inspection of the correlations in Table 2 suggested that most, if not all, of the variables were intercorrelated; hence we used an oblique (promax) rotation, allowing factors to be correlated. Table 3 displays the pattern matrix from this analysis, which approximates simple structure. The two conspiracy theory measures loaded strongly on the first factor and much more weakly on the second. We labeled this first factor "unsubstantiated conspiracy theories." TOPKAM misconceptions, the two measures of pseudoscience and poorly-supported practices, and the RPBS, the measure of paranormal belief all loaded strongly on the second factor and less strongly on the first factor. We labeled this second factor "unsubstantiated science-related claims."

As shown in Table 3, one exception to this simple structure interpretation was the RPBS. Although the misconception and pseudoscience measures aligned well with factor 2, RPBS displayed a loading of .282 on factor 1 and .489 on factor 2. This higher loading on factor 1 in relation to the other much lower loadings suggests that RPBS is related to both factors, likely contributing to the correlation of r = .61 between them. To examine the contribution of RPBS, we conducted a similar factor analysis removing the RPBS. This omission yielded a somewhat lower correlation between the factors, r =.50, supporting the contribution of RPBS in the overlap of the two factors.

To investigate the possibility that our initial analyses overlooked a third factor containing paranormal belief, we repeated the factor analysis but extracted three factors, again rotating the factors with promax. The analysis did not reveal a clearly distinguishable third factor containing paranormal belief. These results support a two-factor, oblique solution with correlated factors and suggest that the measures of false science-related claims are more

related to each other than to the measures comprising unsubstantiated conspiracist claims, implying limits on the generality of endorsement of unsubstantiated claims.

We tested this interpretation of the two factors in two ways. First, we used a simultaneous multiple regression analysis to predict GCB scores from the regressed factor scores for factors 1 and 2 and found it was significant, $F(2,244) = 192.88$, $p < .001$, with the model accounting for 61% of the variance,; adjusted $R^2 = .61$. Supporting the idea of generic themes underlying factor 1 (unsubstantiated conspiracy theories), factor 1 scores significantly predicted GCB scores, $B = 0.74$, $t(244) = 12.50$, $p < .001$ while factor 2 scores (unsubstantiated science-related claims) did not, $B = 0.06$, $t(244) = 1.00$, $p = .32$.

Second, we performed a follow-up analysis comparing the number of misconceptions versus correct answers on the TOPKAM. A chi-square analysis, $X^2 = 78.12$, $p < .001$, showed that the frequency of psychological misconceptions endorsed (54.1%) was significantly greater than the frequency of correct answers (45.9%). This result suggests that overall, students were unable to reliably distinguish most misconceptions from scientifically supported alternative claims and that they lacked adequate knowledge of psychology, which, at least, partly contributed to their deficient performance.

Finally, although our focus was on the generality of endorsement of unsubstantiated claims, we conducted a factor analysis on the same unsubstantiated belief measures as before but added SCB true conspiracies. As shown in Table 4, the factor pattern matrix was similar to that of the previous analysis found in Table 3. SCB true conspiracies loaded on the same conspiracy theory factor along with SCB false and SCB fictitious scales. This new two-factor solution with true SCB scores accounted for slightly less of the variance (59.8%) with factor 1 accounting for 41.4% and Factor 2 accounting for 18.4% of the variance. The correlation of $r = .63$ between the two factors was slightly larger when SCB true scores were included. These results suggest the need to further investigate the relation between conspiracy theory

endorsement and endorsement of pseudoscientific and unsubstantiated science-related claims, given that the two factors were correlated and RPBS shared variance with both factors.

Analysis of Specific Conspiracy Theories and Unsubstantiated Measures

To examine pseudoscientific and scientifically unsupported Specific Conspiracy Belief (SCB) items in relation to the measures of unsubstantiated beliefs, we created two new subscales from SCB items, calculating the means of the two types of items, regardless of their truth values. One subscale was composed of SCB items that referred to pseudoscientific and scientifically unsupported claims, whereas the other subscale was composed of items referring to actions of the government and powerful groups that made no reference to pseudoscientific and scientifically-unsupported claims.

Next, we calculated the correlations between each new SCB subscale and the measures of unsubstantiated claims. Scores on the SCB pseudoscience/unsubstantiated subscale were positively correlated with KOFI endorsement of pseudosciences (r = .17, p <.01), with TEBTP non-evidenced based practices (r = .14, p < .05), with TOPKAM misconceptions (r = .25, p < .001, and with RPBS (r = .48, p < .001). The SCB government/powerful group subscale items were similarly correlated with KOFI endorsement of pseudosciences (r = .12, p <.05), with TEBTP non-evidenced based practices (r = .15, p < .05), with TOPKAM misconceptions (r = .19, p = .001), and with RPBS (r = .40, p < .001.

We followed up these correlations with simultaneous multiple regression analyses predicting each new SCB subscale from the same measures of unsubstantiated beliefs. The analysis of SCB pseudoscientific/unsubstantiated items was significant, $F(2,249) = 20.32$, p < .001, R^2 = 25; adjusted R^2 = 23; but only RPBS scores were a significant predictor, B = .47, $t(249) = 7.24$, p <.001. Likewise, the regression analysis of SCB government/powerful group items was significant, $F(2,249) = 13.90$, p < .001, R^2 = 18; adjusted R^2 = 17. Again, only RPBS scores were a significant predictor, B = .39, $t(249) = 6.06$, p <.001. Taken together,

these results further support the generality of endorsement of unsubstantiated claims, but reveal that paranormal belief consistently predicts specific conspiracy theory endorsement as well as pseudoscientific and unsubstantiated science-related claims made is specific conspiracy theories.

DISCUSSION

The purpose of this study was to test the hypothesis that people tend to show generalized acceptance of unsubstantiated epistemic claims. We adopted a two-tiered approach to testing the generality hypothesis, first testing the generality of acceptance of unsubstantiated conspiracy theories and second, testing the hypothesis more broadly by using more measures of unsubstantiated claims than in any previous study. As expected, the GCB, a measure of generic conspiracist ideation, showed strong positive correlations with measures of specific fictitious conspiracy theories and of false conspiracy theories, which also exhibited strong positive intercorrelations. A simultaneous multiple regression analysis showed that both the measure of specific false conspiracy theories and the measure of fictitious conspiracy theories significantly predicted GCB scores.

Overall, these results provide strong support for the generality of endorsement of conspiracy theories and themes, consistent with the notion of a broad conspiracist mentality. In addition, they replicate the results of Swami et al. (2011), who found that endorsement of a measure of fictitious conspiracy theories concerning an energy drink was positively correlated with endorsement of specific conspiracy theories. Our study extends these findings by showing a positive correlation between generic conspiracist ideation and measures of fictitious and false conspiracy theory beliefs.

One qualification to the support for the generality of endorsement of conspiracy theories was the order effects we obtained for the assessment of the GCB and SCB. When the SCB was completed first and the GCB second (order 2), both SCB fictitious and SCB

false conspiracies significantly predicted GCB scores, but the multiple regression for order 1 scores showed that SCB fictitious scores did not significantly predict GCB scores, although SCB false conspiracies did. To our knowledge, no other study has reported order effects with conspiracy theory measures, and these effects should be interpreted with caution pending independent replication. Nevertheless, our provisional results suggest that researchers may want to control for order effects in future studies. One potential explanation for why specific conspiracy belief was higher after GCB than when generic beliefs followed specific beliefs is that the GCB items served to prime or make specific beliefs more acceptable, but not vice-versa. Supporting this explanation are the findings that when GCB appeared first (order 1), GCB scores, SCB false, and SCB fictitious scores were all significantly higher than when GCB was second (order 2), while SCB true conspiracies were significantly higher when GCB was second (order 2). It may be that the GCB scale primes or lowers the threshold for recognition of specific false and fictitious conspiracy theories, but not specific true conspiracies (Brotherton, 2015).

We used the GCB to measure generic conspiracist ideation, which because of its vague statements could elicit endorsement of a wide variety of specific conspiracist claims. Our results suggest that this tendency indeed occurred for individuals who tended to endorse conspiracies. As such, the GCB may not be especially useful in identifying strong believers in conspiracy theories. Another limitation of the GCB, perhaps also contributing to a problem in identifying believers, is that the scale midpoint, "not sure/cannot decide," may be measuring a reluctance to respond rather than a moderate level of belief endorsement. Future research should investigate the psychometric properties of a scale format that forces a choice between "not true" and "true" options, omitting an "unsure" midpoint.

When we tested the second broader form of the generality hypothesis, we found that the measures of specific false and fictitious conspiracy theories, psychological

misconceptions, pseudoscience and poorly-supported psychological practices, and paranormal and superstitious beliefs were also positively intercorrelated. These results replicate positive correlations between conspiracy theory measures and measures of paranormal belief (Darwin, Neave, & Holmes, 2011; Douglas et al., 2016; Drinkwater, Dagnall, & Parker, 2012; Stähl & van Prooijen, 2018), between conspiracy theory endorsement and belief in superstition (Steiger et al., 2013), and between conspiracy theory measures and measures of paranormal belief and superstition (Swami et al., 2011).

The results also replicate the intercorrelations of paranormal, conspiracy theory, and pseudoscience items found by Lobato et al. (2014), extending their findings by adding measures of psychological misconceptions, poorly-supported practices, and knowledge of pseudoscientific fields, all of which were positively intercorrelated with the measures of conspiracy theories and both paranormal and superstitious beliefs. Furthermore, our results are consistent with those of Author et al., (2014), who found that psychological misconceptions were positively correlated with evaluation of the scientific support for KOFI pseudosciences and TEBTP poorly-supported and pseudoscientific practices.

Our results and those from several other studies provide converging evidence of a general susceptibility to unsubstantiated epistemic claims. Nevertheless, Table 2 also shows marked disparities in the strengths of the correlations among different groups of measures, which suggest possible boundary conditions on the generality hypothesis.

Specifically, our exploratory factor analysis suggested a two-factor solution that grouped the false and fictitious specific conspiracy theory measures under an overarching factor that we have termed “unsubstantiated conspiracy theories” and a second factor, grouping the measures of misconceptions and pseudoscience/poorly-supported practices and paranormal beliefs, that we termed “unsubstantiated science-related claims.” The analysis showed evidence of good simple structure, with the exception of RPBS, which loaded

primarily on factor 2 but also loaded on factor 1. Because RPBS shares variance with both factors and has been repeatedly shown to be related to conspiracy theories, studies should continue to investigate its complicated relations with other unsubstantiated beliefs.

We argue that the conspiracy theory measures loading on the first factor refer to specific claims about hidden forces conspiring to deceive the public for nefarious reasons that may be associated with a few common conspiracist themes found in the GCB scale. In contrast to factor 1, the measures associated with factor 2 assess acceptance of misconceptions and claims regarding pseudoscience and of the efficacy of poorly-supported practices, as well as specific paranormal beliefs. As such, they reflect a broad swath of scientifically unsubstantiated claims. Endorsing the unsubstantiated claims associated with the second factor may be due to a lack of knowledge of diverse scientific findings, including those in psychological science. Broadly speaking, the difference between these two factors may reflect the distinction between "contaminated mindware" and "mindware gaps," with the first referring to irrational beliefs in the presence of adequate knowledge and the latter referring to incorrect beliefs stemming from knowledge deficits (Perkins, 2005; Stanovich, 2009).

Supporting the idea of generic conspiracist ideational themes, factor 1 scores, measuring unsubstantiated conspiracy theories, significantly predicted GCB scores, whereas factor 2 scores, measuring unsubstantiated science-related claims, did not. Support for the interpretation of the second factor as associated largely with a lack of scientific knowledge (a "mindware gap") came from a comparison of correct versus incorrect responses on the TOPKAM showing that the frequency of psychological misconceptions endorsed was significantly greater than the frequency of correct answers. This result suggests that most students were unable to reliably distinguish misconceptions from scientifically-supported, alternative claims, perhaps because they lacked adequate knowledge of psychology.

In contrast, the endorsement of conspiracy theories may arise less from a lack of knowledge and more from irrational thinking, namely, suspicious attitudes concerning hidden malevolent agents acting in various situations ("contaminated mindware"). Wood (2017) argued that his measure of generic conspiracist ideation was measuring suspiciousness in conspiracy-minded individuals. Moreover, belief in conspiracy theories correlates positively with cynicism (Swami et al., 2011). Other research has shown that people who endorse conspiracy theories accept logically inconsistent forms of similar conspiracy theories (Wood, 2013), and even fictitious theories, as found in Swami et al. (2011) and in our study. From this perspective, it is not surprising that SCB true conspiracies also loaded strongly on the conspiracy theories factor. Participants who tended to endorse false and fictitious conspiracy theories also tended to endorse true conspiracy theories because they were probably reminded of the underlying generic conspiratorial themes. Supporting this interpretation, the correlation between GCB and SCB true conspiracy theories was substantial and significant (r = .51, p <.001).

Conspiracy believers' lack of attention to the content of conspiracy theories is probably associated with an intuitive (nonreflective) thinking style, fueled by a distrust of hidden powers. In one respect, then, endorsement of conspiracy theories and psychological misconceptions may partly arise from a similar thinking disposition. Using the Rational–Experiential Inventory of Pacini and Epstein (1999), Author et al. (2014) found that endorsement of psychological misconceptions was positively correlated with a more intuitive thinking style. Using the Inventory of Thinking Dispositions in Psychology of Author (2016), they found a more reflective thinking style correlated negatively with misconceptions. In ongoing work, we are presently examining the roles of cynicism, skepticism, and intuitive and reflective thinking styles in the endorsement of conspiracy theories and other unsubstantiated claims.

Conclusion

The conclusion that there is a general susceptibility to endorse unsubstantiated epistemic claims gathers strength inductively by accumulating high-quality support (Author, 2018). Our findings of positive intercorrelations between measures of unsubstantiated conspiracy theories, paranormal belief, superstitious belief, endorsement of pseudoscientific and poorly-supported practices, and acceptance of psychological misconceptions provide added support for the generality hypothesis. However, factor analysis of the measures of unsubstantiated claims provided evidence for limits on the generality hypothesis, suggesting that measures of scientific knowledge may be interrelated differently than measures of conspiracy theories, with the former perhaps largely reflecting mindware gaps and the latter largely reflecting contaminated mindware (Stanovich, 2006). Nevertheless, further support for the generality hypothesis comes from the substantial correlation of the two factors (r = .60), consistent with the position that these two domains of false belief may stem in part from shared dispositions favoring a preference toward intuitive thinking and less reliance on reflective, analytic thinking.

Clearly, many issues remain regarding the generality of endorsement of unsubstantiated claims. Researchers should seek to replicate our findings with larger, more diverse samples using confirmatory factor analysis, and resolve these issues by testing the generality hypothesis using other measures of unsubstantiated claims. In addition, the extent to which the generality we observed is attributable to general cognitive ability is unknown, although it is worth noting that measures of irrational thinking tend to bear only modest associations with intelligence (Stanovich & West, 2014). Despite these qualifications, our findings suggest a potential new focus for future research. Our findings should be of interest to epistemologists, psychologists, and instructors interested in the acceptance of knowledge claims and beliefs. They may suggest to epistemologists that people often accept a variety of

unsubstantiated claims with little regard for their content or for high-quality evidence refuting them. Psychologists may question why people accept such diverse epistemic claims, wondering if underlying individual differences in personality or cognitive style account for greater susceptibility in some people.

Finally, instructors may be disheartened by our finding of a general susceptibility to unsubstantiated claims in students, but perhaps heartened by the possibility that a domain-general strategy emphasizing critical thinking may be discovered to counteract (or "debias"; see Lilienfeld, Ammirati, & Landfield, 2009) many of these claims. More research on this possibility is needed, and some of our findings suggest that constraints on the generality of the endorsement of unsubstantiated claims may hinge on the type of claims. Specifically, the stronger intercorrelations among conspiracy measures than among measures of unfounded science-related claims suggest that particular educational approaches may be needed for different unsubstantiated claims.

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Footnotes

[1]We also administered measures of traits and dispositions. These included: the Rational-Experiential Inventory of Pacini and Epstein (1999), the Skepticism Scale of Author (2018) and a new scale, the Cynicism Scale (Author 2017b).

Table 1. *Means and Standard Deviations (in Parentheses) for t-test Results of Order on Conspiracy Theory Measure Scores*

Measure	Order 1	Order 2	*t*	*df*	*p*
Generic Conspiracist Belief	45.4 (11.5)	43.8 (11.3)	1.2	274	.23
Specific Conspiracist False	27.3 (7.8)	25.2 (6.8)	2.4	281	.02
Specific Conspiracist Fictitious	25.9 (7.7)	23.7 (6.7)	2.5	281	.02
Specific Conspiracist True	32.4 (7/2)	34.9 (5.9)	-3.2	281	.01

Note. Order 1 = GCB scale first, SCB scales second. Order 2 = SCB scales first, GCB scales second.

Table 2. *Correlations among Measures of Unsubstantiated Claims with Means and Standard Deviations*

Measure	1	2	3	4	5	6
1. TOPKAM Misconception	1.00	-	-	-	-	-
2. TEBTP Poorly-Supported	.18**[a]	1.00	-	-	-	-
3. KOFI Pseudo-Sciences	.22***	.21***	1.00	-	-	-
4. RPBS Adapted Paranormal	.37***	.26***	.23***	1.00	-	-
5. SCB False Conspiracies	.28***	.21***	.22***	.53***	1.00	-
6. SCB Fictitious Conspiracies	.27***	.18**[a]	.17**[a]	.50***	.86***	1.00
M	21.66	56.06	23.72	107.50	26.23	24.79
SD	4.11	10.40	4.81	31.60	7.38	7.29

Note. TOPKAM Misconception = Test of Psychological Knowledge and Misconceptions of Author (2016) scored for misconceptions; TEBTP Poorly Supported = Test of Evidence-based Theories and Practices: Poorly-supported scale of Author(2016); KOFI Pseudoscience = Knowledge of Fields Inventory, pseudoscience scale of Author (2016); RPBS = Revised Paranormal Belief Scale of Tobacyk(1994) adapted; SCB False Conspiracies = False Specific Conspiracy Belief Subscale; SCB Fictitious = Specific Conspiracy Belief Subscale.
*** = $p \leq .001$. ** = $p \leq .01$. a = no longer significant after Bonferroni correction.

Table 3. *Factor Pattern Matrix for Two Factors from the Six Measures of Unsubstantiated Claims*

	Factor	
	1	2
TOPKAM Misconceptions	-.004	.534
TEPTP Poorly Supported	-.025	.445
KOFI Pseudosciences	-.072	.494
RPBS Adapted Paranormal	.282	.489
False SCB Conspiracies	.925	.011
Fictitious SCB Conspiracies	.972	-.081

Note. Factors were rotated using promax.

Table 4. *Factor Pattern Matrix for Two Factors Including True Specific Conspiracy Theories*

	Factor	
	1	2
TOPKAM Misconceptions	-.071	.563
TEPTP Poorly Supported	-.096	.485
KOFI Pseudosciences	-.181	.567
RPBS Adapted Paranormal	.188	.560
False SCB Conspiracies	.874	.111
Fictitious SCB Conspiracies	.869	.053
True SCB Conspiracies	.670	-.291

Note. Factors were rotated using promax.