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Introduction

A group processes approach to antiscience beliefs and endorsement of "alternative facts"

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Abstract

The global spread of antiscience beliefs, misinformation, fake news, and conspiracy theories is posing a threat to the well-being of individuals and societies worldwide. Accordingly, research on why people increasingly doubt science and endorse "alternative facts" is flourishing. Much of this work has focused on identifying cognitive biases and individual differences. Importantly, however, the reasons that lead people to question mainstream scientific findings and share misinformation are also inherently tied to social processes that emerge out of divisive commitments to group identities and worldviews. In this special issue, we focus on the important and thus far neglected role of group processes in motivating science skepticism. The articles that feature in this special issue cover three core areas: the group-based roots of antiscience attitudes; the intergroup dynamics between science and conspiratorial thinking; and finally, insights about science denial related to the COVID-19 pandemic. Across all articles, we highlight the role of worldviews, identities, norms, religion, and other inter- and intragroup processes that shape antiscientific attitudes. We hope that this collection will inspire future research endeavors that take a group processes approach to the social psychological study of science skepticism.

Keywords

science rejection, antiscience beliefs, misinformation, fake news, conspiracy theories, ideology, COVID-19

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We started planning this special issue on antiscience beliefs and endorsement of "alternative facts" in the summer of 2019. In the call for this issue we wrote that "Antiscience beliefs are growing but surprisingly little is known about what makes people skeptical about science." A little over half a year later, it is no exaggeration to

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say that a whole new dimension has been added to this notion. As submissions started rushing in, so did the COVID-19 pandemic. And so, we issued a slightly extended call for submissions which now included an explicit request for work investigating COVID-19-related attitudes and behaviors in the context of science beliefs, (alternative) facts, and (mis)information. The global COVID-19 pandemic makes it abundantly clear how important it is to increase our understanding of the psychological underpinnings of science rejection and susceptibility to—and endorsement of—misinformation. That being said, science rejection is a problem that extends far and wide beyond COVID-19. Antiscience beliefs and the endorsement of misinformation can have catastrophic effects on public health, the economy, and the environment (see Rutjens et al., 2021; van Bavel et al., 2020; World Health Organization [WHO], 2019). To illustrate, consider climate change and vaccine hesitancy. The potentially disastrous effects of human carbon dioxide emissions on global warming stem from anything ranging from an underestimation of the problem to the blatant denial of climate change (Dunlap, 2013; Lewandowsky & Oberauer, 2016). Recently, measles outbreaks have occurred across the globe, and these can arguably be partially blamed on public skepticism about vaccination (Wenner Moyer, 2018). In that sense, the current COVID-19 pandemic is just another topic of contention to be added to the list of topics on which public opinion is sharply divided (Dryhurst et al., 2020). Surveying work on the psychology of science rejection, it is clear that the individual differences approach taken by researchers has fostered numerous fruitful insights (Hornsey, 2020; Rutjens et al., 2018). For example, climate change denial is associated with political conservatism, while vaccination rejection—traditionally more common among the religious orthodox—is increasingly associated with a spiritual worldview rather than with conservatism (Lewandowsky & Oberauer, 2016; Rutjens et al., 2018, in press). At the same time, such personal beliefs are neither formed nor sustained in isolation from the wider group and intergroup context of people's lives. The goal of this special issue therefore is to garner new insights into the intra- and intergroup dimensions of science rejection, conspiracy theories related to science, the endorsement of "alternative facts," and the spread of misinformation, including COVID-19-related attitudes and behaviors. We have received many submissions of excellent quality, of which nine are included in this special issue. Five additional submissions that were relevant to the topic of the issue, but could not be accommodated due to length constraints, will be published in the next issue of the journal and will be clearly marked as such. The nine submissions in this volume can broadly be grouped in three overarching categories. The first category of articles covers work on general antiscience attitudes. The research described in these articles explores the role of ideology and identity in shaping negative attitudes towards science and science rejection. The second category of articles focuses on the relation between antiscience beliefs and conspiracy thinking, including the sharing of fake news that involves techniques commonly used in science denial, such as character assassination. The third set of articles relates evaluations of science to the COVID-19 pandemic, scrutinizing the role that religion, ideology, and norm adherence play in shaping the relation between science beliefs and attitudes and behaviors pertaining to the pandemic.

General Science Attitudes

What are some of the individual difference variables that shape antiscience beliefs, and what is the intergroup context within which these processes take place? In the opening paper of this special issue, Azevedo and Jost (2021) provide important theoretical and empirical advances on the ideological basis of antiscientific attitudes. In large national U.S. samples, they evaluate the relative importance of partisanship, symbolic and operational forms of political ideology, social dominance orientation (SDO), right-wing authoritarianism (RWA), and general system justification (GSJ). Using robust

multiverse analyses, the authors found that controlling for all other factors, conservatism (assessed via operational ideology) was consistently amongst the most important predictors of not only denial of climate science, but also of general skepticism about science (vs. faith) and trust in ordinary people over experts. These findings are corroborated by Kerr and Wilson (2021) who show that SDO and RWA form a common origin to the various effects of ideology on distrust of science in the US and New Zealand. Using structural equation modelling, the authors demonstrate that individuals who hold stronger authoritarian and social inequality views find scientists less credible. In turn, such perception of scientists predicts science rejection across many science domains, including denial of evolution, climate change, and safety of vaccination, GM food, and water fluoridation. Besides political ideology, identity concerns also play a role. Salvatore and Morton (2021) find that evaluations of science are based on whether the evidence affirms or disaffirms people's personal identities. The authors experimentally manipulated whether unfamiliar (and ostensibly real) scientific findings about femininity and masculinity were consistent with participants' views about their own gender identity. The results showed that participants evaluated the scientific findings as more rigorous and persuasive when the findings were consistent, as opposed to inconsistent, with their preexisting sense of femininity or masculinity.

Conspiracy Beliefs and Misinformation

Ample research on the antecedents of science skepticism and antiscience beliefs has shown that conspiracy thinking plays an important role (e.g., Hornsey et al., 2018; Rutjens et al., 2018, in press). Conspiracy theories about science are widespread, for example, in the domains of climate change and vaccination (Lewandowsky et al., 2013; van der Linden et al., 2020). Enders and Uscinsky (2021) ask the question whether conspiracy theories as well as misinformation and antiscience claims are found specially among the more extreme fringes of the political spectrum. Among nationally representative samples of North Americans, the authors find that endorsement of such beliefs is indeed predicted by ideological extremity, but only when these beliefs are imbued with partisan or ideological content. Next, Fong et al., (2021) analyze the intergroup dynamics between popular scientists, conspiracy theorists, and their followers on social media. Specifically, the authors evaluated linguistic patterns in over 160,000 tweets and found that, relative to that used by scientists, the language of the top conspiracy theorists and their followers on Twitter focused on more negative emotions such as anger; outgroup language; and themes focused on death, religion, and power. These results uncover important psycholinguistic markers of conspiratorial discourse online. Next, in two studies, McPhetres et al. (2021) examine why partisans might share fake news. One explanation is rooted in a preference for "character assassination" whereby instead of talking about the science, evidence, or a specific policy, a person's character is deprecated by portraying them in a bad light. Results revealed that, among partisans, character-focused news did not increase the likelihood of reported sharing compared to other types of fake news. In other words, while character-deprecating news might be in supply, it is not necessarily high in demand.

COVID-19

How does group affiliation correlate with misperceptions about COVID-19? Druckman et al. (2021) investigate such misperceptions focusing on the role of race, religion, and partisanship. Each of these variables are found to play a role; members of minority groups, individuals with high levels of religiosity, and people with strong partisan identities (on both sides of the political spectrum) hold more misperceptions about COVID-19 than those with contrasting group affiliations. But it is not only affiliation that plays a role when it comes to misperceptions and compliance with health advice, perceived normativity plays a role too. Dores Cruz et al. (2021)

investigate the role that socially shared information plays in shaping social responses to individuals that violate compliance norms. Specifically, the authors looked at how rumours about the infection status of a norm-violating (vs. norm-adhering vs. no information) group member influence social judgements. Consistent with work on the behavioral immune system, findings revealed that gossip indicating that infected (i.e., contagious) individuals behave in ways that put others at risk results in negative social reactions and elicits avoidance intentions.

Other variables that contribute to compliance with COVID-19-related restrictions are ideology and message source. More specifically, Koetke et al. (2021) show that, among conservatives that reject social distancing, messages recommending social distancing coming from a Republican government official led to an increase in social distancing intentions. Additionally, conservatives that trust science more were also more likely to support social distancing to social distance.

Together, the nine contributions to this special issue show that group processes form an important piece of the puzzle that is modern science rejection. Many of the individual difference beliefs and worldviews that have been previously shown to shape antiscience attitudes are of course not formed in isolation but are to various extents reflective of a group context. From social norms to matters of race, religion, identity, and ideology, we hope that this special issue sets the stage for a group processes perspective on the determinants of antiscience beliefs, the spreading of fake news, and the endorsement of "alternative facts."

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