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Review

Shining a spotlight on the dangerous consequences of conspiracy theories

Daniel Jolley¹, Mathew D. Marques² and Darel Cookson³**Abstract**

The COVID-19 pandemic has illuminated how conspiracy beliefs—that explain important events as the secret actions of the powerful—can severely impact health choices (such as reduced infection-prevention behaviours). However, the consequences of conspiracy beliefs span far beyond the topic of COVID-19. This review shines a spotlight on how conspiracy beliefs could impact public and personal health (e.g., vaccine uptake), democratic citizenship (e.g., political engagement), intergroup relations (e.g., prejudice and discrimination), and may inspire violence and extremism. We argue that conspiracy beliefs are likely to have the power to mobilise citizens in ways detrimental to a smooth-running society. We conclude the review by offering a range of fruitful avenues for future investigation.

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<https://doi.org/10.1016/j.copsyc.2022.101363>2352-250X/© 2022 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).**Keywords**

Conspiracy theories, Consequences, Health, Democracy, Prejudice, Violence, Extremism.

Introduction

Over the last couple of years, parallel with the COVID-19 pandemic, we have seen a COVID-19 infodemic rife with conspiracy theories [1]. Conspiracy theories can be defined as “attempts to explain the ultimate causes of significant social and political events and circumstances with claims of secret plots by two or more powerful actors” ([2], p. 4). COVID-19

conspiracy theories include claims that the virus is a hoax, made up to exert control over an unsuspecting public, and that the virus was developed in China as a bioweapon to fulfil a hidden agenda [3]. It is often assumed that this is indicative of conspiracy theorising being ‘on the rise’ today (e.g., see Ref. [4] for a commentary). However, conspiracy theories have long been a part of history. Whispers of conspiracy theories were reported during the great fire of Rome in AD 64, where people were suspicious that Emperor Nero happened to be out of Rome when the fire began [5]. When considering the historical course of conspiracy theorising, some scholars have argued that conspiracy theories may actually be less popular today than they have been throughout history (e.g., Ref. [6]). Nonetheless, history shows us that belief in conspiracy theories can surge during times of societal crisis (i.e., rapid political change and virus outbreaks, [5]), with COVID-19 thus being described as a ‘perfect storm’ for conspiracy beliefs [7].

Research investigating why people might hold conspiracy beliefs has developed steadily over the last 15 years, with findings suggesting that conspiracy beliefs are adopted when important psychological needs are not being met, such as experiences of anxiety, uncertainty and threat [8]. If conspiracy beliefs are alluring as a means to address psychological needs, then a positive consequence of endorsing these beliefs could be assumed to remedy negative feelings. To test this, Liekefett and colleagues [9] conducted two longitudinal studies over a 6-week and 1-year time frame, tracking individuals’ conspiracy beliefs, anxiety, uncertainty aversion and threat perception. Findings revealed that conspiracy beliefs did not reduce anxiety, uncertainty aversion, or existential threat, and there was some evidence that it increased these negative feelings and reinforced conspiracy beliefs. Concertedly, emerging research demonstrates that appealing positives of conspiracy endorsement are overshadowed by evidence of the dangerous consequences of these beliefs [10]. Whilst the COVID-19 pandemic has illuminated how conspiracy beliefs can severely impact our health choices (e.g., Ref. [11]), the influence of conspiracy beliefs is far-reaching. This article offers an overview of the current understanding of the consequences of conspiracy beliefs that span beyond the COVID-19 pandemic.

Public and personal health

There has been a tidal wave of interest by researchers to explore the links between COVID-19 conspiracy theories and health behaviours. Ripp and Roer [11], in a systematic review performed in February 2021, found twelve studies examining COVID-19 conspiracy beliefs and preventative behaviour and ten measuring COVID-19 vaccination willingness (see Ref. [12] for a similar systematic review). Results consistently uncovered a negative relationship between COVID-19 related conspiracy beliefs, vaccination willingness, and infection-prevention behaviours (see also [13] for a meta-analysis). Importantly, these associations were uncovered in a variety of countries, such as the United Kingdom (UK) [14], Italy [15], France [16], Kuwait and Jordan [17]. Whilst there is a growing evidence base from multiple countries, there is a dearth of evidence speaking to causality. However, consistent with correlational findings, a longitudinal study by Bierwiazczonk et al. [18] provided some causal evidence that COVID-19 conspiracy beliefs reduced adherence to social distancing guidelines over a one-month period.

Whilst attention to COVID-19 conspiracy theories has been warranted, a spotlight should also be shone on other notable health-related consequences. Experimental evidence shows that exposure to anti-vaccine conspiracy theories reduces both intentions to vaccinate children [19,20] and to personally receive the HPV vaccine [21]. Further, in a sample of British White gay males, experiences of discrimination based on sexual orientation were associated with heightened belief in HIV conspiracy theories that propose HIV is human-made. In turn, conspiracy beliefs were associated with less favorability towards Pre-Exposure Prophylaxis (PrEP), a bio-medical therapy for those at high risk of HIV exposure [22]. However, the impact of conspiracy theories is not only reserved for biomedical therapies. Natoli and Marques [23] found that exposure to anti-depressant conspiracy theories (i.e., the pharmaceutical industry secretly places importance on chemical solutions over natural alternatives for profit) reduced participants' intention to seek help, an effect explained by decreased trust in health authorities. The research above illustrates how conspiracy beliefs can influence the acceptance of medicines and health interventions beyond the COVID-19 pandemic.

Democratic citizenship

Belief in conspiracy theories can have seemingly opposite consequences on democratic actions. Imhoff et al. [24] experimentally demonstrated that conspiracy beliefs decrease normative action (such as voting and legal demonstration) but increase non-normative behaviours (such as refusal to pay taxes and committing violence against a person in power). Similar findings from a two-wave panel across five democracies have showcased how

conspiracy beliefs are linked with reduced intention to vote in an election, an effect indirectly explained by reduced external efficacy [25] (see also political powerlessness [26]). However, emerging work has showcased how, in certain circumstances, conspiracy beliefs could *lead* to normative political engagement (i.e., voting). In a sample of Italians, Mancosu et al. [27] demonstrated that conspiracy theorising measured shortly before the 2016 constitutional referendum predicted whether individuals reported that they had voted 'Yes' (i.e., voting to oppose the reform, measured shortly after the referendum). Similarly, Jolley et al. [28] found that conspiracy beliefs held by British participants specific to the 2016 European Union (EU) referendum in the UK (measured one week before) predicted having voted to leave the EU (measured immediately after).

In helping to explain this mismatch between action/non-action of normative political engagement, Kim [29] experimentally demonstrated that when people encounter a conspiracy theory that directly targets a group, such a belief can promote engagement in politics. In other words, when there is a clear conspirator (e.g., another political party) who is targetting a specific group, people believe that they can play a role in calling out this behaviour through normative political activities. The emerging research highlights how conspiracy beliefs may precede political behaviours and, worryingly, could be activated by communication strategies ahead of an electoral campaign.

Intergroup relations

Conspiracy beliefs not only have practical consequences (e.g., reduced pro-environmental intentions [26]) but can interfere with intergroup relations. For example, holding such beliefs can lead to distancing from the wider community. Bilewicz et al. [30] found that participants endorsing conspiracy theories of the Smolensk plane crash preferred to distance themselves from conspiracy non-believers. Similarly, non-conspiracy believers also preferred greater distance from conspiracy believers. Thus, an unintended consequence of conspiracy theories is their potential to increase further the social exclusion of believers [31], which may lead an individual further down the rabbit hole when seeking out their newfound community [32].

Not only can conspiracy beliefs lead to social exclusion, but they can change how perceived conspirators are viewed. A rich evidence base has demonstrated that conspiracy theories about Jewish domination of the world are associated with anti-Semitic attitudes (e.g., Refs. [33–35]). Recently, Jolley et al. [36] extended this work experimentally by showing that exposure to intergroup conspiracy theories directly increased prejudice towards the target group (i.e., immigrants). Importantly, they also uncovered how prejudice towards

several secondary outgroups (e.g., Asians, Americans) who were not involved in the alleged conspiracy theories increased. Jolley *et al.* [36] proposed that this effect is due to an attitude generalisation mechanism, where prejudice towards one group generalises to other, uninvolved outgroups.

Violence and extremism

With such an intergroup dimension to conspiracy beliefs, it is not surprising that links between conspiracy beliefs and extremism exist. Early commentary by Barlett and Miller [37] argued that conspiracy theories play an important social and functional role for extremist groups, where they act as a “radicalizing multiplier” (p. 4). This point was underscored by a Federal Bureau of Investigation report in 2019 of fifty-two lone terrorists showing that twenty-four offenders (46%) discussed or consumed information about conspiracy theories [38]. Importantly, such links have also been uncovered in empirical data. In an experimental study, Imhoff and colleagues [24] found participants were more supportive of violent extremism (e.g., commit a violent attack on a person in power) when participants took the perspective that a few powerful groups control society and that politicians were controlled by these disguised powers (high conspiracy vs society experiencing little or no conspiracies).

Consistent with such experimental evidence [24], Rottweiler and Gill [39] showed that general conspiracy theorising is positively related to violent extremist intentions. However, they also provided evidence that the relationship is contingent on several individual difference variables—specifically, the relationship is more pronounced for individuals who reported lower self-control, hold weaker law-relevant morality and score higher in self-efficacy. In understanding the link between conspiracy beliefs and violent reactions, Jolley and Paterson [40] have uncovered that conspiracy theorising was associated with feelings of state anger, which was associated with justification and willingness for violence. Interestingly, they also found the relationship between anger and violent responses was stronger for those scoring higher on paranoia. In sum, by believing that a powerful group is acting in secret against one’s interests, such a belief is likely to mobilise citizens in ways detrimental to a smooth-running society.

Conclusion and future directions

While there is a strong evidence base for the psychological underpinning of conspiracy beliefs, less is known about the consequences [9]. This article has illuminated a range of consequences of conspiracy theorising, from impacting global issues such as vaccine uptake to worsening intergroup relations. However, the literature is in short supply of experimental and longitudinal designs, limiting the causal claims that can be concluded. Whilst

there is evidence that the cross-sectional findings are consistent with findings that can speak to causality, more longitudinal and experimental work is needed. Further, the available longitudinal work has mainly focused on a few measurements over a short (e.g., 4-time points over 6 weeks [8]; 5-time points over 5 weeks [17]) or longer (e.g., 4-time points over 12 months [8]; 2-time points over 8 months [41]) periods. Future research assessing the changes in and consequences of conspiracy belief using both more measurement occasions and over a longer time period would provide greater fidelity in modeling different trajectories for classes of individuals or groups who may be more (or less) susceptible to the effects of conspiracy theorising. In addition to methodological refinements, there are several other fruitful avenues for future investigation. For example, research understanding the impact of conspiracy beliefs on science scepticism [42] and the rejection of technologies is increasingly important. The refutation of knowledge generated by scientific inquiry because of a belief that it is being advanced as part of a conspiracy erodes support for scientific solutions to pressing and complex issues such as climate change and food security.

In examining the unique prediction of facets of general conspiracy belief on the rejection of scientific innovations, Marques *et al.* [43] found evidence for the association that individuals who believe that there are secret cabals that control global events and conspiracies related to the suppression of information by organisations are less comfortable with genetically modified food. Similarly, Wilks *et al.* [44] found that conspiracy beliefs were strongly associated with opposition to cultured meat. A recent experimental study [45] found that exposure to climate change conspiracy theory rhetoric reduced belief in anthropogenic climate change when the issue was framed around a novel technological solution (i.e., carbon capture), but was less impactful when framed as attacking a federal climate change report, suggesting the impact of climate change conspiracy theories may be greater when audiences are less familiar with a technology. Whether agricultural science, environmental issues, or another emerging technological domain (e.g., artificial intelligence in health monitoring), public support may rise and fall with the tide of conspiracy theories portraying the dangers and hidden agendas behind the development and implementation of advances in science and technology.

Moreover, conspiracy theories can have a prominent place in war, such as in the Russian-Georgian War [46]. Thus, the Russian-Ukrainian War has been a fertile ground for conspiracy beliefs to bloom. Popular conspiracy theories in 2022 included the idea that many high-level Ukrainian government officials are Nazis or that the Ukrainian government is releasing fake videos of bomb attacks and blaming the attacks on Russia (i.e., false flag attacks) [47]. As we have documented in this

review, evidence consistently shows that conspiracy beliefs can foster prejudice, undermine support for adversaries, and increase support for violent actions. Conspiracy theories about the Russian-Ukrainian War will likely foster similar outcomes. This conflict underscores the ongoing relevance and importance of understanding the psychology of conspiracy theories as a weapon in the arsenal of future interventions to redress the consequences of conspiracy beliefs.

Conflict of interest statement

Nothing declared.

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