The Epistemology of Democracy

Author(s)   Samaržija, Hana; Cassam, Quassim

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9 Myside Bias in Individuals and Institutions

Keith E. Stanovich

9.1 Introduction

Belief polarization has numerous diverse causes and can be approached scientifically from many distinct levels of analysis. As I approach the issue from the perspective of a cognitive psychologist, this chapter will focus on myside bias, the primary psychological contributor to our society's failure to achieve belief convergence on numerous critical issues. Myside bias occurs when people evaluate evidence, generate evidence, and test hypotheses in a manner biased toward their own prior beliefs, opinions, and attitudes.

Myside bias occurs in a wide variety of judgment domains. People in all demographic groups exhibit it, and it is displayed even by expert reasoners, the highly educated, and the highly intelligent. It has been demonstrated in studies across a variety of disciplines, including cognitive psychology (Edwards & Smith 1996; Toplak & Stanovich 2003), social psychology (Ditto et al. 2019a), political science (Taber & Lodge 2006), behavioral economics (Babcock et al. 1995), legal studies (Kahan, Hoffman, et al. 2012), cognitive neuroscience (Westen et al. 2006), and in the informal reasoning literature (Kuhn & Modrek 2018). Myside bias has been found to surface at every stage of information processing. That is, studies have shown a tendency toward a biased pursuit of evidence, biased evaluation of data, biased assimilation of evidence, biased memory of outcomes, and biased evidence generation (Bolsen & Palm 2020; Clark et al. 2019; Ditto et al. 2019a; Epley & Gilovich 2016; Hart et al. 2009; Mercier & Sperber 2017).

That is the good news – we know a lot about myside bias. The bad news is that it is one of the strangest cognitive biases, unlike the dozens of others examined. For the first several decades of work in the heuristics and biases tradition (Kahneman & Tversky 1973; Tversky & Kahneman 1974), from the 1970s to the 1990s, myside bias (often termed confirmation bias, see Mercier 2017) was treated as merely another on a growing list of biases (anchoring bias, hindsight bias, availability bias, and many others), and researchers assumed that it would act like other biases:

that it would be correlated with the same individual difference variables, it would show the same degree of domain generality, and its status as a non-normative response tendency would be equally secure. None of these expectations have been realized. In this chapter, I will argue that the strange properties of myside bias have implications for understanding its role in creating belief polarization.

9.2 An Empirically Strange Bias

When Richard West and I began studying individual differences in cognitive biases in the 1990s, one of the first consistent results from our early studies was that the biases tended to correlate with each other (Sá et al. 1999; Stanovich & West 1997, 1998a, 1998b, 2000). The correlations were usually relatively modest, but, then again, they derived from tasks measured with just a few items and hence of relatively low reliability. Another consistent observation in our earliest research was that almost every cognitive bias was correlated with intelligence as measured with various cognitive ability indicators. Individual differences in most cognitive biases were also predicted by several well-studied thinking dispositions, such as actively open-minded thinking and the need for cognition.

These early indications that the tendency to override various cognitive biases correlated with individual differences in cognitive ability and thinking dispositions have been replicated in other research studies (see Stanovich 2021 for citations). This finding has held for some of the most well-studied biases in the Kahneman and Tversky tradition (Kahneman 2011; Tversky & Kahneman 1974): anchoring biases, framing biases, hindsight bias, overconfidence bias, outcome bias, conjunction fallacies, representativeness errors, the gambler's fallacy, probability matching, base-rate neglect, sample-size neglect, ratio bias, covariation detection errors, pseudo-diagnostic effects, and many others.

There is no doubt that, based on prior work, the evident expectation is that any new cognitive bias studied will show the same correlations with individual difference variables. However, it turns out that myside bias is *not* predictable from standard cognitive and behavioral functioning measures. The degree of myside bias is not correlated with intelligence (Klaczynski 1997; Klaczynski & Lavallee 2005; Klaczynski & Robinson 2000; MacPherson & Stanovich 2007; Perkins et al. 1991; Sanchez & Dunning 2021; Stanovich & West 2007, 2008; Toplak & Stanovich 2003). General intelligence's failure to attenuate myside bias extends to variables highly related to intelligence, such as numeracy, scientific thinking, reflectivity, and general knowledge (Drummond & Fischhoff 2019; Kahan 2013; Kahan, Peters, et al. 2012; Kahan et al. 2017; Van Boven et al. 2019). Converging with these results is the literature in political science showing that various indicators of cognitive sophistication, such as educational level, knowledge level, and political awareness, do not attenuate partisan

bias and can often increase it. For example, Joslyn and Haider-Markel (2014) found that highly educated partisans disagreed more about policy-relevant facts than less educated partisans. Jones (2019) found that political perceptions about policy-relevant conditions, such as the state of the economy, were more polarized among the more informed and politically aware partisans. Numerous measures of cognitive sophistication show that cognitive elites display more polarization on various political issues (Drummond & Fischhoff 2017; Ehret et al. 2017; Hamilton 2011; Henry & Napier 2017; Kahan & Stanovich 2016; Kraft et al. 2015; Lupia et al. 2007; Sarathchandra et al. 2018; Yudkin et al. 2019).

In summary, well-controlled laboratory studies of myside bias converge with survey research and polling data showing that intelligence and education do not inoculate against myside tendencies. As Ditto et al. (2019b) note, "What if bias is not the sole province of the simpleminded?….A growing body of research suggests that greater cognitive sophistication and expertise often predicts greater levels of political bias, not less….Cognitive sophistication may allow people to more skillfully argue for their preferred conclusions, thus improving their ability to convince others – and themselves – that their beliefs are correct" (2019b: 312). From a perspective on individual differences, myside bias displays other curious tendencies. Other biases in the literature display correlations with intelligence and thinking dispositions related to rational thinking, such as actively open-minded thinking and the need for cognition (see Stanovich 2021 for citations).

Despite these consistent findings involving almost every other cognitive bias, myside bias has failed to correlate with relevant thinking dispositions in the same manner that it has failed to correlate with intelligence (Clements & Munro 2021; Eichmeier & Stenhouse 2019; Guay & Johnston 2021; Kahan 2013; Kahan & Corbin 2016; Kahan et al. 2017; Macpherson & Stanovich 2007; Stanovich & West 2007; Stenhouse et al. 2018; Toplak & Stanovich 2003). Even personality dispositions that seem most directly related to evading myside bias fail to attenuate it. For example, Simas et al. (2020) suggested that empathy (or lack thereof) would be a pivotal mechanism in developing political polarization, partisan bias, and ideological conflict. However, two studies found that the differences in empathic concern did not predict the degree of partisan bias in evaluating a contentious public event. High empathic concern did not attenuate the degree of affective polarization among partisans. Simas et al. (2020) explain their findings by positing that empathy is biased toward one's ingroup and thus does not provide protection against myside bias.

A reasonably extensive literature has emerged on whether there are ideological and partisan differences in myside bias. These results have converged with the literature failing to find predictable differences in the degree of myside bias. Ditto et al. (2019a) meta-analyzed forty-one experimental studies of partisan differences in myside bias that involved over

12,000 subjects. After amalgamating all of these studies and comparing an overall metric of myside bias, Ditto and colleagues concluded that partisan bias in these studies was quite similar for liberals and conservatives (see Sanchez & Dunning 2021; Washburn & Skitka 2018).

Another way myside bias is an outlier bias is that, in most cases, it shows very little domain generality and appears very content-dependent. Individuals who display high myside bias on one issue do not necessarily show high myside bias on another unrelated issue (Tetlock 1986; Toner et al. 2013; Toplak & Stanovich 2003). These results are unlike other biases, such as framing effects, where other investigators and we obtain reliabilities in the range of .60–.70 across a dozen or so different items (Bruine de Bruin et al. 2007; Stanovich et al. 2016). In the literature, most biases have a substantial degree of domain generality (Stanovich 2021) but not myside bias.

Individual difference variables do not predict the degree of exhibited myside bias, but one variable that does is the strength of the subject's opinion on that specific issue (Gugerty et al. 2021 Stanovich & West 2008), a finding that has been reported in many studies (Bolsen & Palm 2020; Druckman 2012; Edwards & Smith 1996; Houston & Fazio 1989; Taber & Lodge 2006). In short, the level of myside bias displayed on a particular issue in a specific paradigm is highly content-dependent.

9.3 Normative Complications

Myside bias is an outlier bias in another essential way. It is easy to show that they lead to suboptimal decisions for most of the other biases in the literature (anchoring biases, framing effects, base-rate neglect, and many others). In contrast, despite all the damage that myside bias does to our social and political discourse, it is shockingly challenging to show that, for an individual, it is a thinking error.

In determining what to believe, myside bias operates by weighting new evidence more highly when it is consistent with prior beliefs and less highly when it contradicts a previous conviction. This tendency seems wrong, but it is not. Many formal analyses and arguments in the philosophy of science have shown that in most situations that resemble real life, it is rational to use your prior belief to evaluate new evidence (Alloy & Tabachnik 1984; Evans et al. 1993; Kornblith 1993). It is even rational for scientists to do this in the research process (Koehler 1993; Tappin et al. 2020). It is rational because people (and scientists) are not presented with information of perfect reliability (Hahn & Harris 2014). The degree of reliability is something that we must assess. A vital component of that reliability involves estimating the credibility of the information or new data source. For example, it is perfectly reasonable for a scientist to use prior knowledge of a question to evaluate the credibility of new data (Bovens & Hartmann 2003; Gentzkow & Shapiro 2006; Hahn &

Harris 2014; Olsson 2013). Scientists do this all the time, and it is rational. They use the discrepancy between the data they expect, given their prior hypothesis, and the actual data observed to estimate the credibility of the new data source (O'Connor & Weatherall 2018). The more significant the discrepancy, the more surprising the evidence is, and the more a scientist will question the source and thus reduce the weight given the new evidence.

This cognitive strategy is sometimes called knowledge projection (see Stanovich 1999, 2021), and what is intriguing is that it is rational for a layperson to use it, too, if their prior belief represents actual knowledge (an evidence-based prior) and not just an unsupported desire for something to be true. What turns this situation into one of inappropriate myside bias is when a person uses not a belief that prior evidence leads them to think is true but instead projects an initial belief the person *wants* to be true despite inadequate evidence that it is correct by using a conviction-based prior (see Stanovich 2021). The term conviction conveys that these beliefs are often accompanied by emotional commitment and ego preoccupation (Abelson 1988). They can sometimes derive from protected values or partisan stances. The problematic kinds of myside bias derive from people projecting convictions, rather than evidence-based beliefs, onto new evidence they receive. That is how we end up with a society that seemingly cannot agree on empirically demonstrable facts.

All arguments in favor of the normative appropriateness of myside bias given previously have concerned epistemic rationality only. However, there is a further set of arguments in favor of myside bias being instrumentally rational because of the social benefits of that kind of thinking. The social benefits of myside reasoning have been explored by many others (Clark & Winegard 2020; Clark et al. 2019; Greene 2013; Haidt 2012: Kahan 2013, 2015; Kahan et al. 2017; Mercier & Sperber 2017; Sloman & Fernbach 2017; Tetlock 2002; Van Bavel & Pereira 2018) and thus will not be pursued here other than to note that they complement the epistemic analysis in showing that it is difficult to ascertain, on a net-net basis, that mysided processing is non-normative. Thus, for all the reasons discussed in this section, myside bias is a different kind of bias – and it requires a different kind of theoretical explanation than traditional tasks in the heuristics and biases literature (Kahneman 2011; Stanovich 2011).

9.4 A Theoretical Alternative: Memetics

In the literature, the default theoretical stance about myside bias tends to see it as process driven. The findings discussed above indicate that this default may require a reset. If it is indeed a process-based bias, those processes seem to be unpredictable from the most well-studied individual

difference variables in psychology: intelligence and thinking dispositions such as actively open-minded thinking and need for cognition. Instead, opinion strength explains more variance in myside bias than psychological process indicators. We need an alternative conceptualization where myside bias is viewed as a content-based effect and not an individual difference trait. Models that focus on the properties of acquired beliefs, such as memetic theory (Blackmore 1999; Dennett 1995, 2017; Stanovich 2004, 2021), provide more suitable frameworks for studying myside bias. The critical question becomes not "How do people acquire beliefs?" (the tradition in social and cognitive psychology) but instead, "How do beliefs acquire people?"

To avoid the most troublesome kind of myside bias (projecting beliefs that are not evidence-based), we need to distance ourselves from our convictions. It may help conceive our beliefs as memes with their own interests. We treat beliefs as possessions (see Abelson 1986) when we think that we have thought our way to these beliefs and that the beliefs are serving us. What Dennett (2017) calls the meme's eye view leads us to question both assumptions (that we have thought our way to our beliefs and that they are serving our personal goals). Memes want to replicate whether they are beneficial for us or not, and they do not care how they get into a host – whether they get in through conscious thought or are simply an unconscious fit to innate psychological dispositions.

In short, acquiring essential beliefs (convictions) without reflection is possible. There are many psychological examples where people acquire declarative knowledge, behavioral proclivities, and decision-making styles from innate propensities and (largely unconscious) social learning. For example, Haidt (2012) invokes this model to explain moral beliefs and behavior. The model is also applicable to the case of myside bias (see Stanovich 2021). The convictions driving your myside bias are partly caused by your biological makeup and partly by social learning from parents, peers, and schools.

The convictions that determine your *side* when you think in a mysided fashion often do not stem from rational thought. People will feel less ownership of their beliefs when they realize they did not consciously reason their way to them. When a belief is held less like a possession, it is less likely to be projected to new evidence inappropriately. Recall that the problematic kind of myside bias (see Stanovich 2021 for a fuller discussion) is the kind that results when a person projects a conviction-based desired belief as a prior probability rather than a prior probability that has resulted from the rational processing of previous evidence. If we understand where convictions come from (our temperaments and social experience), we might be able to develop a more depersonalized stance toward our beliefs and thus avoid the problematic types of myside bias.

9.5 The Peculiar Properties of Myside Bias Create an Epistemic Crisis in Universities

The bias blind spot is a crucial meta-bias demonstrated in a paper by Pronin, Lin, and Ross (2002). They found that people thought various motivational biases were much more prevalent in others than themselves, a much-replicated finding (Pronin 2007; Scopelliti et al. 2015). In two studies, my research group (see West et al. 2012) showed that there is a blind spot regarding most of the classic cognitive biases in the literature – people think that most of these biases are more characteristic of others than themselves. We found *positive* correlations between the blind spots and cognitive sophistication – more cognitively skilled people were more prone to the bias blind spot. However, this makes sense because most cognitive biases in the heuristics and biases literature *are* negatively correlated with cognitive ability – more intelligent people are less biased (Stanovich 1999, 2011; Stanovich & West 1998a; Stanovich et al. 2016). Therefore, it would make sense for intelligent people to say that they are less biased than others – because they are!

However, one bias – myside bias – sets a trap for the cognitively sophisticated. Regarding most biases, they are used to thinking that they are less biased. However, myside thinking about your political beliefs represents an outlier bias where this is not true (Drummond & Fischhoff 2019; Kahan, Peters, et al. 2012; Kahan et al. 2017; Sanchez & Dunning 2021; Stanovich 2021; Stanovich & West 2008; Van Boven et al. 2019). This disparity may lead to a particularly intense bias blind spot among cognitive elites. Specifically, they may be prone to think that traits such as intelligence (which they have) and experiences like education (which they also have in abundance) provide them with very generalizable inoculations against biased thinking.

If you are a person of high intelligence, have lots of education, and are strongly committed to an ideological viewpoint, you will be especially prone to think that you thought your way to your opinions. You will be even less likely than the average person to know that you derived your beliefs from the social groups around you. The beliefs comported with your temperament and innate psychological propensities (see Haidt 2012; Stanovich 2021). There is, in fact, a group of people who tick all of these boxes: people who are highly intelligent, highly educated, and strongly committed to an ideological viewpoint. That group happens to be the group of social scientists who study politicized topics!

The university professoriate is overwhelmingly left/liberal. This demographic fact has been demonstrated in numerous studies (Abrams 2016; Bikales & Goodman 2020; Ellis 2020; Horowitz et al. 2018; Jussim 2021; Kaufmann 2020; Langbert 2018; Langbert & Stevens 2020; Lukianoff & Haidt 2018; Peters et al. 2020). The trend is ubiquitous in the social sciences (sociology, political science, and like), and it is particularly solid

in psychology, the source of many studies on politicized topics (Buss & von Hippel 2018; Cardiff & Klein 2005; Ceci & Williams 2018; Clark & Winegard 2020; Duarte et al. 2015). Ideological and partisan beliefs are known to lead to the unwarranted projection of prior attitudes on the evidence concerning a variety of issues, such as sexuality, morality, the psychological effects of poverty, family structures, crime, childcare, productivity, marriage, incentives, discipline techniques, educational practices, and many comparable subjects where distal political attitudes are intertwined with people's beliefs on specific issues.

It should be clear why scientific institutions with such an ideological imbalance cannot produce accurate research on these topics. Science overcomes the myside bias of individual scientists by immersing them in a system of checks and balances – where other scientists with differing biases are there to critique and correct. The bias of investigator A might not be shared by investigator B, who will then look at A's results with a skeptical eye. Likewise, when investigator B presents a result, investigator A tends to be critical and look at it skeptically. However, what can ruin this scientific error detection and cross-checking process should be obvious. What ruins it is when all investigators share precisely the same bias. Unfortunately, the field of psychology is in just this situation concerning political ideology. The pool of investigators is politically homogeneous. Thus, we cannot rest assured that our science has enough variability to objectively approach politically charged topics like those mentioned above.

9.6 Psychology's Self-Correction Problem

The previously discussed Ditto et al. (2019a) findings highlight the danger of an academic elite thinking that they can investigate incendiary political topics on which they have strong feelings without compromising their research by myside bias. The Ditto et al. (2019a) findings show that the ideology of the cognitive elite is no less prone to myside bias than the political ideologies of the citizens that academics oppose. Nevertheless, because of their cognitive ability and educational backgrounds, society's cognitive elites will think that their evidence processing is less driven by myside bias than their fellow citizens.

As a result, we have ceased being a self-correcting science regarding specific topics. For years, it has been known that various types of racism scales[1] used in psychology do not measure the construct correctly (Agadjanian et al. 2021; Carmines et al. 2011; Carney & Enos 2019; Reyna 2018; Wright et al. 2021; Zigerell 2015). Many of them literally *build in* correlations between prejudice and conservative views. Early versions of these scales included items on policy issues such as affirmative action, crime prevention, busing to achieve school integration, or attitudes

toward welfare reform and then scored any deviation from liberal ortho-doxy as a racist response. Even endorsing the view that hard work leads to success for many people in America will get a higher score on a "symbolic racism" scale.

The social science monoculture repeatedly yields the same embarrassing sequence time and again. We set out to study a negative trait concept (prejudice, dogmatism, authoritarianism, intolerance, close-mindedness – the list is long). The traits studied are highly valenced – with one end of the trait continuum being good and the other being bad. Then the scale items are constructed like the racism scales discussed above – deliberately building in conservative social policy to define the negative construct. The scale is then used to associate conservatism with negative traits for a decade. Hundreds of articles are produced. The *New York Times* articles about the relevant research are written to show its liberal readers that research psychologists (yes, *science*!) have confirmed the reader's view that liberals are indeed psychologically superior people – doing better on all the tests that scientists have constructed to measure whether people are open-minded, tolerant, and fair.

The flaws in these scales were pointed out as long ago as the 1980s (Sniderman & Tetlock 1986). The decades-long failure to correct such deficiencies in these ideologically slanted scales undermines public confidence in psychology – as it should. Of course, there is *indeed some* self-correction in social science. After about a decade (or maybe two), a few researchers begin to probe whether there may have been theoretical confusion in a particular trait concept. Subsequent research often shows that the proposed trait was something different, or perhaps that the neg-ative aspects can be found on either side of the ideological spectrum.[2] For example, Conway et al. (2018) designed an authoritarianism scale on which liberals score higher than conservatives. They simply took old items that had disadvantaged conservatives and substituted content that disadvantaged liberals. The old item "Our country will be great if we honor the ways of our forefathers, do what the authorities tell us to do, and get rid of the 'rotten apples' who are ruining everything" was changed to "Our country will be great if we honor the ways of progressive think-ing, do what the best liberal authorities tell us to do, and get rid of the religious and conservative 'rotten apples' who are ruining everything." After the change, liberals scored higher on "authoritarianism" for the same reason that made the old scales correlate with conservatism – the content of the questionnaire targeted their views specifically.[3]

However, the fact that the scale eventually gets corrected, and the psychological construct eventually gets clarified, should not be viewed as necessarily flattering to psychology. Simply saying that corrections are eventually made obscures that the errors are always made in one direction (like at your local grocery, where things "ring up wrong" in the overcharge direction much more often than the reverse). The initial

conclusion is that conservatives have higher levels of bad psychological traits.

I had done this myself – in the 1990s, when, with colleagues, I constructed a questionnaire measuring actively open-minded thinking (AOT). One essential processing style tapped by the AOT concept is the subject's willingness to revise beliefs based on evidence. Our early scales, first constructed decades ago, had several items to tap this processing style. However, my colleague Maggie Toplak and I discovered (Stanovich & Toplak 2019) that there is no *generic* belief revision tendency. Belief revision needs to be tapped with content because the *specific* belief determines how much people are willing to revise. In the mid-1990s, our items were biased against religious (and conservative) subjects as initially written. No doubt, if the correlations had come out in the other direction, we would have been quicker to notice a problem, as those of us constructing the items were all secularists.

Cherry-picking scale items to embarrass our enemies is a seemingly irresistible tendency in psychology, as demonstrated during the recent pandemic. As is now well known, the media leaped to label as a conspiracy theory the idea that the virus might have originated in a lab in Wuhan because most mainstream media disliked the administration associated with that idea. Of course, labeling an alternative hypothesis as a conspiracy was deeply unscientific. There were still many viable virus origination theories at the time in 2020 when the media started their conspiracy mantra. In science, especially at the borderline of the unknown, we do not label every hypothesis other than the one with the highest Bayesian prior to be a conspiracy theory. In 2021, the media was embarrassed by this earlier behavior because, as often happens in science, the probability distribution across the viable theories shifted. It was well-publicized that even fact-checkers had made the error of calling everything but the primary hypothesis a conspiracy theory (Jilani 2021; Taibbi 2021; Tufekci 2021).

Perhaps such media bias should be expected in the present environment but seeing fellow social science researchers doing the same thing was mortifying. Several studies of Covid-19 misinformation and Covid-19 conspiracy theory beliefs had items in their scales that labeled belief in the laboratory origin of the virus as a conspiracy theory.[4] Before we knew anything with confidence about the origins of the virus that caused Covid-19, social scientists *also* jumped on the partisan bandwagon when they should have been the first to point out that minority hypotheses should not be labeled conspiracy theories at the beginning of an investigation.

For some years, studies of conspiracy beliefs have been plagued by item selection bias. A few conspiracy theories are prevalent on the left; others are on the right; many have no association with ideology.[5] It is thus trivially easy to select conspiracy theories disproportionally so that there will be ideological correlations in one direction or the other. However,

such correlations would not represent facts about people's underlying psychological structure. They would merely be sampling artifacts.

Kahan (2015) has shown that the heavy reliance of scientific knowledge tests on items involving belief in climate change and evolutionary origins has built correlations between liberalism and scientific knowledge into such measures. Notably, his research has demonstrated that removing belief in human-caused climate change and evolutionary origin items from scientific knowledge scales reduces the correlation between scientific knowledge and liberalism. Eliminating these items *also* makes the remaining test more valid because responses on climate and evolution items are expressive responses signaling group allegiance rather than responses that reflect actual science knowledge (Kahan & Stanovich 2016).

All studies of the "who is more knowledgeable" type in the political domain are at risk of being compromised by such item selection effects. Over the years, Democrats in the United States have called themselves the "party of science" – and they *are* regarding climate science and belief in the evolutionary origins of humans. Nevertheless, regarding topics like the heritability of intelligence and sex differences, the Democrats suddenly become the "party of science denial" (Stanovich 2021). Whoever controls the selection of items will find it irresistible not to bias the selection according to their notion of what knowledge is essential – choosing items that fellow tribe members pass easily and that are opaque to their political enemies and not seeing the possibility of someone else doing exactly the opposite. It is distressingly easy to expose the ignorance of a group we do not like if we control the selection of the items.

9.7 Academia's Perverse Response to the Scientific Problem of an Ideological Monoculture: Doubling Down

How has social science responded to the problems inherent in being an institutionalized ideological monoculture? How has it sought to bolster confidence in its scientific conclusions? Incredibly, the response has been to double down on insisting that, when defining good thinking, only they are the authorities. You must answer the questions posed by these researchers correctly, but you must now also affirm that the creators of the tests are the ultimate arbiters of what constitutes good thinking.

I am referring to the increasing popularity of so-called science trust or "faith in science" scales (I am guilty of authoring one of these scales myself!). On such questionnaires, the respondent is often asked whether they trust universities, the media, or the results of scientific research on pressing social issues. When the respondent answers that they do not trust university research very much, their epistemic abilities are deemed inferior. They are called science deniers, or people who do not "follow the science."

However, most of these "trust in experts" measures used in behavioral science have methodological problems. The researchers employing them view low-trust subjects as epistemically defective in their failure to rely strongly on expert opinion when forming their beliefs. Investigators consider more acceptance of information from experts such as these as better. Indeed, maximum acceptance (answering "complete acceptance" on the scale) is explicitly deemed optimal in the statistical analysis of such measures.

How times have changed. In the 1960s and the 1970s, it was viewed as progressive to display skepticism toward all claims of expertise. Making people more skeptical toward government officials, journalists, and universities was viewed as progressive because, by doing so, we thought we were moving toward a more accurate worldview. It was thought then that truth was obscured by the self-serving interests of precisely the groups listed on current "expert acceptance" questionnaires! Nevertheless, it is viewed as an epistemological defect when conservatives currently evince more skepticism on these scales. Actually, no one knows how much trust in institutions is optimal, so these measures cannot possibly have valid scoring protocols.

Related to these "trust in experts" scales are the "trust in science" scales in the psychological literature (or their complement, so-called anti-scientific attitude scales). I have constructed such a scale but now consider that it is a conceptual error and, as a measure, will be prone to misuse. When you ask a subject to respond to an item such as "science is the best method of acquiring knowledge," you might as well ask the subject whether they have received higher education. The social benefit of attending a university is learning that you are supposed to endorse items like this. Every person with a BA knows it is a good thing to "follow the science," as we have often heard during the pandemic. The same BA equips you to criticize your fellow citizens who do not know that "trust the science" is a code word used by university-educated elites.

For these reasons, I have removed the anti-science attitudes subtest from my lab's omnibus measure of rational thinking, the Comprehensive Assessment of Rational Thinking (Stanovich et al. 2016). It does not provide a clean and unbiased measurement of that construct. Suppose we want to examine people's attitudes toward scientific evidence. In that case, we must take a domain-specific belief that a person has on a scientific matter, present them with contradictory evidence, and see how they assimilate that contradictory evidence (as some studies have done). You cannot just ask people whether they "follow the science" on a questionnaire. That is the equivalent of constructing a test and giving half the respondents the answer sheet. It would not be an independent finding when those with the answer sheet do better. Such scales measure nothing more than whether the respondent is a member of the tribe that designed the test.

My scale was far from the most misguided of this type. These questionnaires can get quite aggressive in what they require assent to if one is to avoid the label "anti-science." For example, one scale (Farias et al. 2013) requires the subjects to affirm propositions such as "We can only rationally believe in what is scientifically provable," "Science tells us everything there is to know about what reality consists of," and "All the tasks human beings face are soluble by science," "Science is the most valuable part of human culture." The above is a quite an uncompromising set of beliefs to have to endorse so as not to end up in the "low faith in science" group in an experiment! One can be appropriately calibrated to scientific evidence without enthusiastically affirming statements like these, which seem to claim Promethean status for science.

In addition to this problem of overblown notions of what belief in science entails, the social sciences employ definitions saturated with their own myside bias. Consider a study (Feygina et al. 2010) that attempted to link the conservative worldview with "the denial of environmental realities." Subjects were presented with the following item: If things continue their present course, we will soon experience a major environmental catastrophe. If the subject did not agree with this statement, they were scored as denying ecological realities. The term denial implies that what is being denied is a descriptive fact. However, without a clear description of what "soon" means in this statement, what "major" means, or what "catastrophe" means, the statement itself is not a fact – and so labeling one set of respondents as science deniers based on an item like this reflects little more than the ideological position of the study's authors.

This tendency to conflate liberal responses with the correct answer (or ethical response, fair response, scientific response, or open-minded response) is particularly prevalent in social psychology and personality psychology subareas. Studies often label any legitimate policy difference with liberalism as an intellectual or personality defect (dogmatism or authoritarianism or racism or prejudice, or science denial). In one utterly typical study (Azevedo & Jost 2021), the aggressive label "social dominance orientation" is used to describe anyone who does not endorse both identity politics (emphasizing groups when thinking about justice) and the new meaning of equity (equality of outcomes). A subject who does not support the item "group equality should be our ideal" is scored in the direction of having a social dominance orientation (wanting to maintain the dominant group in a hierarchy). A conservative individual (or an old-style Democrat) who values equality of opportunity and focuses on the individual will naturally score higher in social dominance orientation than a left-wing advocate of group-based identity politics who focuses on equality among groups.

The entire construct of social dominance represents a form of doubling down on the bet that one's beliefs are correct. The concept assumes that the world should be interpreted through the lens of identity politics and scores in the negative direction any response that strays from that

worldview. In contrast, if a subject denies that group performance is the measure of fairness and thinks instead that fairness is a construct that applies at the individual level, they will be said to have a social dominance orientation – even though group outcomes are not even salient in the subject's framework. The subject's fairness concepts are ignored, and the experimenter's framework is instead imposed upon them.

The study then defines "skepticism about science" with just two items. The first, "We believe too often in science, and not enough in faith and feelings," builds into the scale a direct conflict between religious faith and science that many subjects might not actually experience, thus inflating correlations with religiosity. The second, "When it comes to fundamental questions, scientific facts don't help very much," is even more interesting. If you think that the essential things in life are marriage, family, raising children with good values, and being a good neighbor – and thus answer that you agree on this item, you will get a higher score on this science skepticism scale than a person who believes that the essential things in life are climate change and green technology. Neither of these items shows that conservative subjects are anti-science, but they ensure that conservatism/religiosity will be correlated with the misleading construct that names the scale: "science skepticism."

Cognitive elites often use "fact-checking" to double down on their insistence that adherence to the norms of the institutions that they control are the only arbiters of truth. If you do not accept the conclusions of the fact-checkers, you are not "following the science." Academic researchers in the social sciences seem oblivious to an implication from research on myside bias (Stanovich 2021) – that a primary source of bias is the selection of items to fact-check in the first place. More problematic than inaccuracies in the fact checks themselves is the automatic myside bias that will trigger choosing one proposition over another for checking amongst a population of thousands (Uscinski & Butler 2013).

Unfortunately, fact-checkers have become just another player in the unhinged partisan cacophony of our politics. Progressive academics populate many leading organizations in universities, others are run by, and some are connected to Democratic donors in the United States. You cannot expect such entities to win respect among the general population when they have such ideological connections and do not fully instantiate inclusive adversarial collaboration (see below).

Fact-checking is particularly prone to myside bias in the political domain. The slipups that occur always seem to favor the ideological proclivities of the liberal media outlets that sponsor the fact checks. As previously noted, academic research groups immediately began including items that classified belief in a lab origin for the Covid-19 virus as a conspiracy belief in their studies. Scholars and commentators talking about the possibility of a lab origin were censored on social media (Taibbi 2021). A *New York Times* reporter (a science reporter no less)

said the lab origin hypothesis had "racist origins" (Jilani 2021). The idea of a lab origin was labeled false and a "debunked" idea by fact-checking websites (Taibbi 2021). However, in May 2021, the fact-checking website Politifact issued a retraction to their September 2020 assessment that a lab origin was a "pants on fire" claim. Likewise, fact-checking websites quickly refuted the Trump administration's claims that a vaccine would be available in 2020 (Tierney 2021). Of course, we now know the vaccine rollout was in December 2020.

Regarding many Covid-19 issues, these organizations had no business treating ongoing scientific disputes (origins of the virus, the efficacy of lockdowns) as if they were a matter of established "fact" they could check. They were, as Tufekci (2021) phrased it in an essay, "checking facts even if you can't." In an ongoing scientific dispute with a dominant hypothesis warranting a 60% Bayesian prior, a minority hypothesis with 20% credence does not become a "conspiracy theory," and those advocating for it are not making a "pants on fire" claim. Unfortunately, this was characteristic of fact-checking organizations and many social science researchers studying the spread of misinformation throughout the pandemic. They were too quick to double down by insisting that adherence to their approach to these complex pandemic issues was a sign of epistemic rationality.

9.8 Restoring Epistemic Legitimacy to the Social Sciences

I wrote a book on myside bias (Stanovich 2021) that discussed in detail the difficulty each of us has in checking our tendencies to evaluate and generate evidence in a manner that favors our pre-existing opinion. The remedy for our society-wide epistemic crisis will not be any quick fix at the individual level. The ultimate reform must be at the level of our institutions (Rauch 2021) – precisely the institutions (media and universities) that have lost their status as neutral adjudicators of truth claims in recent years. The answer cannot be to tell the populace to turn more strongly to the same institutions that have been failing us. You cannot do that unless you change the institutions themselves.

Academics pile up more and more studies of the psychological "deficiencies" of the voters who do not support the Democrats or who voted for Brexit. They pile up more conclusions on all the pressing issues of the day (immigration, crime, inequality, race relations) using research teams without any representation outside the left/liberal-progressive consensus. We – universities, social science departments, my tribe – have sorted by temperament, values, and culture into a monolithic intellectual edifice that has long ceased to be a neutral adjudicator of fraught social issues. We create tests to reward and celebrate the intellectual characteristics we define ourselves by and skewer those we deplore. The broader population no longer trusts us. Thus, in the last ten to twenty years, we have created

another layer of tests to find our critics guilty more elementally: they are anti-science and do not "trust expertise." How do you get a low score on our new meta-tests? Answer: Say you do not trust us.

I have sat with university faculty and joked about how doctors think they can regulate themselves, but we psychologists know that it is implausible that they will do it objectively. Nevertheless, we turn around and object when there is disbelief in our self-regulating ability. We have an epistemic crisis because cognitive elites have become so self-referential that they no longer command the respect of the rest of the populace. We have been cleansing disciplines of ideologically dissident voices for thirty years now with relentless efficiency. We have attempted to define the beliefs of our political enemies as pathologies. If you say that hard work will lead to African Americans' success, you will display "symbolic racism." Belief in the equality of opportunity for individuals combined with skepticism of government-enforced equality of outcomes for groups becomes a "social dominance orientation." If you do not believe that "All the tasks human beings face are soluble by science" or that science does not answer many of the most important questions, you will be labeled anti-science or a science skeptic. If you do not believe there will *soon* be a "climate catastrophe," you will be labeled a science denier.[6] As a result, public trust in us is sinking. It will not reverse, and it *should* not reverse – until we take measures to ensure that we are triangulating social issues using various frameworks.

9.9 Adversarial Collaboration and the Ideological Monoculture

Institutions, administrators, and faculty seem unconcerned about the public's plummeting trust in universities. Most outsiders, though, see the monoculture as a bug. If academia wanted to fix the bug, it would turn intensely to mechanisms such as adversarial collaboration, which is well described on the website of the Adversarial Collaboration Project of the University of Pennsylvania (see Clark & Tetlock 2022). Adversarial collaboration seeks to broaden the frameworks within research groups by encouraging disagreeing scholars to work together. Researchers from opposing perspectives design methods that both sides agree to constitute a fair test and jointly publish the results. Both sides participate in interpreting the findings and conclusions based on pre-agreed criteria. Adversarial collaborations prevent researchers from designing studies likely to support a predetermined hypothesis and dismiss unexpected results. Most importantly, findings based on adversarial collaborations can be fairly presented to consumers of scientific information as proper consensus conclusions and not outcomes determined by one side's success in shutting the other out.

There is a significant obstacle, however. It is not certain that, in the future, universities will have enough conservative scholars to function in

the needed adversarial collaborations. The diversity statements that candidates for faculty positions must now write are a significant impediment to increasing intellectual diversity in academia. A candidate will not advance their chance of attaining a faculty position unless they affirm belief in the tenets of progressive identity politics and pledge allegiance to its many terms and concepts without getting too picky about their lack of operational definition (diversity, systemic racism, white privilege, inclusion, equity). Such statements function like ideological loyalty oaths (Jussim 2019; McBrayer, 2022; Rozado 2019; Small 2021; Thompson 2019). You will not be hired if you do not endorse the current shibboleths of identity politics. One wonders whether, in the future, there will be enough intellectual diversity left in academia to make actual adversarial collaboration possible.

Notes

1. Contemporary scales go by a variety of names. The most common labels are racial resentment, symbolic racism, and modern racism (Carmines et al. 2011; Henry & Sears 2002).
2. Alternatively, the history of such scales starts out being unidimensionally negative on one end (high authoritarianism is always worse). However, the concept morphs into something resembling a cognitive style – where extremes on either end look suboptimal, and the wisest response seems somewhere in the middle. For example, authoritarianism morphs into security concerns (Hibbing 2020) or a fixed versus fluid worldview (Hetherington & Weiler 2018).
3. Costello et al. (2021) present results on a more psychometrically sound left-wing authoritarianism scale than that investigated by Conway – one with a more thoroughly established construct validity.
4. See Gligorić et al. (2021) and Teovanović et al. (2021), but there are many other examples.
5. If a scale includes a broad sampling of items, the correlation with ideology should not be that large (Enders & Uscinski 2021; Oliver & Wood 2014; Stanovich et al. 2016). The conspiracy belief subtest of our Comprehensive Assessment of Rational Thinking (CART) sampled twenty-four different conspiracy theories.
6. Singal (2018) parodied our field's flaws when he posited the Jesse Singal Authoritarianism scale consisting of three items cherry-picked to expose liberals in the same way that the academic literature targets conservatives: "In certain cases, it might be acceptable to curtail people's constitutional rights to stop them from spreading climate-change denialism"; "The government needs to do a much more comprehensive job monitoring Christian-oriented far-right terrorism"; "Some people want to act like the causes of racism are complicated, but they aren't": "Racists are moral failures, and that's that" – a scale which would target liberals as the authoritarians.

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