# The relationship between epistemic stance, mentalizing, paranoid distress and conspiracy mentality: an empirical investigation

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

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## ABSTRACT

Epistemic stance, comprising epistemic trust, mistrust, and credulity, and the closely related construct of mentalizing have been related to paranoid ideation and conspiracy mentality. All phenomena are common in the general population and may become clinically and societally relevant at an extreme expression by influencing an individual's positioning towards socially transmitted information possibly as far as complete social detachment or attachment to extremist views. Herein, an individual's experienced distress may play an important role, which has however largely been neglected in empirical research. Thus, this study aims to empirically investigate the effect of epistemic stance on a clinically relevant aspect of paranoid ideation, namely paranoid distress. We assume that epistemic stance will be associated with paranoid distress, but that this association will be mediated by mentalizing. Moreover, we assume that epistemic stance will be indirectly associated with conspiracy thinking via paranoid distress. Data of 595 participants (mean age = 43.05; SD = 13.87; female = 48.32%, male = 51.18%, diverse = 0.51%) were collected via self-report questionnaires through an online-based cross-sectional study. Structural equation modeling was performed for data analysis. As expected, epistemic mistrust was associated with paranoid distress via mentalizing deficits. Unexpectedly, epistemic trust was associated with more paranoid distress. Indirectly, epistemic trust was associated with conspiracy mentality via paranoid distress. Findings partially confirmed the hypothesized associations. Mentalizing may be a target for reducing distress associated with a distrusting epistemic stance. Epistemically trusting individuals with high paranoid distress may turn to conspiracy theories for regulation.

**Key words:** epistemic stance, mentalizing, paranoid distress, conspiracy mentality, structural equation modeling.

## Introduction

Epistemic trust, mistrust and credulity constitute the epistemic stance of an individual, *i.e.* the position an individual adopts towards socially transmitted information (Campbell *et al*., 2021). Epistemic trust is the belief that information or knowledge communicated by others is trustworthy, generalizable and relevant for the individual (Fonagy & Allison, 2014). As such, it is a prerequisite for learning from others. Epistemic mistrust is characterized by hypervigilance towards information communicated by others, associated with high skepticism and a tendency to reject the information. Epistemic credulity represents the opposite of epistemic mistrust, describing a "blind"

trust characterized by a lack of (appropriate) vigilance within interpersonal contact and towards information transmitted by others (Fonagy *et al*., 2023). As interpersonally transmitted learning and social cooperation are considered highly advantageous for the human species, an individual's epistemic trust has been linked to psychological resilience and adaptive participation in society. In contrast, epistemic mistrust and credulity have been linked with lower psychosocial functioning and psychopathology (*e.g.* Campbell *et al*., 2021), and theoretically with belief in conspiracy theories (cmp. Fonagy *et al*., 2023). However, depending on the interpersonal context, each aspect of the epistemic stance may be adaptive; epistemic mistrust may guard the individual from harmful intent in a malign environment, and epistemic credulity may secure one's place within a social context where one's own agency is lost or experienced as threatening by others.

An individual's epistemic stance is assumed to develop within and depending on the individual's interpersonal context (Fonagy *et al*., 2023). It is considered a trait-like disposition of the individual (Campbell *et al*., 2021), which optimally can be modulated by appropriate vigilance in a specific situation taking into account reliability and trustworthiness of others' information (epistemic vigilance; Sperber *et al*., 2010). Epistemic trust is assumed to develop, and be triggered, in secure attachment relationships, and more broadly, within a society that adequately acknowledges the individual (cmp. Fonagy *et al*., 2023). This link is hypothesized to stem from the experience of being adequately seen and understood by others (Nolte & Fonagy, 2023), or in other words: being adequately mentalized. Mentalizing is the ability to understand human behavior on the basis of conjectured mental states (Fonagy *et al*., 2002). According to mentalizing theory, an individual who has adequately been mentalized by others will learn to trust information of those who adequately mentalized him or her, *i.e.* have high epistemic trust in them (Fonagy *et al*., 2019). Moreover, the individual's own capacity to mentalize will develop depending on how adequately the individual was mentalized. Once established, the individual's own capacity to mentalize is important for his or her self- and interpersonal regulation. As the development of mentalizing and epistemic trust is deeply intertwined, epistemic trust and mentalizing are considered to work together in a virtuous circle to serve self- and interpersonal regulatory functions and aid in adaptive participation in society. On the other hand, epistemic mistrust and credulity are assumed to be associated with difficulties in mentalizing. In line, epistemic mistrust and credulity, together with difficulties in mentalizing, are supposed to come along with difficulties in self- and interpersonal regulation and reduced adaptation to society (Fonagy *et al*., 2019).

In times of crises, which have been painfully present in the lives and minds of people within the last years inter alia during the COVID-19 pandemic, the position a person takes towards socially transmitted information seems to have important consequences on an individual level: a person may either seek out official information and find solace in such information presented by an authority acknowledged by the individual, as *e.g.* the government or scientists. Or a person may be suspicious of official accounts, which likely comes along with high psychological distress related to the fear of being harmed by powerful others in already dangerous times. Those individuals may rather find solace in conspiracy theories, which reject official and instead provide other explanations. On a societal level, individuals' more extreme positioning towards socially transmitted information in specific domains may ultimately be a factor in the forming of irreconcilable groups and an indicator of societal separation.

Conspiracy theories may be considered one form of (more or less) extreme positioning towards social information: Conspiracy thinking is characterized by the belief that groups of (powerful) individuals are conspiring to harm other individuals, and that these conspiring groups are behind aversive societal occurrences (Bruder *et al*., 2013). Both theoretically and empirically, the epistemic stance, specifically mistrust, has been linked if not equated with paranoid ideation and found to predict conspiracy thinking (Pierre, 2020). Paranoid ideation has at its core the belief that others will harm the individual and intend to do so (Freeman, 2007). Paranoid thinking is common in the general population but may become clinically relevant when the paranoid ideas cause severe anxiety or "paranoid distress" (Freeman *et al*., 2005). The socio-epistemic model of belief in conspiracy theories (Pierre, 2020), which draws on findings from psychological and socio-political studies, proposes that extreme epistemic mistrust can present as paranoid ideation. Such extreme epistemic mistrust, or "trait-like paranoia", is then proposed to lead to an "epistemic vacuum" or "informational vacuum" due to individuals closing themselves off to socially transmitted and commonly acknowledged information (Pierre, 2020). With the aim to fill this informational vacuum, some people will then turn to conspiracy theories. Thus, according to the model, epistemic mistrust underlies belief in conspiracy theories. However, while several personality traits and cognitive biases with conceptual overlap with epistemic mistrust to epistemic mistrust have been empirically identified as predictors for conspiracy thinking such as schizotypy and dangerous-world beliefs (*e.g.* Bruder *et al*., 2013; Hart & Graether, 2018), the predictive and/or multidirectional mechanisms behind the emergence of conspiracy ideation still remain to a large part unclear. Herein, emotional aspects may play an important role. While this has been repeatedly suggested as indirect implications of findings on cognitive processes and personality traits, negative emotions and their regulation have been largely neglected in research on conspiracy belief (Molenda *et al*., 2023). Yet, recently, Molenda and colleagues (2023) showed that emotion dysregulation and conspiracy belief were positively associated. Taking a resourceful perspective on the link between emotion dysregulation and conspiracy belief, conspiracy theories may serve a (more or less functional) regulatory purpose (*e.g.* Fonagy *et al*., 2023; Pierre, 2020).

Based on the empirical findings and theoretical notions, it seems likely that with greater epistemic mistrust comes along greater paranoid distress. Moreover, individuals may try to regulate this distress via "organizing" it within conspiracy theories, *i.e.* within a larger, more distant interpersonal context. In this process, mentalizing, as it serves self- and interpersonal regulatory purposes, may buffer aversive effects of the individual's epistemic stance on their experienced paranoid distress. Yet so far, empirical investigations of the effects of epistemic stance on paranoid distress and indirectly conspiracy mentality, considering an individual's capacity to mentalize as a mediator are lacking.

In this study, we investigate whether the trait-like epistemic stance of individuals is associated with their paranoid distress via mentalizing (deficits). Moreover, we investigate whether the individuals' epistemic stance is associated with their conspiracy mentality indirectly via paranoid distress. More specifically, our hypotheses were the following:

i. All aspects of the epistemic stance (mistrust, credulity, and trust) are associated with paranoid distress.
   a. Mistrust is positively associated with paranoid distress.
   b. Credulity is positively associated with paranoid distress.
   c. Trust is negatively associated with paranoid distress.
ii. The relationship between all aspects of the epistemic stance (mistrust, credulity, and trust) and paranoid distress is mediated via the ability to mentalize.
   a. The association between mistrust and paranoid distress is mediated via the ability to mentalize.
   b. The association between credulity and paranoid distress is mediated via the ability to mentalize.
   c. The association between trust and paranoid distress is mediated via the ability to mentalize.
iii. Paranoid distress is positively associated with conspiracy mentality.
iv. There is an indirect effect between epistemic mistrust, credulity and trust and conspiracy mentality via paranoid distress:
   a. The association between mistrust and conspiracy mentality is mediated via paranoid distress
   b. The association between credulity and conspiracy mentality is mediated via paranoid distress
   c. The association between trust and conspiracy mentality is mediated via paranoid distress

## Methods

### Recruitment

The online sample was recruited in February 2022 via the panel provider Respondi and conducted via SoSci Survey (Leiner; Version 3.1.06). Respondi is a pure market research panel whose membership and participation are voluntary and follow a double opt-in registration process. The panel is actively managed centrally by a professional panel team. Respondi payed the respondents for their participation based on the previously estimated duration of the survey and ensured that they do not take part in the survey more than once by tracking their account credentials. The survey was conducted in German within Germany and the sample corresponded to the general population with the only exclusion criterion being adults over 65 years of age. The study was approved by the ethics committee of the Faculty of Behavioural and Cultural Studies at Heidelberg University (AZ Tau 2020 1/1).

### Measures

The *Epistemic Trust, Mistrust and Credulity Questionnaire* [ETMCQ; (Campbell *et al*., 2021); German versions by Nolte *et al*., and Weiland *et al*., in prep.] is a validated questionnaire assessing epistemic trust (*e.g.* "I usually ask people for advice when I have a personal problem"), mistrust (*e.g.* "If you put too much faith in what people tell you, you are likely to get hurt.") and credulity (*e.g.* "When I speak to different people, I find myself easily persuaded by what they say even if this is different from what I believed before.") via self-report on overall 15 items. The items are rated on a seven-point Likert scale from "strongly disagree" to (1) "strongly agree" (7). The internal consistencies of the subscales in the current study were α=.78 for epistemic trust, α=.67 for epistemic mistrust, and α=.81 for epistemic credulity.

The *Paranoia Checklist* [PCL; (Freeman *et al*., 2005), German version by (Lincoln, 2017)] is a validated self-report questionnaire and was used to assess paranoid distress. The PCL consists of three subscales assessing frequency of paranoid thoughts, degree of belief and paranoid distress on 18 items per scale. For this study, only the paranoid distress scale was used. Individuals were asked to rate how distressing they find different paranoid thoughts (*e.g.* "People are trying to make me upset.") on a five-point Likert scale from "not distressing" to (1) "very distressing" (5). The internal consistency of the CMQ in the current study was α=.98.

The *Conspiracy Mentality Questionnaire* [CMQ; (Bruder *et al*., 2013)] is a validated self-report questionnaire assessing the tendency to engage in conspiracy thinking. Conspiracy mentality is measured on five items (*e.g.* "I think that politicians usually do not tell us about the true motives for their decisions"). Individuals are asked to indicate how likely they find each statement to be true on an 11-point scale from 0 (0% certainly not) to 10 (100% certain). The internal consistency of scale in the current study was α=.89.

The *Mentalizing Questionnaire* [MZQ; (Hausberg *et al*., 2012)] assesses mentalizing deficits via self-report on 15 items. The items focus on different aspects of mentalizing impairments, as *e.g.* impaired emotional awareness or impaired regulation of affect. The items (*e.g.* "Often, I don't even know what is happening inside of me") are rated on a five-point Likert scale ranging from "no agreement at all (1") to "total agreement (5)", whereas a higher score indicates greater mentalizing impairment, *i.e.* lower mentalizing ability. The internal consistency of the MZQ in the current study was α=.89.

### Data analysis

Data analysis was performed using the desktop version of R-Studio (R Core Team, 2020). After data cleaning as well as performing descriptive and preparatory analyses (inter-construct-correlation using the Pearson-Correlation Coefficient), a structural equation model (SEM) was performed to test our hypotheses. According to the hypotheses, the model includes two, interlaced mediation models. The first one describes a partial mediation of the relationship of the three stances of epistemic trust to paranoid distress via mentalizing. The second mediation is extending the latter one by adding a second, subsequent variable. Thereby a second, complete mediation regarding the relationship between the stances of epistemic trust and conspiracy mentality via paranoid distress is integrated into the model (model is depicted in Figure 1). Due to the fact that $n$=151 participants (25.38%) reported having suffered from a mental disorder during the last year, it was decided to test for group differences via two-tailed, unpaired t-tests as well as include a binary variable *mental disorder* (yes/no) as a control variable into the model. Bias-correction via bootstrapping with 5000 repetitions was used. To evaluate the model fit of the SEM, three model fit indices were used. The Comparative Fit Index (CFI) indicates acceptable model fit with values ≥.9. The Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residuals (SRMR) both indicate acceptable model fits with values ≤.08 (Awang, 2012). After checking the model for its initial fit, it was modified by allowing content coherent intercorrelations as suggested by an R-Studio algorithm (Saris *et al*., 1987).

## Results

### Data cleaning and participants

As an implementation of data quality assurance during the survey, two instructed response items were implemented in the study (*e.g.* "If you are attentive, please answer *very much*."). Of the total *N*=1101, *n*=483 participants answered the items incorrectly. The exclusion of these participants took place directly via SoSci Survey, since it was no longer possible for them to continue answering the questionnaire after responding to the control item incorrectly. The subsequent data cleaning regarding the participants who answered the control items correctly and completed the questionnaire (*n*=618) consisted of two components used for identifying response anomalies. The first step covered the exclusion of participants with more than 25% missing values in the central constructs (*n*=1; cmp. Collins *et al.*, 2001). The second step covered the identification and exclusion of careless responders (cmp. Meade & Craig, 2012). Checking for careless responders was performed by the identification of either excessively fast response times (*n*=17) or contradictory responses of the item in one questionnaire by always selecting the same item category (*n*=5). Data cleaning resulted in a final *N*=595 [mean age = 43.05; *SD*=13.87; range: 18-65 years; female = 48.32%, male = 51.18%, diverse (individuals who do not want to and/or are not able to assign themselves to the binary system male/female) = 0.51%]. A total of 151 participants reported to have suffered from a mental disorder the last year.

### Descriptive and preparatory analyses

Sociodemographic data of the final *N* can be obtained from Table 1. The results of the two-tailed, unpaired t-tests (individuals with and without a mental disorder within the last year) can be taken from Table 2. The findings showed small effects for epistemic mistrust and paranoid distress as well as medium sized effects for epistemic credulity and mentalizing deficits. Participants with a mental disorder during the last year showed higher values regarding those four variables than participants without a mental disorder. The other tested variables (epistemic trust and conspiracy mentality) did not show any significant difference between participants with and without a mental disorder during the last year.

The preparatory inter-construct-correlations as well as the descriptive values of the central constructs are shown in Table 3. All correlations except for the one associating trust and conspiracy mentality showed statistically significant associations. The majority of constructs showed correlations in the expected direction. The only exception in this regard was the positive correlation between trust and paranoid distress.

For preparatory analyses, the normal distribution of the central constructs was tested. Due to the fact that the assumption of a multivariate normal distribution was not given, the SEM was conducted using bootstrapping (5000 repetitions). Furthermore, the measurement models of the variables were examined. After allowing theory-coherent intercorrelations, all measurement models showed a sufficient fit.

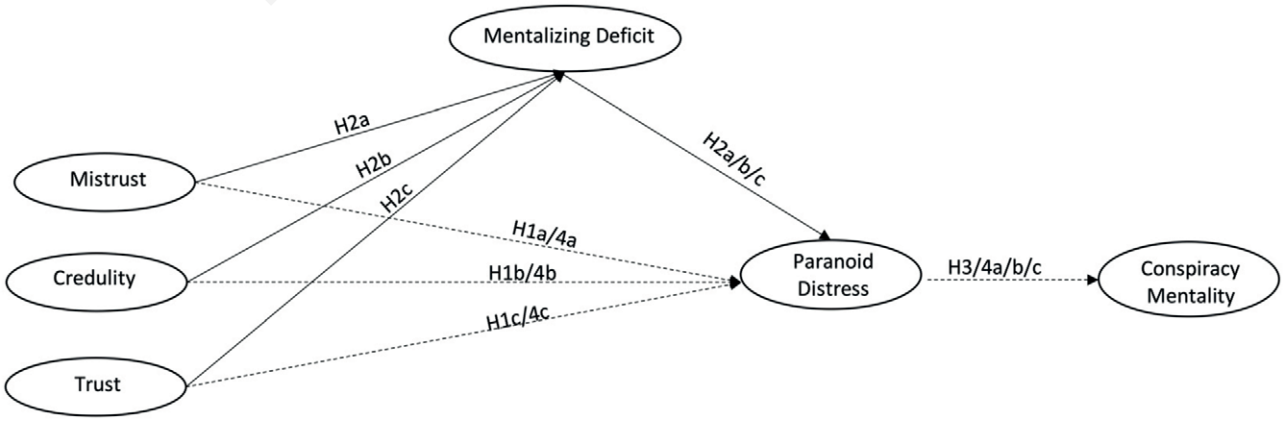
### Hypotheses testing

Overall, the model fit of the final SEM indicated an almost acceptable fit (CFI=.88; RMSEA=.071; SRMR=.076). Whereas RMSEA and SRMR meet the cut-off criteria of an acceptable fit, CFI closely missed it. Due to the small discrepancy between the cut-off and actual CFI (Δ=.02) the model is nevertheless used for hypotheses testing. A comprehensive structural model with all regression coefficients depicted is displayed in Figure 2. In the following, the results are presented according to the established hypotheses.

Hypotheses 1a, 1b and 1c could not be verified. Within our model neither mistrust (β=-.106, p=.507) nor credulity (β=.184, p=.122) showed a significant association with paranoid distress. Trust on the other hand showed a significant, positive association to paranoid distress (β=.178, p=.004). Accordingly, participants with higher epistemic trust showed higher paranoid distress. Although it was a significant effect, it didn't show the expected direction and thereby couldn't confirm hypothesis 1c.

Furthermore, the mediation of the relationship between all aspects of epistemic stance and paranoid distress via mentalizing was investigated as depicted in hypothesis 2. The SEM provides evidence for a significant indirect effect between epistemic mistrust, mentalizing, and paranoid distress, thereby confirming hypothesis 2a.






Dashed lines indicate that the association is part of several hypotheses due to the interlaced mediation model.

**Figure 1.** Graphic illustration of hypotheses.

**Table 1.** Sociodemographic characteristics (N=595).

| Variable | N (%) | M (SD) |
|---|---|---|
| Age in years | | 43.05 (13.87) |
| Sex | | |
| Female | 288 (48.32) | |
| Male | 304 (51.18) | |
| Diverse* | 3 (0.51) | |
| Highest educational attainment | | |
| Currently in school | 2 (0.34) | |
| Middle school diploma | 92 (15.46) | |
| High school diploma | 125 (21.00) | |
| Professional apprenticeship | 173 (29.08) | |
| Bachelor's degree | 77 (12.94) | |
| Master's degree | 119 (33.45) | |
| PhD | 7 (1.18) | |
| Current employment | | |
| Student in school | 4 (0.67) | |
| In training | 9 (1.51) | |
| Student in University/College | 54 (9.08) | |
| Employee | 379 (63.70) | |
| Self-employed | 37 (6.22) | |
| Unemployed/job-seeking | 72 (12.10) | |
| Civil servant | 31 (5.21) | |
| Mental disorder | | |
| Affective disorders | 96 (16.13) | |
| Schizophrenia and paranoid disorders | 5 (0.84) | |
| Neurotic, reactive and somatoform disorders | 68 (11.43) | |
| Mental disorders in connection with physical factors° | 34 (5.71) | |
| Personality/behavioural disorder | 12 (2.02) | |
| Behavioural- or emotional disorder with onset in childhood or adolescence | 10 (1.68) | |
| Developmental disorder | 3 (0.50) | |
| Other | 13 (2.18) | |

M, arithmetic mean; SD, standard deviation.
*Refers to individuals who do not want to and/or are not able to assign themselves to the binary system male/female. °For example eating disorders/sleep disorder or sexual malfunction.

**Table 2.** Results of unpaired t-tests between individuals with and without a mental disorder.

| Variable | With MD | | Without MD | | *t*-statistic | p | Cohen's d |
|---|---|---|---|---|---|---|---|
| | M[#] | SD | M[#] | SD | | | |
| Age | 42.02 | 13.48 | 43.20 | 14.07 | .90 | .366 | .08 |
| Gender | 64/86/3 | - | 224/220/0 | - | -1.80 | .073 | .17 |
| Trust | 23.56 | 5.98 | 23.18 | 5.24 | -.76 | .449 | .07 |
| Mistrust | 16.23 | 4.76 | 14.35 | 4.27 | -4.54 | <.001*** | .43 |
| Credulity | 18.31 | 7.37 | 14.72 | 5.72 | -6.60 | <.001*** | .62 |
| Paranoid distress | 42.76 | 21.48 | 36.79 | 19.84 | -3.14 | .002** | .29 |
| Mentalizing deficit | 45.78 | 11.14 | 38.32 | 10.04 | -7.68 | <.001*** | .72 |
| Conspiracy mentality | 27.38 | 13.25 | 25.85 | 12.52 | -1.27 | .204 | .12 |

M, arithmetic mean; SD, standard deviation, MD, mental disorder. ***p<.001, **p<.01, *p<.05.
[#]In case of the categorical variable gender, instead of the arithmetic mean, the frequency of the response categories is presented in the following order: female/male/diverse.

**Table 3.** Correlations and internal consistencies.

| Variables | M | SD | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|
| 1. ETMCQ trust[a] | 23.28 | 5.44 | (.78) | | | | | |
| 2. ETMCQ mistrust[a] | 19.86 | 4.91 | -.08* | (.67) | | | | |
| 3. ETMCQ credulity[a] | 15.46 | 6.43 | .19*** | .51*** | (.81) | | | |
| 4. MZQ[b] | 40.25 | 10.87 | -.07* | .56*** | .55*** | (.89) | | |
| 5. PCL distress[c] | 38.34 | 20.43 | .15*** | .23*** | .35*** | .38*** | (.98) | |
| 6. CMQ[d] | 26.25 | 12.81 | .06 | .33*** | .28*** | .25*** | .22*** | (.89) |

M, arithmetic mean; SD, standard deviation.
***p<.001, **p<.01, *p<.05. Reliabilities (Cronbach's) alpha are presented in the main diagonal.
[a]Assessed using Empistemic Trust, Mistrust, and Credulity Questionnaire; [b]assessed using Mentalization Questionnaire; cassessed using Paranoia Checklist; [d]assessed using Conspiracy Mentality Questionnaire.

Participants with higher mistrust values showed lower mentalizing ability which in turn came along with more paranoid distress. The hypothesized indirect effects originating from epistemic trust and credulity however showed non-significant results within our model (see Table 4 for the corresponding mediation coefficients).

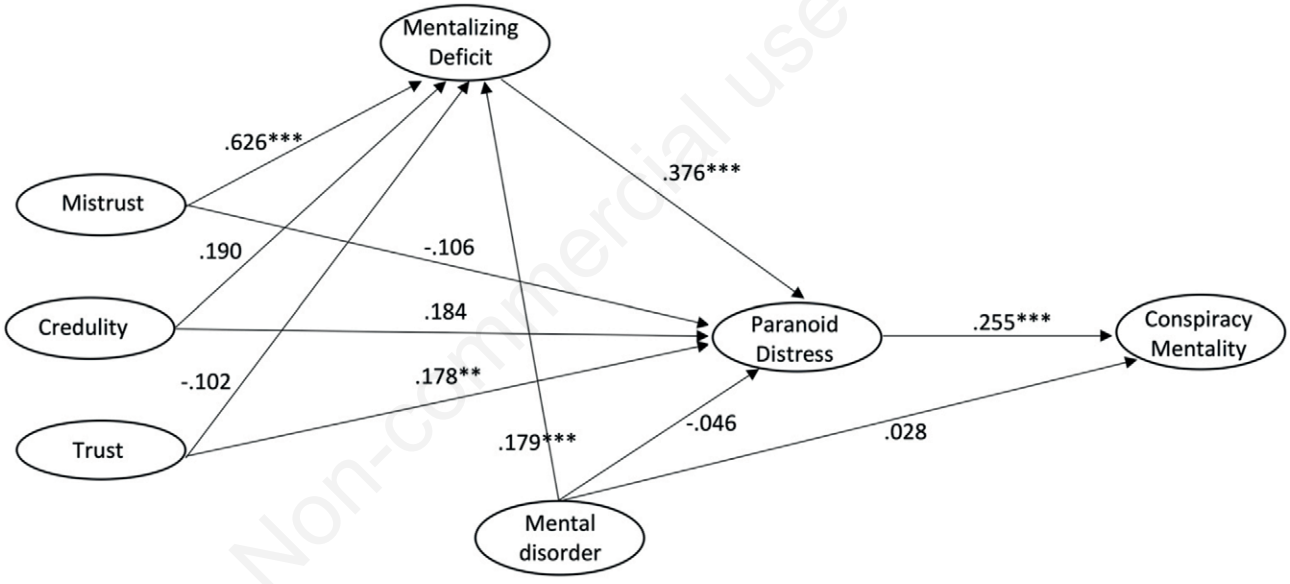
Additionally, according to hypothesis 3, the association between paranoid distress and conspiracy mentality was tested. In accordance with the hypothesis, the analysis revealed a positive association (β=.255, p<.001).

Lastly, hypothesis 4 indicating an indirect effect from all aspects of epistemic stance to conspiracy mentality via paranoid distress was investigated (see Table 4 for the corresponding mediation coefficients). Hypotheses 4a and 4b could not be confirmed within our SEM due to non-significant indirect effects. Hypothesis 4c could also not be confirmed. Analogously to the findings of hypothesis 1c, a significant effect was proven, however it was not in the expected direction. Participants showing higher values in epistemic trust had more paranoid distress which in turn affected conspiracy mentality positively.

As illustrated in Figure 2, the control variable showed a significant association with mentalizing deficits (β=.179, p<.001): Participants who reported having suffered from a mental disorder during the last year showed a greater mentalizing deficit. The associations of the control variable with paranoid distress (β=-.046, p=.292), and with conspiracy mentality (β=.028, p=.515) did not reach significance.

## Discussion

This study aimed at investigating the relationship between epistemic stance, mentalizing, paranoid distress, and conspiracy mentality within a comprehensive model. The SRMR and the RMSEA indicated an acceptable fit while the CFI was just below the cut-off (Δ=.02). In line with Awang (2012), we did not use model indices as strict cut-off criteria but as rough guidelines. The decision to accept or reject a model should not be based solely on one fit index but on the overall representation and impression of the model. Therefore, we accepted the calculated model. Nevertheless, it is important to point out that the results need to be interpreted with caution due to the not entirely clear outcomes regarding the model fit.




***p<.001, **p<.01, *p<.05.

**Figure 2.** SEM with regression coefficients.

**Table 4.** Mediation pathways.

| Mediation pathway | Coefficient | p-value | Confidence interval# | |
|---|---|---|---|---|
| | | | Lower | Upper |
| Mediation via mentalizing | | | | |
| Mistrust → mentalizing → paranoid distress | .223 | .021* | .098 | .452 |
| Credulity → mentalizing → paranoid distress | .062 | .221 | -.021 | .171 |
| Trust → mentalizing → paranoid distress | -.031 | .198 | -.088 | .008 |
| Mediation via paranoid distress | | | | |
| Mistrust → paranoid distress → conspiracy mentality | -.058 | .517 | -.256 | .094 |
| Credulity → paranoid distress → conspiracy mentality | .092 | .137 | -.007 | .242 |
| Trust → paranoid distress → conspiracy mentality | .083 | .014* | .025 | .157 |

*p<.05. #Calculated via bootstrapping with 5000 repetitions.

Findings partially confirmed our hypotheses: Mentalizing impairments mediated the effect of epistemic mistrust on paranoid distress. Moreover, paranoid distress was positively associated with conspiracy mentality. Contrarily, our hypotheses on the direct associations between epistemic mistrust and credulity with paranoid distress, and indirect associations between epistemic mistrust and credulity with conspiracy mentality via paranoid distress could not be confirmed due to insignificant associations. For epistemic trust, associations with paranoid distress and indirectly with conspiracy mentality were found in unexpected directions.

## Epistemic trust, paranoid distress and conspiracy mentality

First, our findings revealed positive associations between epistemic trust, paranoid distress and conspiracy mentality. While we expected epistemic trust to be associated with paranoid distress, the direction of the association was unexpected: The higher the epistemic trust of the individuals, the higher their paranoid distress. While this finding seems to contradict the notion that epistemic trust comes along with increased psychological resilience (*e.g.* Campbell *et al*., 2021), it also is in line with some recent findings. For example, epistemic trust was found to be increased in clinical samples, and it has been discussed that findings may best be understood as indicating a (help-seeking) state rather than a trait (Taubner, 2023). In any case, a positive association between epistemic trust and paranoid distress underscores the salience of interpersonal relations inherent to the construct of epistemic trust. Increased trust in others' information may not only render the individual in an advantageous position for social cooperation; it may similarly render the individual vulnerable to psychological distress in case others really do have malign intentions – or when the individual is otherwise confronted with paranoid content, as was the case in this study. For the assessment of paranoid distress, participants were instructed to imagine how distressing they would find it, if *e.g.* "People are trying to make (you) upset". It seems likely that epistemically trusting individuals, who depend on others for information, will find the imagination of harmful intent in others quite unsettling.

As expected, paranoid distress was positively associated with conspiracy mentality. This is in line with previous findings of paranoid ideation underlying the tendency to engage in conspiracy belief (Pierre, 2020). Moreover, this finding hints at the relevance of the emotional aspect of paranoid ideation, namely paranoid distress, for the occurrence of conspiracy ideation. Thus potentially, increased paranoid distress comes along with an increased need for regulation, which individuals aim to achieve by turning to conspiracy belief. This would be in line with repeated propositions that difficulties with regulation of aversive emotions underlie conspiracy belief, and that conspiracy belief potentially serves a regulatory function (*e.g.* Molenda *et al*., 2023).

Participants with higher epistemic trust had more paranoid distress, which came along with increased conspiracy mentality. While initially we did not expect to find a positive association between epistemic trust and both, paranoid distress and conspiracy mentality, these findings potentially have interesting implications. As discussed above, to an individual who strongly depends on others for information, the confrontation with paranoid content indicating that others intend to harm them will likely be reason for distress. When epistemically trusting individuals have paranoid distress, one major regulation strategy they would normally use – turning to others for regulation – may become disrupted. This may potentially render the trusting individual with a "regulation vacuum". As outlined above, the socio-epistemic model of conspiracy belief (Pierre, 2020) suggests that epistemic *mis*trust underlies the tendency to turn to conspiracy theories due to an "epistemic vacuum" upon epistemic mistrust. Our findings suggest that the model may be complemented by the notion that (state) epistemic *trust* might similarly underlie the tendency to engage in conspiracy belief in the context of an (imagined) threatening interpersonal environment, due to disrupted regulation strategies. This may especially become relevant in times of societal crises and with increasing confrontation with information of paranoid content. The finding of an increased epistemic trust in individuals with paranoid or conspiracy ideation may help explain the urgency of their need to convince others that may transpire as well as the severity of the (feeling of) social isolation. This finding seems to underscore the need to differentiate between individuals and aim to understand an individual's underlying need. It seems necessary to provide an interpersonally trusting atmosphere and interpersonal emotion regulation in contact with individuals with paranoid and/or conspiracy ideation. Therapists may use mentalization-based interventions (*e.g.* Bateman & Fonagy, 2010) such as empathic validation and cautious sharing of their own doubts recommended to support individuals when they suffer from an inadequately high certainty about their (painful) inner reality representing the objective reality.

While correlational analyses revealed small to medium positive direct associations between all aspects of epistemic stance and paranoid distress, no significant associations were found between epistemic mistrust, epistemic credulity and paranoid distress in the SEM. These null effects in the SEM could be related to the fact that structural equation models, unlike correlations, consider all effects simultaneously and additionally assume directional effects. Thus, although small correlative effects seem to be present, they were not confirmed as directional effects in the overall model. While a null-finding does not support a theory, it may be in line with the assumed development of epistemic mistrust and credulity: both epistemic mistrust and credulity likely represent a successful adaptation to an unkind environment (Fonagy *et al*., 2023), potentially serving to reduce or even prevent an individual's paranoid distress. Also, we did not find epistemic mistrust or epistemic credulity to be indirectly associated with conspiracy mentality via paranoid distress. Thus, our findings did not provide support for the socio-epistemic model of conspiracy belief in regard of epistemic mistrust underlying conspiracy mentality (Pierre, 2020). One may hypothesize based on the mainly non-clinical sample, that in this study, a non-trusting epistemic stance (namely mistrust and credulity, subsumed analogously to (Campbell *et al*., 2021)) may have represented an (appropriate) protection towards information provided by conspiracist accounts. This would be in line with the function of epistemic vigilance, which represents an appropriate caution with regard to other people's communicated information (Sperber *et al*., 2010). Yet, this notion would need further investigation in future studies.

## Epistemic mistrust, mentalizing and paranoid distress

Epistemic mistrust showed a significant effect on paranoid distress via mentalizing: Higher epistemic mistrust was associated with higher paranoid distress via greater mentalizing im-

pairments in this study. This finding supports the proposed association between epistemic mistrust and mentalizing deficits (*e.g.* Campbell *et al*., 2021). Moreover, the finding is in line with the notion that with greater epistemic mistrust comes along greater paranoid distress, supporting the link between epistemic mistrust and paranoid ideation (Pierre, 2020). Thus, epistemically distrusting individuals' mentalizing may be specifically targeted to improve intra- and interpersonal regulation as is *e.g.* aimed for in Mentalization-based treatment (Bateman & Fonagy, 2010). For this purpose, the patient needs to first feel recognized as a thinking and feeling person by their therapist. This will enable the experience of an "epistemic match" with the potential to open the patient up for new information provided by this therapist, and eventually, hopefully, providing grounds for the generalization of trust in interpersonally transmitted information outside of therapy (Fonagy *et al*., 2019). Contrary to our expectations, epistemic trust was not associated with lower paranoid distress, and epistemic credulity was not associated with higher paranoid distress via mentalizing ability. Correlational analyses revealed a small correlation between epistemic trust and mentalizing as well as a large correlation between epistemic credulity and mentalizing deficits in the expected directions: higher epistemic trust came along with less mentalizing impairment, and more epistemic credulity came along with more mentalizing impairments. One may hypothesize that the null-finding on the mediation of the effect of epistemic trust on paranoid distress via mentalizing may be related to the notion discussed above: Epistemic trust was associated with increased paranoid distress. As mentalizing deficits were related to increased paranoid distress, and correlational analyses revealed a small correlation between epistemic trust and better mentalizing, mentalizing ability may have buffered effects of epistemic trust on experienced paranoid distress in our study. However, this explanation remains speculatory and does not hold for the effects of epistemic credulity on paranoid distress. As discussed above, one may hypothesize that epistemic credulity may have a protective function with regard to paranoid distress.

As individuals with a mental disorder had higher epistemic mistrust, credulity, mentalizing deficits, and paranoid distress than individuals without a mental disorder, we included mental disorder as a covariate into our model. In line with mentalizing theory, the presence of a mental disorder was associated with higher mentalizing deficits. While this was not the focus of our study, our findings point to the significance of the presence of a mental disorder for the relationship between mentalizing deficits, paranoid distress, and conspiracy mentality.

### *Limitations*

Contrary to our expectations, several hypotheses were not confirmed. With regard to paranoid distress, the design of the study may have contributed to some of the findings. While we assessed the likelihood of distress experienced when confronted with paranoid thoughts, we did not include frequency of paranoid thought into the study. Thus, it may *e.g.* be that trusting and credulous individuals in our study experienced reduced paranoid thoughts and with this, reduced paranoid distress in real life, even though the association we found between epistemic trust and paranoid distress was positive. Thus, our findings are limited by not investigating frequency of paranoid thought within our model. Moreover, as model fit was in part just below acceptance, results must be interpreted with caution and should be replicated in futures studies.

The internal consistency of the epistemic mistrust scale was questionable. As our Cronbach's alpha value is similar to what has been found in the validation study of the questionnaire used to assess epistemic mistrust (Campbell *et al*., 2021), one needs to consider that the measure we used has difficulties to assess this complex construct with sufficient reliability. This may have contributed to the null-findings and limits the explanatory power of the associations found between epistemic mistrust, paranoid distress and conspiracy mentality in this study.

One major limitation is the cross-sectional design of the study. Longitudinal studies should be conducted in the future to enable causal inferences and shed *e.g.* more light on the question of state versus trait variation in epistemic stance.

As our findings indicated the relevance of having a mental disorder for the investigated relationships, future studies should aim for the investigation of group differences by including comparable group sizes. An equal distribution of groups would enable better group-comparisons such as multi-group analysis for SEM.

Moreover, only self-report assessments were used. Future studies should investigate whether findings can be replicated when the constructs are operationalized with objective measures.

We did not assess tendency to engage in specific conspiracy theories, as has been suggested before (Pierre, 2020). Neither did we assess epistemic stance, mentalizing and paranoid distress with regard to specific scenarios. Thus, our findings can only draw conclusions on general tendencies in the investigated population. However, as empirical studies on the variables are largely lacking, findings of this study can be used to inspire research questions including more specific scenarios.

We aimed for a comprehensive model to explain paranoid distress and conspiracy mentality with epistemic stance and mentalizing (impairments). However, further interesting aspects such as right-wing ideology could not be incorporated into the model as the sample size does not allow further complication of the model. Nonetheless, several aspects may be further investigated in future studies, as *e.g.* emotion regulation.

## Conclusions

The findings of this study underscore the relevance of epistemic stance and mentalizing for the occurrence of potentially clinically and societally relevant phenomena like paranoid distress and belief in conspiracy theories. The findings can provide a basis for future research as well as the development of therapeutic and preventive interventions. Epistemic mistrust was associated with increased paranoid distress via mentalizing deficits. Thus, mentalizing ability may be targeted in mistrusting individuals to reduce their psychological distress. Findings did not suggest that epistemic mistrust or credulity, which have been repeatedly associated with reduced psychosocial adaptation in the past, were associated with conspiracy mentality. Rather, findings suggested that epistemic trust may represent a factor in individuals turning to conspiracy belief. Possibly, with its openness towards interpersonally transmitted information, epistemic trust renders an individual not only advantageous for social cooperation, but also susceptible to paranoid distress and conspiracy ideation. One may hypothesize that in interpersonally threatening situations, epistemically trusting individuals' strategy to turn to others for stress regulation may become disrupted, opening a "regulation vacuum", which may be filled by conspiracy theories. This would imply a need for interpersonal regulation proclaiming that therapists or other individuals seeking to

connect with individuals believing in conspiracy theories should aim for a trusting, soothing, and open atmosphere. Yet, as there are only few empirical studies on the associations between the phenomena at this stage, findings should mainly be used to inspire future research. Herein, the directional pathways should further be investigated. Moreover, a distinction between state and trait may shed increasing light on the associations between epistemic stance, mentalizing and paranoid and conspiracy thinking in future studies.

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