Original Article

Semantic and Causal Relations Between the Conspiracy Mentality and Belief in Conspiracy Theories

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Abstract: Four pre-registered studies examined the semantic and causal relation between conspiracy mentality and belief in conspiracy theories. Study 1 (N = 251) confirmed important differences between these two constructs. Participants perceived conspiracy mentality propositions as general rules and conspiracy theories as specific examples. This perception that conspiracy mentality statements are more general was associated with the perception that they are more plausible and, if shared, less likely to cause dispute and to stigmatize the communicator. Conceptualizing them as different constructs, Studies 2–4 together indicate that they might have a bidirectional causal relationship with each other. Affirming conspiracy theories set in real-world and fictional societies increased participants' conspiracy mentality scores, relative to negations of conspiracy theories (Studies 2, 3) and a baseline condition (Study 4). Conversely, affirming conspiracy mentality statements increased participants' endorsement of conspiracy theories (Study 4). The semantic relation between the two constructs means each may reinforce the other through inductive and deductive reasoning. Nonetheless, important social-psychological differences may emerge between them due to the greater specificity and epistemic riskiness of conspiracy theories compared to the conspiracy mentality.

Keywords: conspiracy mentality, conspiracy theories, experimental, causal properties

Conspiracy theories allege that two or more actors have conspired – that is, have colluded in secret to bring about an outcome – in a way that is of public interest but not (yet) public knowledge (Douglas & Sutton, 2023). Scarcely any major public event or phenomenon – from diseases through vaccines to cures, from the rise of celebrities and politicians to their demise – seems to pass without becoming the focus of such conspiracy theories. Despite the seemingly endless variety of conspiracy theories, they seem to have much in common psychologically. When we survey research participants about conspiracy theories as diverse as those about 9/11 terrorist attacks, the assassination of John F. Kennedy, and the death of Princess Diana, their endorsement of each is generally correlated with their endorsement of the others. Indeed, doing this is enough to produce internally consistent scales that measure a general tendency to believe in conspiracy theories, such as the Belief in Conspiracy Theories Inventory (BCTI) devised and validated by Swami et al. (2017).

This method, however, confronts the problem that specific conspiracy theories may be known to some generational, ethnic, or national demographics but unknown to others. For this reason, Bruder et al. (2013) set about to capture the same construct while responding to the "need to assess the general tendency to believe in conspiracies in a way that is not dependent on the cultural familiarity of selected theories" (Bruder et al., 2013 – for similar efforts, see also Brotherton et al., 2013; Stojanov & Halberstadt, 2019). Thus, they developed the Conspiracy Mentality Questionnaire (CMQ; also Imhoff & Bruder, 2014) containing items such as "there are secret organizations that greatly influence political decisions" that capture some of the general ideas that are common to conspiracy theories.

This has become widely used, providing researchers with a brief, portable scale that is robustly correlated with scales that aggregate beliefs in various conspiracy theories, and which generally displays similar relationships with other variables (e.g., Stasielowicz, 2022; Uscinski et al., 2022). Important questions remain, however, about the relationship between these two types of scales. Do they capture the same "general tendency to believe in conspiracies" as Bruder et al. (2013) intended – that is, the same construct? Or might they instead capture related but qualitatively different constructs? In the present article, we examine two questions that arise from supposing that they are different constructs: Why are they different and what is the causal relationship between them? We hope that this will contribute to efforts to clarify not only how to measure conspiracism but also to understand its fundamental

psychological properties (Frenken & Imhoff, 2021; Imhoff et al., 2022; Sutton & Douglas, 2020; Swami et al., 2017).

Do the Two Types of Scales Measure the Same Construct?

As a starting point, it is useful to distinguish between the specific claims of fact made by conspiracy theories from their underlying messages about the nature of truth and power (Enders & Smallpage, 2018). Enders and Smallpage (2018) wrote that however implausible conspiracy theories may be, they convey heuristic messages that may not be harmful and indeed may even be *indispensable* to democratic processes in modern societies. They stress how power may be concealed and that rather than uncritically accepting the narratives promoted by elites, we must each "be ready to evaluate the world on our own terms" (Enders & Smallpage, 2018, p. 315).

Building on this analysis, Sutton and Douglas (2020) critiqued the conspiracy mentality construct on the grounds that it might not capture important properties of belief in conspiracy theories. Their critique centered on the relatively abstract nature of the items in measures such as the CMQ. These items entail no commitment to the specific and often implausible claims of fact made by conspiracy theories. Consider for example how the CMQ item, "I think that many very important things happen in the world, which the public is never informed about," differs from the BCTI item, "Area 51, in Nevada, is a secretive military base that contains hidden alien spacecraft and/or alien bodies." It appears to be a more general rule of which the Area 51 conspiracy theory might be an example, but it makes few or no problematic claims of fact. It lacks, in other words, the "epistemic riskiness" that characterizes conspiracy theories (Douglas & Sutton, 2023). Sutton and Douglas (2020) argued that this might result in important functional differences – the CMQ for example being less related to low cognitive ability, nonrational thinking styles, and susceptibility to disinformation.

Some research findings indicate that the relative abstraction of CMQ items change, as well as their relative absence of problematic claims, affects how participants endorse them. Swami et al. (2017) observed that the CMQ did not have a unifactorial structure. They suggested that some CMQ items (e.g., "I think that government agencies closely monitor all citizens") could be interpreted as factual – meaning that a conspiracist worldview is not required to endorse them. Indeed, agreement with this particular item was higher than mid-point. They inferred that "there may be underlying problems with the construct validity of the CMQ, which affect its latent unidimensionality."

Another line of evidence highlights descriptive differences between the CMQ and scales of belief in conspiracy theories that could also be explained in terms of their differing levels of generality and implausible detail. Imhoff et al. (2022) observed that the CMQ is more normally distributed than scales measuring belief in conspiracy theories, which tend to be more positively skewed – that is, rejected as implausible by a bulk of research participants but accepted across a relatively long and thinly distributed *tail* of participants. This skew is sometimes observed in measures of other empirically unwarranted beliefs, including belief in paranormal phenomena, which are rejected by a majority but considered plausible with varying degrees of enthusiasm by a minority of participants (Thalibourne, 2001), and in some of the antecedents of belief in conspiracy theories, including paranoia (Lincoln et al., 2009), anxiety (Crawford & Henry, 2003), and paranormal beliefs (Thalibourne, 2001).

A third line of evidence is emerging that does seem to highlight exactly the type of functional differences that Sutton and Douglas (2020) suggested. Measures of the conspiracy mentality versus belief in conspiracy theories appear to relate less strongly to some of the psychological traits that make people susceptible to empirically unwarranted claims. These include nonanalytical thinking styles (Gligoric et al., 2018) and the ability and motivation to think rationally (Mikušková, 2021). A meta-analysis of zero-order correlations has shown conspiracy mentality to be less strongly related to low cognitive ability (r = .20 for the BCTI, r = .09 for the CMQ; Stasielowicz, 2022). Furthermore, Pan et al. (2023) observed that climate change denial was positively related to belief in conspiracy theories but negatively related to endorsement of conspiracy mentality statements. Taken together, these findings suggest that the greater empirical riskiness of belief in conspiracy theories causes it to differ functionally from the conspiracy mentality, even if these differences are generally subtle.

A final line of evidence suggests a relevant functional difference between the CMQ and belief in conspiracy theories. Wang and van Prooijen (2023) assessed changes in these two variables in the lead-up to, and aftermath of, the 2020 US Presidential election. They found that belief in conspiracy theories changed reliably over this period – with conspiracy beliefs about political outgroups increasing after the election among Trump voters, but decreasing among Biden voters (conspiracy beliefs about voters' own *side* of the political divide decreased among both groups). In contrast, responses to the CMQ did not change significantly over this period. This result suggests that the CMQ is less sensitive to the *conspiracy theories are for losers* effect in which disappointed voters search for reasons, even implausible reasons, to delegitimize

elections (Uscinski & Parent, 2014). However, this does not provide support for Sutton and Douglas's (2020) critique specifically. The finding could also be interpreted as evidence simply that the CMQ is more stable than measures of belief in conspiracy theories (Imhoff et al., 2022; Wang & van Prooijen, 2023). Furthermore, other research does show that endorsement of the CMQ is higher among those whose preferred political parties are not in power (Imhoff et al., 2022).

The emerging functional differences between the CMQ and measures such as the BCTI might suggest, but do not show definitively, that they are different constructs. They may instead measure the same construct but with different levels of reliability and validity, rendering one less able than the other to detect effects of other variables. Few efforts have been made to determine whether the scales can be distinguished psychometrically. These efforts have used different methods and yielded different results. Frenken and Imhoff (2021) used latent profile analysis, a person-centered technique, and found that items referring to specific conspiracy theories and items from the CMQ similarly contribute to classifying people according to how much they tend to endorse conspiracy statements. In contrast, Trella and colleagues (2023) used the variable-centered factor analytic technique and found that items from the two types of scales formed separate factors, suggesting that the construct we might call *the conspiracy mentality* is captured by the CMQ while the construct we might call *belief in conspiracy theories* is captured by aggregate scales such as the BCTI.

Further research and conceptualization are required to clarify whether these scales measure the same thing. Further psychometric investigation is required to investigate whether they comprise different constructs. Equally, however, testing hypotheses about why they might be different is required to inform psychometric research and to identify possible functional differences between the constructs. We do this by following the causal properties approach put forward by Douglas and Sutton (2023). In this approach, hypotheses about the psychological functions of conspiracy theories are informed by paying attention to their defining features, including their semantic properties. Certain features distinguish conspiracy theories from other propositions and also vary by degree between conspiracy theories. These are not only defining features but important, causative properties in their own right.

Epistemic riskiness is one of these defining and potentially causative factors. The epistemic riskiness of conspiracy theories refers to their proneness to being false (Douglas & Sutton, 2023: e.g., because they are unparsimonious, rely on unsupported premises, and contradict conventionally authoritative sources). Returning to our present problem, we have seen that conspiracy theories are more epistemically risky than conspiracy mentality statements by virtue of making more questionable, specific assertions of fact. This means that the greater generality of conspiracy mentality statements should be associated with higher levels of endorsement compared to conspiracy theories themselves. In addition, competent adults know that conspiracy theories are controversial and even stigmatized on epistemic grounds (Douglas et al., 2022; Green et al., 2023; Lantian et al., 2018). This entails also to the extent that conspiracy mentality statements seem more general, and they will seem less disputable (likely to give rise to a dispute when openly expressed by a communicator) and less stigmatizing (likely to lead to negative evaluations of the communicator). Thus, the relative generality of conspiracy mentality statements compared to conspiracy theories – a simple, unitary, and intended semantic difference – may give them quite different social-psychological meanings.

This causal properties approach not only provides testable reasons to suppose that the conspiracy mentality and belief in conspiracy theories are distinct constructs but also guides predictions about how they might be related causally. There has been some uncertainty in the literature about whether to characterize the conspiracy mentality as a precursor to conspiracy belief (Frenken & Imhoff, 2021; Sutton & Douglas, 2020). Conversely, there is longitudinal evidence that believing in specific conspiracy theories can increase the conspiracy mentality (Granados Samayoa et al., 2022). From the semantic overlap between the two constructs, we can predict that the causal relationship between the conspiracy mentality and belief in conspiracy theories should be bidirectional since each construct can be inferred from the other (assuming only that participants are capable of inductive and deductive reasoning). Thus, belief in conspiracy theories should be reinforced when the conspiracy mentality is reinforced, and conversely, strengthening belief in conspiracy theories should strengthen the conspiracy mentality. We note that this means that the conspiracy mentality can be a consequence, as well as an antecedent, of belief in conspiracy theories.

Furthermore, this bidirectionality may be tempered by the differing abstraction of conspiracy mentality and conspiracy theories. According to the so-called induction-deduction asymmetry in social cognition, people make stronger inferences from specific examples (e.g., a donation to a charity) to general rules (e.g., an altruistic disposition) than vice versa (Maass et al., 2001, 2005; Nisbett & Borgida, 1975). Applying the induction-deduction asymmetry, we might therefore expect inferences from conspiracy theories to conspiracy mentality propositions to be stronger than inferences in the reverse direction.

The Present Studies

The present studies were designed to start understanding the relationship between the conspiracy mentality measure and the aggregate measure of belief in conspiracy theories. In Study 1, we examine the semantic differences between conspiracy mentality and belief in conspiracy theories, and their social-psychological consequences. In Studies 2–4, we used experimental methods to investigate the causal relationship between the putative constructs. The raw data and analysis scripts are available via the Open Science Framework (https://osf.io/kaxuf/?view_only=b7d6a15529334bb4a5f7fc8af94d372b).

Study 1

This pre-registered study sought to examine the semantic and social-psychological meaning of the conspiracy mentality versus belief in conspiracy theories. We presented participants with statements from the conspiracy mentality scales and the BCTI and asked them to rate them on four dimensions. In our pre-registration, we predicted that conspiracy mentality statements would be seen as more general, more plausible, less disputable, and less stigmatizing than conspiracy theories. We also predicted that the perceived generality of statements would be negatively correlated with perceptions that they are disputable and stigmatizing. We also predicted that the plausibility (perceived truth) of statements would be negatively related to their perceived disputability and stigmatizing character.

Method

Participants

Participants were recruited using the online recruiting platform Prolific in exchange for monetary compensation. Filters placed on Prolific included a minimum age of 18, UK nationality, English as participants' first language, no students, a minimum approval rate of 97, and between 20 and 1,000 previous submissions. The sample size was determined on the basis of work showing when correlations tend to stabilize (Schönbrodt & Perugini, 2013). The sample consisted of 251 participants (51% female, 47% male, 2% other), with a M_{age} of 35.4 years, and residents in the United Kingdom.

Materials and Procedure

The study was distributed on Qualtrics. After participants gave informed consent, they read the following instructions: "Some statements are abstract, and can be seen as general rules or principles. Others are more concrete or specific, and are more easily seen as examples than as rules… Consider the following statements: "My little dog Junior barks at everyone who walks past the house," and "Small dogs are noisy." Here, the first statement is more like a specific example than a general rule, while the second statement is more like a general rule than a specific example.

After instructions on how to define examples and rules, participants were given a 31-item scale comprising all elements of the Belief in Conspiracy Theories Inventory (BCTI; Swami et al., 2017), Conspiracy Mentality Questionnaire (CMQ; Bruder et al., 2013), and Conspiracy Mentality Scale (CMS; Stojanov & Halberstadt, 2019) and asked if the statements were a specific example or a general rule on a rating scale from 1 (*specific example*) to 7 (*general rule*).

Participants were then given the same 31-item scale three times more and asked: (1) how likely each statement could potentially lead to a disagreement, rated from 1 (*not at all*) to 7 (*very much*); (2) how likely each statement could potentially lead to stigmatization, rated from 1 (*not at all*) to 7 (*very much*); and (3) agreement on the truthfulness/falseness of the statement, rated from 1 (*completely false*) to 9 (*completely true*).

Results and Discussion

Descriptive statistics and correlations for study variables are presented in Table 1. All comparisons of means confirmed our pre-registered hypotheses. As predicted, CMQ statements, $t(250) = 32.45$, $p = .000$, $d = 2.05$, and CMS statements, $t(250) = 31.92$, $p = .000$, $d = 2.0$, were considered more a general rule than BCTI statements. BCTI statements were also rated as more disputable than CMQ statements, $t(250) = 18.717$, $p = .000$, $d = 1.18$, and CMS statements, $t(250) = 20.53$, $p = .000$, $d = 1.30$. Also as predicted, BCTI statements were rated as more stigmatizing than CMQ statements, $t(250) = 21.19$, $p = .000$, $d = 1.34$, and CMS statements, $t(250) = 22.75$, $p = .000$, $d = 1.43$. Also confirming our predictions, CMQ statements, $t(250) = 28.80$, $p = .000$, $d = 1.82$, and CMS statements, $t(250) = 25.89$, $p = .000$, $d = 1.63$, were considered more true than BCTI statements.

We then tested our pre-registered correlational hypotheses. One way to instantiate these hypotheses is to examine the correlation between the perceived generality, disputability, stigmatization, and plausibility of statements within each type. These are shown in Table 1, and revealed that the predicted negative correlations between the perceived generality of conspiracy statements and their

Table 1. Study 1: Correlations for study variables

	BCTI			CMQ			CMS		
	Disputable	Stigmatizing	True	Disputable	Stigmatizing	True	Disputable	Stigmatizing	True
General	−.24***	−.17**	.22**	−.11†	−.16**	.05	−.13*	−.21**	−.03
Disputable	—	.61***	−.19**	—	.56***	−.10	—	.60***	−.01
Stigmatizing	—	—	−.12†	—	—	−.00	—	—	.01
Mean	5.45	5.08	3.52	3.82	3.33	6.21	3.75	3.31	5.61
SD	*1.04*	*1.03*	*1.50*	*1.34*	*1.27*	*1.39*	*1.27*	*1.18*	*1.37*

Note. BCTI = Belief in Conspiracy Theories Inventory; CMQ = Conspiracy Mentality Questionnaire; CMS = Conspiracy Mentality Scale. General = extent to which each statement type is perceived as a general rule versus a specific example (1–7). Disputable = extent to which each statement type is perceived as likely to arouse a dispute if made by a person (1–7). Stigmatizing = extent to which each statement type is perceived as likely to stigmatize a person who makes it (1–7). True = extent to which each statement type is seen as true (1–9). For generality $M = 2.21$, $SD = 0.94$ (BCTI); $M = 5.66$, $SD = 1.15$ (CMQ); $M = 5.63$, $SD = 1.10$ (CMS). †$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

disputability and stigmatizing character emerged for all three conspiracy constructs (BCTI, CMQ, and CMS). Also as predicted, the perceived disputability and stigmatizing character of conspiracy statements were positively correlated across all three constructs. Furthermore, the perceived truth value of the BCTI statements (specific conspiracy theories) was positively associated with their generality and negatively associated with their disputability, although only marginally with their stigmatizing character, largely confirming hypotheses. In contrast, the predicted correlations between the perceived truth value of CMS and CMQ statements with their generality, disputability, and stigmatization did not emerge. Possibly, the more overtly ideological character of these statements compared to conspiracy theories means that participants reject or accept them on grounds other than their generality and disputability. Or alternatively, participants may have less rehearsed, pre-experimental knowledge about the social consequences of conspiracy mentality items compared to conspiracy theories with which they may be more familiar.

To further explore the relevance of the perceived generality of conspiracy mentality versus conspiracy theory statements, we examined correlations between how much they differed in generality and how much they differed on disputability, stigmatization, and plausibility. After subtracting BCTI means from CMQ means to calculate difference scores for each feature, we found that the more each participant found CMQ statements to be more general than BCTI statements, the more they also found them to be less disputable, $r(249) = -.32$, $p < .001$, less stigmatizing, $r(249) = -.33$, $p < .001$, and more plausible, $r(249) = .20$, $p = .002$. When we repeated these analyses, this time examining difference scores between the BCTI and the CMS, we observed similar results for disputability, $r(249) = -.32$, $p < .001$, stigmatization, $r(249) = -.34$, $p < .001$, and plausibility, $r(249) = .19$, $p < .001$. Finally, we examined whether the predicted correlations between the difference in the generality, disputability, and stigmatization of conspiracy mentality versus conspiracy theory statements remained significant when we computed partial correlations adjusting for their different levels of plausibility. In each case, we found that they did. The difference in generality between CMQ and BCTI statements was associated with differences in disputability, $r(248) = -.26$, $p < .001$, and stigmatization, $r(248) = -.28$, $p < .001$, when we controlled for their differing plausibility. For differences between CMS and BCTI statements, the corresponding partial correlations were $r(248) = -.27$, $p < .001$, and $r(248) = -.28$, $p < .001$, respectively.

In sum, the findings confirm that participants see conspiracy mentality statements as more general than conspiracy theories themselves. Furthermore, this higher generality was associated with perceived differences in their social consequences: namely, the belief that sharing conspiracy mentality statements, compared to conspiracy theories, is less likely to give rise to a dispute and less likely to stigmatize the sharer. Conspiracy mentality statements were seen as more plausible, and this itself was also associated with their higher generality. This association between the relative generality and the relatively low disputability and stigmatization of conspiracy mentality (vs. conspiracy theory) statements could not be explained simply in terms of their higher plausibility. Taken together, the findings offer preliminary, correlational evidence that the greater generality of conspiracy mentality statements than conspiracy theories themselves gives rise not only to greater endorsement of the items in surveys but to the potential for different social-psychological meanings. Therefore, the findings provide some support for the argument that the greater generality of the conspiracy mentality gives it a different epistemic character and social significance than belief in conspiracy theories – which is one theoretical reason to suppose they could be different constructs (Sutton & Douglas, 2020). The remaining studies in this article investigate the causal relationship between these two putative constructs.

Study 2

This pre-registered study attempts the first experimental investigation of whether conspiracy theory beliefs can precede the conspiracy mentality causally. In a two-group design, participants were exposed to affirmations or negations of specific conspiracy theories (Jolley & Douglas, 2014) and their subsequent endorsement of conspiracy mentality statements was assessed. Our key prediction was that participants exposed to affirmations (vs. negations) of specific conspiracy theories would subsequently display higher levels of conspiracy mentality.[1]

Method

Participants and Design

Participants were recruited from Prolific in exchange for monetary compensation. Filters placed on Prolific were as in Study 1. To detect an effect of $f = .20$ with 80% power in a one-way between-subjects ANOVA (two groups, = .05), G*Power suggested we would need 100 participants in each group (n = 200). The sample consisted of 199 participants (67% female, 32% male, 0.5% other), with a M_{age} of 40.3 years, and primarily White (86%). Participants were allocated randomly to two conditions, in which specific conspiracy theories were either affirmed or negated.

Materials and Procedure

Participants were directed from Prolific to Qualtrics. To ensure that they concentrated on the experimental manipulation, they were informed that they would be taking part in a comprehension study focusing on memory. Participants were then given either a pro-conspiracy article or an anti-conspiracy article adapted from Jolley and Douglas (2014), edited to only include elements of specific conspiracy theories and no phrases that could be viewed as conspiracy mentality. For example, sentences such as "Should we be suspicious of government operations?" and "Over the years, many governments have been implicated in major social events" were discarded so that the text could comprise only elements of specific conspiracy theories (e.g., "Did the United States government orchestrate the 9/11 attacks on the Twin Towers?").

After participants read the text, they were asked 10 questions on text comprehension (e.g., "What was the text you just read about?" and "How confident are you of your answer?", each with multiple choice answers). Only the first question was used as a comprehension check (i.e., "What was the text you just read about?" Answer 1: Lady Diana); the other questions were used to distract participants from the objective of the study. The majority of participants succeeded in the comprehension check, while 2.5% of the sample failed suggesting the text was about the Apollo moon landings (Answer 2). These participants were excluded from analyses. Participants were then asked to rate (from 1 = *certainly not*, to 11 = *certain*) 10 items of the original CMQ (Imhoff & Bruder, 2014), and the original 15 items (rated: 1 = *completely false*, 9 = *completely true*) of the BCTI (Swami et al., 2017).

Results and Discussion

A one-way between-subjects ANOVA was conducted to compare the effect of exposure to specific conspiracy theories on conspiracy mentality. As predicted, affirming (vs. negating) specific conspiracy theories increased the conspiracy mentality, $F(1,192) = 4.13$, $p = .044$, $h^2 = .021$. We note that affirmation of specific conspiracy theories did not result in a significant increase in the different set of conspiracy theories assessed after exposure to the manipulation, $F(1,192) = 1.63$, $p = .204$, $h^2 = .008$, even when taking out the two items (8 and 11) that were mentioned in the text, $F(1,192) = 1.04$, $p = .310$, $h^2 = .005$.

The present findings therefore complement longitudinal findings (Granados Samayoa et al., 2022) with the first experimental evidence that the conspiracy mentality may follow from, rather than precede, belief in specific conspiracy theories. The study is not without its limitations, however. Although affirming conspiracy theories strengthened conspiracy mentality, it did not generalize to other conspiracy theories. The conspiracy theories mentioned in the manipulation are relatively well-known and, as such, may have been subject to relatively resistant, pre-experimental world knowledge. Similarly, participants' generalized notions about elites as embedded in the conspiracy mentality may have been resistant to such a fleeting manipulation. We therefore sought to minimize

[1] In Studies 2–4, to get a fuller picture of the relationship between mentality and specifics, measures of socio-political attitudes were added to capture constructs typically related to conspiracy belief. These measures included antecedents to conspiracy belief. These measures included antecedents to conspiracy belief, such as the three psychological motives (Douglas et al., 2017) that explain why people are attracted to conspiracy theories (existential, epistemic, social need), as well as the consequences of conspiracy belief, including voting intentions (Jolley & Douglas, 2014), mistrust in the government (e.g., Einstein & Glick, 2013), and protest (Boulianne & Lee, 2022). For details of the method and results of these extra measures please, see the supplementary material file. These details are omitted from the main text of this article for focus and brevity.

the role of biases arising from world knowledge in the two experiments that follow.

Study 3

Like Study 2, Study 3 was pre-registered and aimed to investigate whether belief in specific conspiracy theories can be a precursor of the conspiracy mentality. The key difference is that in this and the next study (Study 4), we manipulated conspiracy theories in the context of a fictional society called "Bimboolia," inspired by previous research on social and economic attitudes (Jetten et al., 2015; for a recent application related to conspiracy theories, see Casara et al., 2022). As in Study 2, participants were exposed either to affirmations or negations of conspiracy theories. They then evaluated a set of propositions from the CMQ adapted to Bimboolia.

Method

Participants and Design

Participants were partly recruited from a European University (n = 175) in exchange for course credit and partly recruited on Prolific (n = 90) in exchange for monetary compensation. The European University sample had a M_{age} of 20.03 years, 74% were females, and 51% were White. The Prolific sample had a M_{age} of 36.38 years, 71% were females, and 83% were White.

To detect an effect of f = .20 with 80% power in a one-way between-subjects ANOVA (two groups, = .05), G*Power suggested we would need 100 participants in each group (n = 200). The total sample consisted of 257 participants (73% female, 24% male, 3% other), with a M_{age} of 25.5 years, and primarily White (62%).

Participants were randomly assigned to one of two conditions: conspiracy belief affirmation versus negation.

Materials and Procedure

After viewing an information page and completing a consent form on Qualtrics, participants were directed to the study on PsychoPy. After completing the study on that platform, they returned to Qualtrics to complete demographic information and attention checks.

In PsychoPy, participants were welcomed to Bimboolia, a fictional society located on the island of Bimbool, which was presented in 8-bit graphics and background music. In this environment, participants were given a brief statement describing the resemblance between Bimboolia and the United Kingdom. To immerse them in the fictional environment, participants were asked to pick their avatar (eyes, skin, gender, outfit) and were asked three questions to immerse them in Bimboolia culture (e.g., "Some Bimboolians prefer going to Highbury Fields, a big urban park in the center of Bimboolia City, whilst others prefer taking a stroll in the Eastern Woods just outside the city. What kind of Bimboolian are you?").

Manipulation

After the introduction, participants were randomly assigned to one of two conditions: a conspiracy belief affirmation condition or a conspiracy belief negation condition. In the affirmation condition, participants were shown five statements about Bimboolian society which were adapted from the BCTI (Swami et al., 2017). These statements were as follows:

> A powerful and secretive group, known as the Key, are planning to eventually rule Bimboolia through an autonomous government, which would replace sovereign government.
>
> The K3F6 virus (the virus that killed about 1 in 10 people who were infected, especially people 65 or older) was produced under laboratory conditions as a biological weapon.
>
> The assassination of Francis Dame, an activist who became the most visible spokesman and leader in the Bimboolia civil rights movement was the result of an organized conspiracy by government agencies.
>
> "Blight 23 is a secretive military base that contains hidden alien spacecraft and/or alien bodies." "The Bimboolia government allowed the attacks on the great bridge to take place so that it would have an excuse to achieve foreign (e.g., wars in Zentyal and Vurgoe) and domestic (e.g., attacks on civil liberties) goals that had been determined prior to the attacks."

In the negation condition, participants were displayed five statements that were opposite (or in other words, that negated) the ones in the affirmation condition. For example, the first statement was translated into "There is no group secretly planning to overthrow the government."

Dependent Measures

Conspiracy Mentality

Participants were asked to rate (1 = *certainly not*, 11 = *certain*) 10 statements of an extended version of the CMQ (Imhoff & Bruder, 2014) adapted to Bimboolian society. A sample item is "Many very important things happen in Bimboolia, which the public is never informed about." This

task was preceded by a short text introduction given to participants: "Since you haven't lived in Bimboolia for very long, here are some other things that people have been saying about it. Based on what you know about Bimboolia, your task is to rate whether you think these things are true or false."

Results and Discussion

A one-way between-subjects ANOVA confirmed that as predicted, affirmation of conspiracy theories increased conspiracy mentality scores, $F(1,265) = 174.44$, $p = .000$, $h^2 = .397$. These results converge with those of Study 2 to suggest that increases in the conspiracy mentality can be a consequence of affirming specific conspiracy theories. However, both Studies 2 and 3 contrasted the affirmation of conspiracy theories with a single control condition in which conspiracy theories were negated. Thus, it remains unclear whether the contrast between conditions is driven by the effects of affirmation, or negation, of conspiracy theories. It is also not clear how the effect of conspiracy theory affirmations on the conspiracy mentality compares to the converse effect, in which conspiracy mentality predisposes people to believe in conspiracy theories. We address both of these issues in the next study.

Study 4

Study 4 was pre-registered and aimed to conceptually replicate and extend the results of Studies 2 and 3. It had three conditions: a conspiracy mentality affirmation, a specific conspiracy theory affirmation, and a control condition in which no mention, either affirming or negating, was made of conspiracy content. After reading the manipulation text, participants completed measures of conspiracy theory belief and conspiracy mentality with items that were not mentioned in the text. In addition to conceptually replicating the results of Studies 2 and 3, this design allowed us to examine the effects of affirming conspiracy statements *per se* rather than negating them and to compare the relative effect of affirming conspiracy theories on conspiracy mentality with the converse effect of affirming conspiracy mentality on conspiracy theory endorsement. As in Studies 2 and 3, we predicted that affirming conspiracy theories would increase participants' conspiracy mentality scores (in this case, compared to the neutral control condition). We also predicted that affirming the conspiracy mentality would increase participants' endorsement of conspiracy theories (again, compared to the control condition). Finally, since conspiracy mentality statements can be seen as more general, rule-like representations of which conspiracy theories might be seen as exemplars, we predicted, based on the induction-deduction asymmetry (Maass et al., 2001, 2005), that the first effect would be stronger than the second. That is, we predicted that affirming conspiracy theories would have a larger effect on the conspiracy mentality than vice versa.

Method

Participants and Design

Participants were recruited from Prolific in exchange for monetary compensation. Filters placed on Prolific included a minimum age of 18, UK nationality, no students, a minimum approval rate of 97, between 20 and 1,000 previous submissions, and exclusion if participants participated in the previous study. To detect an effect of $f = .20$ with 80% power in a one-way between-subjects ANOVA (three groups, = .05), G*Power suggested we would need 246 participants total. The sample consisted of 325 participants (72% female, 24% male, 4% other), with a M_{age} of 40.8 years, and primarily White (85%), who were randomly assigned to one of three conditions: conspiracy belief affirmation, conspiracy mentality affirmation, or a control condition.

Materials, Procedure, Dependent Variables

Like Study 3, Study 4 immersed participants into the fictional society of Bimboolia. The first part of the experiment is identical to Study 3; changes were made from the manipulation onwards.

In the conspiracy belief affirmation condition, five statements adapted from the BCTI (Swami et al., 2017) were displayed, exactly as in Study 3. In the mentality affirmation condition, likewise, five statements from the adapted CMQ (Bruder et al., 2013; Imhoff & Bruder, 2014) were displayed. Finally, participants could be allocated to the neutral or control condition, in which participants were not given additional information. The statements of the mentality condition are as follows:

> "Many very important things happen in Bimboolia, which the public is never informed about." "The politicians of Bimboolia usually don't tell its citizens the true motives for their decisions." "Bimboolia's government agencies closely monitor all its citizens."
>
> In Bimboolia, events which superficially seem to lack a connection are often the result of secret activities.
>
> In Bimboolia, there are secret organizations that greatly influence political decisions.

Participants were then asked to rate (1 = *certainly not*, 11 = *certain*) the remaining five statements of the extended CMQ (Imhoff & Bruder, 2014) and five additional statements (rated: 1 = *completely false*, 9 = *completely true*) of the adapted version of the BCTI (Swami et al., 2017).

Results and Discussion

A one-way between-subjects ANOVA was conducted to compare conspiracy mentality and belief in specific conspiracy theories in the three conditions. The results suggest that conspiracy mentality scores differed significantly between conditions, $F(2,322) = 53.89$, $p = .000$, $h^2 = .251$, as did belief in specific conspiracy theories scores, $F(2,322) = 49.14$, $p = .000$, $h^2 = .306$.

We first tested the hypothesis that affirming the conspiracy mentality would increase belief in conspiracy theories. Supporting this hypothesis, BCTI scores were significantly higher in the mentality affirmation condition compared to the control condition ($M = 1.49$; $SE = 0.18$; $p < .001$). We also found support for the hypothesis that conversely, affirming specific conspiracy beliefs would increase the conspiracy mentality: CMQ scores were significantly higher in the conspiracy beliefs affirmation condition compared to the control condition ($M = 1.77$; $SE = 0.23$; $p < .001$).

To compare the size of these effects, we standardized BCTI and CMQ scores in the control condition and the relevant experimental conditions for each dependent variable (affirmation of mentality and conspiracy theories, respectively). We then calculated how much the standardized score in each DV deviated from the control group mean by calculating a difference score. Finally, we conducted an independent-samples *t*-test comparing this deviation in the two experimental conditions. This analysis indicated that the effects did not differ significantly from each other, $t(213) = 0.13$, $p = .894$, thus failing to support our prediction, based on the induction-deduction asymmetry, that affirming conspiracy theories would have a greater effect on the conspiracy mentality compared to the converse effect. This might be ascribed to unintended differences in the strength or validity of the manipulations and measures in the present studies. Longer intervals between the manipulation and measure may be required for asymmetrical effects to play out, and longitudinal research may be more suited to examining this interplay (Frenken & Imhoff, 2022; see also Granados Samayoa et al., 2022). Alternatively, the induction-deduction asymmetry itself has been demonstrated in a few studies and may be more bounded in ways that are not yet understood. Further research into the generality of this effect is needed.

Discussion

The *conspiracy mentality* concept is now widely referenced in the literature, as are scales inspired by the view that belief in conspiracy theories is underpinned by abstract conspiracist ideas about power and society. As of late May 2023, a Google Scholar search on the term "conspiracy mentality" turns up 2,100 hits since 2013. However, there is confusion about what the construct is – whether it is separate from, prior to, or the same thing as, a generalized tendency to believe in conspiracy theories. The present studies bring some initial evidence to bear on these questions.

In Study 1, participants saw conspiracy mentality statements as more general in character than conspiracy theories – and concomitantly, as not only more plausible but less likely to stigmatize, or cause a dispute with, a communicator who expresses them. This result complements psychometric investigations of *whether* the two constructs are different by demonstrating *why* they might be different. In particular, they provide preliminary support for Sutton and Douglas's (2020) argument that the two constructs differ because the greater generality of conspiracy mentality statements gives them a different epistemic and psychological character than conspiracy theories.

The findings of Study 1 therefore indicate that over and above the abstract suspicions they convey about powerful interests in society, the specific, epistemically risky claims made by conspiracy theories might be one reason why they give rise to controversy and can stigmatize those who express them (Douglas & Sutton, 2023). In so doing, they suggest that lay people and scholars may distinguish between the implausible details of conspiracy theories and their heuristic messages about secrecy, corruption, and the need to interpret reality in one's own terms (e.g., Enders & Smallpage, 2018). Further research is needed to examine whether the findings translate into experimental and real-life settings. For example, do fewer negative consequences arise from expressing the abstract sentiments of conspiracy theories (in the form of statements like those in the CMQ) compared to conspiracy theories themselves (e.g., Green et al., 2023)? Are people less fearful of expressing these abstract sentiments (Lantian et al., 2018)? Are they less disruptive to relationships (Toribio-Florez et al., 2023)? And the pejorative labels "conspiracy theory" and "conspiracy theorist" less likely to be attached to these abstract statements and the people who express them (Douglas et al., 2022)?

Taking the two constructs to be different, Studies 2–4 provide the first experimental evidence that beliefs in conspiracy theories can precede the conspiracy mentality causally. These findings complement the evidence already obtained by Granados Samayoa et al. (2022) that increases in specific conspiracy theories may be followed over time by increases in the conspiracy mentality. Study 4 also indicates

that the relationship is bidirectional since affirming the conspiracy mentality also had the effect of increasing belief in conspiracy theories. Thus, to the extent that the two constructs are different, these studies suggest that we should not simply see the conspiracy mentality as something that predisposes people to believe in conspiracy theories. It may also be an outcome of conspiracy beliefs and so may be better described as concomitant with, rather than prior to, them.

These latter three studies can only be regarded as preliminary however because they have important limitations. Two of them (Studies 2 and 3) compared affirmation of conspiracy theories to negation and lacked a control group. Two of them (Studies 3 and 4) were set in a fictional society. All of them were based on hypotheses that assumed participants are capable and motivated to apply normative inferential reasoning – inductive and deductive – to conspiracy statements, given the semantic overlap between conspiracy theories and conspiracy mentality statements. In addition, all of them featured very short intervals between the manipulation and the measure, so effects may not only have been short-lived but driven by a particular demand characteristic – the inference that we as the experimenters wanted participants to be able to show they could reason competently. The strength and authenticity of the manipulations in these studies remain to be assessed compared to the real-life conditions that may strengthen the conspiracy mentality, belief in conspiracy theories, or both. Thus, we not only echo Frenken and Imhoff's (2022) call for more longitudinal designs but also call for more realistic, subtle, and less direct experiments to examine the interdependency between these constructs.

The conspiracy mentality concept has generated much research and has equipped researchers with a brief, economical scale. However, the present findings suggest that conspiracy mentality should not be regarded merely as a synonym for the tendency to believe in conspiracy theories. They point to an alternative, and arguably more interesting and generative future for the construct, as something that is qualitatively different to belief in conspiracy theories, and is causally interdependent with it in ways that, as yet, we barely understand. Similarly, the general tendency to endorse conspiracy theories may be understood as a construct that has a causal life of its own, subject to influences and producing consequences that are distinct from sympathy with the abstract sociopolitical ideas at their core.

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