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CHAPTER 2 I

*The Elusive Search for Individual Differences
in Myside Thinking*

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Partisan divisiveness, for decades now a social problem in the United States, has reached levels that cause public concern in European nations as well (Westwood et al., 2018). Many commentators have ascribed some part of the divide to what they term our “post-truth” society, but this is not an apt description of the psychological defect that has played a central role in our divided society. The cause of our division is not that people deny the existence of truth. What our society is really suffering from is myside bias: People evaluate evidence, generate evidence, and test hypotheses in a manner biased toward their own prior beliefs, opinions, and attitudes. That we are facing a myside bias problem and not a calamitous societal abandonment of the concept of truth is perhaps good news in one sense, because the phenomenon of myside bias has been extensively studied in cognitive science.

Myside bias occurs across a wide variety of judgment domains. It is displayed by people in all demographic groups, and it is exhibited even by expert reasoners, the highly educated, and the highly intelligent. It has been demonstrated in research 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 occur in every stage of information processing. That is, studies have shown a tendency toward: biased search for evidence, biased evaluation of evidence, 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; Taber & Lodge, 2006).

That’s the good news – that myside bias has been well-studied and that much is known about it. One of the important things we know is that the

degree of myside bias shown is not predictable from individual difference variables that we would expect to be associated with it. In many studies, myside bias is not attenuated by cognitive sophistication, for example. In cases where it does associate with cognitive sophistication, the correlations tend to go in an unexpected direction: more sophisticated subjects show more myside bias.

21.1 Myside Bias and Cognitive Ability

When Richard West and I began examining 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, West, & Stanovich, 1999; Stanovich & West, 1997, 1998a, 1998b). The correlations were usually quite modest but, then again, they derived from tasks measured with just a few items and hence of fairly low reliability. Another consistent observation in our earliest studies was that almost every cognitive bias was correlated with intelligence as measured with a variety of 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 need for cognition.

These early indications that the tendency to override various cognitive biases was correlated with individual differences in cognitive ability and thinking dispositions have stood the test of time. We have repeatedly observed this tendency in our lab for over two decades now (see Stanovich, West, & Toplak, 2016 for a review of the evidence) and it has been replicated in numerous other investigations conducted by other researchers (Aczel et al., 2015; Bruine de Bruin, Oarker, & Fischhoff, 2007; Finucane & Gullion, 2010; Klaczynski, 2014; Parker & Fischhoff, 2005; Parker et al., 2018; Viator et al., 2020; Weaver & Stewart, 2012; Weller et al., 2018). 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-diagnosticity effects, and many others.

There is no doubt that, based on previous work, the clear expectation is that any new cognitive bias studied will show the same correlations with individual difference variables. This body of previous work sets the context for the surprising findings about the individual difference predictors of myside bias.

Some years ago, Perkins, Farady, and Bushey (1991) reported the interesting finding that although intelligence was moderately related to the *total* number of ideas produced in an argument generation task, it was virtually unrelated to the number of arguments generated which were *counter* to the subject's own position. The Perkins et al. finding lay dormant for many years until a flurry of more recent studies indicated that it was replicable and generalizable.

In a paradigm similar to that of Perkins, Farady, and Bushey (1991), our research group (Toplak & Stanovich, 2003) had subjects generate arguments relevant to controversial issues (e.g., should people be allowed to sell their organs). We found a substantial myside bias on the task (people tended to give more arguments in favor of their position than against), but the degree of myside bias was not correlated with cognitive ability. MacPherson and Stanovich (2007) replicated the main finding that cognitive ability did not correlate with the myside effect in an argument generation task, and also found a lack of correlation using an experiment evaluation task.

In a series of experiments (Klaczynski (1997; Klaczynski & Lavalley, 2005; Klaczynski & Robinson, 2000) subjects were presented with flawed hypothetical experiments and arguments that led to either opinion-consistent or opinion-inconsistent conclusions. They then evaluated the quality of the reasoning used when the subjects critiqued the flaws in the experiments. Klaczynski and colleagues found that verbal ability was related to the overall quality of the reasoning in both the opinion-consistent and opinion-inconsistent conditions. However, verbal ability was *not* correlated with the magnitude of the myside bias effect – the tendency to critique opinion-inconsistent experimental results more harshly than opinion-consistent ones.

This finding of independence between intelligence and myside reasoning also occurs in what we might call more naturalistic reasoning paradigms – ones where the subject is not cued by the nature of the task or the instructions that there is an evaluative component to the experiment at all. For example, my research group has studied a variety of biased beliefs based on one's social and demographic status (Stanovich & West, 2007, 2008). The paradigm was one in which the subject simply had to agree or disagree with facts that put the status in a positive or negative light. Myside biased beliefs were rampant in our studies: smokers were less likely to acknowledge the negative health effects of second-hand smoke; people who were more highly religious were more likely to think that religious people were more honest than nonreligious people; those voting for

George Bush were more likely to think that the invasion of Iraq made us safer from terrorists than those voting for John Kerry; and so on. However, we examined not just whether these biases exist, but whether intelligence serves to attenuate them. The results were clear-cut. We examined 15 different myside biases (Stanovich & West, 2008). Not one of these biases was attenuated by high intelligence.

The failure of general intelligence to attenuate myside bias extends to variables that are highly related to intelligence such as numeracy, scientific literacy, and general knowledge. For example, Drummond and Fischhoff (2019) tested subjects who were either supporters or critics of the Affordable Care Act (ACA). Their individual difference variable was not intelligence, but was a direct measure of scientific reasoning skills. Subjects read and evaluated a description of a scientific study finding positive effects of the ACA and another showing negative effects. Not surprisingly, they observed a myside bias effect. But like the Klaczynski research and our own work, Drummond and Fischhoff (2019) found that their measure of scientific reasoning skills did not correlate with the amount of myside bias displayed. Indeed, they ran several studies, and in some of them there was a slight tendency for those *higher* in scientific reasoning skills to show even larger myside bias effects than those of lower skill levels. This counterintuitive finding occasionally appears in the myside literature, most notably in the work of Kahan (2013; Kahan, Peters et al., 2012; Kahan, Peters et al., 2017).

Kahan, Peters et al. (2012) found that, not surprisingly, left-leaning subjects thought that climate change posed more risks to health and safety than did right-leaning subjects. What was surprising was that this difference between groups was larger among subjects who were high in measured numeracy than among subjects who were low in numeracy. One generally expects that greater degrees of intelligence, numerical skill, and knowledge will bring people together in their view of the facts, but this was not the case in the Kahan, Peters et al. (2012) study. Numerical sophistication was associated with increased group polarization.

Using a paradigm that more directly measured myside bias, Kahan (2013) again found group polarization based on a different individual difference indicator – the Cognitive Reflection Test (CRT) (Frederick, 2005). The CRT is psychometrically complex (tapping thinking dispositions and numeracy, as well as cognitive capacity; see Liberali et al., 2012; Patel, Baker, & Scherer, 2019; Sinayev & Peters, 2015; Stanovich, West, & Toplak, 2016; Toplak, West, & Stanovich, 2011, 2014a) – but this just makes the finding even more fascinating. Kahan (2013) measured myside

bias by assessing how much subjects tended to endorse the validity of an indicator when it yielded an outcome consistent with their beliefs versus how much they endorsed its validity when it yielded an outcome inconsistent with their beliefs. The degree of myside bias displayed was, again, statistically larger among those who scored higher on the CRT.

Kahan, Peters et al. (2017) observed the same thing using the 2×2 covariation detection paradigm (Stanovich & West, 1998b) – a very different myside paradigm in that it involves very direct processing of numerical information. The polarizing issue in their experiment was gun-control, with half of the sample being in favor and half of the sample being opposed. The individual difference variable was numeracy in this experiment. The results clearly indicated that subjects were more accurate in their covariation assessments when the gun-control data supported their prior opinion than they were when the gun-control data contradicted their prior opinion. However, higher numeracy was associated with *more* myside bias for each of the groups on either side of the issue.

In a study by Van Boven et al. (2019), the subject had to choose which of two conditional probabilities (the hit rate or the inverse conditional probability) was the most relevant in evaluating data on two politically charged issues: the Trump administration's restrictions on travel from seven countries, and an assault weapons ban. Despite the similar logic of the two issues in terms of probabilities, the subjects picked totally different conditional probabilities for the two issues because they tended to be on opposite sides (that is, people who were pro-ban on one issue were anti-ban on the other). The myside bias displayed was actually larger for the subjects who were more highly numerate. People apparently used their superior numerical reasoning skills not to reason in an unbiased manner across the different conditions, but to figure out which probability looked more favorable to their side of the issue (Evans, 2019; Mercier & Sperber, 2017).

Converging with the results of Kahan and Van Boven et al. is the literature in political science showing that various indices of cognitive sophistication such as educational level, knowledge level, and political awareness not only do not attenuate partisan bias but can often increase it. For example, Joslyn and Haider-Markel (2014) found that highly educated partisans were in more disagreement about policy-relevant facts than were less-educated partisans.

The trend observed by Joslyn and Haider-Markel (2014) has been found in other work on partisan attitudes. 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. Multiple measures of cognitive sophistication show that cognitive elites display more polarization on a variety of political issues (Drummond & Fischhoff, 2017; Ehret, Sparks, & Sherman, 2017; Hamilton, 2011; Henry & Napier, 2017; Kahan & Stanovich, 2016; Kraft, Lodge, & Taber, 2015; Lupia et al., 2007; Sarathchandra et al., 2018; Yudkin, Hawkins, & Dixon, 2019).

These survey responses are not direct measures of myside bias, and they involve a host of other complexities. Political polarization is far from a pure measure of the myside processing tendency as it is measured in experiment evaluation studies (e.g., Drummond & Fischhoff, 2019; Kahan, Peters et al., 2017; MacPherson & Stanovich, 2007). I have mentioned this literature here, however, because of the interesting convergence between political survey research and the laboratory findings. The convergence I wish to draw attention to in this chapter concerns what we might call the *weak conclusion*¹ that intelligence and other related measures of cognitive sophistication do not inoculate the reasoner against myside bias. We cannot hope that looking to more education or to the cognitive elites of our society will save us from the deleterious social and political effects of myside bias.

In summary, well-controlled laboratory studies of myside bias converge with survey research and polling data in showing that intelligence and education do not inoculate at all 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” (p. 312).

21.2 Myside Bias and Thinking Dispositions

From an individual differences point of view, myside bias displays other curious tendencies. Most of the other biases in the literature display correlations with, not only intelligence, but also thinking dispositions that are related to rational thinking such as actively open-minded thinking and need for cognition (Bruine de Bruin, Parker, & Fischhoff, 2007; Finucane

¹ The strong conclusion, drawn by Kahan and many political science researchers (e.g., Drummond & Fischhoff, 2017; Henry & Napier, 2017; Kahan, 2013; Kahan, Peters et al., 2017; Kraft, Lodge, & Taber, 2015; Yudkin, Hawkins, & Dixon, 2019), is that cognitive elites may actually show a larger myside bias. This is a fascinating conclusion, but its strong form is not necessary for our arguments going forward.

& Gullion, 2010; Kokis et al., 2002; Parker & Fischhoff, 2005; Stanovich & West, 1997, 1998a; Stanovich, West, & Toplak, 2016; Toplak et al., 2007; Toplak & Stanovich, 2002; Toplak, West, & Stanovich, 2011, 2014a, 2014b; Viator et al., 2020; Weller et al., 2018).

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 (Kahan, 2013; Kahan & Corbin, 2016; Kahan, Peters et al., 2017; Stanovich & West, 2007; Stenhouse et al., 2018). For example, in our study using Perkins' (1985) argument generation paradigm (Toplak & Stanovich, 2003), we found substantialmyside biases on several issues (people tended to give more arguments in favor of their position than against), but the degree ofmyside bias was not correlated with several thinking dispositions, including actively open-minded thinking, dogmatism, and need for cognition. In the Macpherson and Stanovich (2007) study, we examinedmyside bias in both argument generation and evidence evaluation and also measured three different thinking dispositions: actively open-minded thinking, need for cognition, and the avoidance of superstitious thinking. None of the six resulting correlations indicated that more sophisticated thinking was significantly associated with avoidingmyside bias.

In our studies of naturalisticmyside bias (Stanovich & West, 2007) and argument evaluation (Stanovich & West, 2008), relationships betweenmyside bias and rational thinking dispositions were also negligible. Guay and Johnston (2021) examinedmyside bias in political reasoning and found that need for certainty and openness did not predict the magnitude of themyside effect.

Kahan and Corbin (2016) found an interaction betweenmyside thinking and actively open-minded thinking AOT scores, but the interaction was in the opposite direction than expected. Conservatives and liberals who were high in AOT had more diverging opinions on climate change than did conservatives and liberals who were low in AOT. Stenhouse et al. (2018) found no significant interaction between AOT and ideological difference in climate-change attitudes. Although not replicating the interaction observed by Kahan and Corbin (2016), the Stenhouse et al. (2018) results (as well those of Clements & Munro, 2021) converged with their results and those of Macpherson and Stanovich (2007) and Stanovich and West (2007) in finding no evidence that higher AOT scores attenuate tendencies towardmyside thinking.

In a follow-up study, Eichmeier and Stenhouse (2019) found a significant correlation between party identification and AOT scores. However,

using an argument evaluation paradigm, they found no indication that AOT scores were related to the myside bias observed in the argument strength ratings (see also, Clements & Munro, 2021). Thus, the findings from the Stenhouse lab (Eichmeier & Stenhouse, 2019; Stenhouse et al., 2018) are exactly parallel to those from the Stanovich lab (Macpherson & Stanovich, 2007; Stanovich & Toplak, 2019; Stanovich & West, 2007). Both find that AOT scores correlate in the 0.20 to 0.30 range with ideology/partisanship, but neither lab finds an indication that AOT itself actually predicts the avoidance of myside bias.

Finally, even personality dispositions that would seem to be most directly related to the avoidance of myside bias fail to correlate with it. For example, Simas, Clifford, and Kirkland (2020) suggested that empathy (or lack thereof), would seem to be a key mechanism in the development of political polarization, partisan bias, and ideological conflict. However, in two studies, they found that the differences in empathic concern did not predict the degree of partisan bias in evaluating a contentious public event, and that high empathic concern did not attenuate the degree of affective polarization among partisans. Simas, Clifford, and Kirkland (2020) explain their findings by positing that empathy itself is biased toward one's ingroup and thus does not provide an inoculation against myside bias.

21.3 Myside Bias as a Psychological Trait Lacks Domain Generality

Another way in which myside bias is an outlier bias is that, in most circumstances, it shows very little domain generality and appears to be very content dependent. Individuals who display high myside bias on one issue do not necessarily show high myside bias on another, unrelated issue. This was apparent in the study by Toplak and Stanovich (2003). Subjects in the study showed large myside biases in generating arguments about three issues: whether students should pay the full cost of their university education; whether people should be allowed to sell their organs; and whether the cost of gasoline should be doubled to discourage people from driving. However, across issues, there were no significant correlations between the degree of myside bias shown on one issue and that shown on another. These results are unlike the case of other biases such as framing effects, where we and other investigators obtain reliabilities in the range of 0.60–0.70 across a dozen or so different items (Bruine de Bruin, Parker, & Fischhoff, 2007; Stanovich et al., 2016). In fact, there is a substantial degree of domain generality in most biases in the literature (Bruine de

Bruin et al., 2007; Dentakos et al., 2019; Parker et al., 2018; Stanovich & West, 1998a; Stanovich, West, & Toplak, 2016; Weaver & Stewart, 2012; Weller et al., 2018) but not in the case of myside bias.

Toplak and Stanovich (2003) found that individual difference variables (both cognitive ability and thinking dispositions) were unable to predict the myside bias displayed on any of the three issues examined in that research. However, there was a different kind of variable in that study that did consistently predict the degree of myside bias. That variable was the strength of the subject's opinion on that specific issue, which was correlated with the myside bias in all three issues examined in the Toplak and Stanovich (2003) study. In our subsequent studies using an argument evaluation paradigm (Stanovich & West, 2008), we found that the strength and direction of the opinion accounted for more variance in myside bias than did all measures of cognitive ability and thinking dispositions combined. The finding that the strength of the belief is a predictor of myside bias replicates a pattern reported in many other studies (Bolsen & Palm, 2020; Druckman, 2012; Edwards & Smith, 1996; Houston & Fazio, 1989; Taber & Lodge, 2006).

Other studies have converged with the conclusion that belief content rather than personal psychological characteristics predicts the degree of myside bias. Tetlock (1986) studied the complexity of people's reasoning about important issues such as environmental protection, crime control, and health care. The differentiation complexity measure in this study is the variable that is closely related to the concept of myside bias, because it is a measure of how well people consider alternative viewpoints and recognize complex trade-offs when reasoning about issues. The way it is defined makes it an inverse measure – it is an operationalization of the processes that enable one to *avoid* myside bias. People could be given an overall differentiation complexity score averaging across the six issues tested, but when predicting differentiation complexity for a *particular* issue, the average score was a less potent predictor than the degree of conflict between the values implicated by each *particular* issue (for example, freedom versus national security on a question about surveillance).

Toner et al. (2013) employed a paradigm that taps myside thinking in a very interesting way. They examined nine issues on which liberals and conservatives in the United States tend to disagree (health care, illegal immigration, abortion, affirmative action, etc.). After assessing the subjects' opinions, they had the participants directly rate how much more correct they thought their belief was compared with other people's beliefs. That is, Toner et al. (2013) measured the opinion on each of the nine

issues along with what they termed the degree of *belief superiority* for each: the degree to which the subject thought their opinion was superior to those of others.

For each of the nine items, Toner et al. (2013) observed a very large strength of belief effect (exemplified as a very strong quadratic effect in their regression analysis). The more extreme the subject's opinion (in either direction) the more the subject tended to believe that their opinion was better than that of others. The strength of the opinion was a more potent predictor than the direction of the opinion in all cases (see Harris & Van Bavel, 2021, for a replication). And, like the analyses in our studies, Toner et al. (2013) found that strength of opinion was a stronger predictor than the individual difference variable of dogmatism.

It is interesting that several decades ago, in his classic papers on how mere beliefs are different from convictions, Abelson (1986, 1988) reported a converging finding. Based on a series of survey questions given to subjects, Abelson (1988) constructed a "conviction score" for each of several social issues that were current in the 1980s (nuclear power, belief in God, divestment from South Africa, abortion, welfare, the Strategic Defense Initiative, AIDS, etc.). Given the results I have just reviewed about strength of belief, it is a safe assumption that Abelson's conviction scores would have correlated highly with the degree of myside bias shown on each issue. Yet, consistent with the results I have reviewed here, Abelson (1988) found no correlation between level of education and conviction on any of the issues. He also found only modest degrees of domain generality for conviction (a median correlation of 0.25) and concluded that his results suggest a "lack of a powerful individual difference variable representing the proclivity to have convictions on social issues" (p. 271).

In short, the level of myside bias displayed on a particular issue in a particular paradigm is highly content-dependent. Myside bias is not highly predictable from traditional psychological variables such as intelligence or thinking dispositions, and it is not attenuated by educational level. General political orientation also has limited ability to predict myside bias (Ditto et al., 2019b), unless very fine-grained information about the strength of belief across various micro-issues is obtained (Toner et al., 2013).

21.4 Normative Issues: Is Myside Bias Irrational?

Myside bias is an outlier bias in another important way. For most of the other biases in the literature (anchoring biases, framing effects, base-rate neglect, etc.) it is easy to show that they lead to suboptimal decisions.

In contrast, despite all the damage that myside bias does to our social and political discourse, it is shockingly hard 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 prior belief. This seems wrong, but it is not. Many formal analyses and arguments in philosophy of science have shown that in most situations that resemble real life, it is rational to use your prior belief in the evaluation of new evidence (Alloy & Tabachnik, 1984; Evans, Over, & Manktelow, 1993; Kornblith, 1993). It is even rational for scientists to do this in the research process (Koehler, 1993; Tappin, Pennycook, & Rand, 2020). The reason that it is rational is that people (and scientists) are not presented with information that is of perfect reliability (Hahn & Harris, 2014). The degree of reliability is something that has to be assessed. A key component of that reliability involves assessing the credibility of the source of the information or new data. For example, it is perfectly reasonable for a scientist to use prior knowledge on the question at issue in order to evaluate the credibility of new data presented (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 source of the new data (O'Connor & Weatherall, 2018). The larger 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 interesting is that it is rational for a layperson to use it too, as long as their prior belief represents real 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 a prior belief the person wants to be true despite inadequate evidence that it is, in fact, true by using a conviction-based prior (see Stanovich, 2021). The term conviction better conveys the fact that these types of beliefs are often accompanied by emotional commitment and ego preoccupation (Abelson, 1988). They can sometimes derive from values or partisan stances. The problematic kinds of myside bias derive from people projecting convictions, rather than evidence-based beliefs, onto new evidence that they receive. That is how we end up with a society that seemingly cannot agree on empirically demonstrable facts.

An example might help here. Imagine a psychology professor who was asked to evaluate the quality of a new study on the heritability of intelligence. Suppose the professor knows the evidence on the substantial heritability of intelligence, but because of an attraction to the blank-slate view of human nature, wishes that were not true – in fact, wishes it were zero. The question is, what is the prior belief that the professor should use to approach the new data? If the professor uses a prior belief that the heritability of intelligence is greater than zero and uses it to evaluate the credibility of new evidence, that would be the proper use of a prior belief. If instead they projected onto new evidence the prior belief that the heritability of intelligence equals zero, that would be an irrational display of myside bias, because it would be projecting a conviction –something that the professor wanted to be true, rather than a prior expectation based on evidence. Projecting convictions in this way is the kind of myside bias that leads to a failure of society to converge on the facts (Stanovich, 2021).

All of the 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, Peters 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 show, on a net-net basis, that myside processing is non-normative.

21.5 Convergence of the Normative Arguments with the Individual Difference Findings

The failure of a potent individual difference variable like intelligence to correlate with myside bias is quite convergent with the argument in the previous section that indicated it is not easy to show that displaying myside bias is non-normative. In a paper published a couple of decades ago, Stanovich and West (2000) suggested that individual difference findings could be used to help adjudicate the normative disputes in the heuristics and biases literature –particularly in cases where investigators were championing alternative responses as normative.

We suggested that the directionality of individual difference correlations could have at least some probative value in indicating which response was

normative. We proposed using Spearman's (1904, 1927) positive manifold as an adjudication device. For a number of classic tasks in the literature (though not all), we demonstrated that the traditional response considered in the heuristics and biases literature to be normative was positively correlated with intelligence, and the response championed by critics of the heuristics and biases tradition showed a negative correlation with intelligence. We pointed out that the directionality of the systematic correlations with intelligence is embarrassing for critics who argue for an alternative normative response. Surely, we would want to avoid the conclusion that individuals with more computational power are systematically computing the *non*-normative response. Such an outcome would be an absolute first in a psychometric field that is over one hundred years and thousands of studies old. It would mean that Spearman's positive manifold for cognitive tasks – virtually unchallenged for one hundred years – had finally broken down.

The argument was, essentially, that the response that preserves positive manifold is statistically more likely to be the optimal response (for the fleshed-out argument, see Stanovich, 1999, 2004; Stanovich & West, 2000). Likewise, given that positive manifold is the norm among cognitive tasks, a negative correlation or a zero correlation between the response traditionally considered normative and standard cognitive ability measures might be taken as a signal that the wrong normative model is being applied or that there are alternative models that are equally appropriate.

We have in fact observed the latter outcome with some tasks in the heuristics and biases literature (Stanovich, 1999; Stanovich & West, 1998a). For example, some noncausal base-rate problems failed to correlate with cognitive ability, as did the false consensus effect in social psychology (Ross, Greene, & House, 1977). There were independent reasons for thinking that the wrong normative model had been applied to the false consensus effect (Dawes, 1989, 1990; Hoch, 1987) and thus, in this case, the individual differences correlations converged with theoretical analyses. A similar thing seems to have occurred with respect to myside bias. Theoretically, it doesn't seem to be an irrational cognitive bias and, likewise, individual difference correlations provide no evidence that it is. Cognitive sophistication (measured in a variety of different ways) is not associated with an attenuated myside bias.

21.6 A Different Kind of Theory for Myside Bias: Memetics

In the literature, the default theoretical stance about myside bias tends to see it as process driven. The findings discussed in this chapter indicate that

this default may need a reset. If it is indeed a process-based bias, then those processes certainly 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 content explains more variance in myside bias than do psychological process indicators. We need an alternative conceptualization in which myside bias is viewed as a content-based effect and not an individual difference trait.

Most of us feel that beliefs are something that we choose to acquire, just like the rest of our possessions (Abelson, 1986). In short, we tend to assume: (1) that we exercised agency in acquiring our beliefs, and (2) that they serve our interests. Under these assumptions, it seems to make sense to have a blanket policy of defending beliefs by having a myside bias. But there is another way to think about this – one that may make us a little more skeptical about our tendency to defend our beliefs, no matter what.

As discussed above, research has shown that people who display a high degree of myside bias in one domain do not tend to show a high degree of myside bias in a different domain. That is, myside bias has little domain generality. However, different beliefs vary reliably in the degree of myside bias that they engender. In short, it might not be people who are characterized by more or less myside bias, but beliefs that differ in how strongly they are structured to repel ideas that contradict them.

These facts about myside bias have profound implications because they invert the way we think about beliefs. Models that focus on the properties of acquired beliefs, such as memetic theory (Blackmore, 1999; Dennett, 1995, 2017; Stanovich, 2004, 2021), provide better frameworks for the study of myside bias. The key 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 convictions that are not evidence based), we need to distance ourselves from our convictions, and it may help to conceive of our beliefs as memes that may well have interests of their own. We treat beliefs as possessions 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 good for us or not; and they don’t care how they get into a host – whether they get in through conscious thought or are simply an unconscious fit to innate psychological dispositions.

But how, then, do we acquire important beliefs (convictions) without reflection? In fact, there are plenty of examples in psychology where people acquire their declarative knowledge, behavioral proclivities, and decision-making styles from a combination of innate propensities and (largely unconscious) social learning. For example, Haidt (2012) invokes just this model to explain moral beliefs and behavior, arguing “if morality doesn’t come primarily from reasoning, then that leaves some combination of innateness and social learning as the most likely candidates. In the rest of this book I’ll try to explain how morality can be innate (as a set of evolved intuitions) and learned (as children learn to apply those intuitions within a particular culture)” (p. 26).

The model that Haidt uses to explain the development of morality is easily applied to the case of myside bias. Myside-causing convictions often come from political ideologies: a set of beliefs about the proper order of society and how it can be achieved. Increasingly, theorists are modeling the development of political ideologies using the same model of innate propensities plus social learning that Haidt (2012) applied to the development of morality (see Van Bavel & Pereira, 2018). For example, there are temperamental substrates that underlie a person’s ideological proclivities, and these temperamental substrates increasingly look like they are biologically based: measures of political ideology and values show considerable heritability (Hatemi & McDermott, 2016; Hufer et al., 2020; Ludeke, Johnson, & Bouchard, 2013; Oskarsson et al., 2015; Twito & Knafo-Noam, 2020); liberals and conservatives differ on two of the Big Five personality dimensions that are themselves substantially heritable (Bouchard & McGue, 2003; Funk et al., 2013); studies have found ideological position to be correlated with brain differences and neurochemical differences (Ahn et al., 2014; Hatemi & McDermott, 2016; Van Bavel & Pereira, 2018); and these differences in personality between liberals and conservatives seem to appear very early in life (Block & Block, 2006; De Neve, 2015; Fraley et al., 2012; Wynn, 2016).

In short, the convictions that are driving your myside bias are in part caused by your biological makeup – not anything that you have thought through consciously. Of course, stressing that we didn’t think our way to our ideological propensities is dealing with only half of Haidt’s “innateness plus social learning” formulation. However, for those of us who hold to the old folk psychology of belief (“I must have thought my way to my convictions because they mean so much to me”), the social learning part of Haidt’s formulation provides little help. Values and worldviews develop throughout early childhood, and the beliefs to which we as children are

exposed are significantly controlled by parents, peers, and schools. Some of the memes to which a child is exposed are quickly acquired because they match the innate propensities discussed above. Others are acquired, perhaps more slowly, whether or not they match innate propensities, because they bond people to relatives and cherished groups (Clark & Winegard, 2020; Haidt, 2012; Tetlock, 2002).

In short, the convictions that determine your *side* when you think in a mysided fashion often don't come from rational thought. People will feel less ownership in their beliefs when they realize that they did not consciously reason their way to them. When a conviction is held less like a possession, it is less likely to be projected onto new evidence inappropriately. Stressing how the convictions that drive myside bias might have been acquired unreflectively converges nicely with the evidence reviewed previously that cognitive sophistication does not show a strong correlation with the avoidance of myside bias. A sign that our convictions are reflectively acquired would be that a primary mechanism leading to well calibrated opinions – the avoidance of myside bias – is correlated with intelligence. The lack of such a correlation itself must raise questions about how reflective we are in acquiring beliefs.

Recall that the problematic kind of myside bias (see Stanovich, 2021) is the kind that results when a person projects a conviction-based belief as a prior probability rather than a prior probability that has resulted from the rational processing of previous evidence. Convictions such as ideological positions are quite often the driver of this problematic kind of myside bias. If we could get people to be more skeptical of these beliefs – to avoid turning these beliefs into possessions – it might help prevent people from projecting convictions inappropriately. 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.

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