Review

Updating the identity-based model of belief: From false belief to the spread of misinformation

Jay J. Van Bavel[a,d], Steve Rathje[b], Madalina Vlasceanu[b] and Clara Pretus[c]

Abstract

The spread of misinformation threatens democratic societies, hampering informed decision-making. Partisan identity biases perceptions of reality, promoting false beliefs. The Identity-based Model of Political Belief explains how social identity shapes information processing and contributes to misinformation. According to this model, social identity goals can override accuracy goals, leading to belief alignment with party members rather than facts. We propose an extended version of this model that incorporates the role of informational context in misinformation belief and sharing. Partisanship involves cognitive and motivational aspects that shape party members' beliefs and actions. This includes whether they seek further evidence, where they seek that evidence, and which sources they trust. Understanding the interplay between social identity and accuracy is crucial in addressing misinformation.

Addresses
[a] Department of Psychology & Center for Neural Science, New York University, USA
[b] Department of Psychology, New York University, USA
[c] Department of Psychobiology and Methodology of Health Sciences, Universitat Autònoma de Barcelona, Spain
[d] Norwegian School of Economics in Bergen, Norway

Corresponding author: Van Bavel, Jay J. (jay.vanbavel@nyu.edu)

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Introduction

"The human mind serves evolutionary success, not truth. To think otherwise is to resurrect the pre-Darwinian error that humans are different from all other animals".
—John Gray, 2002 (pg 26) [1].

The spread of misinformation and political polarization pose a grave threat to democratic societies, as citizens have trouble making informed choices without access to accurate information. Partisan identity—a set of beliefs and feelings that culminate in a sense of psychological attachment to a political party [2]—often distorts interpretations of factual information, leading to the spread of false beliefs within groups [3,4]. Here, we explain how identities shape information processing and contribute to the belief and dissemination of (mis)information.

Partisanship stems from multiple psychological sources [5]: while instrumental preferences for political parties and leaders are usually grounded in policy preferences and ideological beliefs, partisanship also reflects identification with a party [6,7]. This aspect of partisan identity is consistent with the *Social Identity Approach*, where one's self-concept is derived from their membership in a social group [8—10]. As such, partisan identities, like all identities, include cognitive elements (e.g., self-perceptions, beliefs about the group, collective experiences, social norms, and informational exposure) as well as motivational factors (e.g., the need for belonging, distinctiveness, and status) that shape the beliefs and actions of party members.

According to the *Identity-based Model of Political Belief* [11], identity goals—like the need to belong—compete with accuracy goals to determine the value of a belief. When partisan identity goals supersede accuracy goals, group members are more likely to align their beliefs with party members rather than facts. Moreover, in-group norms influence whether it is appropriate (or not) to spread dubious or clearly false information. These dynamics can help people fit in and bind groups together, but it can also lead partisans to believe and spread misinformation. If enough partisans spread false content it can be difficult for citizens to develop accurate beliefs and undercut a shared sense of reality and consensus.

Partisanship can generate biases in reasoning, memory, implicit evaluations, and possibly perception of political issues and events [11]. For instance, supporters of President Trump were more likely to falsely believe that he won the 2020 Presidential Election [12], which

helped satisfy their needs to belong and retain a superior sense of social status even as it fostered violence and threatened democracy. These false beliefs were amplified and validated by Republican elites and media sources (e.g., Fox News) [13,14]. Partisans who heard these false stories may have ignored or forgotten contradictory evidence and rationalized partisan positions. This helps explain why corrections are often ineffective for highly polarized issues—where identity needs outweigh accuracy goals [15,16].

Here, we present a more comprehensive account of *The Identity-based Model of Belief* [11; see Figure 1]. We incorporate the role of informational context in believing and sharing (mis)information. We then discuss the relationship between accuracy goals and social identity, and how the psychological processes underlying believing and sharing (mis)information are differentially affected by social identity. Finally, we outline future research on misinformation belief and sharing from the perspective of the Identity-Based Model of Belief (including extending the model to other social identities).

Belief updating: the role of social identity and accuracy goals with an informational context

Classic models of belief change relied on a purely rational agent model, assuming that beliefs are updated as a function of new information in a Bayesian fashion [17]. However, people's beliefs may not update in a fully rational fashion [18—22]. While people are often motivated to be accurate, they also have directional motivations that shape their beliefs [23,24]. Unfortunately, it is often difficult to isolate the causal role motivation plays in shaping people's beliefs due to differences in the informational context.

While partisans are less likely to update their beliefs in response to fact-checks by an out-group member [25], this does not have to be explained through the lens of motivated cognition. Instead, people, operating from a rational "Bayesian" perspective [26], could simply believe out-group sources are less credible and refuse to update their beliefs. Alternatively, they may have been exposed to far more information that aligned with their party identity—leading to strong priors that are resistant to updating in the face of contradictory information (see BOX 1 for debate).

We do *not* assume that motivation fully explains partisan differences in belief (see Ref. [35] for a list of other factors). For instance, incentives reduce—but do not fully eliminate—partisan differences in (mis)information belief or sharing [30]. Moreover, shifting information exposure can also shift people's beliefs, underscoring the role of informational context [13]. Disentangling the role of motivation versus prior beliefs is also difficult because identity-based motivations likely shape the information people choose to expose themselves to Ref. [36]. Indeed, people often find it aversive to expose themselves to identity-incongruent information [37]. Thus, identity-based motives shape information exposure, as well as the motivation to be accurate and the salience of social identity [10].

Figure 1
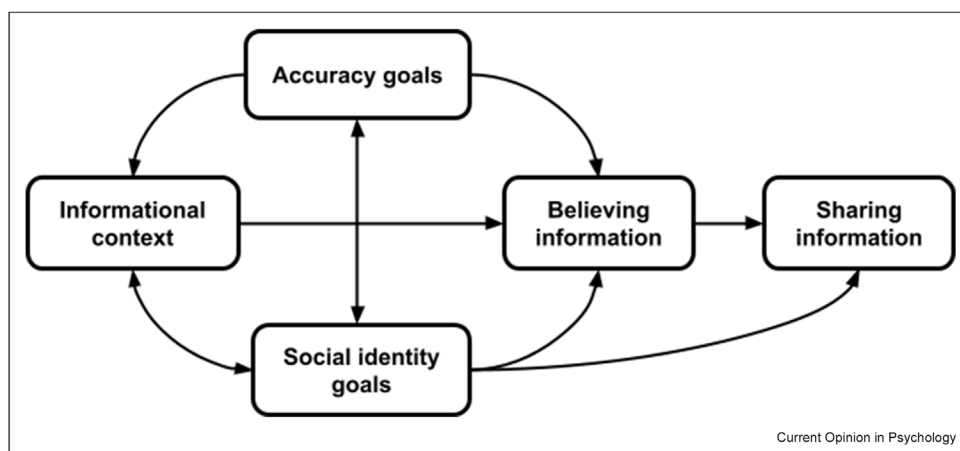
Updated Identity-based Model of Political Belief (Mis)information belief is influenced both by accuracy goals, social identity goals, within an informational context. As in the original *Identity-Based Model of Political Belief*, accuracy goals compete with social identity goals to determine the value of belief. However, this updated model illustrates the key role one's informational context can play in shaping beliefs (as well as activating accuracy or identity goals or conveying social norms). Accuracy goals can influence informational context by leading people to seek accurate information, and social identity goals can influence informational context by leading people to seek out partisan media that affirms their identities. Further, social identities can shape accuracy goals, since some identity groups (e.g., scientists, journalists) may have stronger accuracy goals than others (e.g., partisans). Likewise, accuracy goals can also shape people's choice to join certain social identity groups.

BOX 1.

While partisan differences in belief are often attributed to motivated reasoning, these differences may arise because people are exposed to different information sources [27,28]. For example, a Fox News viewer might have very different beliefs about the world than a CNN viewer because they have a strong partisan identity, but also because they are exposed to different information about the world [13]. Indeed, partisan differences in false beliefs about COVID-19, the 2020 Election, and climate change may stem, in part, because Republicans are often exposed to much higher volumes of misinformation [13,29,30]. Thus, it is critical to test the causal role of identity and accuracy goals on beliefs.

New research has found that manipulating accuracy and identity-based motives does indeed shape belief [30]. For instance, giving people a small amount of money to correctly identify true versus false news headlines made people more accurate, and also reduced partisan bias in belief by 31 % relative to a non-incentivized control condition. Further, incentivizing people to identify news that would be liked by their political in-group made them *less* accurate at identifying true versus false news [30]. A similar pattern was observed in India using a simulated social media platform [31]. These experiments, as well as other research that manipulate accuracy [32,33] versus social [34] goals, illustrate that motives can—and do—have a causal impact on belief and (mis)information sharing.

Accuracy and social goals directly influence our beliefs, and indirectly influence our beliefs through selective information exposure (see Figure 1).

The relationship between social identity and accuracy goals

Our model explains why cognitive reflection and accuracy nudges—which makes accuracy goals more salient [38]—are associated with the reduced spread of misinformation. However, the effect size for accuracy interventions appears to be much larger when it directly increases accuracy *goals* (e.g., by directly incentivizing accuracy [30]). Moreover, cognitive reflection is associated with a reduced likelihood of sharing political misinformation on non-polarizing issues only (where partisan motives are relatively weak). Conversely, cognitive reflection does not override social identity demands in the face of politically polarizing messages (although cognitive reflection is associated with sharing fewer false neutral political messages [16]). Therefore, when identity goals are low, accuracy goals play a larger role in (mis)information belief and sharing by motivating people to seek accurate information and respond to accuracy cues (see Fig. 1).

An overlooked aspect of our model is that social identity can shape accuracy goals. First, people are motivated to be accurate but may only trust in-group sources to update their beliefs. For instance, people are less likely to spread misinformation when in-group members (vs. strangers)

signal the content is misleading [39]. Social identity can thus influence which sources are credible when seeking accurate information. Second, different identities are linked to different norms about accuracy. For instance, scientists are expected to challenge their own beliefs and update them in the face of new evidence [40], while religious followers are expected to believe religious content on faith without requesting further evidence [41]. These epistemic norms have a signaling function, as people who pursue and forgo further inquiry are perceived as being more committed to science and religion, respectively [42]. Social groups thus provide norms about the appropriate level of inquiry and what sources to trust and may account for partisan differences in belief and (mis)information sharing.

Our model is distinct from other theories of identity-protective cognition, in which people with greater reasoning ability engage in greater motivated reasoning [43]. For example, an influential study found that people were bad at solving a math problem if the answer to that math problem did not correspond with their political beliefs—and this tendency was pronounced for those who *scored highest* on a measure of numeracy [44]. However, this surprising finding is difficult to replicate [45–47]. On average, numeracy and reasoning ability are correlated with greater accuracy [48] and less conspiratorial beliefs [49]. Similarly, we argue that factors associated with accuracy goals (like the ability and willingness to engage in reasoning) tend to offset social identity goals and lead to more accurate beliefs and information sharing (see BOX 2 for details).

BOX 2.

It remains an open question whether accuracy versus identity goals tend to dominate beliefs and sharing. A core element of survival requires people to accurately represent the world. Indeed, the vast majority of people across the political spectrum report that sharing accurate content is extremely important [50] and they express concern about misinformation and conspiracy theories going viral [30]. In contrast, only a very small percentage of people endorse purposely sharing misinformation online [50]. As such, we speculate that accuracy goals are more important—on average—in generating most beliefs.

The relative strength of accuracy versus identity goals depends on individual differences as well as the social context. Among committed partisans, identity goals can occasionally outweigh accuracy goals and lead them to believe and spread misinformation in some contexts [11]. Similarly, individuals high in the "Need for Chaos"—who wish to see the political order "burn down"—are more likely to purposely share hostile political rumors online, further illustrating how some personality traits might be correlated with reduced accuracy motivations [51].

Beyond these individual differences, aspects of the social context might trigger these motivations. Social media is a context where social identity is made highly salient [52], and where people frequently signal their social identity in their social media bios [53]. By contrast, some professions—such as journalism or

science—might make accuracy goals more salient [54]. Thus, we believe it is fruitful to understand how individual differences and the social context lead people to care more about accuracy or social identity.

It is currently difficult to measure accuracy and identity goals. Directly asking people how much they care about sharing accurate content may be prone to social desirability biases or a lack of self-awareness. However, there are several measures that loosely capture the value people place on accurate responding (e.g., the Cognitive Reflection Task, Intellectual Humility, and Actively Open-Minded Thinking). Likewise, there are individual measures that capture strength of in-group identification (e.g. Ref. [55]) that include scale items such as "I feel a bond with [in-group]." But these measures do not capture the specific identity goals that drive identification.

In our opinion, a more promising approach to measuring the impact of accuracy and identity-based motivations is to experimentally manipulate them. This allows for a causal test of these different motives on the belief and dissemination of true and false information. It also allows researchers to explore how accuracy and identity motivations can be reinforced or made salient by aspects of the social context. For instance, we recently manipulated accuracy and social identity-based motivations via financial incentives and other means, finding that these manipulations impacted belief in (mis)information [30]. Likewise, threatening or frustrating identity motives might impact these motives. Another way to manipulate social identity motivations is via the "minimal group paradigm," whereby people are randomly assigned to new social groups [56]. Minimal groups may be useful for future work on identity and belief in (mis)information, since it allows researchers to isolate the effect of social identity from other variables (e.g., ideology, pre-existing beliefs about certain groups, etc.).

Another way to disentangle the influences of accuracy versus identity goals is to pit them against each other in a rational belief updating paradigm [57]. This involves measuring beliefs at pretest, providing participants with relevant evidence to each belief, either supporting or refuting the initial beliefs, and then measuring the beliefs again at post-test. Importantly, the beliefs assessed are either neutral or ideologically charged. This paradigm allows the assessment of the degree of rational updating people engage in when their neutral beliefs are threatened (in which case an accuracy goal is likely at play) compared to when their ideological beliefs are threatened (in which case an identity goal is more likely active). One caveat with this approach is that the initial beliefs might reflect motivational factors (i.e., people report what they want to believe). As such, this approach is ill suited to rule out motivation per se.

How social identity influences (mis-)information belief versus sharing

We make a distinction between the psychological processes underlying information belief and information sharing. Although beliefs tend to be highly correlated with sharing decisions [4], beliefs are not always connected to sharing decisions [58]. While people accurately classify misinformation as false, actual information veracity does not always influence whether they are willing to share it or not. Sharing decisions have a strong social signaling function related to social identity goals and norms [16]. Thus, social identity not only affects

sharing decisions indirectly via information belief but also directly through social identity goals (see Figure 1).

Future research

The Identity-Based Model of Political Belief [11] was born out of the desire to understand the growing partisan divide in the U.S. and other polarized nations. However, the model is not limited to politics—it is grounded in the social identity approach and should generalize to inter-group conflict outside partisan domains, including sports fans, religious groups, and nationalities. Indeed, the model should even hold in minimal group contexts where there are *no prior beliefs* about either group [59,60]. Studying the model in these domains is not only important to test generalizability, but it may help isolate the impact of motivational factors.

The model also suggests that certain identities can bolster accuracy, rather than undercutting it. For example, a scientist or journalist might have a strong motivation to be accurate (and build their reputation on accuracy) whereas a partisan might have stronger motives to conform to their in-group. Future work should explore how systemic forces, such as the incentive structures of social media [61−63] or the process of peer review for scientists [64], influence accuracy and identity motives. Relatedly, research should probe how norms and structures can increase the value people place on accuracy goals.

While partisanship influences beliefs, beliefs also influence partisanship. For instance, research has found that correcting false beliefs can decrease political and ethnic polarization [65−68]. This may explain why misleading information—such as conspiracy theories—can lead to a vicious cycle of false beliefs and intergroup conflict [69]. As such, research should integrate the recursive role of beliefs in the spread of misinformation. Interventions that correct false group-based beliefs might, in turn, mitigate the spread of partisan misinformation.

Discussion

Partisanship can override accuracy concerns, resulting in politically biased beliefs and the spread of misinformation. However, this is only a partial picture of misinformation. A fuller accounting requires understanding numerous other factors [63,70], including the information ecosystem that is usually outside the scope of psychology (including historical, sociological, political, economic, and technological factors). Nevertheless, we believe that any complete analysis of misinformation should incorporate the role of social identity.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

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