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A moderated mediation model: the role of Need for Cognitive Closure in the relation between System Justification and Conspiracy Beliefs

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Abstract

Need for Cognitive Closure can be defined as a personal preference for predictability and intolerance towards uncertainty. The connection between Need for Cognitive Closure and conspiracy beliefs is evident: conspiracy theories offer simple and conclusive solutions to complex issues, providing explanations for events that do not have clear dynamics. Features of conspiracy theories make them attractive to people high in Need for Cognitive Closure. There are personal characteristics that increase the likelihood of conspiracy theories' endorsement. The present study (N = 138) tested a moderated mediation model, using variance-based structural equation modeling, highlighting the role of Need for Cognitive Closure as a moderator in the relationship between System Justification and General Conspiracy Beliefs, which resulted as a mediator in the relationship between System Justification and Specific Conspiracy Beliefs/Intention. We observed the moderation effect of Need for Cognitive Closure in the relationship between General Conspiracy Beliefs and Specific Conspiracy Beliefs/Intention. Finally, conspiracy priming showed a strong effect on Specific Conspiracy Beliefs/Intention compared to anti-conspiracy priming and the combination of the two kinds of priming. Results clarify complex dynamics that directly or indirectly foster the endorsement of conspiracy theories. Practical implications regard preventing conspiracy theories' deleterious effects. Interventions focused on educating people before their exposure to conspiracy theories could provide an attempt to protect people against these theories by warning them about manipulative dynamics to which they will be subjected.

Keywords: Conspiracy Theory; Conspiracy Beliefs; Need for Cognitive Closure; System Justification

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Introduction

Conspiracy theories can be considered a peculiar case of misinformation (Swami et al., 2014). In *The Washington Monthly* (1975), Bethell first advanced the hypothesis that conspiracy explanations of Kennedy's assassination were widespread because an explanation that involved a lone assassin was not satisfactory enough for such an important event. According to this hypothesis, the studies conducted by McCauley & Jacques (1979) demonstrated the popularity of conspiracy theories due to the irrational need to explain big and important events with proportionately big and important causes. Scholars concur that conspiracy theories explain the causes of significant events such as secret actions of malevolent groups (Uscinski & Paret, 2014; Wood et al., 2012). Studies show that these theories modify people's attitudes on important issues (Douglas & Sutton, 2018; Jolley et al., 2020; Jolley & Douglas, 2014), like political matters. An international trend sees a general increase in the use of conspiracy theories in political affairs (Moore, 2016). Conspiracy theories are helpful in reallocating power between different political characters; for this reason, they can be considered "populist theories of power" (Fenster, 1999): conspiracy theories propose simplistic and dangerous visions, fostering populist interpretations.

A pilot study by Jolley et al. (2017) identified a positive association between conspiracy beliefs and system justification. Considering, notwithstanding subsequent findings by the same study demonstrating that conspiracy beliefs predict system justification, the present study investigates the alternative and original hypothesis that system-justifying beliefs may also facilitate the endorsement of conspiracy theories, thereby acknowledging the complex and potentially bidirectional nature of this relationship. The relationship between the two constructs derives from the idea that individuals who endorse system-justifying beliefs are motivated to maintain a positive perception of the existing social order. In the face of injustices or societal crises, these individuals may adopt conspiracy theories, attributing blame to deviant groups or external actors. This allows them to avoid cognitive dissonance and defend the system's legitimacy, which they continue to perceive as fundamentally fair and just. On another note, when people consider the actual societal system as just and righteous, their adherence to conspiracy beliefs lowers (Pellegrini et al., 2024).

Other scholars have investigated belief consistency as a mechanism underlying conspiracy thinking, highlighting the tendency to endorse one conspiracy theory to predict belief in others, even when they appear unrelated (Douglas & Sutton, 2008; Swami et al., 2011). Accordingly, individuals endorsing concrete and specific theories tied to particular events or topics are considerably more inclined to adopt broader general conspiratorial beliefs, reflecting a pervasive distrust across diverse public interest domains (Wood, 2017). Wood et al. (2012) demonstrated that the aforementioned mechanism works even if conspiracy theories are inconsistent with each other or irrelevant, finding that the more participants believed that Princess Diana faked her own death, the more they believed that she was killed because both ideas were consistent with the assumption that something was being covered up.

The spread of conspiracy theories is also related to the satisfaction of curiosity when information is inadequate, when available data are conflicting, or when events seem random (Douglas et al., 2017). Conspiracy thinking is a mindset regarding people looking for simple explanations, so this perspective is attractive to people intolerant of uncertainty (Marchlewska et al., 2018): the aversion toward ambiguity is a dynamic related to the Need for Cognitive Closure (NfCC; Kruglanski & Webster, 1996). This construct relates to the inclination toward predictability and preference for structure. Abalakina-Paap et al. (1999) showed that people with a low tolerance for ambiguity tended to prefer the simplified explanations related to conspiracy theories over the multiple explanations offered by legitimate political or scientific authorities. In particular, NfCC can be seen as a need to immediately avoid uncertainty and find clear beliefs about reality (that could support conspiracy theories). Individuals with high NfCC tend to make swift judgments and resist revising them once formed (Roets et al., 2015; Livi et al., 2015). This urgency for closure supports group norm adherence and can enhance sensitivity to salient explanations—including conspiratorial narratives—especially in contexts of perceived threat or social instability (Prislei et al., 2024). Moreover, NfCC has been linked to greater alignment with binding moral foundations (e.g., authority, in-group loyalty) and a preference for cultural tightness, both of which may reinforce exclusionary or rigid worldviews (De Cristofaro et al., 2019; Prislei et al., 2024). Although some studies have demonstrated a tendency for NfCC to predict conspiratorial beliefs (Staszak et al., 2022), other research suggests that this is context-dependent. One study showed that NfCC was a good predictor of adopting a conspiratorial interpretation of ambiguous events, but only when the conspiratorial explanation was made salient (Marchlewska et al., 2017). Leman & Cinnirella (2013) found that some people were more likely to accept certain conspiracy explanations for events: participants with lower NfCC were more motivated to attend to and scrutinize the evidence in more detail (Klein & Webster, 2000).

The present research hypothesized a moderated mediation model, considering the role of Need for Cognitive Closure as a moderator in the relationship between System Justification (SJ) and General Conspiracy Beliefs (GCBs), which should be a mediator in the relationship between SJ and Specific Conspiracy Beliefs/Intention (SCBs/Intention). Furthermore, we hypothesized a moderation effect by NfCC in the relationship between GCBs and SCBs/Intention. Besides, it was hypothesized a major impact of conspiracy priming on SCBs/Intention compared to anti-conspiracy priming and the combination of the two kinds of priming.

Method

Participants

The sample size was estimated using an a priori power analysis using the dedicated part of the software WARP PLS v. 8.0 (Kock, 2024) and the gamma-exponential method (Kock &

Hadaya, 2018). Presupposing a relatively small path coefficient ($\beta = 0.21$) between the considered variables (based upon previous research; Pellegrini et al., 2024), a significance level of 0.05, and a power of 0.80, the required sample size emerged to be 130. Thus, the study was conducted among 138 university students. The questionnaire was organized and administered using the Qualtrics questionnaire design software. The sample consisted of 115 females and 20 males (3 people did not specify his/her gender). The participants ranged from 19 to 40 years (age $M = 20.84$, age $SD = 2.25$). Participants gave their informed consent to participate. This study was approved by the ethical committee of Sapienza University of Rome (Protocol No.: CERT_18D13473DE6). All methods and procedures were conducted in accordance with Helsinki's Declaration.

Procedure

The participation link for the study was distributed during a university course at Sapienza University of Rome. Upon providing their informed consent, students who indicated their willingness to take part were granted access to the questionnaire, hosted by the Qualtrics platform. The total number of participants was equally and randomly allocated to the four experimental conditions (Conspiracy Priming vs Anti-conspiracy Priming vs Conspiracy Priming / Anti-conspiracy Priming vs Anti-conspiracy Priming / Conspiracy Priming).

After reading the stimuli, participants answered a question about the Russian-Ukrainian conflict to measure their engagement in the specific conspiracy theory. The term "conspiracy" has never been reported in the stimuli (Douglas & Sutton, 2008). At the end of the proposed questionnaire, we specified that the text reported contained baseless conspiracy beliefs. All the stimuli are available in the Appendix. The four conditions were designed to explore both the content and order effects of priming. The inclusion of a priming procedure is useful to experimentally activate specific cognitive frames, either supportive or critical of conspiracy thinking, prior to measuring participants' endorsement of a conspiracy theory. This method serves to test the causal effect of exposure to conspiracy content on belief formation. Indeed, the final two conditions were included to provide a clearer understanding of how the sequence of stimuli modulates cognitive processing and subsequently shapes participants' responses. Specifically, the first two conditions isolate the effect of a single type of priming, while the latter two conditions allow for examining sequence effects: whether presenting opposing perspectives in a specific order influences the impact of the priming.

The previous procedure was adapted from previously used measures (Jolley & Douglas, 2017). In the aforementioned study, participants were randomly assigned to different experimental conditions in which they read conspiracy and/or anti-conspiracy articles presenting opposing perspectives on vaccine safety.

Our main hypothesis was that participants exposed solely to conspiracy priming would show higher levels of conspiracy theories endorsement regarding the Russian-Ukrainian

conflict, compared to those in the anti-conspiracy condition or the mixed conditions. Moreover, we hypothesized that anti-conspiracy priming presented last (Condition 4) would be less effective in reducing conspiracy beliefs than when it was presented first (Condition 3), due to recency and confirmation bias effects.

This approach enabled us to investigate not only whether priming works, but also how the structure and sequence of information influenced belief updating and resistance to misinformation.

Measures

Tendency to support a specific conspiracy theory. 1 Likert-like item was used to understand if the stimulus/stimuli affected the tendency to adhere to a conspiracy theory concerning the Russian-Ukrainian war and the subsequent intention to support Russia (1 = absolutely not convinced to 10 = absolutely convinced; "If I were a young Russian, I would defend my nation's interests"). The item's formulation is intended to elicit an empathetic perspective-taking toward the conspiracy priming. Its selection is grounded in the assumption that even a hypothetical identification with such a viewpoint may indicate a heightened propensity to endorse specific conspiracy narratives, particularly those related to the geopolitical conflict in question.

General tendency to support conspiracy theories. This tendency was measured using the Generic Conspiracist Beliefs Scale (GCB scale) (Brotherton et al., 2013). This scale is made up of 56 items about widespread conspiracy theories about events that actually occurred. Participants rated items on a 5-point Likert-type scale (1: definitely not true to 5: definitely true). The instrument includes five factors: government malfeasance (e.g., "The government has employed people in secret to assassinate others"), extraterrestrial cover-up (e.g., "Evidence of alien contact is being concealed from the public"), malevolent global conspiracy (e.g., "A small, secret group of people is actually in control of the world economy"), personal well-being (e.g., "Cures for certain deadly and common diseases exist, but are being deliberately withheld"), and control of information (e.g., "A lot of information about diseases and treatments is withheld from the public") ($\alpha = .966$, $\omega = .967$). While correlations were examined using individual factor scores of the GCB scale, the moderated mediation model was conducted using a composite score.

System Justification. People's level of System Justification was evaluated with the Italian version of the System Justification Scale (e.g., "In general, you find society to be fair"; Rocco et al., 2014). Participants were asked to respond to 8 items from 1: strongly disagree to 7: strongly agree ($\alpha = .673$, $\omega = .712$).

Need for Cognitive Closure. It was measured using the short version (14 items) of the Italian version of the Need for Cognitive Closure Scale (e.g., "I generally avoid participating in discussions about ambiguous and controversial issues"; Pierro & Kruglanski, 2005), already used in the Italian context (i.a., Parris et al., 2023). Participants were asked to rate each statement on a scale from 1: completely disagree to 6: completely agree ($\alpha = .809$, $\omega = .813$).

Data analysis

Pearson correlations were performed to process the bivariate correlations between the key variables, using Jamovi (Jamovi, 2023).

We used variance-based structural equation modeling (VB-SEM) to test our hypothesis, employing WARP PLS statistical software (Kock, 2024). In the abovementioned analysis, measurement error is explicitly modeled through constructing latent factors, much like a covariance-based SEM analysis. Furthermore, VB-SEM estimates models through the use of ranked data, which is distribution-free. Model complexity, sample size, and deviations of the variable distributions from normality have less impact on model estimation. Following the published criteria for VB-SEM models, VB-SEM can evaluate the model at the measurement and structural levels. Considering the measurement level, VB-SEM defines the construct validity of the latent factors with the average variance extracted (AVE) and the composite reliability coefficients (ρ), which should respectively be more than .50 and .70. Considering the structural level, VB-SEM determines the adequacy of the hypothesized relations among the constructs employing the goodness-of-fit (GoF) index resulting from the square root of the product between AVE and the average R^2 for the model with values of .10, .25, and .36 which indicates respectively small, medium, and large effect sizes for model fit (Tenenhaus et al., 2005). The average path coefficient (APC) and average R^2 (ARS) coefficients are helpful to understand the model's adequacy, both of which should be statistically significantly different from zero. The full collinearity variance inflation factor (AFVIF) measures multicollinearity: values below 3.300 indicate an acceptable level of multicollinearity.

According to our hypothesis, we tested a moderated mediation model, evaluating the role of NfCC as a moderator

in the relationship between System Justification (SJ) and General Conspiracy Beliefs (GCBs), which is a mediator in the relationship between SJ and Specific Conspiracy Beliefs (SCBs) /Intention. As seen in our Path Diagram (Figure 1), we also hypothesized a moderation effect by NfCC in the relationship between GCBs and SCBs/Intention.

Results

Correlations

As shown in Table 1, there is a correlation between all factors of GCBs and their composite measure. Notably, a correlation between SJ and SCBs/Intention emerged. Although not statistically significant, there was a marginal correlation between SJ and GCBs.

Priming Effect

To test the Priming effect, a One-way Analysis of Variance (ANOVA) was performed: results showed a significant effect of the Priming on Specific Conspiracy Beliefs/Intentions ($F(3, 131) = 2.923, p < .05, \eta^2 = .063$), the priming effect was not significant for General Conspiracy Beliefs ($F(3, 131) = 1.176, p = .32, \eta^2 = .026$), two participants were excluded from the analysis because they did not provide complete responses to the scale measuring belief in general and specific conspiracy theory. In a post hoc analysis, we compared the mean scores of each level of the priming using Tukey's multiple comparison of means test: results were significant only when considering the difference between the Conspiracy Priming ($M = 3.648, SD =$

Tab. 1. Correlation matrix between key variables.

	1	2	3	4	5	6	7	8
1. Government Malfeasance	—							
2. Personal well-being	.683***	—						
3. Malevolent Global Conspiracy	.711***	.699***	—					
4. Control of Information	.786***	.802***	.729***	—				
5. Extraterrestrial Cover-Up	.498***	.637***	.571***	.523***	—			
6. System Justification	-.139	-.113	-.192	-.201*	-.035	—		
7. Need for Cognitive Closure	.061	.120	.046	.144	.002	.135	—	
8. Specific Conspiracies Beliefs	.094	.158	.077	.113	-.042	.294***	.168	—
9. General Conspiracies Beliefs	.845***	.889***	.876***	.886***	.778***	-.150	.095	.081

* $p < .05$; ** $p < .01$; *** $p < .001$

Tab. 2. Effect of the Priming on Specific Conspiracy Beliefs/Intention and difference between means.

Manipulation	n	M	SD	Comparison	Diff	p	95% C.I.	
							Lower	Upper
C	37	3.648	2.084	vs. AC	1.248	.049	.003	2.493
				vs. C+ AC	.677	.455	-.517	1.872
				vs. AC + C	1.113	.076	-.080	2.347
AC	32	2.400	1.302	vs. C+ AC	-.571	.641	-1.83	.690
				vs. AC + C	-.115	.995	-1.393	1.163
C+AC	35	2.971	2.134	vs. AC + C	.456	.769	-.773	1.686
AC+C	34	2.515	2.063					

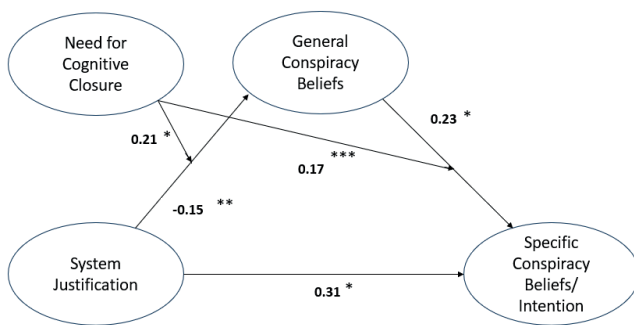
Note: C: Conspiracy Priming; AC: Anti-conspiracy Priming; C+AC: Conspiracy Priming/Anti conspiracy Priming; AC+C: Anti-conspiracy Priming / Conspiracy Priming

2.084) and Anti-Conspiracy Priming ($M = 2.400$, $SD = 1.302$; $Diff = 1.248$, $p = .049$, 95% C.I. = 2.494; .049). Results for other comparisons can be found in Table 2.

Moderated mediation model^l

According to our hypotheses, the moderated mediation model showed an ideal fit ($GoF = .281$; $APC = .213$, $p = .002$; $ARS = .119$, $p = .039$; $AVIF = 1.009$). All hypothesized paths presented significant relationships between the latent variables. In particular, there is a direct relation between SJ and SCBs/Intention ($\beta = .31$, $SE = .03$, $p < .01$) and GCBs ($\beta = -.15$, $SE = .02$, $p = .04$). The two hypothesized moderation effects of NfCC on the relation of SJ and GCBs and between GCBs and SCBs/Intention were significant (respectively $\beta = .21$, $SE = .05$, $p < .01$, and $\beta = .17$, $SE = .04$, $p = .02$). The link between GCBs and SCBs/Intention was also significant ($\beta = .23$, $SE = .03$, $p < .01$). The path coefficients of the model are reported in Figure 1.

Fig. 1. Moderated mediation model * $p < .01$, ** $p = .04$, *** $p = .02$



To investigate the effect of the moderator on the indirect effects, we implemented a Monte Carlo approach to estimate both the single moderated associations between SJ and GCBs, GCBs and SCBs, and the indirect effects at three different levels of the moderator (i.e., NfCC; -1 SD, Mean, 1 SD). Since this was not yet implemented in WarpPLS, we used R (R Core Team, 2024) to firstly simulate the moderated association of the single paths, then the indirect moderated association using 20000 Monte Carlo draws for each simulation. As seen in Table 3, the relationship between SJ and GCBs emerged as significant at low ($\beta = -.35$, $SE = .05$, $p < .001$, 95% C.I.: -.45; -.25) and mean levels ($\beta = -.15$, $SE = .02$, $p < .001$, 95% C.I.: -.19; -.09) of NfCC. These results suggest that the negative association between system justification and general conspiracy beliefs is stronger for individuals with low levels of cognitive closure. Regarding the relationship between GCBs and SCBs moderated by the NfCC, the simple slope analysis revealed that the positive relationship between general conspiracy beliefs and specific conspiracy beliefs was significant for mean ($\beta = .20$, $SE = .03$, $p < .001$, 95% C.I.: .13; .26) and high ($\beta = .39$, $SE = .05$, $p < .001$, 95% C.I.: .29; .48) levels of NfCC.

When looking at the overall indirect moderated relationship, results shows that only the indirect effect for a mean level of the moderator was significant ($\beta = -.03$, $SE = .01$,

$p < .001$, 95% C.I.: -.043; -.017). Indicating that for mean levels of NfCC, justifying the system is negatively associated with specific conspiracy beliefs through a reduced adherence to general conspiracy beliefs. The indirect effects for low levels of the moderator ($\beta = -.003$, $SE = .02$, $p = .820$, 95% C.I.: -.003; .030) and high levels of it ($\beta = .02$, $SE = .02$, $p = .245$, 95% C.I.: -.016; .063) were not significant.

Tab. 3. Simple slopes for the relation between SJ on GCBS and GCBS on SCBS.

Effect	Moderator Level	β	SE	p	C.I. 95%	
					LL	UL
SJ → GCBS	Low	-.35	.05	<.001	-.025	-.08
	Mean	-.15	.02	<.001	-.19	-.09
	High	.06	.05	.245	-.04	.16
GCBS → SCBS	Low	.01	.05	.820	-.08	.11
	Mean	.20	.03	<.001	.13	.26
	High	.39	.05	<.001	.29	.48

Discussion

One of the main scopes of our study was to determine whether General Conspiracy Beliefs mediate the association between System Justification and Specific Conspiracy Beliefs/Intention at different values of Need for Cognitive Closure.

Our findings support the assumption of a mediating role for GCBs. Previous studies have analyzed the relationship between System Justification Theory and conspiracy theory: both frameworks explain respective constructs through the satisfaction of relational, epistemic, and existential needs. Indeed, supporting conspiracy beliefs might represent an alternative path to satisfying these needs when system justification is untenable (Jolley et al., 2018). People are motivated to justify the status quo, but could paradoxically endorse conspiracy theories when their social system is threatened. Goertzel (2010) claimed that conspiracy theories propose someone tangible to blame: they identify a small group of wrongdoers within the system who are responsible for the ills of society (Ellard et al., 2002). The motivated defense of social systems via conspiracy theories is similar to preserving many cherished social beliefs. Supporting conspiracy theories lets people attribute problems to the negative programs of outsiders, so they do not question their system. In line with the current literature, the present work found similar results by reversing the direction of the relationship between constructs, considering the complex and potentially bidirectional nature of this relationship: SJ has a negative relation with GCBs (Pellegrini et al., 2024).

The mediating role of GCBs could be explained by belief consistency (Douglas & Sutton, 2008). Literature suggests that those who endorse one conspiracy theory tend to endorse others without a rationale mechanism: this inclination was named "conspiracist ideation" (Swami et al., 2011). Douglas & Sutton (2011) proposed a socio-psychological mechanism that explained the endorsement of conspiracy theories: they hypothesized a stable individual difference in the general tendency to engage with conspiracist explanations for events, regardless of the specific theme. The monological nature of

conspiracism is driven by the coherence of each theory with higher-order beliefs that foster the idea of general conspiracy beliefs (Swami et al., 2011). This system encourages easy and automatic explanations for all unknown phenomena, particularly factors that threaten the system itself.

Results seemed to sustain our moderator hypotheses: NfCC moderated the relationship between SJ and GCBs, reducing the negative magnitude of this relationship for people with higher need of cognitive closure. While counterintuitive, this effect may be explained by the broad perspective given by the system justification. In fact, it seems more plausible that people who have low levels of cognitive rigidity may have their existential, relational, and epistemic needs satisfied by a broad concept such as system justification, making the satisfaction given by the conspiracy beliefs less prominent. Conversely, people with higher levels of NfCC may be more keen to search for satisfaction of their needs through more concrete and immediate narratives, such as the ones provided by endorsing conspiracy beliefs. This is partially in contrast with previous literature. In fact, research that has delved into the relationship between SJ and GCBs provides different accounts of their interplay. On the one hand, Jolley and colleagues (2017) sustain that the two are positively related to each other. On the other hand, and more in line with our results, Pellegrini et al. (2024) showed how system justification may function as a protective factor in the endorsement of conspiracy beliefs. With this research, we extend their work by taking into account the role of NfCC in this relationship. Conversely, NfCC played an opposite role in the relationship between GCBs and SCBs/Intention, increasing the positive relationship between the aforementioned construct at higher levels. The increase of the relationship at higher levels of NfCC suggests that people with high levels of general conspiracy beliefs who are more prone to engage in seizing and freezing (classical components of the need for cognitive closure; Kruglanski & Webster, 1996) may be keen to endorse beliefs in specific conspiracies (similarly to what is asserted in Marchlewska et al., 2017). NfCC may influence the motivational heuristics responsible for interpreting information; a high level of NfCC produces a reliance on confirmation heuristics (De Dreu et al., 1999) that results in a strengthening of available beliefs. People high in NfCC have a peculiar mindset structure, characterized by a need to eliminate uncertainty immediately, find clear beliefs about reality, and form quick judgments on any given topic (Roets et al., 2015). Other studies show that a hard-nosed conspiracy theorist searches for evidence that conforms to a particular view (Leman & Cinnirella, 2013). In our study, we saw that having a medium level of NfCC may reduce the negative effect of system justification on the general attitude to endorse conspiracy theories (Marchlewska et al., 2018). This is in line with previous literature that shows how people who are cognitively closed are more likely to endorse conspiracy theories, even supporting theories without proven principles (Abalakina-Paap et al., 1999).

Results showed that conspiracy priming had a stronger effect on SCBs/Intention than anti-conspiracy priming. The stimulus that promoted conspiracy ideas was also stronger than the combination of the two kinds of priming in the two orders. It demonstrated that our priming effectively affected conspiracy ideas about a specific conspiracy theory, influencing

the tendency to adhere to a conspiracy theory concerning the Russian-Ukrainian war and the subsequent intention to support Russia. Nonsignificant data regarding the effect of conspiracy priming on SCBs may indicate that the two stimuli operate relatively independently from one another, influencing beliefs without the order of presentation significantly affecting their effectiveness. Such independence suggests that the reception and processing of contradictory information may occur in parallel or separately within participants' minds, resulting in stable responses regardless of order.

These results help us better understand psychological constructs and complex dynamics that directly or indirectly foster the endorsement of conspiracy theories. Studies show that these theories also modify people's attitudes in political matters, and an international trend is seen in the general increase in the use of conspiracy theories in political affairs (Moore, 2016). Thus, conspiracy theories can be harmful: preventing their deleterious effects is desirable. Interventions focused on educating people before their exposure to conspiracy theories may be effective. The approach could provide an attempt to protect people against conspiracy theories by warning them about manipulative dynamics to which they will be subjected.

Limitations

The present study is not exempt from limitations. First, our data should be read with caution because of the low sample size, which may affect the external validity of the results. Besides, the sample size used compelled us to use a specific type of analysis: PLS-SEM. Adopting PLS-SEM entails features aimed at raising accuracy and statistical power using resampling. A "stable" resampling method has been used that causes a tendency to generate low standard errors, with small samples and medium-to-high effect sizes (Kock, 2018). Furthermore, the type of power analysis conducted resulted in a required sample size below the commonly used minimum sample size for the PLS models (Hair et al., 2022; Kock & Hadaya, 2018; Kock, 2024, p. 24), suggesting a possible issue of underpower. On the same topic, the effect size emerged from our analysis is below the expected one, making our results not consistently interpretable. Future research should try to use a larger sample size to address this issue. Another limit is given to the high response variance of our sample, which could have been the reason for the non-significant results in the post hoc pairwise t-test conducted. It is important to highlight that our sample consisted entirely of young university students (age $M = 20.84$). This demographic characteristic may have influenced the scores on both GCBs and SCBs/Intention, as previous research indicates that lower levels of education are associated with higher endorsement of conspiracy beliefs (Douglas et al., 2016). An important limitation of the study's procedure is the absence of a manipulation check to verify the effectiveness of administering the primings and the consequent SCB measure. Furthermore, the Cronbach's alpha for the system justification scale results below the commonly accepted threshold of .70, which could be an indication of low reliability in the measure adopted. It is important to underline that, even if lower than .70, the alpha is .67, so relatively close to the threshold, and that the system justification scale is a widely

used scale that has been validated also in Italy (Roccatto et al., 2014). In conclusion, the measure of tendency to support a specific conspiracy theory presents notable limitations. Using a single-item scale does not ensure adequate reliability or content validity. Moreover, the item itself is inherently ambiguous and may reflect broader political or patriotic attitudes, rather than clearly endorsing a specific conspiracy theory.

Notes

¹ Despite the evaluation of alternative models, the model presented in the manuscript is the only one that exhibits an acceptable level of fit and significance.

Ethical Approval

The CERT Ethics Review Committee at Sapienza University of Rome approved our interviews (approval: CERT_18D13473DE6) on February 27, 2024. Respondents gave written consent for review and signature before starting interviews.

Data Availability Statement

We are committed to ensuring the transparency and reproducibility of our research. Therefore, the data supporting this study are openly available at the following link: https://osf.io/wpjev/?view_only=6856068b92b8425e98d772983f75c4bb

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Conflict of Interests

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Author Contributions

Mariateresa Loverre: Conceptualization; Data curation; Investigation; Methodology; Writing – original draft; Writing – review & editing

Matteo Bonora: Data curation; Formal analysis; Methodology; Software; Validation; Visualization; Writing – original draft; Writing – review & editing

Stefano Livi: Conceptualization; Project administration; Supervision; Writing – review & editing

Fabio Lucidi: Supervision

Andrea Chirico: Conceptualization; Formal analysis; Project administration; Supervision; Writing – review & editing

Supplementary material

Not applicable

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