

Preventing belief in misinformation: Current and future directions for the field

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The six papers included in this special section on “Combating misinformation in a misinformation age” make impactful contributions for our understanding of how to prevent belief in misinformation. What’s more, they highlight important questions and new directions for the field. Galvanized by the widespread false claims surrounding the 2016 US presidential election, psychologists (and social scientists more broadly) have been increasingly concerned with how people come to believe false information and how to prevent those beliefs. To be clear, misinformation has always been with us (e.g., widespread rumors in the US South during World War II that Black women were organizing into Eleanor Roosevelt Clubs with the goal of forcing their employers to cook and clean for them (Zeitz, 2017)) and psychologists have always been interested in false beliefs (e.g. Allport and Postman’s foundational research on rumor (Allport & Postman, 1947)). However, it is clear that the amount of research and the popularity of the topic has greatly increased since 2016.

We have learned a lot over the past seven years, but multiple key questions remain unanswered. I am pleased that the articles in this special section begin to answer some of these questions and set a research agenda for the rest of the field. Below, I highlight some of the key themes from this set of papers and some important future directions for understanding the psychology of misinformation.

Moving Beyond Simple Measures of Belief

One of the key issues in misinformation research is how to measure people’s beliefs. Most commonly, participants are presented with a true or false statement and asked to judge its accuracy on a Lickert scale (e.g., Aird et al., 2018; Brashier et al., 2021; Guess et al., 2020; Pennycook & Rand, 2019). While useful, there are also drawbacks to this approach. Primarily, belief in any given claim is measured with only a single item and single item measures are known to be noisy and often have poor reliability (see Swire-Thompson et al., 2020 for a detailed explanation in the misinformation context). Thus, reliable measurements can often only occur when belief is collapsed across multiple different claims.

In addition, we are often most interested in not whether people believe the misinformation, but whether they will rely on the false information when making other decisions. Thus, it is exciting that both Sanderson et al. (2023) and Butler et al. (2023) in this section include inference questions as an outcome. These questions measure whether people rely on the false information in later reasoning. For example, in Butler et al. (2023) participants who saw the false statement “Students learn best when teaching styles are matched to their learning style” would later rate their agreement with the statement “Teachers should disregard learning styles when developing their curriculum”. Such questions offer an opportunity to both increase the number of items measuring belief in a particular claim (because one can ask multiple inference questions for a given statement) and to measure how the misinformation is affecting people’s reasoning and later decisions.

Other promising recent examples include measuring the impact of misinformation on hypothetical behaviors by examining people’s willingness to pay for vitamin supplements

(MacFarlane et al., 2021) or to download an app (Greene & Murphy, 2021). Another alternative is to ask people open-ended questions about their beliefs. That is, instead of asking participants to rate the accuracy of the false claim “China produces 90% of the world’s carbon emissions pollution”, participants instead answer the open-ended question “What do you believe about China producing 90% of the world’s carbon emissions pollution?” (Collier et al., 2023). Such open-ended questions can allow for a broader range of responses and a better understanding of participants’ beliefs (especially when participants have conflicting beliefs).

In short, I am glad to see greater diversity in the questions used to measure belief in misinformation and I hope that this trend continues.

Combining Social and Cognitive Psychology

We do not encounter misinformation in isolation. Instead, it is connected to a variety of social cues such as the original source of the information, the person or organization who shared it, and on social media sites, additional cues such as the number of likes, views or reshares. Yet, when cognitive psychologists study misinformation, we often strip these important social cues from our stimuli. Thus, I was pleased to see research in the special section focused on the impact of these social cues. Across two studies, high levels of social endorsement (~1000 likes on a social media post) led to greater belief in both false claims and misinformation corrections – as compared to posts with low (~10 likes) social endorsement (Butler et al., 2023). In addition, personality characteristics such as the Dark Factor of Personality examined by Rudloff et al. (2023) in the current section are understudied as possible influences on belief in misinformation.

Humans are social creatures and when studying misinformation, it is important to pay attention to both internal cognitive mechanisms such as memory, language and reasoning and also social features such as trust in the source of the information, social consensus, and individual differences in personality, motivations, and cultural background. While isolating single variables can be an important step in making scientific process, we should always remember that in real-world situations belief in misinformation is affected by both social and cognitive factors along with their interaction.

Simple Ways to Encourage Evaluative Mindsets

One of the key findings in recent misinformation research is that people are more accurate in distinguishing between true and false information when they enter an evaluative mindset. That is, when people are actively thinking about the accuracy of what they are reading, they are more likely to notice errors in what they read and less likely to share false information with others (e.g., Bago et al., 2020; Pennycook et al., 2021; Rapp et al., 2014). Such mindsets are often induced by having people actively search for errors in what they are reading (e.g., Marsh & Fazio, 2006; Rapp et al., 2014), by having people rate the accuracy of information (e.g., Brashier et al., 2020; Pennycook et al., 2021), by occasionally prompting people to consider the accuracy of what they are reading (Salovich et al., 2022) or by forcing people to explain how they know that a statement is true or false (Fazio, 2020; Pillai & Fazio, in press).

Thus, it was exciting to see two new papers in this section that demonstrate novel ways to induce an evaluative mindset. In the first, Salovich & Rapp (2023) find that people are less susceptible to misinformation when they know that their performance is being monitored (either because they received feedback or were simply told that their susceptibility to misinformation was being monitored). People are often unmotivated to do the deep thinking required by an evaluative mindset, however, the social pressure of being evaluated may be a useful motivational push.

The second paper finds that an even more subtle change can encourage an evaluative mindset. In general, when people hear information multiple times they are more likely to think that it is true (e.g., Fazio et al., 2015; Hasher et al., 1977; Unkelbach et al., 2019). However, in the current section Calvillo and Harris (2023) find that prior exposure to headlines posed as questions (e.g., “Did Mark Zuckerberg Post About Orgies on Little James Island?”) did not affect belief in the underlying claim (“Mark Zuckerberg Posted About Orgies on Little James Island”). In fact, exposure to question headlines reduced the effect of repetition on other unrelated headlines that were presented as statements. The authors hypothesize that simply seeing some headlines as questions encouraged a focus on accuracy and an evaluative mindset that reduced the effect of repetition on belief.

It is likely that there are multiple other ways to induce an evaluative mindset; future research should focus on identifying which techniques are most effective (while acknowledging tradeoffs for the time and effort involved) as well as examining the duration of the benefits. Can people be trained to naturally use evaluative mindsets in certain situations (e.g., while scrolling social media) or will they always need external reminders and prompts?

Understanding How People Evaluate Evidence

Finally, it is important to understand how people decide whether information is true or false and whether an assertion provides good evidence for its claim. A key aspect of critical thinking is the ability to detect logical fallacies. In the current section, Motz and colleagues (2023) use induction learning to teach people to identify common fallacies (e.g., overgeneralization, correlation is not causation). Typical educational interventions for critical thinking involve multiple hours of instruction and long essay questions, however, the current researchers were able to improve people’s ability to identify logical fallacies in less than an hour. Their key innovation was using lessons from the long history of cognitive research on categorization to increase people’s ability to identify each fallacy (primarily by providing concrete examples and multiple opportunities to practice with feedback).

I was struck by the similarities between the current approach and recent research on inoculation and prebunking (e.g., Basol et al., 2020; Roozenbeek et al., 2022; Roozenbeek & van der Linden, 2019). Both approaches focus on exposing people to different logical fallacies so that they will be better able to notice and avoid such fallacies in the future. I would love to see future research combining the gamified approach from the Bad News Game (Roozenbeek & van der Linden, 2019) with the deep knowledge of learning principles and education psychology exemplified by Motz and colleagues (2023). I am confident that we can create better and more

effective interventions against misinformation by using what we know as a field about improving learning and memory.

Rather than focus on people's recognition of logical fallacies, Rudloff and Appel (2023) focus on people's epistemic beliefs or how they decide what is true. For example, people vary in how much they rely on their gut feelings versus evidence, and in how important it is for their views to align with external evidence. The researchers find that people's epistemic beliefs predict their ability to distinguish between true and false political headlines. Their research serves as a reminder that people vary in how they decide what is true or false and that the methods and arguments used by scientists may not be convincing for everyone. I am excited for future research to further explore how these epistemic beliefs develop, along with how they may be shaped by political discourse and education.

Conclusion

The field of misinformation studies is at an exciting point in its development. We know a lot, we have learned a lot, and important questions remain. The papers in this special section begin to answer some of these important questions: How can we best measure belief? What is the influence of social factors on misinformation belief and correction? How can we encourage evaluative mindsets? And how do people decide what is true? I hope that you will enjoy reading the section as much as I have and that you will walk away inspired with new questions of your own.

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