"Trust me, do not trust anyone": how epistemic mistrust and credulity are associated with conspiracy mentality

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**LEARNING TO UNDERSTAND:
LATEST CONTRIBUTIONS ABOUT EPISTEMIC TRUST AND MENTALIZATION-RELATED CONCEPTS**

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ABSTRACT

Previous research shows that the propensity to endorse conspiracy theories is associated with disrupted forms of epistemic trust, *i.e.*, the appropriate openness towards interpersonally communicated information. There are associations, first, with an increased mistrust in several actors and institutions responsible for the communication of information in society, and second, with a pronounced credulity in unreliable sources and implausible phenomena (*e.g.*, superstition, astrology). This study aims to investigate whether these phenomena are associated with specific personality-related disruptions of epistemic trust. Based on self-reported data of 417 individuals (mean = 33.28; standard deviation = 11.11) from a UK population sampled online, the potential relationships between disruptions in epistemic trust and the endorsement of a conspiracy mentality are explored. The epistemic stances characterized by mistrust and credulity (independent variables) are measured with the epistemic trust, mistrust, and credulity questionnaire (ETMCQ), and conspiracy mentality (dependent variable) is measured with the conspiracy mentality questionnaire. In a multiple linear regression model, mistrust is associated with the endorsement of a conspiracy mentality, even when accounting for other contributing factors (*e.g.*, individual narcissism, attachment avoidance and anxiety, authoritarianism, loneliness). In a bootstrapped mediation model controlling for other relevant predictors, the association between credulity and conspiracy mentality is fully mediated by mistrust. In future research, the impact of disrupted epistemic trust on conspiracy beliefs should be investigated in terms of the specific epistemic stances of mistrust and credulity. In this respect, the ETMCQ represents a highly promising instrument to assess individual differences in factors underpinning aspects of conspiracy endorsement.

Key words: epistemic trust, mistrust, credulity, conspiracy mentality.

Introduction

The onset of the COVID-19 pandemic has fueled considerable public discourse concerning the foundations of conspiracy theories (CTs) and their potentially detrimental effects. Over recent years, the exploration of individual difference factors associated with the endorsement of CTs has become a pivotal area of psychological research (van Prooijen & Imhoff, 2022). As recent empirical syntheses have pointed out, a rapidly growing aspect of the field involves the investigation of limited trust capacities that are associated with the endorsement of a conspiracy mentality (Bowes *et al*., 2023; Pilch *et al*., 2023). In this vein, in our study,

we explore the endorsement of conspiracy mentality using the epistemic trust (ET) framework, a cultural-developmental approach to the tendency to trust communicated information as a precondition for social learning (Fonagy *et al.*, 2022). We attempt here to link the ET framework, so far mainly applied to developmental and clinical hypotheses, with the social psychological research field on conspiracy beliefs.

Theoretical background

The investigation of conspiracy theories in psychological research

Existing research in the field provides a comprehensive framework that identifies several defining characteristics of CTs. These include: i) the belief that a group of actors has secretly coordinated plans; ii) the goal of these plans is typically malevolent or involves forbidden acts; iii) CTs attribute political agency to individuals and groups rather than impersonal or systemic forces; iv) they contradict assumptions that align with general public opinion; and v) proponents of CTs share these beliefs with specific social objectives in mind (Douglas & Sutton, 2023). Since the emergence of modern research into CTs around three decades ago, it has been established that people who believe in one CT are very likely to believe in other CTs, even if they are completely different in content (Abalakina-Paap *et al.*, 1999; Goertzel, 1994). This interrelationship is now considered one of the most crucial insights of psychological research on conspiracy-related phenomena (van Prooijen & Imhoff, 2022).

The phenomenon of certain individuals tending to be more prone to the endorsement of conspiracy beliefs, in general, has led researchers to develop the concept of conspiracy mentality as the basis for various conspiracy beliefs, akin to a general trait-like psychological dimension (Bruder *et al*., 2013). The notion of a personality type that is more linked to conspiracy ideation has been validated in various large-scale, multi-national samples (Frenken & Imhoff, 2021). As compared to instruments assessing specific conspiracy beliefs, the measurement of a generalized conspiracy mentality exhibits more reliable correlations with other variables, a less skewed distribution in larger samples, and greater stability over extended periods (Imhoff *et al*., 2022).

Previous research has explored possible psychological variables associated with a generalized tendency to believe in CTs. In an influential model based on an empirical synthesis, Douglas *et al.* (2017) postulated that the endorsement of conspiracy beliefs might be understood as driven by three levels of psychological motivation: i) epistemic motives (*e.g.*, the desire for understanding and subjective certainty); ii) existential motives (*e.g.*, the desire for control and security over one's experiences and their meaning); iii) social motives (*e.g.*, the desire to defend a positive image of the self or one's social group) (Douglas *et al*., 2017). Accordingly, the general tendency toward CT ideation is understood as a psychological buffer against perceived societal and inter- and intra-personal frustrations (Douglas *et al.*, 2019).

Limited trust capacities related to the endorsement of a conspiracy mentality

Meta-analytical accounts exploring the three aforementioned levels of motivation (epistemic, existential, and social) have revealed a multitude of variables associated with pronounced conspiracy mentality (Biddlestone *et al*., 2022; Bowes *et al*., 2023). A rapidly growing area of research consists of the study of the role of difficulties in relation to trust, which falls into the third category (social) of Douglas' psychological model of conspiracy ideation (Bowes *et al*., 2023). While an earlier review evaluating research between 1994 and 2017 found only a few studies on limited trust as a factor in conspiracy ideation (Goreis & Voracek, 2019), a recent synopsis summarizing research from 2018 onward indicates a large number of studies considering the trust factor (Pilch *et al*., 2023). A recent meta-analysis, synthesizing the findings of 40 studies, reported significant associations between conspiracy mentality and reduced levels of trust (Bowes *et al.*, 2023). No differences were found for different domains of trust, which were strongly correlated (*e.g*., low trust in political institutions, in scientific actors, or in interpersonal relationships) (Bowes *et al*., 2023). The evidence of strong interrelationships between a conspiracy mentality and different domains of reduced trust suggests that a fundamental tendency to mistrust (*e.g.*, whether in other individuals or social authorities) is a central psychological precondition for a heightened conspiracy mentality (Frenken & Imhoff, 2023).

One specific aspect of trust, epistemic trust (*i.e.*, trust in the communication of social knowledge), has also emerged as an area of recent research interest (Magarini *et al.*, 2021; van Mulukom *et al.*, 2022), has also emerged as an area of recent research interest. In a preliminary study, a strong conspiracy mentality was found to be associated with two parallel reactions of ET: while conspiracy believers show more mistrust in the communicated transmission of knowledge by socially powerful authorities, they are also more credulous in response to the communicated transmission by powerless sources (Imhoff *et al*., 2018). This may indicate that the endorsement of a conspiracy mentality is associated with disrupted ET capacities, expressed in a parallel manifestation of increased mistrust as well as increased credulity. In the current study, we aim to further explore these associations by applying the ET framework (Campbell *et al*., 2021; Fonagy *et al*., 2022).

A further ground for considering the association between conspiracy thinking and ET/mistrust can be found in the two-component socio-epistemic framework (Pierre, 2020). This hypothesis posits that conspiracy mentality arises from 2 forms of epistemic disruption: i) a suspicious attitude comprising a generalized mistrust in the transmission of information by socially authorized institutions or individuals; ii) an epistemic vacuum emerges as a result of the suspicious repudiation of authorized explanations, leading the individual to credulously seek out other explanations that may be based on misinformation (Pierre, 2020).

Empirical evidence suggests that conspiracy mentality does indeed draw on these two epistemic processes. Regarding the first component, a recent systematic review has synthesized empirical evidence indicating that the endorsement of a conspiracy mentality is driven by mistrust in various knowledge-transmitting authorities in contemporary societies (van Mulukom *et al*., 2022). In the context of the COVID-19 pandemic, overarching epistemic mistrust also represents a key factor contributing to the increased prevalence of conspiracy beliefs (Magarini *et al*., 2021). Specific examples of such associations include the correlation between conspiracy mentality and mistrust in scientific institutions and health organizations, resulting in reduced compliance with preventive guidelines (Plohl & Musil, 2021); mistrust in democratic political institutions and non-populist governments (Martinez *et al*., 2022; Pickel *et al*., 2022); and mistrust in conventional media platforms and news outlets, particularly when coupled with increased social media use (van der Linden *et al*., 2020). These correlations between mistrust in various societal authorities responsible for information dissemination and conspiracy beliefs

have been corroborated in multinational, representative samples (De Coninck *et al*., 2021) and concerning both general and specific COVID-related CTs (Freeman *et al*., 2022).

The second component in Pierre's framework, that excessive credulity (a tendency to readily believe without sufficient evidence as a result of an epistemic vacuum) may also impact the development of conspiracy beliefs, is supported by the gullible conspiracist hypothesis. This model argues that a conspiracy mentality may be associated with a weak capacity to critique the accuracy or validity of information in the social transmission of knowledge (van Prooijen, 2019). Consistent with this approach, several studies have found that individuals with strong conspiracy beliefs tend to interpret nonsensical statements as profound and are more likely to believe in the existence of supernatural phenomena (*e.g*., reincarnation, astrology) (van Prooijen *et al*., 2022). For instance, in a representative survey in Germany, the emergence of a COVID-19-related conspiracy mentality was associated with greater beliefs in superstition and esotericism, even after controlling for other influencing factors (Pickel *et al*., 2022). Additionally, individuals with a pronounced conspiracy mentality are more likely to ascribe credibility to distorted news from right-wing platforms compared to reliable information from mainstream newspapers (Frischlich *et al*., 2021). They are also more prone to perceive fake news headlines as accurate and to disseminate them on social media (Tanzer *et al*., 2021). Cross-national large-scale studies have found a positive association between higher conspiracy mentality levels and a tendency to trust informal sources (*e.g*., internet websites and social media) for information about COVID-19 (Martinez *et al*., 2022; van Mulukom *et al.*, 2022).

Similar to Pierre's two-component-model, according to the gullible conspiracist hypothesis, epistemic mistrust and epistemic credulity are understood as co-existing in a conspiracy mentality, *i.e.,* "a deep-rooted distrust […] leads believers to reflexively reject official accounts of impactful events, and to uncritically accept implausible conspiracy theories" (van Prooijen, 2019). In her discussion of this hypothesis, Douglas *et al.* (2019) clarified that extant research does not indicate that gullible people are automatically conspiracy believers. Instead, she calls for a closer examination of the specific mechanisms at work in driving gullibility toward conspiracy thinking, proposing that the crucial mechanism for the endorsement of a conspiracy mentality is the blocked fulfillment of certain epistemic, existential, or social motives (Douglas *et al*., 2017). Therefore, statistical models should be conducted to identify such specific mediating mechanisms between gullibility and conspiracy beliefs.

Applying the recently developed epistemic trust framework to conspiracy research

The aforementioned findings suggest that the endorsement of conspiracy beliefs may be influenced by distorted capacities for ET. However, within the field of CT research, we are not aware of any instrument that has been developed to measure aspects of ET independent of the focus on specific social or political institutions and actors. In this paper, we apply a recently developed theoretical framework that posits ET as a socio-evolutionary and developmental predisposition critical for the functioning of social communication in general (Fonagy *et al.,* 2017). This framework views disruptions in ET as contributors to the development of interpersonal dysfunction and personality-related impairments (Fonagy *et al*., 2022). A systematic consensus among relevant experts has conceptualized ET as a trait-like capacity for social communication that exhibits stable features over time but is contingent on the actual situational context, so the emergence of these features depends on the actual relational context (Knapen *et al*., 2022; Nolte *et al*., 2023).

For the reliable measurement of individual differences in ET capacities and potential disruptions, the epistemic trust, mistrust, and credulity questionnaire (ETMCQ) was developed and validated as a self-report instrument (Campbell *et al.*, 2021). The ETMCQ distinguishes three factors representing distinct epistemic stances: the trust subscale, which captures the capacity to be open to social learning opportunities across different contexts; the mistrust subscale, which reflects a general tendency to view information sources as unreliable and resist influence from others' communications; and the credulity subscale, which signifies a lack of clarity about one's stance leading to a high dependency on others in knowledge transmission processes (Campbell *et al*., 2021). Validation studies of the ETMCQ have consistently demonstrated significant interrelationships with personality-related risk factors of maladaptive psychological functioning (*e.g.*, deficits in mentalizing, disorganized attachment, impairments in personality functioning) and psychopathological symptoms (*e.g*., depression, anxiety, post-traumatic symptoms) (Campbell *et al*., 2021; Kampling *et al*., 2022; Liotti *et al*., 2023; Nolte *et al*., under review).

In addition to such associations with clinical variables, other studies have provided initial insights into the interrelations of the ETMCQ with broader socio-political phenomena (Fiorini Bincoletto *et al*., 2023; Kampling *et al*., 2023; Tanzer *et al.*, 2021; Tanzilli *et al*., 2022). Multiple linear regression analyses have revealed that, even when other relevant confounding variables are controlled for, high levels of credulity are associated with an inability to discriminate between fake and real news (Tanzer *et al.*, 2021). Moreover, the association between childhood maltreatment and this lack of discrimination capacity in adulthood is fully mediated by both credulity and mistrust (Tanzer *et al*., 2021).

In another study investigating associations between ET and fake news discrimination, it was found that a stronger tendency to mistakenly believe that monkeypox is fake news is significantly related to reduced ET and increased epistemic mistrust (Nimbi *et al*., 2023). Concerning coping with the COVID-19 pandemic, it has been shown that mistrust is associated with an introverted-maladaptive response style, whereby adherence to preventive rules is not related to reduced anxiety (Tanzilli *et al*., 2022). Conversely, credulity is associated with an extraverted-maladaptive response style characterized by a reckless disregard for all restrictions and an indifference to the safety of others (Tanzilli *et al*., 2022).

Also, with specific regard to the endorsement of a conspiracy mentality, studies have found initial evidence of associations with disrupted ET capacities. In a prior study using the ETMCQ to explore relationships with conspiracy beliefs, the endorsement of a conspiracy mentality was significantly associated with high levels of both credulity (r=.23) and mistrust (r=.30) (Tanzer *et al*., 2021). In a recent study based on cross-sectional representative data of the German population, it was shown that, in a statistical model explaining the variance of conspiracy ideation, the addition of ET significantly increased the proportion of explained variance, thus showing that the concept of ET capacities can contribute to explaining the endorsement of a conspiracy mentality (Kampling *et al*., 2023).

Building on these preliminary findings, our study aims to systematically explore the broader potential of using the ETMCQ in psychological research on conspiracy beliefs.

Potential confounders on associations between epistemic trust and conspiracy mentality

Previous meta-analytic investigations have revealed evidence that a variety of contributing factors are involved in the endorsement of conspiracy mentality (Biddlestone *et al*., 2022; Bowes *et al*., 2023). Therefore, empirical studies exploring the potential antecedents of conspiracy beliefs have to control the potential confounding effects that are relevant to their respective hypotheses. In our cross-sectional study applying the epistemic framework to investigate the endorsement of a conspiracy mentality, four potential confounding factors need to be taken into account, as they are generally related to an inhibited development of ET capacities and, in conjunction with this, can specifically reinforce the formation of a conspiracy mentality.

First, the ET framework postulates that disrupted ET capacities develop in the context of adverse childhood experiences, leading to the formation of insecure attachment styles (Fonagy *et al*., 2022). Concomitantly, validation studies of the ETMCQ found that disrupted ET (especially mistrust) is empirically related to increased attachment avoidance and anxiety, which is associated with more adverse childhood experiences (Campbell *et al*., 2021; Liotti *et al*., 2023; Nolte *et al*., under review). Additionally, regarding the formation of conspiracy mentality, in the German validation study of the ETMCQ, a mediation effect was found that adverse childhood experiences contribute to limited ET capacities, which strengthens the tendency to believe in CTs (Kampling *et al*., 2023). This means that for the potential associations between ET disruptions and conspiracy mentality, possible confounding by insecure attachment styles must be excluded.

Second, in the ET framework, it has been argued that when there is a dominance of dismissive attachment styles associated with epistemic mistrust leading to a complete closure of social learning, this can closely be associated with the emergence of narcissistic personality traits (Choi-Kain *et al.*, 2022). Concerning conspiracy beliefs, it has been concluded based on previous research that in adolescent development, narcissistic tendencies to feel superior to one's peers (*e.g*., because of supposedly unique access to truth) are associated with the formation of a conspiracy mentality when accompanied by generalized mistrust (Bowes *et al*., 2023). In addition, it has been hypothesized that enhanced credulity in terms of insensitivity to cues of untrustworthiness can also be responsible for the mediation between narcissism and conspiracy beliefs (Cichocka *et al*., 2022). Therefore, the potential relationship between disrupted ET capacities and conspiracy beliefs has to be controlled for narcissistic personality traits.

Third, based on evidence collected in a systematic review, it was postulated that the development of ET capacities in childhood and adolescence is likely to be diminished in social contexts of loneliness, especially when there is social isolation from peers (Bauer *et al*., 2021). Concerning conspiracy beliefs, Freeman & Bentall (2017) formulated that, especially in adolescence and young adulthood, both loneliness and mistrust in authoritative sources (in addition to insecure attachment styles and narcissistic impairment due to low self-esteem) function as predisposing factors of conspiracy beliefs. Therefore, future studies investigating conspiracy mentality should take all these aspects into account.

And fourth, data from the so-called "authoritarianism studies", regularly conducted surveys representative of the German population, have shown that a strong expression of authoritarian attitudes in adulthood, which are closely connected to a conspiracy mentality, is associated with more adverse childhood experiences (*e.g*., harsh punishments), which result in the general tendency to mistrust (*e.g*., no reliance on other people) (Decker *et al.*, 2022). Additionally, in a Croatian study, a mediation effect was found, according to which authoritarian attitudes lead to reduced trust in the transmission of scientific knowledge, which in turn reinforces COVID-19-related conspiracy beliefs (Tonković *et al*., 2021).

These four variables (attachment, individual narcissism, loneliness, and authoritarianism), which can play a compromising role in the development of ET capacities, have also been shown to be relevant contributing factors to conspiracy beliefs, in general (Bowes *et al*., 2023; Biddlestone *et al*., 2022).

The present study

In the study presented here, we aim to investigate how disruptions in ET are associated with a conspiracy mentality. By employing the ETMCQ, we examine whether individual differences in the epistemic stances of mistrust and credulity are related to the general tendency to believe in CTs, even when controlling for other relevant contributing factors.

Hypotheses

The hypotheses formulated are: i) conspiracy mentality is positively associated with mistrust and credulity (small-to-medium effect size) and is negatively associated with trust (small effect size); ii) beyond other factors (*e.g.*, authoritarianism, attachment avoidance, and anxiety regarding romantic partners, loneliness, narcissism), mistrust and credulity are significantly associated with conspiracy mentality (with mistrust showing more explained variance); iii) the effect of credulity on conspiracy mentality is mediated by mistrust. The hypotheses and design of our study were pre-registered in advance (https://doi.org/10.17605/OSF.IO/4F38B).

Methods

In this study, we used a cross-sectional design to collect data from a diverse group of participants who were compensated monetarily for their participation. The recruitment was done through the crowd-sourcing site Prolific (https://www.prolific.co). This platform uses an algorithm designed to capture a sample that is representative of the distribution of the UK population in terms of age, ethnicity, and gender. Our participant inclusion criteria were that they must be at least 18 years old, currently living in the UK, and proficient in the English language (minimum proficiency of level C1 in the common European framework of reference). The University College London Research Ethics Committee approved this study (reference 14285/002).

In accordance with our preregistration, we conducted an *a priori* power analysis using G*Power, which indicated that a minimum sample size of 107 participants was required to detect the hypothesized effects. Ultimately, we included a total of 417 participants in our final sample, the majority of whom were women (282 female, 134 male, and 1 other).

A detailed breakdown of the socio-demographic characteristics of our sample can be found in Table 1. Compared to the general UK population, our sample had a lower average age [mean (M)=33.28; standard deviation (SD)=11.11), higher levels of educational attainment (37% had completed higher education, and 21% had postgraduate education), and lower household income (32% earn less than £10,000, and 24% earn £10,000-20,000). The majority of the participants identified their

ethnicity as "White-British" (65%), while "white-any other white" accounted for 14.6%. All other ethnic groups each represented less than 5% of the total sample (*e.g.*, "Asian/British Asian-Indian" or "black/black British-African"). More details can be found in Table 1.

Instruments

Conspiracy mentality

We used the short version of the conspiracy mentality questionnaire (CMQ) (Bruder *et al*., 2013) to measure the propensity to endorse CTs. The CMQ consists of 5 items (*e.g.*, "I think that events which superficially seem to lack a connection are often the result of secret activities"), with responses given on an 11-point scale from 0% ("certainly not") to 100% ("certainly"). The convergent and discriminant validity, predictive test-retest reliability, and cross-cultural equivalence of this 5-item version of the CMQ have been demonstrated in international samples (Bruder *et al*., 2013). The CMQ has been shown to be the strongest predictor of belief in various specific CTs, even after controlling for a range of other contributing factors (Bruder *et al*., 2013; Milošević Đorđević *et al*., 2021). In our study, the CMQ demonstrated a high level of internal consistency (Cronbach's α=.84).

Table 1. Sociodemographic characteristics of the participants (n=417). Participants were on average 33.38 years old (standard deviation: 11.11).

Sample characteristics	No.	%
Gender		
Male	134	32.1
Female	282	67.6
Other	1	.2
Education		
No qualifications	4	1.0
Other qualifications (not listed)	5	1.2
Vocational level 1 (GCSE<5 A*-C)	24	5.8
Vocational level 2 (GCSE>5 A*-C)	23	5.5
A level (vocational level 3)	119	28.5
Higher education (or equivalent)	155	37.2
Postgraduate education (or equivalent)	87	20.9
Ethnicity		
White-British	271	65.0
White-Irish	2	.5
White-any other white	61	14.6
Asian/British Asian-Indian	14	3.4
Asian/British Asian-Pakistani	8	1.9
Asian/British Asian-Bangladeshi	4	1.0
Asian/British Asian-Chinese	3	.7
Asian/British Asian-any other Asian	14	3.4
Black/black British-African	5	1.2
Black/black British-Caribbean	1	.2
Mixed-white and Asian	8	1.9
Mixed-white and Black African	5	1.2
Mixed-white and Black Caribbean	1	.2
Mixed-any other mixed	6	1.4
Not stated	9	2.2
Household income, £		
Less than 10,000	134	32.1
10,000-20,000	99	23.7
20,000-35,000	114	27.3
35,000-50,000	42	10,1
50,000-75,000	22	5.5
75,000-100,000	3	.7
Not stated	2	.5

GCSE, general certificate of secondary education.

Epistemic trust, mistrust, and credulity

To measure the individual's trust in communicated knowledge and its potential disruptions, we employed the ETMCQ (Campbell *et al*., 2021). The ETMCQ is a 15-item self-report measure that produces 3 subscales: trust, mistrust, and credulity. Respondents rate each item on a scale from 1 ("strongly disagree") to 7 ("strongly agree"). Trust reflects a person's ability to be open to opportunities for social learning in relationships (*e.g.*, "I usually ask people for advice when I have a personal problem"). Mistrust indicates a tendency to treat information sources as unreliable and to avoid being influenced by communication from others (*e.g.*, "I don't usually act on advice that I get from others even when I think it's probably sound"). Credulity represents a lack of vigilance and discrimination regarding the transmission of information by others, indicating a person's lack of clarity about one's position (*e.g.*, "I am often considered naïve because I believe almost anything that people tell me"). Previous validation studies have demonstrated the ETMCQ's satisfactory internal consistency, test-retest reliability, and confirmed its factor structure as well as substantial interrelations with relevant developmental risk factors for mental health problems (Campbell *et al*., 2021; Kampling *et al*., 2023). In our study, the internal consistency of the 3 subscales was satisfactory: trust (α=.73), mistrust (α=.70), and credulity (α=.77).

Authoritarianism

To assess authoritarian tendencies, we utilized the authoritarianism-ultra short (A-US) (Heller *et al*., 2020), a screening tool that evaluates tendencies towards aggression, submission, and conventionalism. The A-US contains 3 items (*e.g.*, "troublemakers should clearly feel the effects of the fact that they are unwanted in the society") rated on a 5-point scale from 1 ("fully disagree") to 5 ("fully agree"). Its 1-factor structure, internal consistency, and construct and convergent validity have been confirmed in validation studies using a representative German sample (Heller *et al.*, 2020). In our sample, the internal consistency of the A-US was acceptable considering its brevity (α=.62).

Loneliness

We used the 3-item loneliness scale (TIL) (Hughes *et al*., 2004) to assess loneliness. The TIL consists of 3 items (*e.g.*, "how often do you feel isolated from others?") rated on a scale from 1 ("hardly ever") to 3 ("often"). The convergent validity of the TIL has been confirmed through high correlations with several common measures of social isolation, and its validity has been demonstrated through significant associations with measures of depression and perceived stress (Hughes *et al.*, 2004). In our sample, the internal consistency of the TIL was high (α=.83).

Individual narcissism

The pathological narcissism inventory (PNI) (Pincus *et al*., 2009) is one of the most used self-report measures of individual narcissism. It captures 7 dimensions, expressing on the one hand narcissistic grandiosity (entitlement rage, exploitativeness, grandiose fantasy, self-sacrificing self-enhancement) and on the other hand narcissistic vulnerability (contingent self-esteem, hid-

ing the self, devaluing). Overall, 52 items are presented (*e.g.*, "I often fantasize about performing heroic deeds"), which are rated on a 5-point scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). A total score is formed across all subscales, representing pathological narcissistic traits in general. The reliability, convergent, and divergent validity, as well as validity regarding clinical parameters, have been confirmed in validation studies (Pincus *et al.*, 2009). In our study, the internal consistency of the total scale was excellent (α=.96).

Attachment avoidance and anxiety

The revised experiences in close relationships (ECR-R) (Sibley *et al*., 2005) is one of the most commonly used self-report measures to assess attachment styles in adulthood. Using 36 items about aspects of attachment in romantic partnerships, which are rated on a scale ranging from 0 ("strongly disagree") to 6 ("strongly agree"), 2 subscales are formed: avoidance assesses the amount of discomfort with intimacy and independence-seeking (*e.g.*, "I prefer not to be too close to romantic partners"), whereas anxiety captures the tendency to fear rejection and abandonment (*e.g.*, "I often worry that my partner will not want to stay with me"). In validation studies, the ECR-R provided highly stable indicators of latent attachment during 3 weeks and predicted social interaction diary ratings of attachment-related emotions experienced during interactions with a romantic partner (Sibley *et al*., 2005). In our sample, the internal consistency of both subscales was excellent: anxiety (α=.94) and avoidance (α=.94).

Statistical data analysis

All statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) version 28 (IBM, Armonk, NY, USA), along with the PROCESS macro for moderation and mediation analyses. The dataset had less than 3% missing values, and analysis of the missing data indicated that the missing values occurred completely at random (Little's MCAR test: p>.05). A detailed analysis of the cases with missing values revealed that there were 12 cases where several questionnaires were not assessed due to a technical problem at the beginning of the survey. Since the proportion of missing values was small and there was no risk to statistical power, these cases were excluded through listwise deletion (Tabachnick & Fidell, 2019). As a result, a total of 405 cases were included in the statistical analyses.

Before conducting the main analyses, a pre-analysis was performed to examine the characteristics of the data for the dependent variable (conspiracy mentality). Descriptive statistics, including M and SD, were calculated and compared to findings from previous large-scale investigations using the CMQ in samples from the UK (Bruder *et al*., 2013; Imhoff *et al*., 2022). The normal distribution of the data was assessed using the Kolmogorov-Smirnov test.

To assess the associations between ETMCQ subscales and the CMQ, as well as with other measured variables, Pearson's correlation analyses were conducted. To account for multiple comparisons, methods such as Bonferroni correction and Bonferroni-Holm method were applied to adjust the alpha level.

Multiple linear regression analyses were conducted to explain the variance of conspiracy mentality, with mistrust and credulity as the main factors. Control variables potentially confounding the associations were included in the analysis: individual narcissism, insecure attachment styles (avoidance and anxiety), authoritarianism, loneliness, and sociodemographic factors (gender, age). A total of 3 separate multiple linear regression models were constructed: model 1 included all potential confounders and mistrust; model 2 included all potential confounders and credulity; and model 3 included all potential confounders, as well as both mistrust and credulity together. The homoskedasticity and normal distribution of residuals were assessed using scatter plots, multicollinearity was estimated using the variance inflation factor (VIF), and the independence of residuals was tested using the Durbin-Watson statistic (Tabachnick & Fidell, 2019).

Additionally, a mediation model was tested to examine whether the association between credulity and conspiracy mentality is mediated by mistrust. The mediation model included credulity as the independent variable (X), conspiracy mentality as the dependent variable (Y), and mistrust as the potential mediator (M). Bias-corrected bootstrapped confidence intervals (bias-corrected 95% confidence intervals) were estimated for the indirect effect using 10,000 bootstrap replications. The contributing factors significantly explaining the variance of conspiracy mentality in the multiple linear regression analyses were included as covariates in the mediation model to account for possible confounding effects (Hayes, 2018). That is, 2 models are conducted, one to explain mistrust (with all relevant contributing factors and credulity) and another to explain conspiracy mentality (with all relevant contributing factors, credulity, and mistrust), and the percentages of explained variance are calculated in each model (R^2).

Results

Pre-analysis

As a preliminary analysis, we examined the characteristics of the data on the dependent variable, conspiracy mentality. The data for conspiracy mentality in our sample followed a normal distribution, as indicated by the non-significant result of the Kolmogorov-Smirnov test (p>.05). On average, participants rated the items on the CMQ with a mean value of 5.88 (SD=2.11), suggesting that the statements were perceived as somewhat likely. This mean value is slightly lower than findings from previous studies conducted in the UK using the CMQ, including validation studies (M=6.3, SD=1.9) (Bruder *et al*., 2013) and large-scale multinational studies (M=6.49, SD=2.45) (Imhoff *et al*., 2022).

Descriptives and intercorrelations

Table 2 presents the descriptive statistics of all study variables and the bivariate correlations between them, supporting our first hypothesis. Concerning the ETMCQ subscales, conspiracy mentality showed a small positive correlation with trust (r=.10, p=.04). However, this correlation did not remain significant after applying the sequentially rejective multiple comparisons correction (Bonferroni-Holm method). On the other hand, conspiracy mentality exhibited small-to-medium positive correlations with both forms of epistemic disruption, namely mistrust (r=.31, p<.001) and credulity (r=.20, p<.001), both of which remained significant after Bonferroni correction. Additionally, conspiracy mentality was significantly associated with the control variables of individual narcissism (r=.25, p<.001), attachment anxiety (r=.11, p<.05), and authoritarianism (r=.13, p<.01). However, no significant correlations were found between conspiracy mentality and loneliness or attachment avoidance. Mistrust and credulity demonstrated significant positive correlations with all control variables (r=.11 to

.39), except for the association between credulity and attachment avoidance, which only showed a trend (r=.08, p=.08).

Multiple linear regression models

Regarding the second hypothesis, the results are presented in Table 3. Three regression models explaining the variance of conspiracy mentality were tested, including all potential confounding variables. In model 1, only mistrust was included as a contributing factor, while in model 2, only credulity was included. Model 3 included both mistrust and credulity together. All 3 models met the statistical assumptions: residuals were independent (Durbin Watson values between 1.9 and 2.0), normally distributed (scatter plot showed closeness to diagonal), and there was no evidence of multicollinearity (VIF values were below 10) or heteroskedasticity (scatter plot showed a balanced horizontal distribution).

In all 3 models, age, individual narcissism, and authoritarianism significantly contributed to explaining the variance of conspiracy mentality (p<.05), while gender, attachment anxiety, and avoidance, as well as loneliness, had no significant effects (p>.05). Model 1 accounted for 14% of the variance in conspiracy mentality (adjusted R^2=.14, F(8, 396)=8.96, p≤.001). This indicates that, even when controlling for the other confounding factors, mistrust significantly contributes to explaining the variance of conspiracy mentality (β=.28, p<.001). Model 2 explained 9% of the variance in conspiracy mentality (adjusted R^2=.09, F(8, 396)=6.04, p≤.001), indicating that, even when controlling for the other confounding factors, credulity significantly contributes to explaining the variance of conspiracy mentality when included without mistrust (β=.13, p<.05). Model 3 explained 14% of the variance in conspiracy mentality (adjusted R^2=.14, F(8, 396)=8.13, p≤.001). In addition to the block including only the control variables as influencing factors, which explained 8% of the variance in conspiracy mentality (adjusted R^2=.08, F(7, 397)=5.95, p≤.001), the inclusion of both ETMCQ subscales provided an additional explanation of 6% of the variance. When examining the specific effects, model 3 revealed that when both ETMCQ subscales were included together, only the contribution by mistrust was significant (β=.26, p<.001), while credulity did not provide any additional contribution (β=.06, p=.23) to the explained variance of conspiracy mentality.

Simple mediation model

Our results show a substantial correlation between the 2 ETMCQ subscales, credulity and mistrust (r=.38) (Table 2), which is consistent with findings from other studies using the ETMCQ (Campbell *et al*., 2021; Kampling *et al*., 2022; Tanzer

Table 2. Descriptive statistics and intercorrelations for all study variables.

Variable	No.	Mean	SD	1	2	3	4	5	6	7	8
1. Trust	405	4.70	.93	-							
2. Mistrust	405	3.97	.95	-.13**	-						
3. Credulity	405	3.06	1.11	.17***	.38***	-					
4. CMQ	405	5.88	2.12	.10*	.31***	.20***	-				
5. PNI	405	3.03	.82	.21***	.36***	.27***	.25***	-			
6. ECR_anxiety	405	3.24	1.26	-.02	.39***	.31***	.11*	.38***	-		
7. ECR_avoidance	405	2.91	1.19	-.26***	.23***	.09*	.01	.13**	.46***	-	
8. TIL	405	1.63	.57	-.14**	.33***	.17***	.06	.34***	.56***	.36***	-
9. A-US	405	2.78	.79	.06	.11**	.14**	.13**	.07	.05	.07	.00

SD, standard deviation; CMQ, conspiracy mentality questionnaire; PNI, pathological narcissism inventory; ECR, experiences in close relationships-revised; TIL, 3-item loneliness scale; A-US, authoritarianism-ultra short; *p<.05, **p<.01, ***p<.001

Table 3. Results of the multiple linear regression analysis explaining the variance of conspiracy mentality (n=405). Regarding the ETMCQ subscales (as potential contributing variables), model 1 includes only mistrust, model 2 includes only credulity, and model 3 includes both mistrust and credulity.

	Model 1 (mistrust)			Model 2 (credulity)			Model 3 (mistrust-credulity)		
	B	SE (B)	β	B	SE (B)	β	B	SE (B)	β
Gender	3.80	2.08	.09	3.76	2.14	.09	3.73	2.08	.09
Age	-.23	.10	-.12*	-.21	.10	-.11*	-.23	.096	-.12*
Narcissism	3.74	1.43	.14**	4.92	1.44	.19***	3.58	1.43	.14*
Attachment anxiety	-.30	1.05	-.02	.06	1.09	.00	-.54	1.07	-.03
Attachment avoidance	-.78	.95	-.04	-.37	.98	-.02	-.69	.95	-.04
Loneliness	-2,019	2.14	-.05	-.72	2.18	-.02	-1.88	2.14	-.05
Authoritarianism	2.97	1.27	.11*	3.09	1.31	.12*	2.80	1.28	.11*
Mistrust	6.11	1.17	.28***	-	-	-	5.73	1.21	.26***
Credulity	-	-	-	2.43	.98	.13*	1.20	.99	.06
R^2 (adjusted)		.14			.09			.14	
F		8.96***			6.04***			8.13***	

SE, standard error; *p<.05, **p<.01, ***p<.001.

et al., 2021). Based on previous elaborations regarding the potential effect of gullibility on conspiracy beliefs (Douglas *et al.*, 2019; van Prooijen, 2019), it can be hypothesized that credulity could be associated with conspiracy mentality through a mediating effect *via* mistrust. To investigate this hypothesis, a mediation model was conducted.

Figure 1 displays the direct and indirect effects while controlling for age, individual narcissism, and authoritarianism as covariates (included due to their significant contributions in all multiple linear regression analyses). Based on 10,000 bootstrap samples, the results show a significant indirect effect of credulity on conspiracy mentality *via* mistrust (β=.07, 95% confidence interval [.03, .11]). The direct effect of credulity on conspiracy mentality, when holding mistrust constant, was not significant (β=.06, p=.24), but the total effect (sum of direct and indirect effects) was significant (β=.13, p=.01). This indicates that the effect of credulity on conspiracy mentality is fully mediated by mistrust. The mediation model accounted for 10% of the variance in conspiracy mentality (R^2=.10, F=11.11, p≤.001).

Discussion

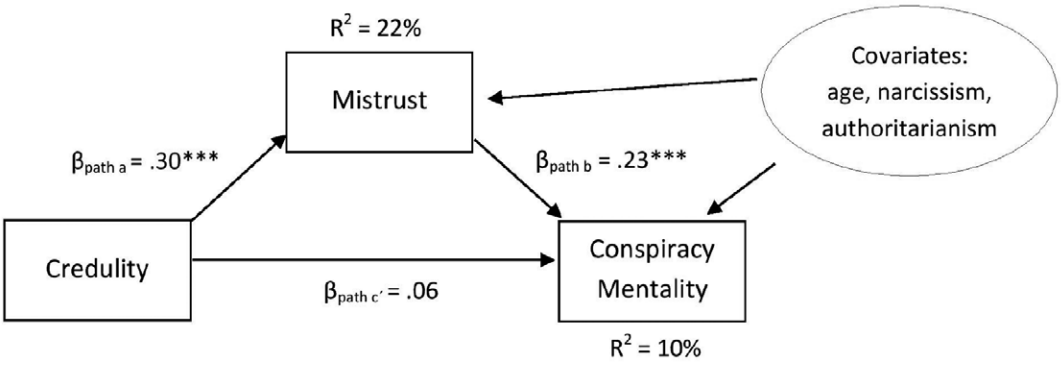
In this preregistered cross-sectional study, we examined how disruptions in ET, namely mistrust and credulity, are associated with the general propensity to believe in CTs when controlling for other contributing factors. Our sample consisted of 417 self-selected participants from the UK population who completed measures of conspiracy mentality (assessed with the CMQ) and ET, mistrust, and credulity (assessed with the ETMCQ), as well as instruments of the contributing factors of individual narcissism (PNI), adult attachment (ECR-R), authoritarianism (A-US), and loneliness (TIL). We also explored the potential mediating role of mistrust in the relationship between credulity and conspiracy mentality.

Consistent with our preregistered hypotheses, we found significant positive correlations between conspiracy mentality and both mistrust and credulity factors, indicating that disruptions in ET are associated with a higher tendency to believe in CTs. These positive associations are consistent with findings from a previous study that detected very similar correlations between the two ETMCQ subscales and conspiracy mentality (Tanzer, 2021). Our findings further support the two-component, socio-epistemic framework (Pierre, 2020) that the endorsement of a conspiracy mentality is related to, first, a generalized mistrust in the transmission of knowledge by socially authorized institutions or individuals, and, second, a heightened vulnerability to credulous belief in misinformation. Specifically, the finding regarding mistrust is consistent with the empirical synthesis of studies in the context of the COVID-19 pandemic that have demonstrated associations between conspiracy mentality and mistrust in the communication of information by various social authorities (van Mulukom *et al.*, 2022). Thus, our study provides a further contribution to a recently growing number of studies that demonstrate epistemic mistrust as demonstrating incremental validity when predicting conspiracy mentality (Bowes *et al*., 2023).

Additionally, the positive correlation between credulity and conspiracy mentality supports the gullible conspiracist hypothesis (van Prooijen, 2019), which posits that individuals with strong conspiracy beliefs may have an increased tendency to believe in implausible phenomena. This finding showing a significant credulity-conspiracy-association substantiates the assumption of former studies that a worldview shaped by conspiracy beliefs is often accompanied by a pronounced deficit of vigilance and discrimination in parsing knowledge, which can lead to vulnerability to misinformation (Pennycook & Rand, 2021).

Surprisingly, we also observed a small positive correlation between trust and conspiracy mentality, albeit with a very small effect size, but this finding does not withstand a correction controlling for sequentially rejective multiple comparisons, a finding that is in line with previous findings (Tanzer *et al*., 2021). This result also aligns with a general trend in other studies using the ETMCQ, which shows that the credulity and mistrust subscales more consistently produce stable associations (*e.g.*, with clinical outcomes or maladaptive pandemic coping styles) than the ET subscale (Fiorini Bincoletto *et al*., 2023; Kampling *et al*., 2022; Liotti *et al*., 2023; Tanzilli *et al*., 2022).

Based on the correlational analyses, it was also found that conspiracy mentality was significantly associated with other variables, namely individual narcissism, attachment anxiety, and authoritarianism. These findings substantiate insight from previous empirical investigations that have demonstrated evidence for these variables as key factors in the endorsement of conspiracy beliefs (Biddlestone *et al*., 2022; Bowes *et al*., 2023; Pilch *et al*., 2023).



***p<.001, β, standardized coefficients; CI, confidence interval (α=.05); R^2, explained variance.

Figure 1. The mediating role of mistrust in the relationship between credulity and conspiracy mentality (n=405).

The finding regarding authoritarianism is in line with a contemporary trend within psychological research on conspiracy beliefs, which reveals a clear direction toward positive relationships, although older findings were more ambiguous (Pilch *et al*., 2023). In our study, conspiracy mentality was not associated with attachment avoidance, which is surprising given that in meta-analyses, attachment avoidance is a stable contributing factor (with even slightly larger effect sizes than attachment anxiety) (Biddlestone *et al*., 2022). This may be explained by the fact that we identified attachment styles concerning romantic partners in adulthood, whereas other research has mostly examined attachment concerning primary caregivers in childhood (Biddlestone *et al*., 2022). Furthermore, we did not detect a relationship between conspiracy mentality and loneliness, which is surprising in light of some other studies showing positive correlations (albeit with small effect sizes) (Freeman & Bentall, 2017). However, other recent large-scale studies show that the association of loneliness with conspiracy mentality disappears when controlling for other contributing variables (Hettich *et al*., 2022). Thus, our study substantiates a conclusion from a recent meta-analysis that more research is needed to clarify the relationship between conspiracy mentality and loneliness (Biddlestone *et al*., 2022).

In line with our second hypothesis, our multiple linear regression models showed that both mistrust and credulity, when entered separately, significantly contributed to the explained variance of conspiracy mentality while controlling for other relevant factors such as socio-demographic variables, individual narcissism, adult attachment, authoritarianism, and loneliness. However, when both ETMCQ subscales were included in the final model, only the contribution of mistrust remained significant, whereas the contribution of credulity disappeared. These multiple linear regression findings contribute to the existing literature by highlighting the importance of epistemic mistrust as a key factor in the endorsement of a conspiracy mentality (Magarini *et al*., 2021). Previous research has primarily focused on mistrust in specific sources of information or social institutions (van Mulukom *et al*., 2022), while our study demonstrates that a more fundamental tendency toward a developmentally formed epistemic stance of mistrust can shape the propensity for conspiracy thinking. This finding supports models stating that a conspiracy mentality might be rooted in a broader psychological mindset characterized by a lack of "source-based trust" in social authorities (Frenken & Imhoff, 2023; Imhoff, 2023).

In line with our third hypothesis, we conducted a mediation analysis to explore whether the association between credulity and conspiracy mentality is mediated by mistrust. Such a model can be formulated based on the theoretical assumptions regarding the Gullible conspiracist hypothesis (van Prooijen, 2019), specifically that a manifest tendency toward credulity is often concomitant with heightened epistemic mistrust, which is the crucial mechanism for endorsing a conspiracy mentality. Our results demonstrate a full mediation effect, which implies that heightened epistemic mistrust serves as a crucial mechanism at work in the interrelation between epistemic credulity and conspiracy mentality. This finding further substantiates the gullible conspiracist hypotheses (van Prooijen, 2019). Also, our finding is consistent with Douglas' (2019) hypothesis that heightened gullibility may lead to more conspiracy beliefs when combined with the lack of fulfillment of psychological motives. Our finding can be interpreted in such a way that more credulous individuals are more likely to develop a conspiracy mentality through their concurrently increased mistrust in the communication of knowledge by authoritative sources because this co-occurrence of mistrust can prevent the fulfillment of epistemic motives, for example, a sense of subjective certainty or the desire for understanding (Douglas *et al*., 2017). In the broader social context, this could imply that gullible people are more likely to believe such political actors (*e.g*., populist actors) who give apparently simple, plausible explanations (*e.g*., CTs), but that these actors' statements reinforce the concurrently heightened epistemic mistrust in the very sources (*e.g*. scientific organizations, traditional media), which would lead to a challenging of conspiracy beliefs. It is through the coupled relationship between mistrust and credulity that the "rabbit hole" of radicalized conspiracy ideation is opened up (van Prooijen *et al*., 2022).

The notion that the associations between epistemic mistrust, credulity, and conspiracy mentality may have harmful social consequences is also suggested by recent structural equation models showing that generalized dispositional mistrust is the psychological common core of a conspiracy mentality and populist attitudes, represented by the strict division between the "normal people" *versus* the "corrupt elites" as well as between "the ingroup" *versus* "the outgroups" (Thielmann & Hilbig, 2023). In line with these insights, longitudinal, biannual studies using representative survey data from Germany show that manifested mistrust in communications by established authorities combined with a pronounced conspiracy mentality can contribute to an anti-democratic radicalization, characterized by far-right attitudes like antisemitism or islamophobia (Decker *et al*., 2022).

Potentially detrimental consequences, related to the heightened combination of disrupted ET and conspiracy mentality, have also been shown in the context of the COVID-19 pandemic. Large-scale cross-sectional and longitudinal studies in several countries consistently substantiate a model that a strong conspiracy mentality predicts reduced adherence to preventive anti-pandemic guidelines (*e.g*., vaccine hesitancy or rejection of lockdown rules), mediated by heightened epistemic mistrust in authorities responsible for the communication of COVID-19-related information (van Mulukom *et al.*, 2022). Such reduced adherence to prevention guidelines can also be reinforced by increased epistemic credulity, as it supports the "social network infodemic" driven by actors spreading fake news about the effectiveness of anti-pandemic measures (Magarini *et al*., 2021). Thus, in the context of a pandemic, the general tendency within a conspiracy mentality to suspect secretly coordinated plans by malicious, powerful groups of people to carry out harmful actions, when combined with a strong manifestation of epistemic mistrust and credulity, may contribute to disregarding anti-pandemic policies and rejecting an effective vaccination (Tanzer *et al*., 2021; Tanzilli *et al*., 2022).

Most fundamentally, our study substantiates the conclusion of Pierre's two-component, socio-epistemic model of conspiracy beliefs, "that effective mitigation requires attention on the part of institutions of epistemic authority to cultivate trust". Our finding, in line with other studies that have embedded the ET framework within the context of broader social and political phenomena (Nimbi *et al*., 2023; Tanzer *et al*., 2021; Tanzilli *et al*., 2022), suggests that it is not so much the establishment of ET in a positive sense that is a protective factor, but rather the reduction of epistemic disruptions, namely mistrust and credulity, that may be of greater value. Concerning specific interventions against conspiracy ideation, this means that state institutions responsible for the communication of socially relevant knowledge (for example, in the context of pandemics) should not only rely on fact-checking tools without considering the relevant psychological mechanisms. Based on the ET framework (Fonagy *et al*., 2022), it can be as-

sumed that epistemic petrification, which can arise from massive mistrust, can even be reinforced by confrontational counter-interventions based on fact-checking. Instead, interventions that aim to establish trustful actors in the everyday communication spaces of solidified conspiracy believers, who can engage in direct dialogue (*e.g.*, in radicalized social media forums), are more promising. In general, our findings show the potential to counteract an increase in conspiracy ideation by reducing the spread of developmental preconditions for disrupted ET capacities.

These results contribute to a better understanding of the complex relationship between epistemic disruptions and conspiracy mentality. They highlight the importance of considering both mistrust and credulity as distinct yet interrelated factors when examining the formation of conspiracy beliefs.

Study limitations

Our study has several limitations that should be taken into consideration when interpreting the findings and generalizing them to other populations.

First, our sample was obtained from a self-selected online platform, which may introduce selection bias. Although efforts were made to recruit participants from the wider UK population, the sample may not fully represent the general population. Specifically, the composition of our sample was skewed towards young, well-educated women. This could introduce bias in terms of gender, age, and education, as these factors have been associated with differences in conspiracy mentality. Moreover, the majority of participants in our sample identified as white, limiting the generalizability of our findings to other ethnic groups. Replication in a more diverse sample would provide a broader understanding of the relationship between epistemic disruptions and conspiracy beliefs.

Second, our study focused on individuals with a moderate tendency to believe in CTs, rather than extreme conspiracy theorists. This could limit the generalizability of our findings to individuals with more radicalized conspiracy ideation. Investigating the role of epistemic disruptions in populations with high levels of conspiracy beliefs would provide a more comprehensive understanding.

Third, the use of the 5-item version of the CMQ for assessing conspiracy mentality has been criticized for potential limitations in construct validity. Replicating the study using alternative measures, such as the Generic Conspiracist Beliefs Scale, would help validate the findings and provide a broader perspective on the relationship between disrupted ET and conspiracy beliefs. Besides, the mistrust and credulity findings may be related to problems with possible cross-loadings of certain items. To investigate this possible methodological limitation, further research on the factorial structure of the ETMCQ is necessary.

Fourth, the measurement of disrupted ET relied on self-report measures, which may not fully capture actual capacities in challenging social situations. Incorporating experimental assessments, such as the Epistemic Trust Assessment (Schröder-Pfeifer *et al*., 2022), would provide a more objective and controlled assessment of ET. This could also gather evidence for the potential causality of the relationships shown here.

Fifth, because of the cross-sectional study design, no predictive statements can be made about the effect of disrupted ET capacities on the endorsement of conspiracy mentality. A replication of our study with longitudinal study designs could allow us to make predictions over time. It could also be tested whether the presumed effects actually work in the direction we postulated (epistemic disruptions > conspiracy mentality), as can be theoretically justified but cannot methodologically be assured based on our study design.

Sixth, it is paramount to note that the cross-sectional design also limits the interpretation of the mediation model. We follow Hayes' (2018) recommendation that such an approach can be justified if it is theoretically consistent, even if it does not permit any statements about causal relationships. However, our interpretations of the mediation model should necessarily be considered preliminary until the interrelationships have been tested in different study designs (*e.g.*, longitudinal assessments of the hypothesized relationships).

It should also be noted that our models indicate a very large proportion of unexplained variance in conspiracy mentality. This finding is in line with the fact that conspiracy thinking constitutes a very complex phenomenon that is influenced by a large number of variables, each of which has only small to medium associations (Biddlestone *et al*., 2022; Bowes *et al*., 2023). The main finding of our study, that epistemic disruptions (especially mistrust) are significantly associated with conspiracy mentality, even when controlling for other relevant contributing factors, is comparable to the effect size of other psychological variables. However, future studies should aim to reduce the proportion of unexplained variance by adding possible interrelationships with related variables in more elaborate statistical models.

In conclusion, while our study provides insights into the association between disrupted ET and conspiracy mentality, these findings should be interpreted in light of the aforementioned limitations. Future research addressing these limitations will contribute to a more comprehensive understanding of the complex nature of conspiracy beliefs and their underlying mechanisms.

Implications for further research

Based on our findings, there seem to be two fundamental directions for future studies that can further investigate the complex interrelationships between disrupted ET capacities and the endorsement of a conspiracy mentality. Thereby, an application of the ET framework can help clarify currently open research questions in conspiracy research.

On the one hand, very recently there has been a growing development in conspiracy research to examine (subclinical) forms of psychopathological aspects as a potential factor (Pilch *et al*., 2023). This development is interesting for the application of the ET framework, as several studies have revealed complex interrelationships between disruptions of ET capacities and psychopathological symptoms (Campbell *et al*., 2021; Kampling *et al*., 2022; Liotti *et al*., 2023). Within conspiracy research, the most stable associations of psychopathological impairments and conspiracy ideation have been produced by 2 factors: narcissism (r=.28) and paranoia (r=.34) (Bowes *et al*., 2023). In this regard, prior findings suggest that disrupted ET capacities may mediate these associations, regarding both narcissism (Cichocka *et al*., 2022) and paranoia (Imhoff & Lamberty, 2018). Based on this, it would be fruitful to investigate in future studies, for example, using structural equation modeling, if these interrelations exist. In this context, it would also be necessary to statistically control for aversive childhood experiences, as these have been shown to have associations with disrupted ET capacities in a broader social context (Kampling *et al.,* 2023; Tanzer *et al*., 2021). In general, an application of the ET framework to conspiracy research offers a deeper potential to investigate more precisely potential associations between psychopathological components and conspiracy

ideation in light of developmental impairments (*e.g.*, childhood adversity, limited mentalizing, attachment disorganization).

Another research direction for an application of the ET framework in conspiracy research may be to investigate the emergence of conspiracy beliefs in the context of broader social vulnerabilities. Meta-analytic syntheses have revealed that at the social level, experiences of alienation, deprivation, or powerlessness are stable factors for the endorsement of a conspiracy mentality (Biddlestone *et al*., 2022; Bowes *et al*., 2023). In such contexts, conspiracy beliefs may serve the epistemic function of supposedly explaining one's experience of being treated unfairly. Additionally, the ET framework hypothesizes that for coping with such experiences in the social context of fundamental economic inequalities, the formation of epistemic mistrust of social authorities may be adaptive (Campbell & Allison, 2022). Future studies could use longitudinal study designs to explore whether experiences of alienation, deprivation, or powerlessness can affect the manifestation of epistemic mistrust, which in the long run results in strong conspiracy ideation. Thus, such studies could contribute to a more in-depth investigation of the adaptive functions of a conspiracy mentality in the context of social vulnerabilities (instead of simply understanding them as individual deficits), thereby addressing a crucial knowledge gap in the field of research on conspiracy beliefs to date (van Prooijen & Imhoff, 2022).

Conclusions

Our study provides support for the association between epistemic disruptions (mistrust and credulity) and conspiracy mentality, in line with our preregistered hypotheses. The findings highlight the importance of considering epistemic mistrust as a fundamental disposition underlying conspiracy belief, suggesting that individuals with a general suspicion towards authoritative information are more likely to endorse CTs. Moreover, the association between epistemic credulity and conspiracy mentality is mediated by epistemic mistrust. The ETMCQ demonstrates its potential as a valuable instrument for investigating the impact of disrupted ET on conspiracy beliefs in future research.

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