Direct and Indirect Influences of Political Ideology on Perceptions of Scientific Findings
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For:
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Abstract

Scientists are urged to be skeptical about empirical findings before accepting them accurate reflections of reality. This chapter presents a model of how ideological beliefs can influence the perceptions of empirical findings, and thus interpretations of reality. Two processing routes are proposed: A direct route, where theoretical confirmation bias and political confirmation bias are actively engaged in, and an indirect route, where both forms of bias can unintentionally creep into scholarship and influence the perception and interpretation of scientific findings. This chapter primarily explores the indirect route and how it may have influenced social psychological scholarship on left-wing authoritarianism, the power of the situation, demographic gaps, the "denial" of scientific findings, and implicit prejudice. Specifically, we suggest that through this indirect route, ideological beliefs can influence what topics are studied, how they are studied, the analyses performed, and how the results of those analyses are interpreted.

Science places a primary value on findings and empirical evidence obtained via the scientific method. Yet, scientists, are also urged to maintain skepticism when presented with scientific findings (Merton, 1942/1973; Popper, 1959). Recent controversies over the reliability and validity of findings in the social sciences (Gelman, 2016; Simonsohn, Nelson, & Simmons, 2013) raise concerns over how accurate and robust such conclusions are, and if they accurately reflect social reality. A variety of reasons have been offered as to why the veracity of social scientific findings, have become suspect (e.g., Haidt, 2011; Jussim, 2012; Simmons, Nelson, & Simonsohn, 2011). Of these, we contend that political beliefs (Jussim, Crawford, Anglin, & Stevens, 2015a; Jussim, Crawford, Anglin, Stevens, & Duarte, 2016a; Jussim, Crawford, Stevens, & Anglin, 2016b; Jussim, Crawford, Anglin, Stevens, & Duarte, 2016c) and the level of ideological homogeneity of certain disciplines (Honeycutt & Freberg, 2017; Inbar & Lammers, 2012) pose significant threats. This chapter proposes a model of how political beliefs can influence social scientists' perceptions of empirical evidence, their interpretation of empirical findings, and thus, in part, their beliefs about social reality.

In our proposed model, confirmation bias takes two forms. *Theoretical confirmation bias* occurs when researchers are more accepting and less critical of scientific evidence that comports well with their theoretical inclinations, when non-politicized research topics are under investigation. *Political confirmation bias*, on the other hand, occurs when researchers are more accepting and less critical of scientific evidence that comports well with their *political beliefs*. Both forms can influence a researcher's beliefs about social reality via a direct route and an indirect route. In the direct route, researchers are more accepting and less critical of evidence that comports well with their preexisting beliefs – theoretical and/or political. In the indirect route, theoretical confirmation bias occurs when the theory endorsed by a researcher influence the research design and the conclusions drawn so that they are consistent with this orientation. Political confirmation bias occurs when researchers' political beliefs influence the research design and the conclusions drawn, so that they are consistent with the researcher's political beliefs about social reality.

In this chapter, we briefly review evidence for the ideological homogeneity of the social sciences. Then, we present our proposed model. We briefly describe the direct route before turning our attention to the indirect route, which we suspect may have more influence than the direct route. Our proposed model (Figure 1) suggests that political confirmation bias occurs when researchers' ideological beliefs influence what topics they select to study, how they study them, and what conclusions they draw from the results. Because the conclusions produced by a field that investigates politicized topics may be influenced by the ideological beliefs of its practitioners (Jussim, 2012; Tetlock, 1994), this indirect influence of politics on science may exceed that of the direct route. We conclude with recommendations for limiting the impact of political beliefs on the interpretation of scientific evidence.

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Ideological Homogeneity of the Social Sciences

At the very least, academics within the United States and the United Kingdom is composed of growing majorities of left-leaning faculty (Cardiff & Klein, 2005; Carl, 2017;

Rothman, Lichter, & Nevitte, 2005), majorities that are particularly pronounced within the social sciences (Gross & Simmons, 2007; Honeycutt & Freberg, 2017; Inbar & Lammers, 2012). It is common for social science faculty to cover political material in the classroom and in their research. Thus, ideological beliefs may play a greater role than they would in other academic areas (Klein & Stern, 2009). Without colleagues who, because of their different political beliefs, raise different questions, frame hypotheses differently, and generally see the world in a different way, the domination of the social sciences by individuals of one ideological orientation may create blind spots. These blind spots may increase the risk that certain questions are not asked or investigated, data are misinterpreted or are interpreted with bias, or conclusions are generated that are convenient, exaggerated, distorted, or advance a political agenda (Duarte et al., 2015; Tetlock, 1994).

Direct route

A host of cognitive mechanisms have been identified that lead people to process evidence in ways that support their desired conclusions (MacCoun, 1998). Many theorists argue that such processes are "hot," motivated biases (MacCoun, 1998; Taber & Lodge, 2006). However, they can also be driven by "cold" cognitive strategies (Koehler, 1993). These strategies can be logical, as it may be rational to give more weight to evidence confirming prior beliefs while scrutinizing or dismissing evidence inconsistent with prior experience.

Even so, process models often depict motivated reasoning as affective. When information supports prior beliefs, people experience positive affect; they process information heuristically and quickly assimilate it into their existing views (Munro & Ditto, 1997). When information challenges prior beliefs, negative arousal induces more effortful processing aimed at disconfirming the evidence (Munro & Ditto, 1997; Taber & Lodge, 2006). Consistent with these models, people analyze belief-inconsistent evidence longer and generate more counterarguments than in response to belief-consistent evidence (Munro & Ditto, 1997; Taber & Lodge, 2006; but see Kahan, Peters, Dawson, & Slovic, 2017).

When belief preservation motives distort reasoning and judgment, people believe their reasoning is objective because they quickly rationalize their automatic response (Haidt, 2001). If motivated reasoning is unintentional, this poses an obstacle to the generation of valid scientific knowledge (Hamilton, 2011). Recent evidence suggests that people may possess some awareness of their bias, and although laypeople attribute polarizing research findings to the researchers' ideological beliefs (Anglin, 2016), they perceive researchers to be less biased than themselves (Anglin, 2016). However, accumulating evidence suggests that those with greater knowledge, education, and expertise (e.g., researchers) may be more prone to belief-driven processing (Anglin & Jussim, 2017; Hamilton, 2011).

Indirect route

Controversies over replication (Gelman, 2016), effect sizes (Ioannidis, 2008), p-hacking (Simonsohn et al., 2013), and null hypothesis testing (Cohen, 1994) have led a number of scientists to question the reliability and validity of findings across many disciplines. Critics of this view emphasize confidence in the scientific method, and, for many disciplines, inferential

statistics (Fiske, 2016). It appears that one unstated implication of this criticism is that scientific reformers have lost confidence in the scientific method. Yet, in our view this is not the case. The problem is not with the scientific method, it is with human error in employing it. We strongly suspect that the problem is behavioral and *largely unintentional* – people may assign greater weight to desirable information (e.g., Tappin, van der Leer, & McKay, 2017). We thus contend that one manifestation of this problem is the indirect route of political confirmation bias in our proposed model.

Debates as to whether hypothesis testing and the use of inferential statistics are impacted by beliefs and value judgements are not new (see Meehl, 1990; Rudner, 1953). Rudner (1953) was one of the first to argue that the decision-making process involved in hypothesis testing was value-based:

> "For the scientist to close his eyes to the fact that the scientific method
> *intrinsically* requires the making of value decisions, for him to push out of
> his consciousness the fact that he does make them, can in no way bring
> him closer to the ideal of objectivity. To refuse to pay attention to the
> value decisions which *must* be made, to make them intuitively,
> unconsciously, haphazardly, is to leave an essential aspect of scientific
> method scientifically out of control" (p. 6).

We agree with this position and contend it is flawed to assume that the scientific method ensures that a researcher's beliefs and values cannot influence how findings are interpreted. We propose that political beliefs and values can indirectly influence the research process by impacting any of the following, alone or in combination: the selection of the research question; the research design; what variables are measured and how they are measured; and, the statistical analyses performed and the inferences made from them. This section describes each of these elements of the research process through examples from social psychological literature.

Research Question

One way that that a researcher's political beliefs can indirectly influence conclusions is by influencing which questions they ask and how they ask them. The horrific events of World War II sparked greater interest in explaining the psychological roots of fascism and authoritarianism (see Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950). Adorno et al. (1950) defined authoritarianism as a personality syndrome characterized by ethnocentrism, aggression, submissiveness to recognized authority figures, and political conservatism. They also developed the F Scale to identify those predisposed to an authoritarian personality. Although this work was criticized (e.g., Rokeach, 1960; Shils, 1954) and the F Scale was psychometrically flawed (Altemeyer, 1996), research on authoritarianism remains a burgeoning area of research.

Shils' (1954), one of the earliest and most prominent critics, suggested that the work of Adorno et al. (1950) was politicized because its conceptualization of political ideology was insufficient, and that the F-Scale was confounded with right-wing politics (see also Feldman, 2003). He objected to the idea of a unidimensional approach that placed fascism and

authoritarianism on the extreme right, and supporters of a democratic system of government on the left. Shils (1954) argued that there was an authoritarian of the left and that Adorno et al. (1950) did not find one because it placed its focus on fascism, and Nazism in particular, and ignored communism, particularly in the Soviet Union under Stalin (see also Greenberg & Jonas, 2003; Rokeach, 1960).

The myth of Left Wing Authoritarianism (LWA). Stone (1980), on the other hand, has concluded that LWA is a myth (Stone, 1980; Stone & Smith, 1993) and contends that belief in LWA persists because of a *centrist bias* in social science (Stone, 1980). Stone (1980) noted that evidence demonstrating that fascists and communists have similar underlying personality dynamics is scant (Altemeyer, 1996; Rokeach, 1960). Brown (1965) reached a similar conclusion 25 years earlier: "It has not been demonstrated that fascists and communists resemble one another in authoritarianism or any other dimension of ideology" (p. 542).

Myth or reality? Brown (1965) and Stone (1980) support their claims with empirical findings. Yet, we suspect there are at least two possible reasons for the dearth of evidence of LWA. First, it is possible that people on the left are not prone to authoritarianism (Altemeyer, 1996; Stone, 1980). Second, it is possible that the Adorno group's goal of understanding Nazism and anti-Semitism – and not communism and other left-wing ideologies – may have, over time, combined with an increasingly leftward ideological tilt of the field (Duarte et al., 2015) to create obstacles to measuring LWA.

What are the key elements of "authoritarianism" that *could* manifest on the left? We speculate that they include intolerance of political differences, willingness to suppress others' human rights if they are perceived as political rivals, and a willingness to engage in violent protest. Consistent with this, Crawford and Pilanski (2014) reported that political liberalism and conservatism both predicted intolerance of rival political targets based on the perceived threat from these targets. More recently, across three studies, van Prooijen and Krouwel (2017) found evidence that dogmatic intolerance was predicted by extreme political beliefs, on the left and the right. Importantly, they also found evidence that dogmatic intolerance may result in an increased willingness to curtail the free speech of political opponents and increased support for violence against political opponents.

An error of omission? In short, the methods typically used to study right-wing authoritarianism may not identify LWA. It remains possible that LWA is more than a myth, but, if so, a different approach may be needed to capture it. Thus, demonstrating that communists do not possess the same underlying personality dynamics as fascists may be a red herring and we suspect the scholarship on authoritarianism may suffer from an *error of omission*.

Indeed, Stone (1980, p. 7) has also opined that "had the F Scale not correlated with conservatism, something would have been wrong with the conceptualization." Thus, from its inception, the psychological measurement of authoritarianism could only have been a right-wing phenomenon. Furthermore, Despite Adorno et al. (1950) and Altemeyer (1996) explicitly stating that conservatism and authoritarianism were distinct constructs, much of the literature has come to treat them as synonymous (e.g., Jost, Glaser, Kruglanski, & Sulloway, 2003; Wilson, 1973).

Again, there are two possibilities here: 1) The consensus that LWA is a myth is true, as stated; or 2) Social psychologists have trouble recognizing and measuring authoritarianism of the left.

Research Design and the Selection of Variables and Measures

The power of the situation. Social psychologists have long emphasized the "power of the situation" – the conclusion that situations are better predictors of behavior than personality (Funder, 2006). In other words, behavior is not a result of personality, except to the extent that those characteristics result from one's environment – society, socialization, the media, etc. Although this debate has been largely resolved in favor of an interactionist perspective, a narrative about "the power of the situation" persists in much of the social psychological literature (Funder, 2006). There are reasons to suspect that this persistence reflects, in part, political beliefs and values (Funder, 2006).

Funder (2006) contends that the situationist outlook begins "with a basic belief in equality" (p. 32-33) and is thus consistent with egalitarian political beliefs. How might this reflect an effect of political beliefs and values? The person-centered approach, in contrast, is more consistent with beliefs emphasizing personal responsibility, a belief more consistent with conservatism (Haidt 2012; Pinker, 2002). In other words, the persistence of the power of the situation narrative, in the face of disconfirming evidence, may reflect, in part, a subtle distorting effect of social psychology's ideological imbalance (Honeycutt & Freberg, 2017; Inbar & Lammers, 2012).

Demographic gaps. Where do demographic gaps come from? One of the go-to explanation in the social sciences is discrimination (Moss-Racusin et al, 2012; Williams & Smith, 2015). We consider this explanation as "selective" because it is primarily applied when the group is one the left perceives as oppressed and protected in some way. In contrast, concerns about the lack of political diversity in academia are expressed far less frequently, and often dismissed (Gilbert, 2011; Jost, 2011). Academics offer a variety of alternatives to "discrimination" when explaining the ideological imbalance in many disciplines (see, e.g., the commentaries on Haidt, 2011). But, these alternative explanations are absent when considering demographic gaps, such as the gender gap in STEM.

Simpson's Paradox I. Obtaining empirical evidence that bears on alternative explanations is a variable selection problem because they will be overlooked if they are not tested. Some demographic gaps result from Simpson's Paradox (Simpson, 1951): A pattern that describes a population may not describe any subset of that population. For example, there can be a gender gap in college admissions because men or women differentially apply to programs with different acceptance rates. In one famous case, Berkeley successfully defended itself against charges of discrimination in graduate admissions (Bicker, Hammel & O'Connell, 1975; see also Jussim et al., 2016a), by showing that, even though admission rates were considerably higher for men (44%) than women (35%), there was no systematic discrimination against women *within departments.* Rather, women disproportionately applied to programs that had more stringent admissions standards. What was the "variable selection problem"? Not *examining* admission rates within *departments.*

Simpson's Paradox II. van der Lee and Ellemers (2015a) found that, in The Netherlands, men had higher funding rates than women, and concluded that (p. 12349): "Results showed evidence of gender bias in application evaluations and success rates…" These results demonstrated a gap, but they did not show a gender bias. Consistent with Simpson's Paradox, Albers (2015) showed that women tended to apply for funding in disciplines where it was more difficult to obtain (for a response see van der Lee & Ellemers, 2015b).

Ignoring changes over time I. Budden et al (2008) found that a higher proportion of articles by women were accepted after Behavioral Ecology adopted double-blind review. Their interpretation was that if submitters' names were known to reviewers, gender biases could occur. Because there were more female authors after adoption of double blind review, researchers believed gender bias had contributed to the gender gap. These findings made enough of a splash that it was cited in an editorial by Nature (2008) calling for double blind review to combat unjustified gender bias.

Webb, O'Hara, & Freckleton (2008) did not dispute the data; however, they showed that the proportion of female authors *also* increased in many other ecology journals that *did not* adopt double blind review. Put differently, *something* was increasing the proportion of female authors, but blinding reviewers to authors' gender was irrelevant. What was the "variable selection problem" here? It was failure to include other journals that did not adopt double blind review for comparison.

All but ignoring changes over time II. Brown and Groh (2016) found evidence of a gender gap in social-personality psychology in publications and prestigious awards, a finding primarily interpreted as evidence of gender bias. One of us was a reviewer of this paper, and pointed out that the gaps they studied were decreasing over time. Indeed, the calculation of an approximate correlation between time and percent of women publishing equaled .64, a correlation that was included in the paper.

This is important because it raises the possibility that all or some of the current publication gap is because, historically, the most senior and successful social psychologists were mostly men, and that as the percentage of women entering the field has increased, women are publishing more. What is the variable selection problem identified here? Not considering the differing distributions of men and women in the field *over time*. Even though, this analysis was reported, the original interpretation prevailed. Yet, time is only one possible relevant omitted variable. It is also possible that women publish less and receive fewer awards for all sorts of other unexamined reasons that were not considered (e.g., fewer papers are submitted for publication or the journals submitted to have higher rejection rates).

Analyses and Interpretation

Sound and fury signifying almost nothing. Lewandowski, Oberauer, and Gignac (2013) published a paper that suggested conspiratorial thinking contributes to the rejection of science. They assessed 1145 people's belief in various conspiracies and acceptance of scientific conclusions. Latent variable modeling found that "conspiracist ideation" negatively predicted acceptance of climate science. The "endorsement of free markets" also predicted the rejection of

other established findings, such as that HIV causes AIDS and that smoking causes lung cancer. These claims were supported by standard statistical analyses, so, what was the problem?

Lewandowski et al. (2013) drew an explicit link between belief in the moon-landing hoax and belief in a climate science hoax. Yet, a closer inspection of the data reveals that a total of *ten* participants endorsed the moon-landing hoax. Furthermore, of the 134 participants who believed climate science was a hoax, *three* endorsed the moon-landing hoax. Although, the statistical analyses revealed significant correlations, only a fraction of 1% of the sample believed the moon-landing was a hoax and also reported that climate change was a hoax.

Endorsement of free markets also predicted the rejection of other established scientific findings (Lewandowski et al., 2013). Yet, only *sixteen* participants rejected the fact that HIV causes AIDS, and only *eleven* participants rejected the fact that smoking causes lung cancer. There were 176 free market endorsers in the sample. *Nine* of them rejected the HIV-AIDS link, and *seven* of them rejected the smoking-lung cancer link. Thus, 95% and 96% of free market endorsers agreed with those findings. It thus seems hasty to draw a causal connection between believing in hoaxes and conspiracy theories, and a rejection of legitimate scientific findings.

More importantly, even if more people had actually endorsed the hoaxes, any causal claim would still be unfounded. Covariance in levels of positive *agreement* with scientific facts drove the linear associations, which resulted from covariance in levels of agreement among reasonable positions (e.g., disbelieving the moon landing hoax and disbelieving that climate science is a hoax). No analyses directly compared those who believed the moon-landing hoax with those who did not. Thus, the conclusions drawn (Lewandowski et al., 2013) conflated the sign of the correlational results with participants' actual placement on the items.

IAT scores predict egalitarianism. The problem of conflating correlations with levels of a construct is not an isolated incident. For instance, McConnell and Leibold (2001) reported that the IAT predicted anti-Black discrimination, because the IAT was correlated with discrimination. Blanton, Jaccard, Klick, Mellers, Mitchell, and Tetlock's (2009) critique of these findings simply displayed a scatterplot of the data – which showed little evidence of anti-Black discrimination. Most participants treated the African-American target more positively than the White target, and most of the remainder treated targets nearly equally. The significant correlation occurred because higher IAT scores were indicative of *egalitarian behavior*, while lower IAT scores corresponded to anti-White behavior.

The not so impressive power of self-fulfilling prophecies. Finally, social psychologists have long emphasized the power of expectations to create social reality through self-fulfilling prophecies. Although many experimental studies and many naturalistic studies provide statistically significant evidence of self-fulfilling prophecies, this evidence does not demonstrate the *pervasive* power of expectancies to fuel self-fulfilling prophecies (Jussim, 2012). Indeed, Jussim (2012) demonstrated that: 1) Many of the studies serving as sources for these claims have been subject to replication failures; 2) The effect size for self-fulfilling prophecies runs about r=.20 to .30 in most experimental studies involving human (as opposed to animal) behavior and lower for studies conducted in field settings; and, 3) in most naturalistic studies of real people making real judgments (e.g., teachers in elementary schools), accuracy was two to three times

larger than self-fulfilling prophecies. Finally, Figure 2 shows that, as sample sizes increase, self-fulfilling prophecy effects decrease, a pattern consistent with publication biases producing a literature overstating the typical effect size.

--INSERT FIGURE 2 HERE--

Nonetheless, it is worth considering how "powerful" an r=.20 effect is. As per a binomial effect size display, it means that self-fulfilling effects of real world teacher expectations substantially change the achievement of about 10% of all students. This would mean changing the achievement of two students in a class of 20, which, of course, means the achievement of 18 students was not changed. Some have claimed that even small effects can be important because they can accumulate (Greenwald, Banaji, & Nosek, 2015). However, such an argument is plausibly interpretable as consistent with the main argument of the present chapter, because Greenwald et al (2015) provided no evidence that the small effects actually did accumulate. As Oswald et al (2015, p. 568) put it, "cumulative effect modeling is more complex than invoking a compound interest formula." Can this controversy be resolved by evidence rather than argument? Indeed, it can. To date evidence shows that self-fulfilling prophecies dissipate rather than accumulate (Jussim, 2012). Thus, there is scant evidence that expectancies fuel self-fulfilling prophecies which then create social reality.

Recommendations

Social scientists often subject politically unpalatable findings to far more skeptical scrutiny than politically palatable findings (for reviews, see Crawford & Jussim, 2018; Jussim, 2012; Pinker, 2002). But the strongest and most valid scientific claims, especially about controversial issues, will withstand even withering criticisms. Therefore, we embrace and are calling for a renewal of Mertonian skepticism and Popperian falsificationism.

Embrace Mertonian skepticism. Merton (1942/1973) argued that organized skepticism is one of the core norms of science. He used the term "skepticism" in its modern colloquial sense: To be dubious, critical, and even suspicious of any claim until the evidence in support of that claim was overwhelmingly clear and compelling. "Organized" meant not restricting skepticism to the personal beliefs of individual scientists (though such skepticism was certainly a component), but that it was built into the fabric of science. Therefore, one of the core norms of science is to subject claims to intense, highly critical scrutiny before accepting them as valid.

Although subsequent work has suggested that Merton presented more of an ideal than a norm (Mulkay, 1976), our view is that it is an ideal worth invigorating. Specifically, scientific claims *should* be subject to intense skepticism and scrutiny, so that unjustified claims are sifted out from justified claims. Extraordinary claims should require extraordinary evidence.

We suspect that the research areas we reviewed above were not subjected to the intense scrutiny deemed necessary by Mertonian Skepticism because the conclusions about social reality generally supported an egalitarian perspective, and thus potentially advanced a politically desirable narrative. Perhaps this is why claims of powerful stereotype effects in person perception and powerful and pervasive self-fulfilling prophecies have not held up (see Jussim,

2012; Kunda & Thagard, 1996). It may also help explain why a high-powered replication failed to find any evidence of a stereotype threat effect (Finnigan & Corker, 2016), and why reviews and meta-analyses have concluded that the validity of the stereotype threat phenomenon is in doubt (Flore & Wicherts, 2014; Stoet & Geary, 2012).

Neo-Popperian falsification. "Neo-Popperian falsificationism" refers to a modern adaptation of Popper's notion of falsification (Popper, 1959). There are limits to pure falsificationism. Predictions can fail for many reasons that do not invalidate the underlying theory (e.g., the methods were poor) and it is almost impossible to conclusively falsify *any* theory in psychology (Meehl, 1990). Thus, few psychological theories or claims can be falsified in an absolute sense – it is essentially impossible to justify a conclusion that some phenomenon is nonexistent everywhere, among everyone and all conditions, for all time.

Nonetheless, neo-Popperian falsification strongly encourages researchers to conduct Mertonian tests of important hypotheses. Even if some claim cannot be "ultimately" falsified, specifically stated predictions that were informed by existing scholarship and tested in particular studies can be disconfirmed (for an example, see Brandt, 2017). When specifically stated predictions are repeatedly disconfirmed, especially by other high-quality studies (e.g., highly powered, with pre-registered predictions), one can conclude that the claim is either generally false or requires modification. Even the suggestion that rare and arcane circumstances exist under which the claim holds true would warrant being held in abeyance until such evidence was produced.

Increasing Mertonian skepticism and neo-Popperian falsification by promoting diversity of political beliefs. Research on minority influence (Crano, 2012) shows that there are two beneficial scientific outcomes when a minority attempts to change the majority's view: 1) The minority is wrong, but by mounting a strong challenge, it leads the majority to provide even stronger and clearer evidence that it was correct all along; or 2) The minority is right, and eventually produces such a mountain of evidence that it wins over and corrects the majority's initially incorrect view.

Given the benefits of skeptical scrutiny for scientific validity, an influx of political diversity into fields that investigate topics that can become politicized may spur an embrace of Mertonian Skepticism and could possibly improve the quality of research. For instance, increasing political diversity should improve social psychology because those in the ideological minority (e.g., conservative, libertarian, anarchist) will probably be far more skeptical of claims that advance the dominant perspectives in the field. Those in the ideological minority may not always be correct, but that skepticism will force others to either produce strong data or retreat from their strong claims.

For instance, Clark McCauley is one of the few social psychologists who has publicly acknowledged that he is politically conservative (Haidt, 2011). He was also the first to demonstrate that the conclusion that "stereotypes are inaccurate" was erroneous, first by providing one of the earliest and clearest empirical demonstrations that people held a slew of stereotypes about differences between black and other Americans that corresponded well to Census data (McCauley & Stitt, 1978), and then with a review highlighting a slew of logical and

empirical failures on the part of perspectives declaring stereotypes to be inaccurate (McCauley, Stitt, & Segal, 1980). In other words, it is likely that McCauley's political orientation led him to be less blindly accepting of unjustified claims of "stereotype inaccuracy" and, ultimately, to a major corrective in social psychology (for other proactive steps to increase political diversity, see Duarte et al., 2015).

More importantly, skepticism and a more robust falsificationism can be directly incorporated into researchers' personal practices. We strongly suspect that if researchers proactively attempted to falsify rather than confirm some hypothesis it would lead to different research questions and, possibly, a different methodology. For instance, one recommendation that can be implemented by the individual researcher is to apply a turnabout test (see Tetlock, 1994) when assessing the veracity of an empirical claim that is consistent with their political beliefs.

For other examples see Crawford (2018) for a review of evidence identifying conditions under which liberals show a greater propensity for bias and double standards than do conservatives, and Brandt (2017) who specified clear falsifiable predictions and then assessed the accuracy of those predictions. Such a disconfirmation-seeking process can be greatly facilitated by designing studies to explicitly compare the validity of plausible alternative hypotheses. If they are true alternatives, then at least one, and possibly several hypotheses will ultimately be disconfirmed, unless they can be integrated into some sort of unified perspective, which, in a different way, will also advance scientific knowledge.

Conclusions

Concern over the potential for political bias to impact and distort scientific findings is not new (Shils, 1954; Tetlock, 1994), and, considering the growing ideological homogeneity of the social sciences (Honeycutt & Friberg, 2017), it appears that previous attempts have fallen on deaf ears. Yet, we are optimistic that this time such concerns are not falling by the wayside. The aforementioned concerns over p-hacking, replication, and null hypothesis testing have spurred a growing scientific reform movement (see, Jussim, Krosnick, Vazire, Stevens, & Anglin, 2015). Less than ten years ago concerns over the ideological homogeneity of the social sciences, specifically social psychology (Haidt, 2011), were frequently dismissed (Gilbert, 2011; Jost, 2011). This is no longer the case (Duarte et al., 2015 and the responses), although disagreement over the causes remains. Those disagreements, however, represent fertile ground for new, and in our view, important research.

We return to Rudner's (1953, p. 6) observation, made almost 70 years ago and emphasize that researchers need to pay attention to how their own beliefs impact value judgments made throughout the research process. There is nothing wrong with making these value judgments. However, when a field becomes dominated by ideologically homogeneity, blind spots can develop and the field risks shining a narrow spotlight on the phenomena of interest. In other words, shining the light exclusively in one spot will not provide a full understanding, and one never knows what they will find in the dark until they shine the light there and look.

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Appendix

Figure 1. Direct and indirect influences on perceptions of scientific facts.
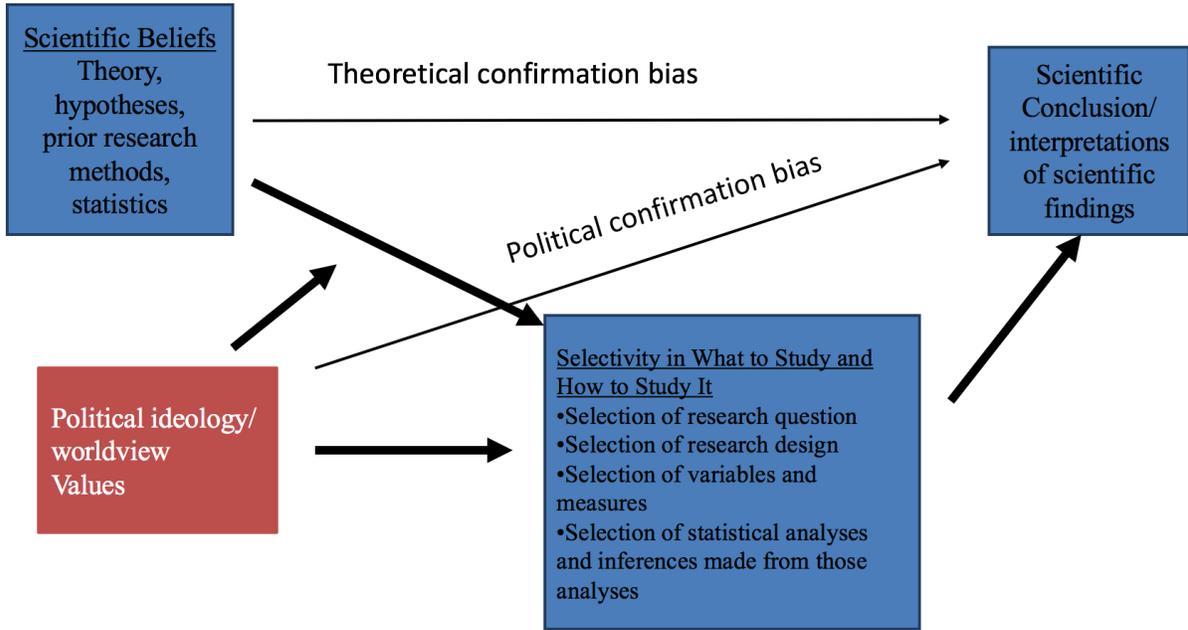
Thin arrows represent the direct route. Thick arrows represent the indirect route

Figure 2. Data from table 13-1 in Jussim (2012).

Figure 2