

Conspiracy Theories about Infectious Diseases: An Introduction

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Abstract

Understanding why people believe conspiracy theories related to disease outbreaks and the consequences of such beliefs is critical for combating both the COVID-19 pandemic and its corresponding “infodemic.” In the introduction to this special issue on conspiracy theories about infectious diseases, the authors first provide a brief overview of the narratives of conspiracy theories related to COVID-19, followed by a review of extant theoretical frameworks regarding the psychology of conspiracy beliefs. Specifically, they discuss how epistemic, existential, and social needs contribute to the holding of conspiracy beliefs. Then, the authors summarize the major findings from the nine empirical articles featured in this issue, particularly how they shed light on the antecedents and consequences of disease-related conspiracy beliefs. They conclude by discussing future directions for the study of disease-related conspiracy beliefs.

Keywords

infectious diseases, conspiracy theories, COVID-19, conspiracy beliefs

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Introduction

We’re not just fighting an epidemic; we’re fighting an infodemic. (Tedros Adhanom Ghebreyesus, Director General of the World Health Organization, February 2020)

COVID-19, which started as an epidemic in China, has since the beginning of 2020 become a pandemic affecting countries on all continents. As of August 2021, the virus had infected more than 210 million people and killed more than 4.4 million people. As has been the case for other public health crises (e.g., the Zika virus outbreak; Klofstad et al., 2019), people have created and spread conspiracy theories regarding COVID-19, from its origin and transmission to treatments and cures. The age of social media makes transmission of these conspiracy theories fast and easy through popular websites and applications, such as Twitter (Ahmed et al., 2020) and Reddit (Shahsavari et al., 2020). The recent prevalence and spread of conspiracy theories is worrying because belief in conspiracy theories has been shown to have detrimental consequences for the self, others, and society at large (Douglas, 2021a). Understanding why people believe conspiracy theories related to disease outbreaks and the consequences of these beliefs therefore represents a critical issue for combating the current COVID-19 pandemic and concomitant “infodemic,” as well as for being prepared for future pandemics. Eight of the nine empirical articles

featured in this special issue seek to address this timely issue from different angles, based on the responses of participants from a range of countries in East Asia, Europe, South America, and North America. The ninth article focuses on conspiracy theories about the Zika virus, which is just as relevant to the discussion.

To provide a backdrop for the articles featured in the special issue, we will first give a brief overview of the conspiracy theories related to COVID-19, followed by a review of existing theoretical frameworks for understanding conspiracy beliefs. Then, we will summarize the studies in this special issue and highlight their contributions to the literature.

Conspiracy Theories Related to COVID-19

Conspiracy theories are “attempts to explain the ultimate causes of significant social and political events and circumstances with claims of secret plots by two or more powerful

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actors” (Douglas et al., 2019, p. 4). It is noteworthy that “powerful actors” does not necessarily refer to people who have actual sociopolitical power (e.g., high social status), since the “power” of the conspirators is perceived and attributed by believers of specific conspiracy theories (Nera et al., 2021). Although the alleged actors within a conspiracy theory may be either objectively powerless (e.g., an ethnic minority) or powerful (e.g., a country’s government), they must have a malicious intent behind their actions (van Prooijen & van Vugt, 2018). A conspiracy theory is thus distinctly different from a rumor (which is a story of unknown, even doubtful, validity) and from fake news (which is false by definition), as well as from an authentic conspiracy (which is an actual causal chain of events—e.g., the Watergate scandal). Given that conspiracy theories are ever evolving, we do not aim to present an exhaustive list of COVID-19-related conspiracy theories. Our goal here is to provide a brief overview of the main types of COVID-19 conspiracy theories (for a review, see van Mulukom et al., 2020).

COVID-19-related conspiracy theories have emerged since the beginning of the outbreak of the virus (Evanega et al., 2021; Shahsavari et al., 2020; van Bavel et al., 2020). Evanega et al. (2021) observe a surge in news coverage of misinformation, including conspiracy theories, in English-language media outlets since mid-January 2020. In an analysis of the narratives of conspiracy theories on social media sites (4chan and Reddit) and in related news reports, Shahsavari et al. (2020) observe several prevalent COVID-19-related conspiracy theories: (1) the 5G network is the cause of the virus; (2) Bill Gates is behind a plan that aims to limit population growth through vaccination; (3) the Chinese Communist Party has covered up bat-eating culinary practices as the cause of the disease outbreak; (4) COVID-19 is a bioweapon created in a Chinese laboratory (or unspecified military laboratory) and was either accidentally leaked or deliberately released; and (5) COVID-19 is a hoax created by a global cabal and is no more dangerous than the flu. Similarly, Chan et al.’s (2021) supplementary social media engagement analysis also identifies conspiracy theories related to bioweaponry, laboratory leakage, a Chinese cover-up, a human-made virus, and COVID-19 as a hoax. Some conspiracy theories also allege that COVID-19 was planned by the “deep state” to bring down Donald Trump’s presidency (see Shahsavari et al., 2020). Similar to previous disease outbreaks (e.g., Zika and Ebola), conspiracy theories have also focused on pharmaceutical companies’ role in exaggerating the severity of COVID-19 for financial and political gains (Evanega et al., 2021). Importantly, Shahsavari et al. (2020) also note that the narratives of these conspiracy theories are evolving and may eventually develop into a single overarching conspiracy theory. For example, conspiracy theories related to deep states can be part of a larger conspiracy theory, such as that of QAnon.

A Brief Overview of Existing Theoretical Frameworks

Researchers have identified numerous reasons that explain why people adhere to or believe conspiracy theories (for reviews, see Douglas et al., 2017, 2019; van Prooijen, 2019). Bringing this research together into an overarching framework, Douglas et al. (2017) posit that people turn to conspiracy theories when (1) epistemic, (2) existential, and (3) social needs are not satisfied or are frustrated.

Epistemic need refers to people’s motivation to maintain certainty, consistency, and accuracy about their understanding of the world (Heider, 1958; Kruglanski, 1989). This motive drives individuals to seek causal explanations for events that involve uncertainty and randomness. Conspiracy theories often claim to identify hidden patterns and the culprits behind events, and thus appeal to people who are uncomfortable with uncertainty and randomness. For example, studies have found that people with a high need for cognitive closure report stronger conspiracy beliefs when the official account of an incident is lacking (e.g., Marchlewska et al., 2018). Other studies have revealed that conspiracy beliefs are related to a higher tendency to perceive patterns and agency that do not exist (e.g., Douglas et al., 2016; van Prooijen et al., 2018; Whitson & Galinsky, 2008).

Existential need refers to people’s desire to feel safe, secure, and able to exert control over their environment. When these needs are dampened and a direct restoration is not plausible, people may engage in compensatory mechanisms for restoring a sense of security and control (e.g., Landau et al., 2015). Conspiracy theories are attractive for people experiencing strong existential needs for two possible reasons. First, they allow people to externalize the blame to some malicious “other” group or groups, thereby attributing their miserable situation to external causes (see Kofta et al., 2020). Second, these theories may serve as a warning signal to people who feel that they are living in a dangerous and untrustworthy world; the world appears to be safer if all potential enemies are detected (Bost & Prunier, 2013). Research studies have revealed that feelings of anxiety, powerlessness, and lack of sociopolitical control are related to stronger conspiracy beliefs (e.g., Bruder et al., 2013; Grzesiak-Feldman, 2013; Kofta et al., 2020). However, it is noteworthy that empirical evidence on the relationship between lacking control and conspiracy beliefs is inconclusive (for a meta-analysis, see Stojanov & Halberstadt, 2020).

Social need refers to people’s motivation to maintain a positive social image of themselves and the group to which they belong. Research studies have found that people who have a high need for positive regard (e.g., a need for uniqueness: Lantian et al., 2018; collective narcissism: Cichocka, Marchlewska, & Golec de Zavala, 2016a;

Cichocka, Marchlewska, Golec de Zavala, & Olechowski, 2016b) are more likely to believe conspiracy theories. Some conspiracy theories are inherently related to tension between different groups; these theories, therefore, are aligned with the motivation to maintain a positive in-group image and to derogate the out-group, especially when there are in-group image threats (Cichocka, Marchlewska, & Golec de Zavala, 2016a; Cichocka, Marchlewska, Golec de Zavala, & Olechowski, 2016b) or salient antagonistic out-groups (e.g., Golec de Zavala & Federico, 2018).

Following this framework, van Prooijen (2019) proposes an existential threat model of conspiracy theories, which integrates all three needs. This model posits that existential threats may trigger sense-making processes, making people more susceptible to conspiracy theories. The relationship between sense-making and conspiracy beliefs may also be modulated by the existence or salience of antagonistic out-groups. In addition, conspiracy beliefs may reinforce the feeling of existential threats. This model thus suggests that conspiracy beliefs can be a source of existential threats, but not a resource to cope with such threats. Indeed, as Douglas et al. (2017) note, conspiracy beliefs do not appear to satisfy any of the three needs described above. Some studies have found instead that exposure to conspiracy theories further frustrates these needs (for a review, see Douglas et al., 2017).

These theoretical and empirical developments contribute to our understanding of why conspiracy theories have proliferated during the COVID-19 pandemic (for a discussion, see Douglas, 2021b). Questions about the origin and spread of the virus are full of uncertainty and pose both existential and realistic threats to individuals. To some extent, these questions also threaten one's national image (e.g., via comparison of different countries' success versus failure in containing/overcoming the virus). COVID-19 conspiracy theories are thus appealing to many people. Previous research has also shown that conspiracy theories go viral in times of societal crisis (e.g., the Zika outbreak: Wood, 2018; for a review, see van Prooijen & Douglas, 2017). Importantly, conspiracy beliefs could have significant consequences for the prevention, treatment, and aftermath of disease outbreaks (for reviews, see Douglas, 2021b; van Mulukom et al., 2020). For example, studies have shown that believing COVID-19 is a hoax reduces compliance with disease-prevention measures (e.g., Chan et al., 2021; Imhoff & Lamberty, 2020). Likewise, previous research has also demonstrated the harmful effect of conspiracy beliefs on people's attitudes and plans regarding vaccination (e.g., Hornsey et al., 2018; Jolley & Douglas, 2014). Against this backdrop, we called for this special issue to help us all better understand why people believe or disbelieve disease-related conspiracy theories, and how such beliefs relate to people's response to disease outbreaks (including the COVID-19 pandemic).

Overview of Articles in the Special Issue

There are nine articles featured in this special issue. Together, they contribute to our understanding of why people believe in or reject conspiracy theories about infectious diseases, as well as how conspiracy beliefs relate to COVID-19 disease-prevention behaviors and vaccination intentions. The articles feature sample participants from a wide range of countries, including Chile, China, Finland, France, Germany, Italy, South Korea, the United Kingdom, and the United States. This collection of articles illustrates that disease-related conspiracy theories are globally relevant, across eastern and western cultures alike. We now briefly highlight each article before taking stock and looking toward the future of research on conspiracy theories and infectious diseases.

The Role of Personal Narcissism and National Collective Narcissism

Three articles in this special issue expand our knowledge of the social motives underlying conspiracy beliefs. In two German samples, Siem et al. (2021) replicate previous findings that people with higher personal narcissism are more likely to believe conspiracy theories. Consistent with Cichocka, Marchlewska, and Golec de Zavala (2016a) and Cichocka, Marchlewska, Golec de Zavala, and Olechowski (2016b), they found that personal narcissism and self-esteem were mutual suppressors—the true effect of narcissism and self-esteem on COVID-19 conspiracy beliefs was only revealed when the shared variance between the two constructs was partialled out. Extending the work of Cichocka, Marchlewska, and Golec de Zavala (2016a) and Cichocka, Marchlewska, Golec de Zavala, and Olechowski (2016b, Study 3), Siem et al. revealed that personal narcissism was related to stronger endorsement of conspiracy theories but unrelated to the rejection of conspiracy theorists. These findings thus indicate that conspiracy beliefs and support for, or rejection of, conspiracy theorists could be qualitatively different and have distinct antecedents.

Wang et al. (2021) and Bertin and Delouree (2021) both provide insights into why national collective narcissism relates to stronger conspiracy beliefs. National collective narcissism is the belief that one's nation is superior and deserving of special treatment, but its exceptionality is insufficiently recognized by others (Golec de Zavala et al., 2009). Wang et al. posited that the attribution of responsibility for the COVID-19 outbreak would relate to people's risk-acceptance conspiracy beliefs (i.e., COVID-19 is a real threat and it was intentionally caused by some people, organizations, and countries) and risk-rejection conspiracy beliefs (i.e., the severity of COVID-19 is exaggerated by some people and organizations intentionally; for more on the distinction between

the two types of conspiracy beliefs, see Chan et al., 2021). They further posited that the differential attribution of responsibility would mediate the link between national collective narcissism and conspiracy beliefs. With a sample of mainland Chinese participants, they found that national collective narcissism, as an insecure type of in-group positivity, was related to a higher tendency to attribute responsibility for the pandemic to the out-group (the United States) and, in turn, related to a stronger belief in risk-acceptance conspiracy theories. In contrast, national identification, as a secure type of in-group positivity, was related to a lower tendency to attribute responsibility for the pandemic to the in-group (China) and, in turn, related to weaker belief in risk-rejection conspiracy theories. These findings thus suggest that social motives underlying in-group versus out-group responsibility attributions may play a crucial role in explaining why people believe some conspiracy theories but not others.

Bertin and Delouree (2021) examined the role of exclusive victimhood in explaining the link between national collective narcissism and Zika-virus-related conspiracy beliefs. They theorized that national collective narcissism would relate to an inflated perception of the national in-group's suffering in a crisis (i.e., exclusive victimhood), and thus would make individuals endorse conspiracy theories that externally attributed the blame for the disease to threatening out-groups. They tested this proposition with a representative sample of French participants. They found that national collective narcissism was related to a strong belief in French people's exclusive suffering (uniquely and more than others) from the Zika outbreak, which in turn was related to a stronger belief in Zika-virus-related conspiracy theories. These findings suggest that conspiracy beliefs may serve a defensive role for some people to justify or explain their country's suffering during a large-scale societal crisis. Their results also indicate that the link between national collective narcissism and disease-related conspiracy beliefs is not limited to the COVID-19 pandemic.

The Role of Attitudes toward Societal Systems

Two articles extend our knowledge of how people's perception of the societal system relates to conspiracy beliefs. Mao et al. (2021) examined the effect of social-system threat on conspiracy beliefs. They propose that conspiracy beliefs are a consequence of system justification, in which people justify the social system by externalizing blame to an antagonistic out-group. In response to the COVID-19 pandemic, conspiracy theories about out-groups represent a possible way for people to defend the social system. In two experimental studies, Mao et al. found that mainland Chinese participants who read a system-threat article reported stronger beliefs in out-group conspiracy theories and system-justifying beliefs than those who read a control article. Importantly, they

found that conspiracy beliefs mediated the relationship between experimentally induced system threat and system-justifying belief. Their findings thus confirm the role of out-group conspiracy beliefs in helping people maintain the status quo during the COVID-19 pandemic.

Moon and Travaglino (2021) examined the role of disgust toward the political system in conspiratorial tendencies and prosocial tendencies across four countries (Italy, the United Kingdom, the United States, and South Korea). They proposed that feeling disgust toward the political system would relate to people's perception of moral violation in the system, making people suspect that the government was not telling them the whole story about COVID-19 (i.e., conspiratorial tendencies). They further posited that conspiratorial tendencies would relate to a lower intention to help others during the pandemic. They found supporting evidence for these propositions. In all four countries, disgust toward the political system was related to higher conspiratorial tendencies, which, in turn, linked to lower prosocial tendencies. Their findings extend previous studies by highlighting the role of affect (disgust) toward the societal system in conspiracy beliefs. In addition, their study evidences the harmful effect of conspiracy thinking on tackling societal crises.

The Role of a Rational Thinking Style

Swami and Barron (2021) extend our knowledge of conspiracy theories by considering the impact of people's active rejection of conspiracy theories and theorists. They designed a novel measure to capture people's active rejection of conspiracy theories and theorists, and tested it with a representative sample of participants from the United Kingdom. They found that people with a more rational thinking style were more likely to reject COVID-19 conspiracy theories and theorists, and this rejection was further related to higher compliance with mandated COVID-19 policies. Importantly, their findings suggest that active rejection of conspiracy theories and theorists may be a useful alternative to conceptualizing and examining the impact of conspiracy theories.

Impact on Compliance with Disease-Prevention Policies

Peitz et al. (2021) examined the links between conspiracy beliefs and attitudes toward mandatory COVID-19 policies with self-reported compliance regarding social distancing and health-protection measures. In particular, they posited that COVID-19 conspiracy beliefs would relate to people's response to mandatory COVID-19 policies through differential emotional pathways. They focused on three emotions: anger, anxiety, and hope. With a large

sample of participants from the United Kingdom, they found that COVID-19 conspiracy beliefs were related to higher levels of anger and anxiety but lower levels of hope. Importantly, they found that anger was related to a lowered perception of the importance of respecting government restrictions, whereas anxiety was related to a higher perception of the importance of following such restrictions. This perceived importance translated into people's self-compliance with the restrictions. Peitz et al.'s findings show that conspiracy beliefs can lead to higher and lower levels of support for COVID-19 policies and recommendations (and, in turn, compliance with them) through different negative emotions.

Impact on Vaccine Hesitancy

Two articles in this special issue provide insights into how COVID-19 conspiracy beliefs relate to vaccine hesitancy. Drawing on the theory of reasoned action (Ajzen & Fishbein, 1980), Baeza-Rivera et al. (2021) proposed that vaccine intentions would be determined by beliefs about vaccine effectiveness, belief in COVID-19 conspiracy theories, and injunctive norms regarding vaccination. They tested this proposition with a sample of Chilean participants and found that only beliefs about vaccine effectiveness and injunctive norms were related to stronger vaccination intentions. Belief in COVID-19 conspiracy theories was unrelated to these intentions. In an exploratory analysis, Baeza-Rivera et al. observed that such conspiracy beliefs were related to weaker beliefs about vaccine effectiveness, which in turn related to weaker vaccination intentions. Their findings suggest that belief in COVID-19 conspiracy theories may not have a direct impact on vaccine hesitancy. Such belief, however, may reduce people's perceived effectiveness of the vaccines, which in turn attenuates vaccination intentions.

Similarly, Pivetti et al. (2021) found that belief in COVID-19 conspiracy theories was related to attitudes toward COVID-19 vaccines only through general attitudes toward vaccines. More specifically, they proposed and tested a comprehensive model that considered both antecedents and consequences of COVID-19 conspiracy beliefs. Their model considered moral purity, political orientation, faith in science, and general conspiracy beliefs as the antecedents of COVID-19 conspiracy beliefs. They found supporting evidence with a sample of Finnish participants. Importantly, they also found that COVID-19 conspiracy beliefs were related to less support for government restrictions, less trust in government-released information about COVID-19 (informational contamination), and less favorable attitudes toward vaccination in general (which further related to less favorable attitudes toward COVID-19 vaccines specifically). Their findings thus corroborate the harmful effects of COVID-19 conspiracy beliefs on containing and preventing the spread of the virus.

Conclusion and Looking Forward

Taken as a whole, this special issue contributes to our understanding of why people believe or reject disease-related conspiracy theories. Specifically, national collective narcissism and system threat were positively related to conspiracy theories that blamed the out-group(s) and maintained positive in-group status. These findings support the idea that the social need to maintain a positive image of one's national group, which underlies other conspiracy beliefs (e.g., Cichocka, Marchlewska, & Golec de Zavala, 2016a; Cichocka, Marchlewska, Golec de Zavala, & Olechowski, 2016b), also underlies the endorsement of conspiracy theories about infectious diseases. This may also be related to the existential threat the national group faces during a pandemic; excluding a national out-group may be a way to defend against the pathogenic threat from that out-group. As such, it is possible that disease-related conspiracy theories could hinder international and intranational relations, and future studies could examine this possibility. Furthermore, it may be possible that more harmonious international relations could help prevent the onset and spread of conspiracy theories that accuse out-groups of malicious wrongdoing. Addressing these questions could aid in the global effort to fight the current pandemic, as well as help us prepare for future ones. In other words, addressing why people create and spread conspiracy theories about other people, ethnicities/nationalities, and countries may help keep everyone safer from their negative outcomes.

The research in this special issue also suggests that perceptions of the in-group are crucial to understanding why conspiracy theories originate and spread. Specifically, disgust toward the political system in one's own country appears to increase epistemic mistrust toward the government and the tendency to believe in conspiracy theories. Future studies may therefore examine the interplay between belief in conspiracy theories and people's attitudes toward in-groups. For example, research could examine the link between conspiracy beliefs and societal discontent (Gootjes et al., 2021), as well as political trust (the degree of belief that one's political system is fair and free from corruption). Furthermore, research could examine how political discourse within a country may influence the endorsement of different types of conspiracy narratives. Indeed, the scientific study of conspiracy theories has a unique place in political psychology.

This special issue has also contributed to our understanding of the potential impacts of conspiracy theories on behaviors that prevent the spread of infectious diseases. Specifically, the findings reported here show that belief in disease-related conspiracy theories is associated with less support for and compliance with disease-prevention policies, as well as weaker beliefs about vaccine effectiveness and hence weaker vaccination intentions. In light of all the research, conspiracy theories do indeed appear to

undermine efforts to contain the pandemic. Finding ways to reduce people's reliance on conspiracy theories is therefore imperative. To this end, the research in this issue has shown that a rational thinking style was associated with rejection of COVID-19 conspiracy theories, which was further related to increased compliance with mandated COVID-19 policies. This suggests that helping people employ rational thinking to meet their epistemic need for certainty, consistency, and accuracy about their understanding of the world could be helpful in enhancing resistance to conspiracy theories. Future research could test the causal effects of rational thinking on conspiracy theory rejection and related intervention programs to alleviate conspiracy theories.

Overall, the research reported in this special issue highlights the importance of paying attention to conspiracy theories during disease outbreaks. These featured articles help answer important questions about the predictors of conspiracy beliefs about diseases and the consequences of these conspiracy theories, especially for disease-mitigation measures. Psychological research can offer much to deepen our understanding of how people think, feel, and behave during disease outbreaks in general and the COVID-19 pandemic in particular (van Bavel et al., 2020). Considering the role of conspiracy theories is an important part of this understanding, and a vital step to help the entire world be better prepared for the next potential pandemic.

A psychological understanding of conspiracy theories stands to benefit people and countries around the world. After all, sense-making in the face of uncertainty and change is a natural human response that transcends culture. Our reactive tendencies to fear, to blame, to discount, to exaggerate, to rebel, and to tell stories—these are relevant to much more than infectious diseases. As we prepare to take on climate change, end our dependence on fossil fuels, and face numerous environmental disasters, as well as extremist movements around the world, understanding how people choose whom to believe and whether to cooperate will be crucial for humanity's next steps.

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