

****UNDER REVIEW****

Equalitarianism: A source of liberal bias

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Abstract

Recent scholarship has challenged the long-held assumption in the social sciences that Conservatives are more biased than Liberals, contending that the predominance of Liberals in social science may have caused social scientists to ignore liberal bias. Here, we demonstrate that Liberals are particularly prone to bias about victims' groups (e.g. Blacks, Muslims, women) and identify a trait that consistently predicts this bias. This trait, termed *Equalitarianism*, stems from an aversion to inequality and is comprised of three interrelated assumptions: (1) demographic groups do not differ biologically; (2) prejudice is ubiquitous; (3) society can, and should, make all groups equal in society. This leads to bias *against* information that portrays a perceived privileged group more favorably than a perceived victims' group. Eight studies ($n=3,274$) support this theory. Liberalism was associated with perceiving certain groups as victims (Studies 1a-1b). In Studies 2-7, Liberals evaluated the same study as less credible when the results concluded that a privileged group (men and Whites) had a superior quality relative to a victims' group (women and Blacks) than vice versa. Ruling out alternative explanations of Bayesian (or other normative) reasoning, significant order effects in within-subjects designs in Studies 6 and 7 suggest that Liberals think that they should not evaluate identical information differently depending on which group is said to have a superior quality, yet do so. In all studies, higher equalitarianism mediated the relationship between more liberal ideology and lower credibility ratings when privileged groups were said to score higher on a socially valuable trait.

Keywords: political psychology, liberal bias, motivated cognition, egalitarianism, prejudice

Equalitarianism: A Source of Liberal Bias

In August of 2017, an internal document about diversity written at Google by James Damore was published online without his permission (Wakabayashi, 2017). In it, Damore contended that extant Google diversity policies ignored biologically rooted sex differences, which likely contributed more to the skewed sex distribution of Google programmers (more men than women) than many analysts believed. He did not denigrate diversity, but suggested that efforts to mitigate representation gaps should be informed by an understanding of the empirical literature about sex differences.

Reaction from liberal commentators was swift and almost universally unfavorable. Many denounced the memo and assailed Damore's character, suggesting that he was, at best, a clueless male, and, at worst, a nefarious sexist working to perpetuate Tech Industry's "bro culture." For just a couple of examples, an article at Vox, a popular liberal website, was subtitled "James Damore's sexist screed indicted all of Silicon Valley" (Romano, 2017). And an article at the Guardian was titled, "Google's sexist memo has provided the alt-right a new martyr" (Jones, 2017). Both attacked Damore's memo for sexism and strongly insinuated that Damore was a bigoted naïf who simply mantled his own prejudices with "pseudo-scientific jargon" to protect a patriarchal culture at Google (Jones, 2017).

Such hostility toward those who violate sacred narratives (in this case, a primarily liberal narrative about group equality) is not unusual. Socrates was condemned and eventually chose to die for impiety, and Galileo was arrested for publishing a dialogue that appeared to promote heliocentrism. These examples may strike modern readers as peculiar and foreign: We no longer have sacred concerns about State Gods and have left the study of the ether to astronomers and

physicists, who work without fear of political censure. But many people today do have sacred concerns about human nature and social policies.

These sacred concerns depend largely upon the political party to which one belongs (and almost certainly, the party to which one belongs depends upon prior personality traits that affect one's sacred values; Haidt, 2012; Kandler, Bleidorn, & Reimann, 2012). We contend that Liberals have sacred concerns about protecting victims' groups (e.g., women, Blacks; see Study 1a for a list of perceived victims' groups), which leads Liberals to evince bias when evaluating information about perceived victims' groups and about potential demographic differences among them (even Conservatives may have such a bias, but we predicted that it would be strongest in Liberals; Bawer, 2012; Winegard & Winegard, 2015). We support this argument with 8 studies that show that Liberals were consistently biased against information that portrayed privileged groups more favorably than victims' groups (small to medium effects across all studies), whereas Conservatives displayed no consistent bias pattern. In all studies, this bias was predicted by higher equalitarian beliefs.

Equalitarianism

The present experimental work expands on work by Winegard and colleagues (Winegard, Winegard & Geary, 2015; Winegard & Winegard, 2015; 2017), which contends that Liberals are particularly disturbed by extant inequalities among demographic groups and want to ameliorate all such disparities. Liberals, more than conservatives, are egalitarian (Jost, Nosek, & Gosling, 2008) and empathize more with others (e.g., Hasson, Tamir, Brahm, Cohrs, & Halperin, 2018), particularly disadvantaged others (Lucas & Kteily, 2018; see, also, Jeffries, Hornsey, Sutton, Douglas, & Bain, 2012), than do Conservatives. Inequalities among demographic groups lead

Liberals to empathize with groups that are relatively low-status or experiencing relatively poor outcomes.

There are at least two possible explanations for disparities between demographic groups. One is that groups differ for predominantly genetic reasons. The other is that society mistreats certain groups, stunting their potential and inhibiting their success. For those disturbed by inequality, the latter explanation is probably more appealing because it suggests that social disparities are caused by injustice, not by difficult to alter genetic processes. If, for example, women's underrepresentation among Fields medalists (an award for achievement in mathematics) is due to genetically caused differences in interests and ability, then it would require massive (and procedurally unfair) interventions to equalize the representation. But if this disparity is due to social processes, stereotypes, and sexism, then equality can be achieved in a meritocratic and unbiased society—one just has to eradicate the sexism.

Thus, Liberals may be motivated to believe that most socially consequential demographic differences (e.g., in median income, representation in various fields, criminality) are caused by discrimination and other environmental forces, not by characterological differences. Winegard and Winegard (2017) called this belief *cosmic egalitarianism* because it suggests that the universe (cosmos) is inherently fair in its distribution of traits to demographic groups and that all groups are relatively equal on socially valued traits. One particularly prominent form of cosmic egalitarianism is blank slatism, the belief that humans are very malleable and that genetic/biological variables do not cause important demographic differences (Pinker, 2002). Our theory predicts that Liberals will endorse cosmic egalitarianism in favor of the notion that inequalities among demographic groups are caused by the thousands of years of oppression inflicted on many minority groups and women (that continue present day).

Strong inclinations to reject information that threatens egalitarianism and to assimilate and promote information that buttresses it can lead to motivated cognition and bias. We call the commitment that explains liberal bias about perceived victims' groups *egalitarianism* and individuals who are dedicated to egalitarianism *egalitarians*. Egalitarians are committed to at least three propositions. First, egalitarians endorse cosmic egalitarianism. They believe that demographic groups (save for age, perhaps) do not differ biologically on socially valued traits. Second, egalitarians believe that society is rife with sexism and racism and that disparate demographic outcomes are likely caused by oppression and prejudice. And third, egalitarians believe that people in society should work together to combat pervasive racism and sexism, and that if successful, no group differences in life outcomes (e.g., educational attainment, imprisonment, socioeconomic status) would remain. We argue that this set of beliefs leads to bias against information that threatens cosmic egalitarianism—particularly when that information appears to disfavor victims' groups.

Bias: The Dark Matter of Psychology

Bias is an important concept in social and cognitive psychology. Unfortunately, it is exceedingly difficult to define or measure. As we will discuss in greater detail later, there are, to our knowledge, no empirical studies of bias that entirely escape reasonable objections (usually from a Bayesian perspective). However, broadly conceived, bias is fairly straightforward: It is a preference or commitment that shapes and distorts cognition away from the truth or from impartiality in a predictable, preference congruent manner (Ditto et al., 2018; Kahan & Braman, 2006; Taber & Lodge, 2006). If someone, for example, is a devoted fan of the New York Yankees (a major-league baseball team) and allows her team preference to influence her opinion of balls and strikes (smaller strike zone for Yankees batters than for the other team's batters),

then we would say that she is biased. If, on the other hand, she assessed balls and strikes in a similar manner across teams, then we would say that she is not biased or that she is impartial.

Bias can infect the cognitive process from beginning to end and anywhere between (e.g., Ditto & Lopez, 1992; Frenda, Knowles, Saletan, & Loftus, 2013; Iyengar and Hahn, 2009; Taber & Lodge, 2006). As many scholars have noted, all reasoning is motivated and most people are prone to bias (Kunda, 1990). Some reasoning is motivated by a concern for the truth, and therefore is not prone to bias (although it might still lead to incorrect conclusions); and some is motivated by extraneous concerns such as tribal identity or esteem needs, and therefore is prone to bias (Taber & Lodge, 2006). As a general rule, bias increases as the strength of one's preferences increases (Skitka, 2010; Taber & Lodge, 2006). The fervid Yankees fan is much more likely than the casual fan to have a biased strike zone. Furthermore, preferences that form an important part of one's identity are more likely to impel bias than preferences that do not (Haidt, 2012; Tajfel, 1974). For example, most people have a strong preference for sunshine over clouds, but this preference probably does not cause significant bias because it is not an important component of people's identities. On the other hand, a preference for one's home team or sibling might very well cause significant bias because it could comprise one crucial part of a person's social identity. Morally valenced identity preferences generally cause the strongest biases (Skitka, 2010; Tetlock, 2003). Last, the clearness of the facts/data affects bias (see Felson, 1981; Kruger & Dunning, 2011 for similar discussions about ambiguity and bias). Generally speaking, people are not biased about things that are undeniable and obvious (i.e., that have high clarity). The less clear, the more ambiguous, facts/data become, the more biased people can be. Balls and strikes in baseball are less clear than runs, and are therefore a more fertile source of bias.

On whole, then, bias is a function of clarity, accuracy concerns, and extraneous concerns, such that extraneous concerns increase bias, and accuracy concerns and clarity decrease bias. This likely explains why partisan bias is such a potent form of bias. First, clarity is often low. Experts have studied tax policy for many years, and they still don't have a clear answer about the optimal marginal rates. Even something such as anthropogenic global warming that compels near scientific consensus is difficult to predict and measure and therefore unclear to most people. And second, extraneous concerns are often high. Many people highly value their moral and political identities and want to protect them from potential threats (Haidt, 2012; Kahan & Braman, 2006; Skitka, 2010). Often moral and political commitments become *sacred values* or values that "a moral community treats as possessing transcendental significance" and that cannot be sacrificed for other values, even, perhaps, the pursuit of truth (Tetlock, 2003, p. 320; also, Atran, Axelrod, & Davis, 2007). The intensity of these extraneous values can easily cloud out accuracy concerns especially when clarity is low, creating a climate extremely conducive to bias. It is worth noting that from an evolutionary perspective, tribal biases are almost certainly not irrational (Van Bavel & Pereira, 2018). Group membership and status are probably more important for survival and reproduction than is the truth about abstruse or abstract questions (Baumeister, Maranges, & Vohs, 2017).

Political bias. For many people, political (and/or moral) preferences are powerful and comprise a narrative (often not conscious) that is important to one's identity (Haidt, 2012; Huddy, 2001). Therefore, political commitments are very likely to give rise to bias. Indeed, for many years now, social scientists have examined political personality types and prejudices, often creating scales to capture certain traits that are thought to lead to bias, rigidity, and unpleasant perhaps even deleterious social consequences (Adorno, Frenkel-Brunswik, Levinson, Sandord,

1950; Altmeyer, 1981; 1996; Jost, Glaser, Kruglanski, Sulloway, 2003; Pratto, Sidanius, Stallworth, Malle, 1994).

One thing many of these studies and theories share is that they depict political conservatism as potentially malignant, full of bias, and less explicable than liberalism, which is often assumed to be “normal” or simply correct and therefore without need of explanation (Haidt, 2012; Tetlock, 1994). (We will call this, in line with other researchers, the asymmetry hypothesis, which is the belief that Conservatives are *more* biased than Liberals; see Ditto et al., 2018.) For example, a highly influential paper that has been cited several thousand times in the literature was entitled “Political conservatism as *motivated social cognition*” (Jost et al., 2003; italics added). Although the article briefly acknowledged the possibility that there could be biased cognition among liberals, its main thrust was to depict conservatives as rigid, fearful, and biased. Many scales in social science reflect this view. That is, they appear to assume that liberalism or cosmopolitanism (closely related to liberalism) is correct or preferable to conservatism and therefore measure traits that deviate from liberalism, describe the traits in pejorative ways, and label the traits pejorative names (see Crawford & Jussim, 2017 for discussion of political bias in social psychology).

However, throughout the history of the study of political bias, some researchers have charged that the asymmetry hypothesis is wrong and possibly irresponsible (Rokeach, 1956; Taylor, 1960). More recently, many social scientists have contended that the asymmetry hypothesis might be an unfortunate outgrowth of a liberally biased field (Duarte, Crawford, Stern, Haidt, Jussim, & Tetlock, 2015; Haidt, 2011). This argument suggests that just as Europeans in the 1300s did not notice “Christian bias” because they simply accepted Christian doctrine as truth, so social scientists do not notice liberal bias because most of them assume its

principles are correct and require no further explanation. Inbar and Lammers (2012) and von Hippel and Buss (2017) have quantified political beliefs in social psychology and have confirmed suspicions that the field is dominated by social liberals. This provides at least *prima facie* support to the argument that the field's liberal bias may have contributed to the asymmetry hypothesis and to the generally unsavory depiction of political conservatives that dominates social psychology.

Recently, many scholars have worked to correct politically motivated shortcomings in social science, finding that liberals are often just as biased as conservatives if one scrutinizes in the correct places (Crawford, 2012; 2014; Graham et al., 2013). In 2018, Ditto et al. reported a meta-analysis on partisan bias and found strong support for a symmetry hypothesis, noting that the overall effect size for conservative bias was not significantly greater than for liberal bias (conservative $r = .255$; liberal $r = .235$).

However, there is reason to believe that this meta-analysis may have underestimated the size of liberal bias because it only included a few studies that measured what we will argue is one of the most potent sources of liberal bias: perceived victims' groups. And in fact, the one included study that had the most obvious relevance to victims' groups (a study regarding affirmative action and same-sex marriage) found one of the largest effects of liberal bias ($r = .54$), and a reverse bias for Conservatives such that they also demonstrated a preference for affirmative action and same-sex marriage ($r = -.20$), just to a lesser degree (Crawford, Jussim, Cain, & Cohen, 2013). In this article, we want to help rectify this problem by directly examining liberal bias as related to perceived victims' groups.

Liberal bias and equalitarianism: Summary of bias and the theory

We contend that Liberals have sacred values about perceived victims' groups. Though Liberals' concern for victims' groups stems from admirable compassion, this can lead to ironic effects (e.g., patronizing behaviors [Dupree & Fiske, 2018]) and bias. Liberals (more than Conservatives) appear to believe that women and minorities comprise a victims' group category that needs to be protected from oppression and other social harms. This suggests that Liberals will be biased when evaluating information about perceived victims' groups in predictable ways. Most broadly, Liberals will be especially motivated to reject information that poses potential threats to victims' groups.

Consider, for example, the conflagration of controversy ignited by *The Bell Curve* (Herrnstein & Murray, 1994). Most of what was written in the book was relatively mainstream in psychometrics (Hunt, 2011) and many of those who launched scurrilous attacks on the book were clearly ignorant of its actual content (Pinker, 2001; Winegard & Winegard, 2017). According to our theory, some of the hostility to the book may have stemmed from biased cognition (though, of course, not all) because the substance, chiefly the claim that there are IQ differences between Blacks and Whites and that such differences are likely caused at least partially by differences in genes, posed a direct threat to cosmic egalitarianism (in a way that threatened a perceived victims' group). This likely explains why the most ferocious ad hominem attacks in social science are deployed against scholars such as Charles Murray, Arthur Jensen, Linda Gottfredson, J. P. Rushton, and Richard Lynn: They all forwarded data and theories that directly challenged cosmic egalitarianism. And indeed, recent research suggests that Liberals are more inclined to impute motives to researchers who present results suggesting that intrinsic factors such as genetics, hormones, and neurochemistry influence outcomes like intelligence, mating strategy, and violence than to researchers who provide more extrinsic explanations, such

as education, nutrition, socialization and culture, and parenting and development (Hannikainen, 2018).

This leads to an important point: liberal bias appears to be triggered by challenges to cosmic egalitarianism, but most intensively so when the challenge threatens a perceived victims' group. In the abstract, most liberals are cosmic egalitarians (to one degree or another); but, we contend that their real concern is about victims' groups, and therefore, they should only evince strong bias against challenges to cosmic egalitarianism that contend that perceived victims' groups are *lower on average* on socially valued traits than perceived privileged groups. This may explain why, for example, almost nobody was offended by Jared Diamond's unsupported speculation that New Guineans are smarter than Westerners in *Guns, Germs, and Steel* (Diamond, 1998) but many people were apoplectic about J. P. Rushton's speculation that Whites are smarter on average than Blacks and Africans in *Race, Evolution, and Behavior* (1995; see Gottfredson, 2013 for a discussion). New Guineans are seen as victims; therefore, speculation that they are smarter than Whites, who are seen as privileged, does not trigger intense alarm, strong emotions, and profound bias. On the other hand, the opposite claim does trigger alarm, strong emotions, and, perhaps, bias.

But is it bias?

Most bias studies, including ours, rely upon the principle of invariance: Decision irrelevant information (extraneous information) should not affect judgments; therefore, the degree of a person's bias is reflected by the degree to which the extraneous information affects his or her judgments (Ditto et al. 2018; Kahneman & Tversky, 1984). In psychology, the standard methods for testing bias involve matching as much information as possible, changing only the conclusions of a vignette or other supposedly extraneous information (such as the race

or sex of an actor), and then having participants evaluate the *matched* information rather than the manipulated information. If participants evaluate identical information differently depending on the extraneous information, this is considered bias. For example, in a famous study on bias, Lord, Ross, and Lepper (1979) gave participants identical methodology descriptions of studies testing the deterrent efficacy of the death penalty. The only information that varied in the conditions was the conclusion: the study found that the death penalty did or did not deter crime. Then they had the participants rate the quality of the studies' methods (which again, were identical).

Participants who supported the death penalty rated the methods as worse when the conclusion contradicted their prior attitude (death penalty deters crime) than when it buttressed it.

However, it is not clear that this paradigm allows a researcher to isolate bias unambiguously. In methods matching studies, for example, it might be rational to assess methods differently depending upon the outcomes of those methods. Imagine, for example, a description of methods that appeared sound but generated results that showed that eating purple muffins allows people to see the future. People cannot see the future (but see Bem, 2011); therefore, one should be very skeptical of the results; and if one is skeptical of the results, then one should probably be skeptical of the methods that led to them. We call this "the proof of the recipe is in the eating" or PRE principle. A recipe might look good or bad on paper, but its final value depends upon the food it produces. If one follows the recipe and gets bad food, it is not irrational to update one's assessment of the recipe. More broadly, the results of a process (methods, recipe, blueprint) provide information about the soundness of the process, and a good Bayesian should update his or her priors about the process after getting the results (see Kahan, 2016, for a discussion of Bayesian reasoning and bias).

The same criticism applies to matched vignettes that change the demographic characteristics of described individuals. Suppose, for example, that a researcher believes that liberals are biased *against* White people. She designs a study that includes a vignette describing a cop shooting a person who was found to be holding a piece of silverware (not a weapon). The vignette is altered such that in one condition the cop's victim is White and in the other he is Black. She then finds that liberals rate the cop as less wrong when the victim was White than when he is Black and contends that this is due to liberal bias against White people. One might object, however, that the demographic characteristics Black and White provide information. Perhaps one believes, for example, that Blacks are unfairly targeted by police officers more often than Whites. One might believe, then, that in the White condition the spoon must have looked quite menacing because otherwise the cop would not have shot; whereas, in the Black condition, one might just think "yeah, cops wrongly shoot Black people all the time... this is very wrong."

There are a couple of ways to mitigate the force of the Bayesian (normative rationality) objection. First, one can choose examples in which base rates go in the opposite direction from the predicted bias. Suppose, for example, that a researcher thinks that Conservatives are biased against women. He could use a vignette in which either a man or a woman sexually propositions a subordinate in a crass way and ask participants if the (identical) behavior is sexual harassment. In this way, the demographic information is going, if anything, against the direction of the hypothesis because most people believe that men are more likely than women to sexually harass others. Thus, if Conservatives rate the identical behavior as harassment only when performed by a woman (and not when performed by a man), it would be reasonably compelling evidence that Conservatives are biased against women in this domain.

Second, one could observe order effects in a within-subjects design (for example, see Uhlmann, Pizarro, Tannenbaum, & Ditto, 2009, which, incidentally, found that Liberals were more willing to sacrifice a White man to save 100 others than to sacrifice a Black man to save 100 others, whereas race had no influence on Conservatives' willingness to sacrifice one life to save 100, somewhat consistent with our predictions here). That is, one could give both vignettes to participants and manipulate the order of presentation. If participants believe that their answers in the two conditions *should be* the same and therefore anchor their second response to their first, that suggests that people at least believe it is irrational (and biased) to answer them differently. If an order effect is observed such that both vignettes are evaluated more favorably when the preference consistent one is presented first than when the preference inconsistent one is presented first, this would indicate that participants are biased despite their apparent belief that it is irrational to treat the two conditions differently. In our experiments, we tried to use both principles to counter possible objections. We still believe that objections are possible; ultimately, it might not be possible to demonstrate bias in an experiment without putting participants through timely experiments that allow researchers to rule out Bayesian updating explanations. Nevertheless, current methods allow us to glean valuable information about potential bias, which, when combined with theory, *should* cause us to update our priors about sources of bias.

Research Overview and General Predictions

Across eight studies, we tested the equalitarian theory of liberal bias. We used a novel measure of equalitarianism, which had an excellent alpha (.88-.93; see appendix for full scale). Studies 1a-1b were equalitarianism validation studies, which simply tested whether liberalism was associated with perceiving certain groups (e.g., women, Blacks, Hispanics) as victims, a variety of pro-victims' group attitudes, and intolerance of putative real world events in which

victims' groups were harmed (e.g., cop shooting an unarmed Black person), and whether equalitarianism mediated all of these relationships. The remaining studies tested our main hypotheses. In Studies 2-3, participants read vignettes, which suggested that either a privileged group (men or Whites) or a victims' group (women or Blacks) were superior on a socially valued trait (intelligence) and evaluated the credibility of the arguments. Studies 4-5 included conditions in which both groups were said to be equal. Studies 6-7 were conducted within-subjects to test for order effects to increase confidence that the obtained results indeed reflect bias. Across all studies, we expected that Liberals would rate the arguments as less credible when the privileged group was said to be more intelligent than the victim's group than vice versa, and that Liberals would rate the arguments that stated that the privileged group was more intelligent as less credible than Conservatives. However, we expected that Liberals would rate the argument that stated that both groups are equal as the most credible. We further predicted that higher equalitarianism would mediate the influence of more liberal ideology on lower credibility ratings when privileged groups were said to be more intelligent. Table 13 toward the end summarizes all main results.

Study 1a

Study 1a tested the hypotheses that stronger liberal ideology would predict stronger beliefs that certain groups are victims of unfair treatment by society, and that our measure of equalitarianism would mediate this relationship.¹

Method

¹ Please see the supplemental materials for our *Initiative for Open Science Statement*, which reports that for all studies, there were no data exclusions, no undisclosed manipulations or measures, no premature analyses, that the data are open, and that we have no file drawer studies.

Participants. U.S. participants ($M_{\text{age}} = 36.93$, $SD = 12.30$; 122 female) were recruited via Amazon Mechanical Turk (MTurk). We aimed for a fairly large sample size of 200; 202 people participated.²

Procedure. Order of procedures was randomized. Participants were asked to rate how unfairly various groups of people are treated in society on 100-point sliding scales from *Treated completely unfairly* to *Treated completely fairly*. Four were groups that are generally considered victims' groups (Black people, Women, Hispanic people, and Muslims); three were groups that are generally considered privileged groups (White people, Men, and Christians).³

Participants also completed an equalitarianism measure, which contained 18 items measuring attitudes about whether 1) cosmic egalitarianism is true (e.g., "All ethnic groups have equal abilities on all tasks [for example, mathematics, sports, creativity]"), 2) prejudiced attitudes are a problem (e.g., "Racism is everywhere even though people say they are not racist"), and 3) we can and should strive for a more egalitarian society (e.g., "We should strive to make all groups equal in society"), rated on 7-point scales from *Do not agree at all* to *Completely agree*, $\alpha = .92$ (see appendix for full scale). The only other procedure was a demographics survey on which participants reported a variety of demographic variables, including political ideology, which was reported on a 7-point scale from *Very conservative* to *Very liberal*.

Results

² This would allow detection of an r effect size around .2 (at $p < .05$ with 80% power; G*Power; Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007).

³ One additional group was included (atheists), but this group does not clearly fit as a victims' or privileged group nor did we have a priori predictions about this group. But to satisfy curiosity, these were the results for atheists: fairness rating ($M = 55.16$, $SD = 29.46$); correlation with liberal ideology, $r = -.35$, $p < .001$. Thus, it seems Liberals believe atheists to be victims as well.

Participants were slightly above the midpoint on liberalism ($M = 4.44$, $SD = 1.79$) and equalitarianism ($M = 4.69$, $SD = 1.14$), and these were positively correlated, $r = .53$, $p < .001$. As can be seen in Table 1, participants viewed Whites as treated the most fairly, followed in order by Men, Christians, Women, Hispanics, Blacks, and last, Muslims. As predicted, stronger liberal ideology was significantly negatively related to fairness ratings for all four victims' groups: Muslims, Blacks, Hispanics, and Women. Results were slightly mixed for the privileged groups, such that stronger liberal ideology was significantly positively related to fairness ratings for Christians, slightly (but non-significantly) positively related to fairness ratings for Whites, and unrelated or slightly negatively related to fairness ratings for Men.

Table 1
Fairness ratings by group and their correlation with (liberal) ideology

Group	<i>M</i>	<i>SD</i>	<i>r</i>	<i>p</i>
Whites	78.92	23.03	0.09	0.231
Men	78.34	23.22	-0.05	0.514
Christians	68.12	27.74	0.32	<.001
Women	59.81	22.85	-0.39	<.001
Hispanics	51.65	25.12	-0.42	<.001
Blacks	50.30	26.23	-0.44	<.001
Muslims	41.94	28.57	-0.39	<.001

Fairness ratings for the victims' groups were reverse-scored and combined with fairness ratings for the privileged groups to create an unfairness index, $\alpha = .77$. A bootstrap mediation analysis (10,000 resamples; PROCESS model 4 [Hayes, 2013])⁴ revealed a significant indirect effect of ideology on unfairness ratings through equalitarianism, 95% CI [-2.99, -1.22]. As can be seen in Figure 1, more liberal ideology predicted rating victims' groups as treated more

⁴ In this study and all upcoming studies, this is how we tested simple mediations.

unfairly (and privileged groups as treated more fairly), and this was partially mediated by their higher equalitarian attitudes.

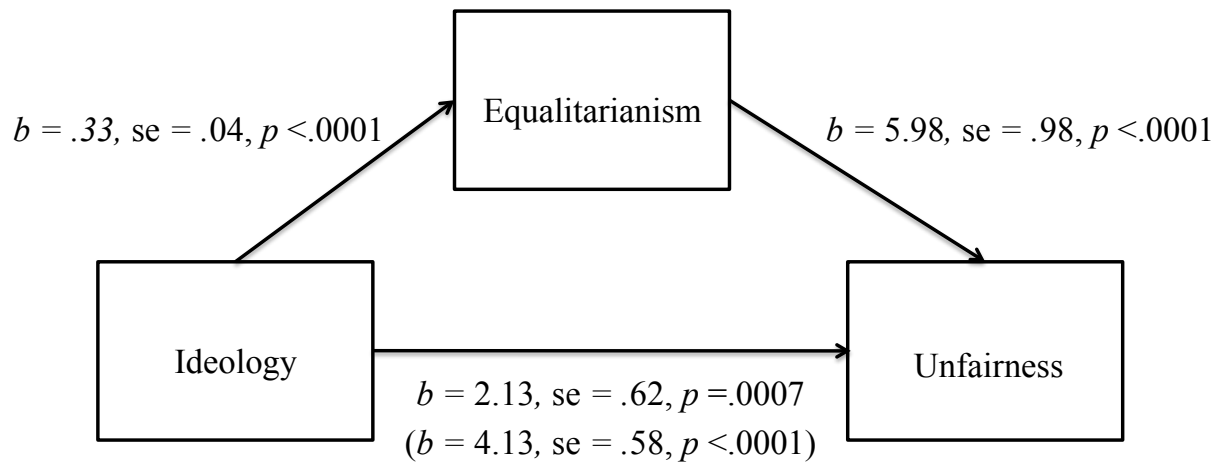


Figure 1. Influence of ideology (higher values = more liberal) on unfairness (higher values = victims' groups treated more unfairly/privileged groups treated more fairly), mediated by equalitarianism (higher values = more equalitarian). In this and all subsequent studies, values in parenthesis are the total effect of the IV on the DV (i.e., prior to controlling for equalitarianism).

Discussion

As predicted, Liberals viewed perceived victims' groups as treated more unfairly than Conservatives, and this effect was partially mediated by scores on a measure of equalitarianism.

Study 1b

Study 1b examined the influence of political ideology and equalitarianism on evaluations of news events and public opinions involving victims' groups. Participants evaluated two ostensible news events, one involving a cop shooting an unarmed Black man, and one involving a university using a performance exam on which men outperform women. We expected that Liberals would evaluate the cop and the exam more unfavorably, and that these would be at least partially accounted for by their higher equalitarianism scores. Participants also reported their agreement with a variety of statements relevant to victims' groups. We expected that more

liberal ideology would predict more pro-victims' groups and more anti-privileged groups attitudes, and that these would also be at least partially accounted for by their higher equalitarianism scores.

Method

Participants. U.S. participants ($M_{\text{age}} = 34.68$, $SD = 11.14$; 100 female) were recruited via MTurk. Given the strength of the relationships in Study 1a, we aimed for a slightly smaller sample size of 150; 151 people participated.⁵ Participants were slightly above the midpoint on liberalism ($M = 4.30$, $SD = 1.77$) and equalitarianism ($M = 4.78$, $SD = 1.01$), and these were positively correlated, $r = .54$, $p < .001$.

Procedure. Order of procedures was randomized. Participants completed the same measure of equalitarianism, $\alpha = .89$, and reported political ideology as in Study 1a. Participants were also asked to read two ostensible news reports from *The New York Times* and *The Boston Globe* (order of presentation was counterbalanced). One story was about a police officer killing an unarmed Black man:

On the night of August 19th, Joe Smith, a New York City policeman encountered Darren Johnson, an African American, on a playground. Officer Smith had received a call about an armed robber in the area. Officer Smith confronted Darren Johnson and told him to put his hands up. Darren Johnson then lifted a shiny object into the air and pointed at Officer Smith. Officer Smith fired five shots at Darren Johnson, killing him instantly. After the shooting, police discovered that the shiny object was a ballpoint pen.

⁵ This would allow us to detect an r effect size of around .23, which is still smaller than those found in Study 1a (Faul et al., 2007, 2009).

The other story was about the introduction of a performance exam, on which men outperform women:

Washington State University is facing controversy after introducing the Graduate Performance Test (GPT). The GPT predicts college performance quite well, so Washington State began to administer it to incoming freshman. However, men perform much better than women on it. Some activists believe that the test is sexist and have called on administrators to stop using it. However, others have noted that men perform better in college at Washington State University, so the test is fair and predictive of performance.

Immediately following the cop story, participants responded to four questions (“How justified was the officer’s shooting?” [reversed], “How wrong was the person who was shot?” [reversed], “Should the officer be punished?”, and “Should the family of the person who was shot receive money?”) on 7-point scales from *Not at all* to *Very much so*, which were combined into an index of belief that the cop was wrong, $\alpha = .80$. Immediately following the test story, participants responded to four questions (“How justified was the school in using the Graduate Performance Test?” [reversed], “How right were activists in trying to get rid of the test?”, “Is the test fair?” [reversed], and “Is the test sexist?”) on 7-point scales from *Not at all* to *Very much so*, which were combined into an index of belief that the test is unfair, $\alpha = .88$.

Participants rated their agreement with several statements relevant to victims’ groups (*Most police departments are racist, Islam is a religion of peace, Men are physically stronger*

than women, Men are better at mathematics than women, The government should spy on Muslims, Jokes about race are offensive, A woman’s proper role in society is in the kitchen, and Women are smarter than men) on 7-point scales from 1= Not at all to 7= Very much so.⁶

Results

As expected, more liberalism predicted stronger beliefs that the cop was wrong, $r = .45, p < .001$, and stronger beliefs that the test is unfair, $r = .24, p = .003$. Moreover, and consistent with predictions, stronger equalitarian beliefs partially mediated the influence of liberal ideology on beliefs that the cop was wrong, 95% CI [.04, .23] and that the test is unfair, 95% CI [.06, .25]. One of these mediations is mapped in Figure 2 below, in which more liberal ideology predicted stronger beliefs that the cop was wrong to shoot the Black man, and this was partially accounted for by Liberals’ stronger equalitarian attitudes.

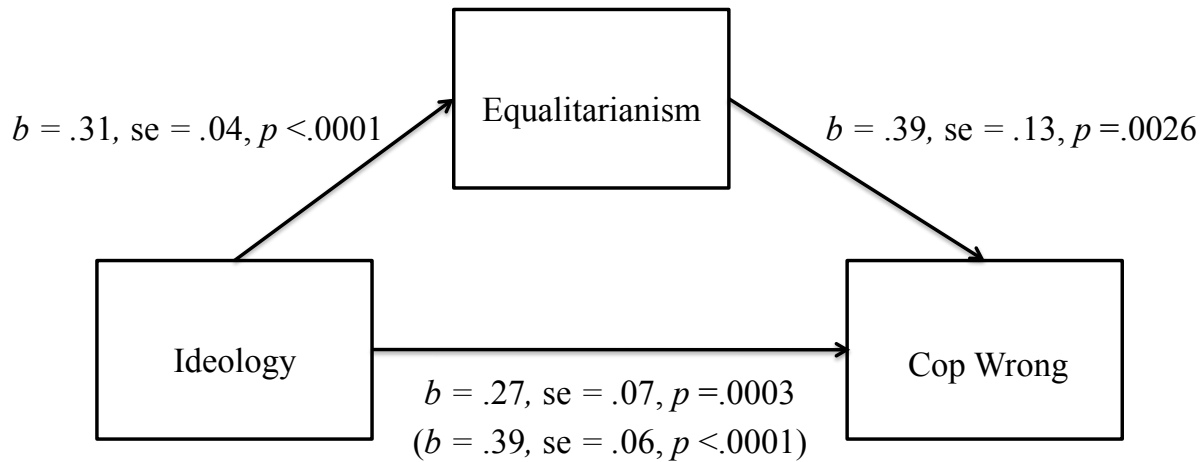


Figure 2. Influence of ideology (higher values = more liberal) on beliefs that the cop was wrong, mediated by equalitarianism.

⁶ For purposes of upholding the cover story that the study was about political attitudes, two additional statements were included (*I think gays should be able to marry, and Abortion should be legal*). We had no a priori predictions regarding these items, but to satisfy curiosity, these were the agreement rating and correlation with liberal ideology results for the former: $M = 5.44, SD = 2.13, r = .59, p < .001$, and the latter: $M = 4.80, SD = 2.36, r = .53, p < .001$.

We next examined the relationships between ideology and agreement with the statements regarding victims' groups and privileged groups. As can be seen in Table 2, more liberal ideology was significantly positively related to beliefs that most police departments are racist and that Islam is a religion of peace and significantly negatively related to beliefs that men are physically stronger than women, that men are better at math than women, that the government should spy on Muslims, and that a woman's place in society is in the kitchen. There was also a small (but not significant) negative relationship between liberalism and beliefs that jokes about race are offensive. There was no significant relationship between ideology and beliefs that women are smarter than men (later studies will suggest that both Conservatives and Liberals prefer this conclusion). Higher equalitarian attitudes significantly mediated all relationships except the relationship between ideology and beliefs that the government should spy on Muslims and the non-significant relationship between ideology and beliefs that women are smarter than men. Thus, other than these two exceptions, results were consistent with predictions that more liberal ideology predicts more pro-victims' groups attitudes and more anti-privileged groups attitudes, and that these relationships are partially explained by a stronger equalitarian narrative.

Table 2
Agreement with victims' groups statements, their correlation with (liberal) ideology, and mediation of that relationship by equalitarianism in Study 1b

Group	<i>M</i>	<i>SD</i>	<i>r</i>	<i>p</i>	Mediation 95% CI
Most police departments are racist.	3.27	1.82	.42	<.001	.13, .32
Islam is a religion of peace.	3.98	1.83	.53	<.001	.06, .25
Men are physically stronger than women.	4.93	1.77	-.31	<.001	-.30, -.08
Men are better at mathematics than women.	2.50	1.57	-.20	.017	-.35, -.12
The government should spy on Muslims.	2.70	1.89	-.56	<.001	-.18, .05
Jokes about race are offensive.	5.08	1.80	-.13	.102	.09, .34
A woman's proper role in society is in the kitchen.	1.67	1.25	-.24	.003	-.21, -.06
Women are smarter than men.	3.39	1.54	.03	.742	-.05, .13

Note. 1 = not at all agree; 7 = agree very much so

Discussion

As predicted, more liberalism predicted greater opposition to using a test that favored men and more unfavorable judgments of a police officer who shot an unarmed black person; and these relationships were partially mediated by higher equalitarianism. More liberalism also predicted more positive victims' group attitudes and more negative privileged group attitudes, and equalitarianism generally mediated these relationships.

Study 2

So far, liberal ideology predicts 1) beliefs that victims' groups are treated more unfairly by society, 2) that a cop shooting an unarmed black man was more wrong, 3) that it is more unacceptable to use performance exams on which men outperform women, and 4) more favorable attitudes toward victims' groups/less favorable attitudes toward privileged groups. Liberals' higher equalitarian attitudes at least partially accounted for nearly all these outcomes. These validation studies suggest that Liberals' have greater concern for victims groups. Thus, this concern could be a potential source of Liberal bias. In the remaining studies, we expanded our investigation to test whether Liberals' equalitarian attitudes were related to bias against threats to cosmic egalitarianism, especially when those threats indicated that privileged groups score higher than victims' groups on a socially valued trait.

Study 2 tested the prediction that Liberals would be less likely to trust, support, and accept an exam on which men outperform women than an exam on which women outperform men. As we noted in the introduction, Liberals appear to have a sacred narrative about protecting perceived victims' groups; therefore, they likely are more sensitive to potential threats to those groups. When a threat is detected, we predict that many Liberals will shift from standard to motivated reasoning and will evince bias. In this Study, we hypothesized that the test on which

men perform better will be perceived as a threat to many Liberals, therefore causing bias against it (i.e., causing them to assess it differently from the same test when women are said to do better [no threat]).

Using standard methods to detect bias, we had participants read one of two vignettes about a university's use of a performance exam, and randomly assigned them to read either that men outperform women or that women outperform men (on average). Participants then evaluated whether it is acceptable to use the test. We predicted that more liberal participants would be biased such that they would rate the exam as less acceptable when men outperform women than when women outperform men.

We also expected that Liberals would rate the exam more unacceptable than Conservatives when men outperform women. These results would indicate that 1) Liberals evaluate information in a biased manner when that information could portray victims' groups or privileged groups in a more or less favorable light, and 2) Liberals (relative to Conservatives) are particularly motivated to disparage information that threatens cosmic egalitarianism when the information appears to favor a privileged group over a victims' groups.

Method

Participants. U.S. participants ($M_{\text{age}} = 36.80$, $SD = 12.75$; 113 female) were recruited via MTurk. We aimed for 100 participants per condition (200 total); 205 participated.⁷ Participants were slightly above the midpoint on liberalism ($M = 4.30$, $SD = 1.66$) and equalitarianism ($M = 4.68$, $SD = 1.02$), and these were positively correlated, $r = .42$, $p < .001$.

⁷ In this study and all remaining studies, sample sizes were derived from the researchers' personal experience conducting similar work, but we were consistent in our sample sizes across experimental designs (100 per condition in studies with two groups [Studies 2 and 3], 150 per condition in studies with three groups [Studies 4 and 5], and 200 per condition in studies with four groups [i.e., 2 x 2 designs; Studies 6 and 7]).

Procedure. As in Studies 1a and 1b, order of procedures was randomized. Equalitarian attitudes, $\alpha = .90$, and political ideology were measured with the same procedures as in Studies 1a and 1b. Participants also read a short vignette about a college entrance exam (below), and were randomly assigned to read that either men outperform women or women outperform men:

In the past decade, the College Entrance Exam (CEE) has been given to high school students. It has been shown to have remarkable accuracy at predicting academic performance in college.

However, universities have been debating whether to use the exam or not because women/(men), on average, score much higher than men/(women) on the exam, leading to the acceptance of more women/(men) to college than men/(women).

Following this vignette, participants responded to three questions (“How much do you think the test should be used?”, “How fair do you think the test is?”, and “How sexist do you think the test is?” [reverse-scored]) on 7-point scales from 1= *Not at all* to 7= *Very much so*, which were combined into an index of test acceptability, $\alpha = .85$.

Results

For this and all subsequent studies, interactions could be computed with either the continuous measure of ideology or by categorizing participants as liberals, moderates, and conservatives based on conceptual cut points. The former strategy retains all available information, but the latter is easier to comprehend particularly as the designs get more complicated in later studies. For these reasons, and for the sake of open reporting, we report the results both ways. Note that across all studies, both analysis strategies yield similar

interpretations of the data, though in some cases, the continuous analyses have slightly larger overall effect sizes or smaller p -values, especially for the relevant interaction effects.

Continuous. We regressed test acceptability ratings on the Sex condition, ideology (centered), and the interaction, controlling for sex.⁸ As can be seen in Table 3, there was a significant main effect of Sex condition on test acceptability such that the test was considered less acceptable if men outperform women than if women outperform men. There was also a main effect of ideology such that liberalism predicted lower test acceptability. Somewhat consistent with predictions, there was a small, trending (but not statistically significant) interaction between the condition and ideology.

Consistent with predictions, simple slopes one standard deviation above and below the mean of political ideology revealed that liberal participants found the test significantly less acceptable when men outperform women than vice versa ($b = 1.02$), $t = 3.54$, $p = .001$. In contrast, conservative participants (one standard deviation below the mean) found the test equally acceptable regardless of whether women outperform men or men outperform women ($b = .40$), $t = 1.38$, $p = .171$, though they were still trending in the same direction as Liberals.

Examining the interaction another way, in the condition in which women outperform men, there was virtually no effect of ideology on test acceptability ($b = .01$), $t = 0.12$, $p = .902$. Both Liberals and Conservatives found the test reasonably acceptable (above the midpoint) if women outperform men. However, in the condition in which men outperform women, more liberal ideology predicted lower test acceptability ($b = -.18$), $t = -2.10$, $p = .037$.

⁸ Removing sex as a control does not affect the statistical significance of any effects.

Table 3

Test acceptability ratings regressed on Sex condition (0: Men Outperform, 1: Women Outperform), ideology, and the interaction, controlling for sex

	β	t	p	95% CI	semipartial r
Sex	-0.28	-4.33	<.001	-1.28, -.48	-.28
Condition	.23	3.46	.001	.30, 1.11	.23
Ideology	-.19	-2.13	.034	-.34, -.01	-.14
Condition x Ideology	.13	1.52	.129	-.06, .43	.10

Categorical. We created a categorical ideology variable for Conservatives (those who responded 1-3 on the 7-point ideology scale; $n = 62$), Moderates (those who responded 4; $n = 57$), and Liberals (those who responded 5-7; $n = 86$).⁹ We analyzed the 2 (Sex condition) x 3 (categorical ideology) interaction on acceptability ratings in a Univariate Analysis of Variance (ANOVA).

There was a significant main effect of Sex condition, indicating that all participants objected more to a test favoring men than a test favoring women. The main effect of ideology and the interaction were not significant. However, consistent with the continuous results, simple contrasts revealed the largest (and a significant) difference between experimental conditions for Liberals (see Table 4 and Figure 3). Specifically, Liberals rated the test as significantly more acceptable if women outperform men than if men outperform women, $p = .004$, *Cohen's d* = .64, whereas Moderates, $p = .507$, *Cohen's d* = .17, and Conservatives, $p = .118$, *Cohen's d* = .44, demonstrated no such difference (though note Conservatives were trending in a similar direction as Liberals).

In the Women Outperform condition, no groups significantly differed, $ps > .557$. In the Men Outperform condition, Liberals rated the test as marginally less acceptable than Moderates,

⁹ This coding scheme is how we created a categorical ideology variable in this study and all subsequent studies.

$p = .099$, and somewhat (though not significantly) less acceptable than Conservatives, $p = .152$; whereas there were virtually no differences between Conservatives and Moderates in this condition, $p = .791$.

Table 4

Categorical ideology, Sex condition (0: Men Outperform; 1: Women Outperform), and the interaction on test acceptability

	F	p	η_p^2
Condition	8.11	.005	.039
Ideology	0.78	.460	.008
Condition x Ideology	0.94	.393	.009

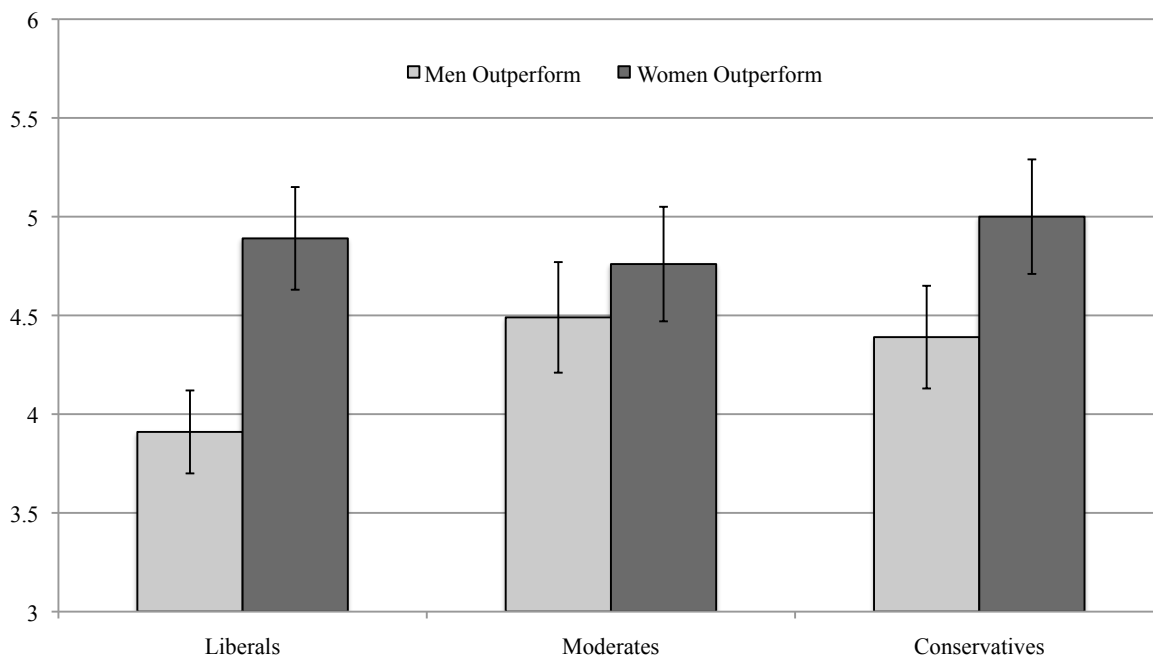


Figure 3. Test acceptability by Sex condition within each ideological group. Error bars are standard errors.

Moderated Mediation and Mediations. Equalitarianism mediated the interactive effect of Sex condition and (continuous) ideology on test acceptability, based on PROCESS model 5

(10,000 resamples; Hayes, 2013),¹⁰ specifying ideology as the independent variable and Sex condition as the moderator, 95% CI [-.24, -.07]. To model this interaction simply, we then tested simple mediations within each condition. Confirming the results of the moderated mediation, equalitarianism did not mediate the (non)effect of ideology on test acceptability in the condition in which women outperform men, 95% CI [-.20, .01], but it did mediate the influence of ideology on test acceptability in the condition in which men outperform women, 95% CI [-.36, -.12]. As can be seen in Figure 4, higher equalitarianism fully accounted for the relationship between more liberal ideology and lower ratings of test acceptability in the condition in which men outperform women on the test.

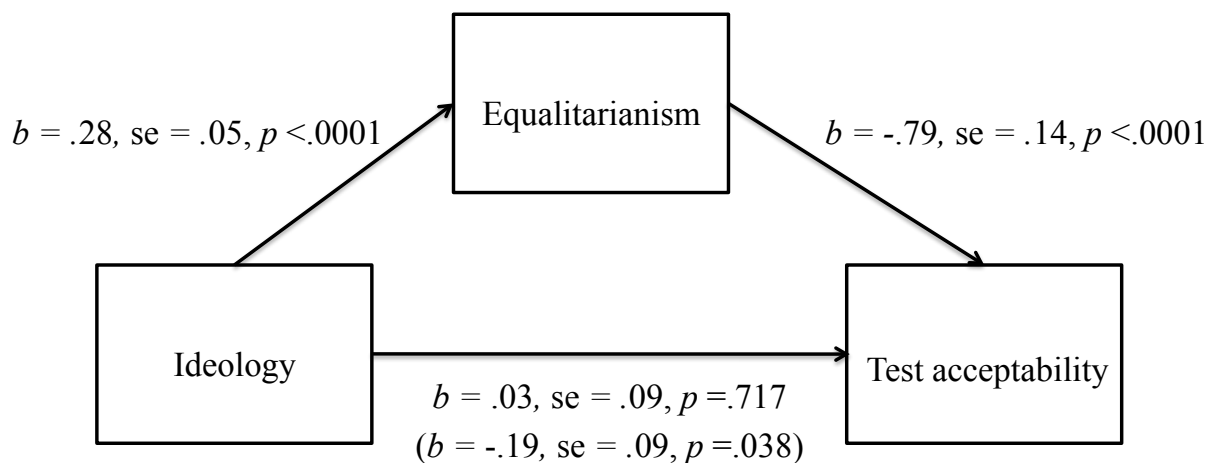


Figure 4. Influence of ideology (higher values = more liberal) on test acceptability, mediated by equalitarianism in the condition in which men outperform women.

Discussion

Study 2 found a general pattern of biased evaluation. Across the full sample, participants objected to a test more if men outperformed women than if women outperformed men.

Consistent with our predictions, this was strongest (and significant) among Liberals. Also

¹⁰ This is how we tested moderated mediation in this study and all subsequent studies.

consistent with predictions, Liberals objected to the test more than Conservatives only in the condition in which men outperformed women. However, the full interactions did not reach statistical significance. The upcoming studies shed more light on this pattern.

We should address an important challenge to our argument. Perhaps Liberals are not biased at all, but rather are using some Bayesian-type reasoning. More women than men are going to college, and women tend to earn higher GPAs in college than men, so perhaps it is rational to conclude that a college test that favored men is sexist and unfair (it contradicts real base rates). To address this objection, the upcoming studies manipulated stated sex differences in IQ (men and women have roughly equal IQ) and stated race differences in IQ (Whites have up to one standard deviation higher IQ than Blacks [estimates range from 10-15 points]; see, for example, Hunt, 2011; Mackintosh, 2011).

It is also possible that Liberals were not biased against the validity of the test per se, but rather concerned about the explicitly stated downstream consequences (i.e., that fewer women would be admitted to college). If so, Liberals were not biased against the test, but were rationally concerned about the potential deleterious consequences to women. To address this objection, the upcoming studies avoided manipulating downstream consequences of differences and focused only the stated differences themselves.

Another plausible objection to the bias argument is that Liberals were using a different but equally rational prior that altered their response patterns when men outperform women: The base rate of sexism. If society is more sexist against women than against men, then perhaps it is rational to conclude that a test or policy that favors men is likely less fair and more sexist than a test or policy that favors women. We address this objection as fully as we can in Studies 6 and 7. The best methodological strategies to ensure that one is measuring bias are to use matched

materials, to ask questions about the matched information and not the manipulated information (Ditto et al., 2018), to use examples in which base rates go against the no bias explanation, and to use within-subjects designs. We improved upon all these in upcoming studies.

Study 3

Study 3 was similar to Study 2 but focused on race instead of gender. Study 3 also sought to minimize potential Bayesian counter-explanations for the bias by having participants evaluate the credibility of identical scientific arguments that only differed in their conclusions. In both conditions, participants read an argument about the discovery of a gene that was associated with higher IQ scores and that may explain intelligence differences between Blacks and Whites. The only difference between conditions was whether the gene explained why Blacks score higher on IQ tests than Whites or why Whites score higher on IQ tests than Blacks. Whether it appears credible that a gene is associated with intelligence and could explain intelligence differences between Blacks and Whites should be largely independent (perhaps not completely, though, see PRE principle) of whether Blacks or Whites are said to be of higher intelligence. Thus, one can argue that different ratings of argument credibility reflect bias.

We once again expected that Liberals would display bias such that they would evaluate the credibility of the argument more unfavorably if the gene was said to explain why Whites have higher IQs than Blacks than vice versa (because Blacks but not Whites are a perceived victims' group). We again expected that ideological differences in argument credibility ratings would be largest in the condition that casts a victims' group in a less favorable light than a privileged group such that Liberals would be particularly motivated to disparage information that threatens cosmic egalitarianism when it is said that Whites have higher IQs than Blacks (relative to Conservatives).

Method

Participants. U.S. participants ($M_{\text{age}} = 37.65$, $SD = 12.65$; 118 female; 159 White, 17 Asian, 13 Latino, 12 Black, 1 Middle Eastern) were recruited via MTurk. As in Study 2, we aimed for 100 participants per condition (200 total); 202 participated. Participants were slightly above the midpoint on liberalism ($M = 4.55$) and equalitarianism ($M = 4.81$), and these were positively correlated, $r = .53$, $p < .001$.

Procedure. Procedures were identical to Study 2 (equalitarian scale $\alpha = .92$), except participants read a different vignette and responded to different questions in response to the vignette. This vignette was an ostensible *The New York Times* science article, which described research about the discovery of a gene that might explain racial differences in IQ. We used a racially neutral name, Tom Berry (and used this name in all studies that used a variation of this vignette). Participants were randomly assigned to read that this gene might explain either why Whites score higher on IQ tests than Blacks, or why Blacks score higher on IQ tests than Whites:

Researchers from a large research institution have discovered a gene that might explain intelligence differences between Blacks and Whites. For many years, researchers have found that Blacks/(Whites) score higher on certain intelligence tests than Whites/(Blacks). Tom Berry and his colleagues have tried to find genetic causes for the disparity in intelligence scores, arguing that environmental explanations cannot explain the IQ gap. "There is simply no reasonable environmental explanation for the IQ gap that we can find or that other researchers have proposed," Dr. Berry explained.

Berry and his team think they have an answer. They isolated a gene on the 21st

chromosome that is reliably associated with higher IQ scores. The gene polymorphism, called THS-56RR, was first found in 1999, but researchers didn't know that it was related to higher IQ scores. Berry and his team found that it was strongly related to IQ scores.

They also found that the gene is much more common in American Blacks/(Whites) than Whites/(Blacks). "About 93% of Blacks/(Whites) carry the gene," Dr. Berry said, "whereas only 10% of Whites/(Blacks) carry it. We really think this might explain the IQ gap."

Participants responded to the news article on six questions ("How credible do you find Dr. Berry's argument?", "Do you believe Dr. Berry's argument?", "Is Dr. Berry's argument racist?" [reversed], "Is Dr. Berry's argument logical?", "How important is this research?", and "Do you think we should fund more of this type of research?") rated on 7-point scales from *Not at all* to *Very much so* (first four questions) or *Not at all* to *Extremely/Definitely*, which were combined into an index of argument credibility, $\alpha = .92$.

Results

Continuous. We regressed argument credibility ratings on the Race condition, ideology (centered), and the interaction. As can be seen in Table 5, there was a significant main effect of the Race condition such that the argument that the gene could account for racial differences in intelligence was considered more credible if the gene explained why Blacks are more intelligent than Whites ($M = 3.61$, $SD = 1.38$) than if the gene explained why Whites are more intelligent than Blacks ($M = 3.15$, $SD = 1.59$). There was also a main effect of ideology such that more liberalism was associated with lower credibility ratings.

There was also a statistically significant interaction between the Race condition and ideology. Consistent with predictions, simple slopes one standard deviation above and below the mean revealed that more liberal participants found the argument more credible if the gene explained why Blacks have higher IQ than Whites than if it explained why Whites have higher IQ than Blacks ($b = 1.04$), $t = 3.40$, $p = .001$. In contrast, more conservative participants found the argument equally credible regardless of whether it explained Blacks' or Whites' higher intelligence ($b = -0.12$), $t = -0.40$, $p = .693$.

Examining the interaction another way, in the Blacks Higher condition, ideology was unrelated to argument credibility ratings ($b = 0.11$), $t = 1.16$, $p = .248$. Both Liberals and Conservatives found the argument reasonably credible if the gene explained why Blacks have higher IQs than Whites. However, as predicted, in the Whites Higher condition, more liberal ideology predicted lower argument credibility ratings ($b = -0.22$), $t = -2.84$, $p = .005$.

Table 5
Argument credibility ratings regressed on Race condition (0: Whites Higher; 1: Blacks Higher), ideology, and the interaction

	β	t	p	95% CI	semipartial r
Condition	.15	2.13	.034	.04, .89	.15
Ideology	-.25	-2.91	.004	-.37, -.07	-.20
Condition x Ideology	.23	2.71	.007	.09, .58	.19

Categorical. We again created an ideological category variable (Conservatives $n = 56$, Moderates $n = 37$, Liberals $n = 109$) and analyzed the 2 (Race condition) x 3 (categorical ideology) interaction on credibility ratings in an ANOVA. There was no main effect of Race condition, nor ideology, but similar to the continuous results, there was a marginal interaction (see Table 6 and Figure 5).

All simple contrasts demonstrated the expected pattern of results. Specifically, Liberals rated the argument as significantly more credible in the Blacks Higher condition than the Whites

Higher condition, $p = .005$, *Cohen's d* = .58. This difference was smaller and not significant for Moderates, $p = .400$, *Cohen's d* = .58, and slightly (but not significantly) in the opposite direction for Conservatives, $p = .498$, *Cohen's d* = .20. In the Blacks Higher condition, no groups significantly differed, $ps > .134$. In the Whites Higher condition, Liberals rated the argument as significantly less credible than Moderates, $p = .040$, and Conservatives, $p = .030$; Moderates and Conservatives did not differ, $p = .856$.

Table 6
Categorical ideology, Race condition (0: Whites Higher; 1: Blacks Higher), and the interaction on argument credibility

	<i>F</i>	<i>p</i>	η_p^2
Condition	1.90	.170	.010
Ideology	1.67	.192	.017
Condition x Ideology	2.44	.090	.024

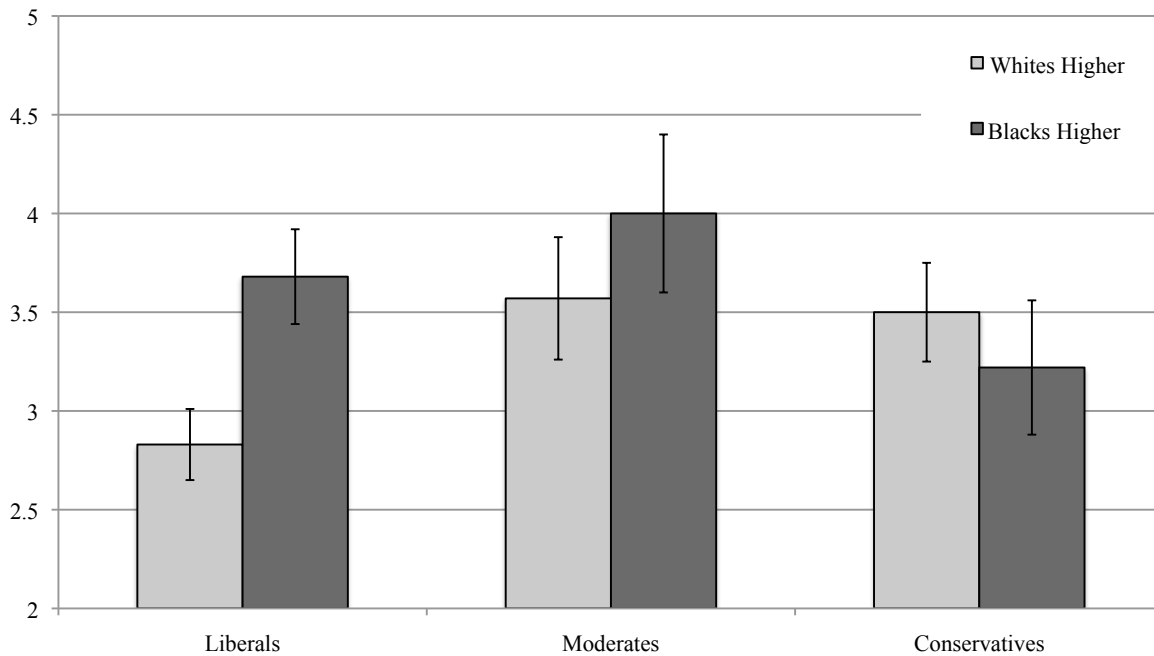


Figure 5. Argument Credibility by Race condition within each ideological group. Error bars are standard errors.

Moderated Mediation and Simple Mediations. We next tested whether equalitarianism mediated the interactive effect of Race condition and ideology on argument credibility, specifying ideology as the independent variable and Race condition as the moderator. As expected, higher equalitarianism mediated the interactive effect, 95% CI [-.24, -.07]. Simple mediations within each condition confirmed the results of the moderated mediation: equalitarianism did not mediate the (non)effect of ideology on argument credibility in the Blacks Higher condition, 95% CI [-.10, .10], but did mediate the influence of ideology on argument credibility in the Whites Higher condition, 95% CI [-.42, -.16]. As can be seen in Figure 6, higher equalitarianism fully accounted for the relationship between more liberal ideology and lower ratings of argument credibility in the condition in which Whites were said to have a higher average IQ than Blacks.

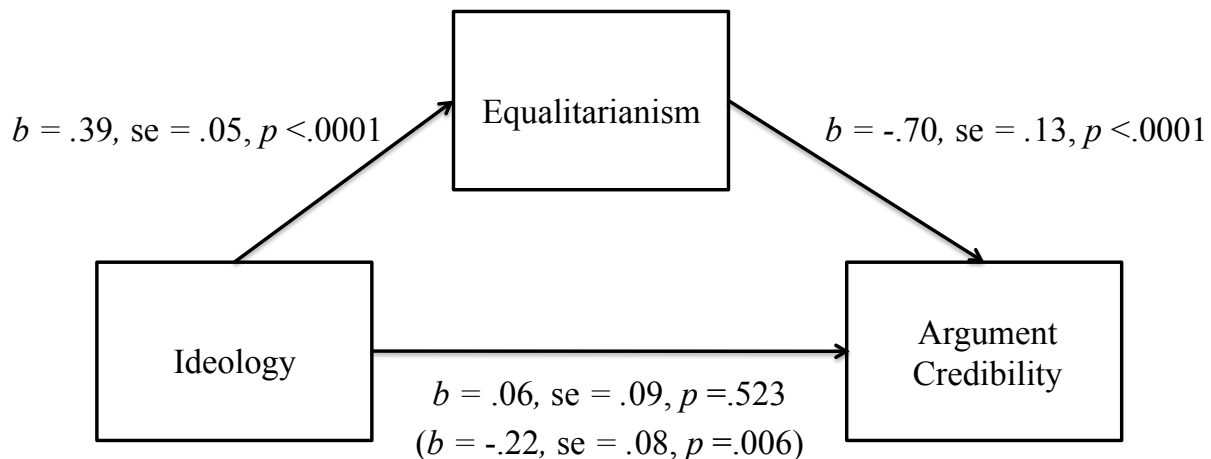


Figure 6. Influence of ideology (higher values = more liberal) on argument credibility, mediated by equalitarianism in the Whites Higher condition.

Discussion

Study 3 replicated the basic pattern of results of Study 2 with materials more resistant to potential Bayesian-type counterarguments. Specifically, it found that Liberals, but not Conservatives, were biased against genetic explanations for IQ differences between Whites and

Blacks when Whites were said to outperform Blacks (on average). This largely refutes at least one version of the Bayesian counterargument because research shows that if there is a race difference in intelligence, it is in the opposite direction such that Whites outperform Blacks (on average) on modern intelligence tests (Hunt, 2011; Mackintosh, 2011). Therefore, if anything, the argument should be *more* not less plausible when it explains why Whites outperform Blacks than vice versa. However, this doesn't rule out an objection about pervasive racism. That is, one could argue that modern society is rife with racism and that therefore any explanation, any test, any policy, that appears to disfavor Blacks is likely to be unfair and racist. This does seem a plausible objection to some of our questions (e.g., "should this research be funded?"), but it seems less plausible to raise this objection to other questions (e.g., "Is Dr. Barry's argument logical?"). In the upcoming studies, we dropped the objectionable questions.

Study 4

Study 4 sought to replicate and extend the results of Study 3 by including an Equal condition, in which it was said that a gene explained individual differences in intelligence, that the gene was found in equal degrees in both Blacks and Whites, and that this explains why Blacks and Whites score similarly on intelligence tests. We added this condition to explore whether Liberals are motivated to reject the conclusion that Whites have higher IQs than Blacks, motivated to accept the conclusion that Blacks have higher IQs than Whites, or perhaps motivated to reject both but to different degrees relative to an Equal condition. Consistent with the cosmic egalitarian hypothesis, we predicted that Liberals would find the Equal condition most credible, followed by Blacks higher and then last by Whites higher. Regarding Conservatives, our main prediction (as in previous studies) was that they would be more

accepting of the argument when the privileged group (here, Whites) is said to have higher IQs than the victims' group (here, Blacks) relative to Liberals.

Method

Participants. U.S. participants ($M_{\text{age}} = 36.96$, $SD = 12.34$; 233 female; 341 White, 48 Asian, 34 Black, 28 Latino, 1 Middle Eastern) were recruited via MTurk. Because of the addition of the Equal condition, we aimed for a higher number of participants per condition to increase our odds of having sufficient power. We aimed for 150 participants per condition (450 total); 452 participated. Participants were slightly above the midpoint on liberalism ($M = 4.49$) and equalitarianism ($M = 4.70$), and these were positively correlated, $r = .54$, $p < .001$.

Procedure. Methods were identical to Study 3 (equalitarian scale $\alpha = .92$) with two exceptions. First, we used only the one question from Study 3 that was the least vulnerable to Bayesian counter-explanation: "Is Dr. Berry's argument logical?" We also added two additional items that should be minimally vulnerable to Bayesian counter-explanations: "How reasonable do you find Dr. Berry's argument?" and "How plausible is it that a gene could explain IQ differences?", which were combined into an index of argument credibility, $\alpha = .91$. Second, an Equal condition was also included (pasted below).¹¹

Researchers from a large research institution have discovered a gene that might explain intelligence similarities among Blacks and Whites. For many years, researchers have found that Whites and Blacks score similarly on certain intelligence tests. Tom Berry and

¹¹ There were a few other trivial changes that apply to Studies 4-7: Order of procedures was fixed rather than randomized (science article and DVs came first, then the equalitarianism scale, then demographics), some unrelated and unreported demographic questions were removed (e.g., relationship status, sexual orientation), and open-ended suspicion probes and comment boxes were added.

his colleagues have tried to find genetic causes for intelligence scores, arguing that environmental factors cannot explain IQ. "There is simply no reasonable environmental explanation for IQ differences within races that we can find or that other researchers have proposed," Dr. Berry explained.

Berry and his team think they have an answer. They isolated a gene on the 21st chromosome that is reliably associated with higher IQ scores. The gene polymorphism, called THS-56RR, was first found in 1999, but researchers didn't know that it was related to higher IQ scores. Berry and his team found that it was strongly related to IQ scores.

They also found that the gene is equally common in American Whites and Blacks. "About 60-65% of both Whites and Blacks carry the gene," Dr. Berry said, "We really think this might explain similarities in intelligence scores between them."

Results

Continuous. We regressed argument credibility ratings on the Race condition dummy coded with the Equal condition as the reference category, ideology (centered), and the interactions. As can be seen in Table 7, there were significant main effects for both dummy variables such that participants rated the arguments as less credible if the gene explained why Whites have higher IQ than Blacks or if the gene explained why Blacks have higher IQ than Whites (relative to the Equal condition). There was no main effect of ideology.

There was no significant interaction between the Blacks Higher dummy variable and ideology. But, as expected, there was a significant interaction between the Whites Higher

dummy variable and ideology. Simple slopes at each level of the Whites Higher dummy variable revealed that in the condition in which Whites were said to have a higher IQ than Blacks, more liberal ideology predicted lower ratings of credibility ($b = -.24$), $t = -3.76$, $p < .001$. In the other conditions, ideology was unrelated to credibility ratings ($b = -.03$), $t = -.41$, $p = .680$.

Table 7

Argument credibility ratings regressed on dummy coded Race conditions, ideology, and the interactions

	β	t	p	95% CI	semipartial r
Blacks Higher	-.21	-3.95	<.001	-1.02, -.34	-.18
Whites Higher	-.23	-4.43	<.001	-1.10, -.42	-.20
Ideology	-.04	-0.42	.673	-.18, .12	-.02
Black x Ideology	.02	0.35	.724	-.17, .24	.02
White x Ideology	-.14	-2.05	.041	-.40, -.01	-.09

Categorical. We again created an ideological category variable for Conservatives ($n = 125$), Moderates ($n = 103$), and Liberals ($n = 224$), and analyzed the 3 (Race condition: Whites Higher, Blacks Higher, Equal) x 3 (categorical ideology) interaction on credibility ratings in an ANOVA. There was a significant main effect of Race condition, a marginal main effect of ideology, and a significant interaction (see Table 8).

Table 8

Categorical ideology, Race condition (0: Whites Higher; 1: Blacks Higher), and the interaction on argument credibility

	F	p	η_p^2
Condition	9.06	<.001	.039
Ideology	2.49	.085	.011
Condition x Ideology	2.57	.037	.023

As can be seen in Figure 7, there were no differences between Liberals, Moderates, and Conservatives on argument credibility in the Equal or Blacks Higher conditions, $ps > .344$. In the Whites Higher condition, Conservatives and Moderates did not differ ($p = .648$), but Liberals rated the argument as less credible than both Conservatives ($p = .003$) and Moderates ($p = .002$).

Among Conservatives and Moderates, only the Equal and Blacks Higher conditions significantly differed ($ps = .010$ and $.025$, respectively, *Cohen's ds* = $.57$ -. $.58$) such that participants rated the argument that a gene could explain *similarities* in intelligence among Blacks and Whites as more credible than when it was said to explain why Blacks have higher IQ than Whites. The Whites Higher condition fell between the other two conditions and did not significantly differ from either the Blacks Higher or the Equal condition for Conservatives or Moderates, $ps > .117$, *Cohen's ds* = $.31$ -. $.33$. Among Liberals, all conditions significantly differed. Liberals rated the argument as more credible in the Equal condition than the Blacks Higher condition, $p = .038$, *Cohen's d* = $.36$, and the Whites Higher condition, $p < .001$, *Cohen's d* = $.69$, and more credible in the Blacks Higher condition than the Whites Higher condition, $p = .016$, *Cohen's d* = $.39$.

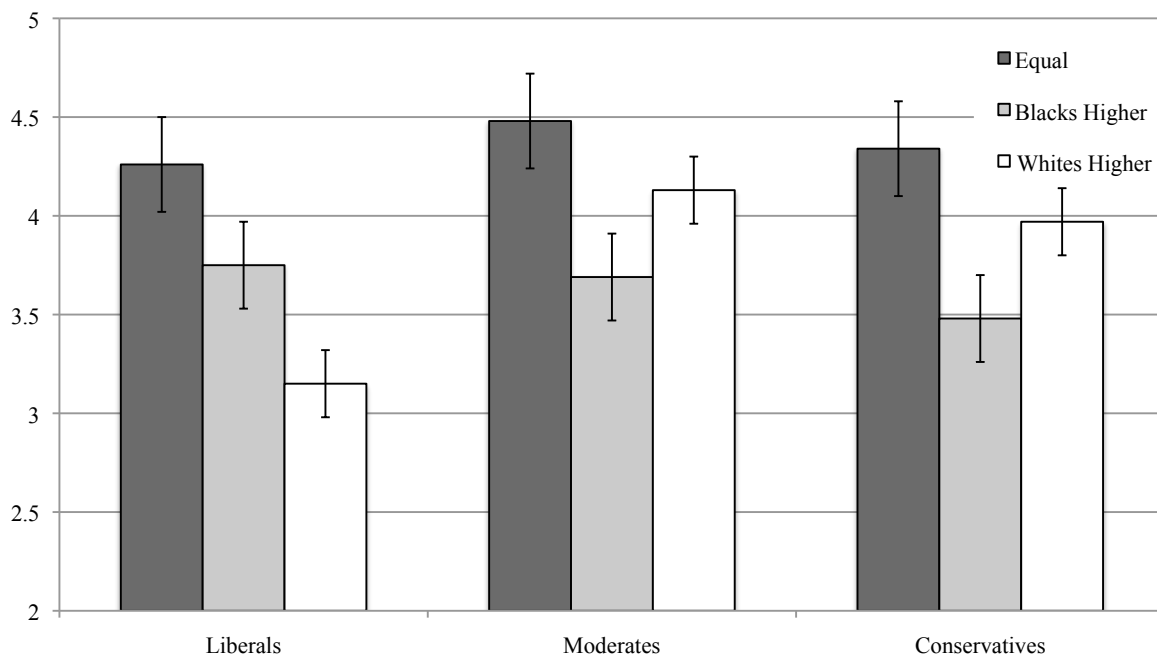


Figure 7. Argument credibility by Race condition within each ideological group. Error bars are standard errors.

Mediations. We next examined whether higher equalitarianism mediated the influence of ideology on argument credibility ratings within each Race condition. In the Equal and Blacks

Higher conditions, equalitarianism did not mediate the (non-effect) of ideology on argument credibility ratings, 95% CI [-.12, .09] and 95% CI [-.10, .13], respectively. As can be seen in Figure 8, and consistent with all results thus far, in the Whites Higher condition, higher equalitarianism fully mediated the influence of more liberal ideology on lower argument credibility ratings, 95% CI [-.28, -.08].

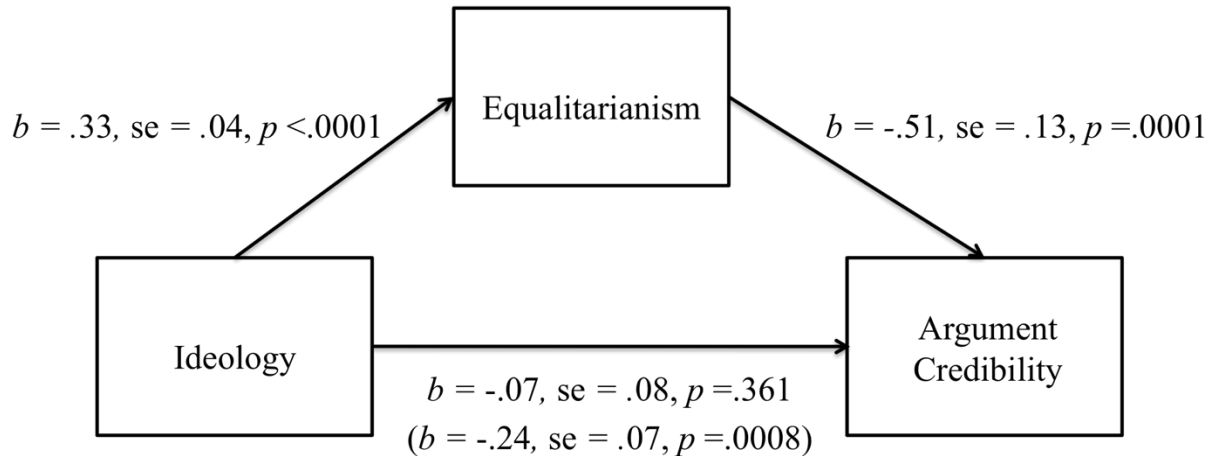


Figure 8. Influence of ideology (higher values = more liberal) on argument credibility, mediated by equalitarianism in the Whites Higher condition.

Discussion

Results were mostly consistent with predictions. As in Studies 2 and 3, ideological differences in argument credibility only emerged in the condition in which the privileged group was portrayed more favorably, such that Liberals found the Whites Higher argument less credible than Moderates and Conservatives. And higher equalitarianism mediated the influence of ideology on lower credibility ratings in the Whites Higher condition. Liberals, Moderates, and Conservatives did not significantly differ in their credibility ratings of the Blacks Higher or Equal arguments.

Also consistent with predictions (and Studies 2-3), Liberals found the Whites Higher argument less credible than the Equal and Blacks Higher arguments. Conservatives (and

Moderates) showed no (significant) difference in credibility ratings between the Whites Higher and Blacks Higher arguments.

It may seem surprising that all ideological groups (Conservatives, Moderates, and Liberals) rated the Equal argument as more credible than the other arguments (though note, not significantly more than Whites Higher for Conservatives and Moderates). This suggests that all groups have some preference for cosmic egalitarianism, and perhaps simply Conservatives and Moderates are somewhat more willing to accept that that might not be the case (or Liberals are somewhat more unwilling), especially if those differences favor the privileged group. While apparently people across the political spectrum preferred to hear that the races have equal IQs, Liberals stood out in rejecting the message of higher average intelligence among Whites than Blacks. They were readier to accept that Blacks have higher average IQs than Whites, whereas Moderates and Conservatives showed a (non-significant) tendency toward the reverse. The Conservative and Moderate position may be understandable in view of the evidence of disparate educational and other intellectual achievements that currently exists between races, whereas the Liberal position suggests a victory of equalitarian idealism and protectiveness toward minorities.

Study 5

Study 5 explored biases when the targets are men (privileged group) and women (victims' group), instead of Blacks and Whites. Study 5 replicated the methods of Study 4 exactly, but manipulated sex rather than race. The objective psychometric facts would incline a purely data-driven person toward regarding the two as roughly equal, but it may be equally reasonable to conclude that men have slightly higher IQs than women or vice versa. Large-scale comparisons of intelligence test performance suggest that adult men and women have nearly equal intelligence, with the male mean being very slightly higher. Women outperform men in

school, whereas men slightly outperform women on the SAT. There is also a substantial difference in variance, with more men at both extremes, and so someone exposed to more exemplars of either extreme might generalize mistakenly.

However, we expected that people would answer based more on their prejudices than on published IQ data. We predicted that Liberals in particular would evince bias such that they would evaluate the Men Higher argument as less credible than the Equal or Women Higher arguments, due to their protective concern for women as a victim class. Furthermore, we expected Liberals to rate the Men Higher argument as less credible than Conservatives, and that higher equalitarianism would mediate the influence of more liberal ideology on lower credibility ratings in the Men Higher condition.

We were less confident and more uncertain about our predictions for Conservatives. But, we suspected that Conservatives might demonstrate a slight preference for the Equal argument (as in Study 4) over the other two arguments, and possibly also a slight preference for the Women Higher argument over the Men Higher argument (as in Study 2).

Method

Participants. U.S. participants ($M_{\text{age}} = 36.42$, $SD = 11.52$; 254 female; 353 White, 35 Black, 32 Asian, 31 Latino, 2 Middle Eastern) were recruited via MTurk. We again aimed for 450 participants (150 per condition); 454 participated. Participants were slightly above the midpoint on liberalism ($M = 4.51$) and equalitarianism ($M = 4.78$), and these were positively correlated, $r = .51$, $p < .001$.

Procedure. Methods were identical to Study 3 (equalitarian scale $\alpha = .90$; argument credibility, $\alpha = .91$) with one exception: we manipulated which sex was said to have a higher IQ (or that the sexes have roughly equal IQs) instead of which race.

Results

Continuous. We regressed argument credibility ratings on the Sex condition dummy coded with the Equal condition as the reference category, ideology (centered), and the interactions. As can be seen in Table 9, there was only a main effect of the Men Higher dummy variable, such that participants rated the Men Higher argument as less credible than the other arguments. No other effects were significant (including the expected Men Higher x ideology interaction).

Nonetheless, the simple slopes at each level of the Men Higher dummy variable revealed that in the condition in which Men were said to have a higher IQ than Women, more liberal ideology predicted marginally lower credibility ratings ($b = -.12$), $t = -1.90$, $p = .058$ (consistent with predictions). In the other conditions, ideology was unrelated to credibility ratings ($b = -.07$), $t = -1.11$, $p = .269$, (consistent with predictions, though note this relationship was trending in the same direction as the Men Higher condition, hence, the non-significant interaction).

Table 9

Argument credibility ratings regressed on dummy coded Sex conditions, ideology, and the interactions

	β	t	p	95% CI	semipartial r
Women Higher	-.04	-0.38	.474	-.43, .20	-.03
Men Higher	-.23	-4.38	<.001	-1.02, -.39	-.20
Ideology	-.09	-1.08	.280	-.20, .06	-.05
Women x Ideology	-.04	-0.58	.563	-.23, .13	-.03
Men x Ideology	-.04	-0.57	.573	-.23, .13	-.03

Categorical. We again created an ideological category variable for Conservatives ($n = 132$), Moderates ($n = 82$), and Liberals ($n = 239$), and analyzed the 3 (Sex condition: Men Higher, Women Higher, Equal) x 3 (categorical ideology) interaction on credibility ratings in an ANOVA. There was a significant main effect of Sex condition, a marginal main effect of ideology, and again unexpectedly, no significant interaction (see Table 10).

Table 10

Categorical ideology, Race condition (0: Men Higher; 1: Women Higher), and the interaction on argument credibility

	<i>F</i>	<i>p</i>	η_p^2
Condition	7.84	<.001	.034
Ideology	2.99	.051	.013
Condition x Ideology	0.30	.876	.003

As can be seen in Figure 9, consistent with predictions and all studies thus far, there were no differences between Liberals, Moderates, and Conservatives on argument credibility in the Equal or Victims' Group (here, women) Higher conditions, $ps > .107$. In the Men Higher condition, there was a marginal main effect such that Liberals evaluated the argument as less credible than Conservatives, $p = .076$, weakly consistent with predictions (and consistent with all studies thus far and upcoming Study 7).

Liberals generally displayed the expected pattern of results: They rated the Equal condition as the most credible, followed by Women Higher, followed by the Men Higher. Liberals did not significantly differ between the Equal and Women Higher conditions, $p = .310$, *Cohen's d* = .17 (we did not have a strong prediction, here, but thought Liberals would rate the Equal condition as most credible). Consistent with predictions, Liberals rated the Men Higher argument as significantly less credible than both the Women Higher, $p = .005$, *Cohen's d* = .41, and Equal arguments, $p < .001$, *Cohen's d* = .59.

Conservatives also did not differ between the Equal and Women Higher conditions, $p = .865$, *Cohen's d* = .04, but unexpectedly, rated the Men Higher argument as marginally less credible than the Equal argument, $p = .076$, *Cohen's d* = .39, and significantly less credible than the Women Higher argument, $p = .048$, *Cohen's d* = .45. Moderates did not significantly differ between any of the sex conditions, $ps > .185$, *Cohen's ds* .03- .36, but demonstrated the same

basic pattern as Conservatives and Liberals (i.e., Equal and Women Higher roughly equivalent, and both higher than Men Higher),

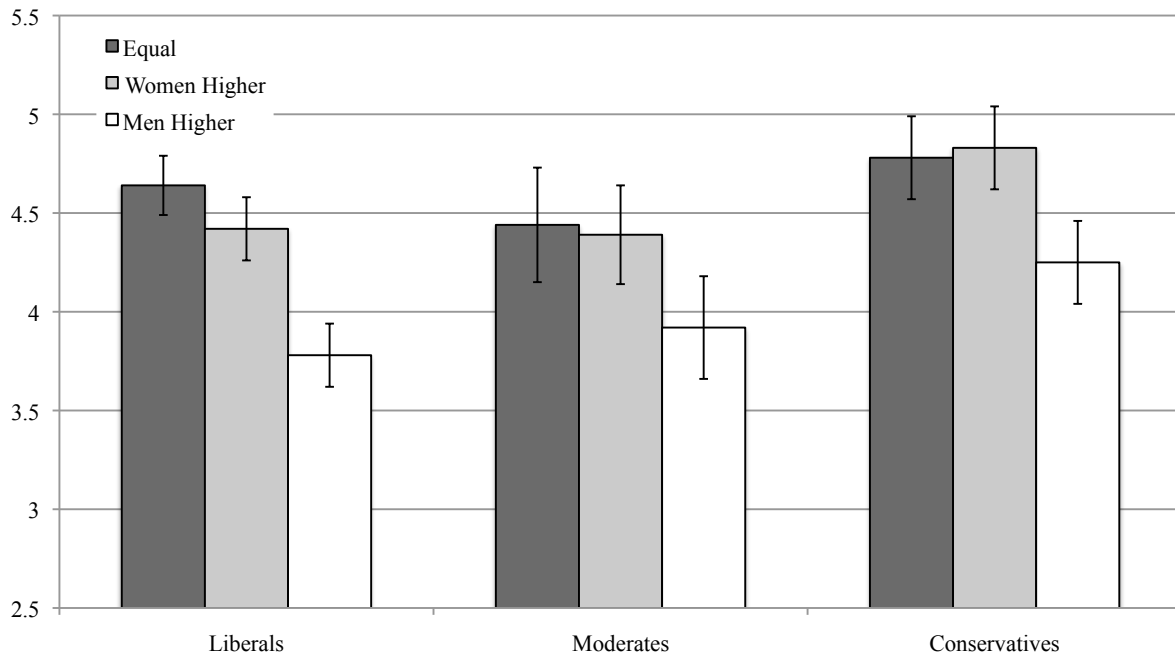


Figure 9. Argument credibility by Sex condition within each ideological group. Error bars are standard errors.

Mediations. We next examined whether equalitarianism scores mediated the influence of ideology on argument credibility ratings within each Sex condition. As expected, and consistent with Studies 2-4), in the condition in which the victims' group was said to be higher (Women, in this case), there was no significant mediation, 95% CI [-.06, .09].

As can be seen in Figure 10, and as expected, in the Men Higher condition, higher equalitarianism fully mediated the marginal influence of more liberal ideology on lower argument credibility ratings, 95% CI [-.23, -.02].

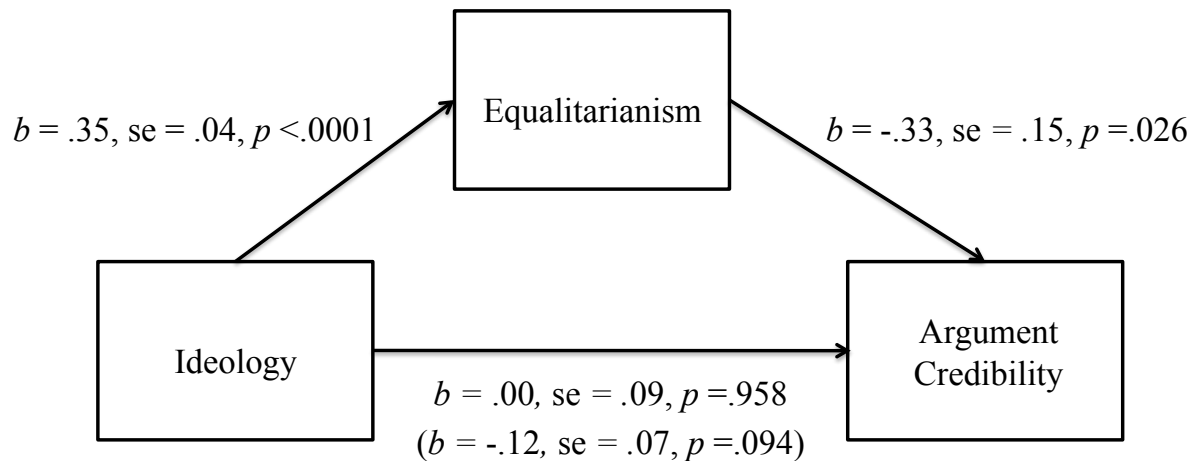


Figure 10. Influence of ideology (higher values = more liberal) on argument credibility, mediated by equalitarianism in the Whites Higher condition.

Unexpectedly (and unlike Study 4), in the Equal condition, equalitarianism mediated the influence of ideology on argument credibility ratings, 95% CI [.02, .16]; see Figure 11. The meaning of this significant mediation was not immediately obvious to us. Consistent with previous results, higher liberalism predicted higher equalitarianism, higher equalitarianism predicted stronger agreement in the Equal condition (not particularly surprising), but more liberal ideology predicted *lower* credibility ratings in the Equal condition (significantly so only *after* controlling for equalitarianism). Across all reported studies, Liberals generally found the vignettes about genetic differences less credible than Conservatives. Perhaps this mediation pattern reflects this. Higher liberalism is related to lower credibility scores, *but* Liberals also score higher in Equalitarianism than Conservatives and so want groups to be equal. Therefore, when the Equalitarian score is put into the mediation analysis, and thus Liberals' desire for equality is accounted for, the negative relationship between Liberalism and argument credibility becomes significant.

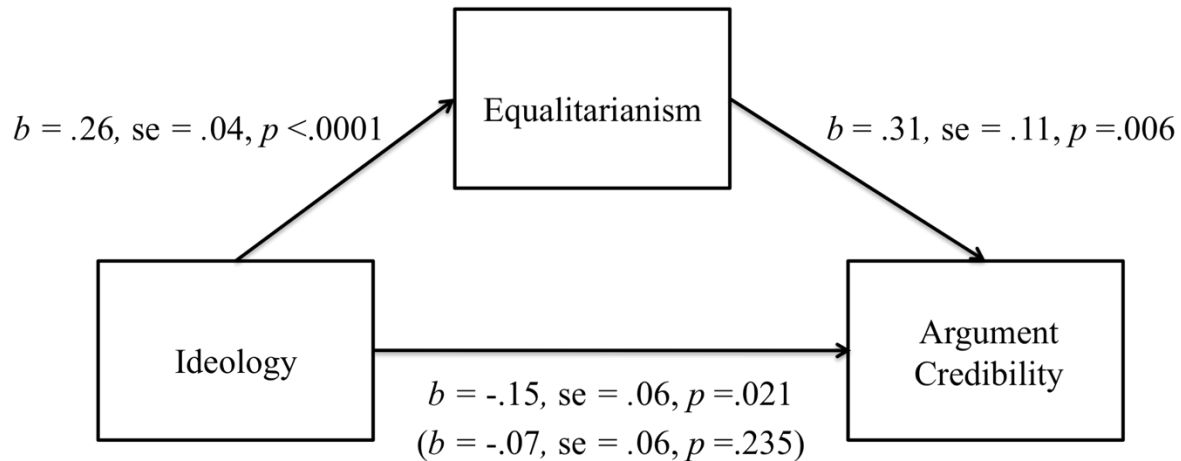


Figure 11. Influence of ideology (higher values = more liberal) on argument credibility, mediated by equalitarianism in the Equal condition.

Discussion

Results were partially consistent with predictions. As expected, Liberals appeared biased against arguments that suggested that a privileged group scores higher on a socially valued trait than a victims' group: They rated the Men Higher argument as less credible than the Women Higher and the Equal arguments. And as in Studies 2-4, ideological differences in credibility ratings emerged only in the condition in which the privileged group was said to be higher such that Liberals found the Men Higher argument (marginally) less credible than Conservatives, and this was mediated by higher equalitarianism scores.

As in Study 4, all ideological groups generally rated the Equal condition as the most credible. However, unlike Study 4, there were generally no differences in credibility ratings between the Equal condition and the Victims' Group (women) Higher condition, for any ideological group. Also, and surprisingly, all groups rated the Privileged (men) Higher condition as the least credible (significantly lower than the other two conditions for Liberals and Conservatives, but not for Moderates). In Study 4, on the other hand, Conservatives and Moderates showed a slight (but not significant) reverse effect such that they rated the Victims'

Group Higher (Black) condition as less credible than the Privileged Group Higher (White) condition.

So far, our results have consistently shown that Liberals are biased against information that suggests that a privileged group is higher in a socially valued trait than a victims' group relative to information that suggests that a victims' group is higher or that the two groups are equal. Our results have also consistently shown that higher liberalism scores predict lower credibility ratings of vignettes that suggest that a privileged group is higher in a socially valued trait than a victims' group, and this has been consistently mediated by scores on our equalitarianism scale.

However, the story for Conservatives is more mixed and more difficult to summarize. In this study, Conservatives' results looked like Liberals' results. However, in previous studies that used race instead of sex, Conservatives either evinced no bias or appeared to "favor" the Privileged Group (White) over the Victims' group (Black) (though they demonstrated the strongest preference for Equal). This lends some support to the idea that Conservatives are more aware of psychometric data than Liberals and therefore find it more plausible that Whites are more intelligent than Blacks (in a vignette) than that Blacks are more intelligent Whites (in a vignette) because it suggests that they are not simply biased against victims' groups in general (and/or biased in favor of privileged groups). However, Conservatives' results in the present study are somewhat puzzling because men and women have roughly equal IQ and yet they appeared biased *against* the privileged group (though to a lesser degree than Liberals). Of course, there are myriad explanations for Conservatives' pattern of results, such as that they are racially biased against Blacks and sexually biased against men; or that they believe that which race or sex is said to be higher is a valid input into argument credibility evaluations (see PRE principle); or

that our results for Conservatives are false positives (given the inconsistency of the size and direction of these differences for Conservatives). Though we cannot address all these explanations assiduously in a few studies, and though the primary focus of this paper is on Liberal bias, which has been very consistent and predictable in all studies—we do explore them further in Studies 6 and 7.

Of course, there are possible objections to our interpretation of our results thus far, the two most serious are these: (1) Perhaps the results do not show that Liberals are biased but rather that they are using appropriate Bayesian reasoning; and/or (2) Perhaps the results do not show that Liberals are biased but rather that they are appropriately skeptical of the powerful (privileged groups) when they (or anyone) claim that their group (Whites or Men) is superior on a socially valued trait. One might argue that Liberals are not aware of contemporary psychometric data and generally assume that all demographic groups score equally on intelligence tests. They then interpret any deviation from equality as implausible and therefore greet the argument that a gene explains a non-existent difference with legitimate skepticism. And one might contend that (1) powerful groups in society often forward narratives, including even putatively scientific narratives, that cast them in a favorable light while casting less powerful groups in a negative light and (2) Liberals are more sensitive to this reality than Conservatives.

These alternative hypotheses are difficult to rule out entirely, but we believe that a within-subjects design is the best tool to do so. Therefore, in Studies 6 and 7, we used such a design. We explain the logic in more detail below.

Study 6

Study 6 sought to replicate Study 4 and attempt to rule out possible alternative explanations by parlaying a within-subjects design. For the sake of simplicity, the Equal

condition was dropped from Study 4. All other materials were identical. As discussed in the introduction, within-subjects designs are useful for studying bias because it allows us to ascertain whether participants *believe* they should answer both vignettes consistently. Every participant gets both vignettes. Some get the Whites Higher first; others get the Blacks Higher first. If they believe that they should rate them consistently, then they should anchor their second response to their first. This would suggest that they believe it is biased (or that it looks biased) to rate them differently. Bias would manifest as an order effect such that if participants see preference congruent information first, then they would rate both arguments higher (on average) than when preference incongruent information came first (because they are anchoring their second response to their first). On the other hand, if they don't think they should answer them consistently, because they think it is rational to let which group is said to be higher influence their judgments (e.g., because it is right and rational to be skeptical of information that suggests that privileged groups are higher), then we should not see an order effect, and conclude that perhaps this is not a bias after all.

To see this more clearly, imagine that we used two vignettes describing identical research procedures. In one, a scientist concluded, "A squirrel is larger than a bear." And in the other, he/she concluded, "A bear is larger than a squirrel." And then we asked how credible each procedure was. We might not expect an order effect because people believe that it is rational not to answer these two statements consistently because one is clearly wrong and the other is clearly correct. Now imagine two vignettes in which either a very attractive or a very unattractive woman applied for an office job with the exact same résumé. And then we asked, "how qualified is the candidate?" Here, we might expect an order effect because participants know that it would be biased to rate the candidates differently, but they also might have a propensity to rate the

attractive candidate as more qualified (therefore, they would try to match their second response to their first response).

For Liberals, we expected an order effect such that they would evaluate both arguments more favorably if they first read the Blacks Higher argument and then the Whites Higher argument than if the arguments were presented in reverse order. We also expected Liberals to rate both Race conditions more similarly within order condition than between order conditions, which would indicate that Liberals at least *believe* it is irrational to evaluate the two arguments differently, despite evincing this exact bias in the order effect.

For Conservatives, we expected a possible main effect of race (consistent with the trending but non-significant patterns in Studies 3-4) such that they would rate the Whites Higher argument somewhat more credible than the Blacks Higher argument. If they do so, and this is not a bias but rather reflects an awareness of psychometric data (or perhaps a naïve but correct assumption), we should observe no order effect. We did not have strong predictions about whether there would be an order effect for Conservatives, but we did think the presence or absence of it would be informative for understanding the underlying reasons for a possible race effect for Conservatives.

Method

Participants. U.S. participants ($M_{\text{age}} = 35.41$, $SD = 11.88$; 421 female; 604 White, 83 Black, 75 Asian, 34 Latino, 5 Middle Eastern) were recruited via MTurk. We originally aimed for 400 participants (401 participated) and analyzed the results after 401. The Order condition x ideology interaction was trending in an informative direction, but was not statistically significant. We then conducted a second wave of recruitment a few days later for 400 more participants (800 total); 803 participated. After recruiting these additional participants, observed power = .79 for

the Order x ideology interaction. Participants were slightly above the midpoint on liberalism ($M = 4.53$) and slightly above the midpoint on equalitarianism ($M = 4.70$), and these were positively correlated, $r = .56, p < .001$.

Procedure. Methods were identical to Study 3 with one exception (equalitarian scale, $\alpha = .92$; Blacks Higher credibility, $\alpha = .93$; Whites Higher credibility, $\alpha = .94$): it was conducted within subjects rather than between. Order of presentation was randomly assigned. After reading the first argument, they received the direction below before receiving the second:

In the article you just read, we altered the direction of the IQ gap that Dr. Berry was trying to explain and the results that Dr. Berry found. That is, we changed the article to say that Dr. Berry was trying to explain why Whites(/Blacks) score higher on certain IQ tests than Blacks(/Whites), and that he found that 93% of Whites(/Blacks) carry the intelligence gene whereas only 10% of Blacks(/Whites) carry it.

In reality, Dr. Berry was trying to explain why Blacks(/Whites) score higher on certain IQ tests than Whites(/Blacks), and he found that 93% of Blacks(/Whites) carry the intelligence gene whereas only 10% of Whites(/Blacks) carry it.

On the next page, you will read the actual article as it was originally published, and respond on the same three questions.

Results

We first entered credibility ratings into a general linear model, with Order condition (between: Whites Higher First vs. Blacks Higher First), Race condition (within: Whites Higher vs. Blacks Higher), ideology (centered), and all interactions as predictors. As can be seen in Table 11, there was a significant main effect of Race condition such that the argument was perceived as somewhat more credible when the gene explained why Whites score higher on intelligence tests than Blacks ($M = 3.70$, $SD = 1.72$) than vice versa ($M = 3.59$, $SD = 1.65$). There was no main effect of order. There was a main effect of ideology such that more liberal ideology predicted lower argument credibility ratings. All two-way interactions and the three-way interaction were statistically significant.

Table 11

The influence of the Race Condition (Whites Higher credibility; Blacks Higher credibility), Order Condition (0: Whites Higher First; 1: Blacks Higher First), ideology, and the interactions on argument credibility

	<i>F</i>	<i>p</i>	η_p^2
Race condition	26.52	<.001	.033
Order condition	1.49	.223	.002
Ideology	3.49	.002	.026
Race x Order	8.78	.003	.011
Race x Ideology	11.93	<.001	.083
Order x Ideology	2.22	.039	.017
Race x Order x Ideology	5.22	<.001	.038
<i>Conservatives Only</i>			
Race condition	25.71	<.001	.113
Order condition	0.38	.540	.002
Race x Order	2.61	.108	.013
<i>Moderates Only</i>			
Race condition	3.83	.052	.021
Order condition	2.20	.140	.012
Race x Order	4.49	.035	.024
<i>Liberals Only</i>			
Race condition	12.71	<.001	.030
Order condition	5.47	.020	.013
Race x Order	0.11	.737	.000

As in previous studies, we broke the model down into categorical ideological groups. We reran the model among only Conservatives ($n = 204$), among only Moderates ($n = 183$), and among only Liberals ($n = 414$) with Order condition (between: Whites Higher First vs. Blacks Higher First), Race condition (within: Whites Higher vs. Blacks Higher), and the two-way interaction as predictors. As predicted, and as can be seen in Figure 12, Liberals displayed an order effect such that they rated both arguments (averaged) as more credible if they read the Blacks Higher argument first and then the Whites Higher ($M = 3.63$, $SD = 1.63$) than when the arguments were presented in the reverse order ($M = 3.26$, $SD = 1.65$). However, Liberals also display a main effect of race such that they rated the Blacks Higher argument as more credible ($M = 3.51$, $SD = 1.64$) than the Whites Higher argument ($M = 3.37$, $SD = 1.67$). As can be seen in Figure 12, simple contrasts revealed that Liberals rated both the Blacks Higher argument, $p = .028$, and the Whites Higher argument, $p = .020$, as more credible in the Blacks Higher First condition than the Whites Higher First condition. Liberals also rated the argument more credible in the Blacks Higher condition than the Whites Higher condition regardless of which argument came first, $ps < .023$. Note that magnitude of the difference between the two Order conditions within each Race condition was more than double the magnitude of the difference between each Race condition within each Order condition. In other words, within each order condition, Liberals evaluated the Blacks Higher and Whites Higher arguments more similarly to each other than how similarly they rated the exact same Blacks Higher argument across order conditions and how similarly they rated the exact same Whites Higher argument across order conditions.

Among Conservatives, there was only a significant main effect of Race condition, such that Conservatives evaluated the argument as more credible in the Whites Higher condition ($M = 4.25$, $SD = 1.75$) than in the Blacks Higher condition ($M = 3.67$, $SD = 1.69$), somewhat similarly

to Studies 3-4, which found trending but non-significant effects in the same direction. The Order effect and interaction were not significant (see Table 11). As can be seen in Figure 12, simple contrasts revealed that Conservatives rated the argument more credible in the Whites Higher condition than the Blacks Higher regardless of which argument came first, $ps < .014$, and the order condition had no significant influence on credibility ratings for either the Blacks Higher or Whites Higher argument, $ps > .178$.

Among Moderates, there was a marginal main effect of Race condition, such that they evaluated the argument as more credible in the Whites Higher condition ($M = 3.82$, $SD = 1.65$) than the Blacks Higher condition ($M = 3.68$, $SD = 1.63$), similar to Conservatives. The Order condition was not significant, but the interaction was. As can be seen in Figure 12, simple contrasts revealed that Moderates rated the Whites Higher argument as more credible when they saw it second than when they saw it first, $p = .044$, but evaluated the Blacks Higher argument as equally credible regardless of order of presentation, $p = .241$. When the Whites Higher argument was presented first, Moderates rated the Blacks Higher and Whites Higher arguments roughly equally, $p = .910$, but when the Blacks Higher argument was presented first, Moderates rated the Whites Higher argument as more credible than the Blacks Higher argument, $p = .004$.

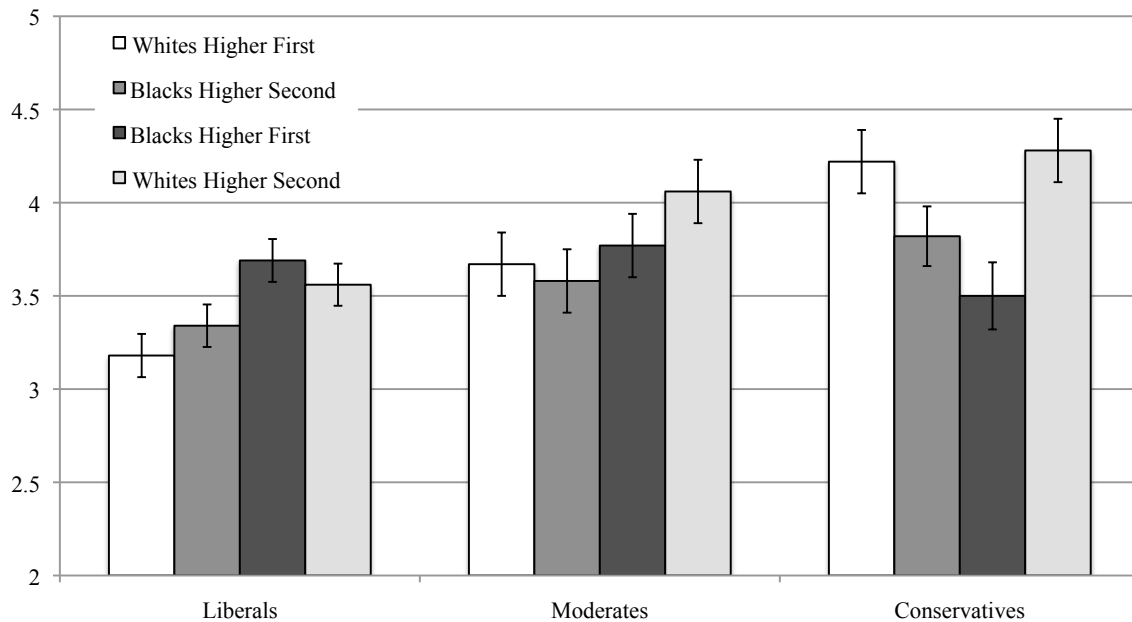


Figure 12. Argument credibility by Race and Order conditions within each ideological group. Notes. Within each ideological group, the center two bars are credibility ratings of the Blacks Higher argument and the outer two bars are ratings of the Whites Higher argument; the left two bars are ratings within the condition in which the Whites Higher argument came first and the right two bars are ratings within the condition in which the Blacks Higher argument came first.

Moderated Mediations and Mediations. We next tested whether equalitarianism mediated the interactive effect of Order condition and ideology on argument credibility (within each Race condition), specifying ideology as the independent variable and Order condition as the moderator. For Whites Higher credibility ratings, equalitarianism mediated the interactive effect, 95% CI [-.21, -.11]. Unexpectedly, there was also a smaller but significant moderated mediation for argument credibility in the Blacks Higher condition, 95% CI [-.12, -.02].

We then ran simple mediations within each Order condition. Consistent with the results of the moderated mediation, equalitarianism mediated the effect of ideology on Whites Higher argument credibility when they read the Whites Higher argument first, 95% CI [-.27, -.11]. As can be seen in Figure 13, higher equalitarianism accounted for the relationship between more

liberal ideology and lower ratings of argument credibility when Whites were higher and that condition came first.

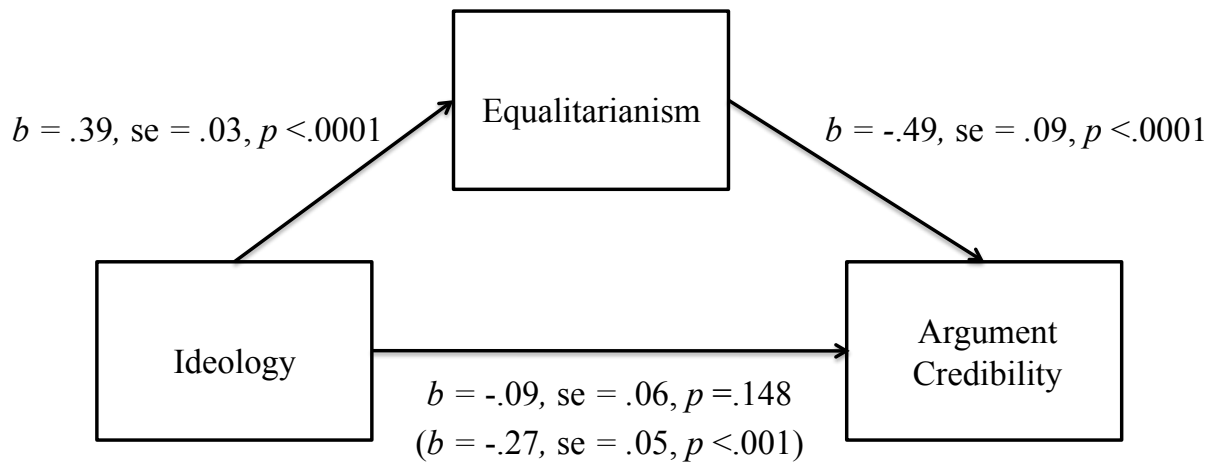


Figure 13. Influence of ideology (higher values = more liberal) on argument credibility, mediated by equalitarianism in the Whites Higher condition when this argument came first.

These relationships were somewhat smaller, but generally similar when they read the Whites Higher argument second, 95% CI [-.19, -.07], such that higher equalitarianism mediated the relationship between more liberalism and lower ratings of argument credibility that Whites are higher (see Figure 14).

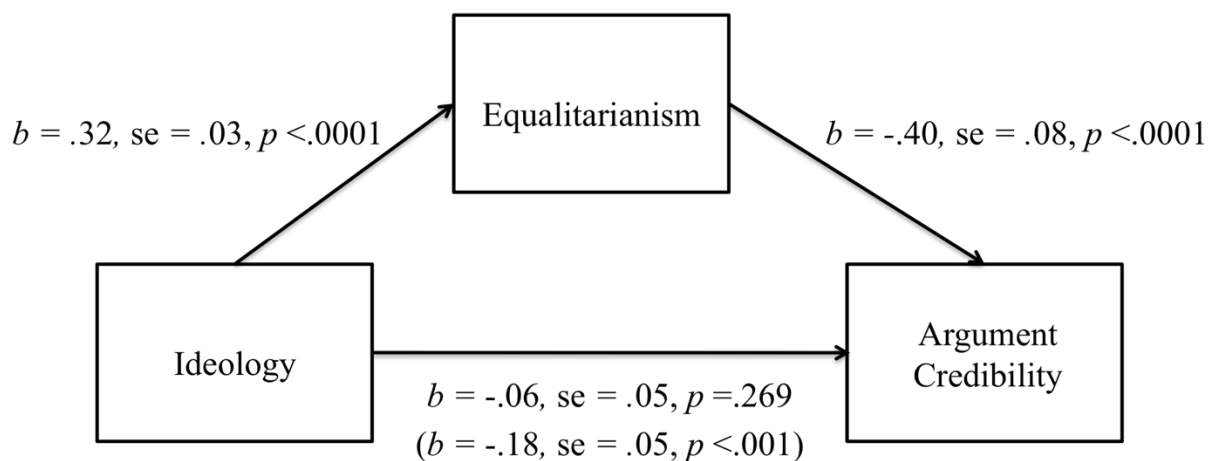


Figure 14. Influence of ideology (higher values = more liberal) on argument credibility, mediated by equalitarianism in the Whites Higher condition when this argument came second.

On the Blacks Higher outcome, equalitarianism did not mediate ideology on argument credibility when the argument came first 95% CI [-.12, .00], but did when the argument came second 95% CI [-.17, -.01]. As can be seen in Figure 15, higher equalitarianism fully accounted for the relationship between more liberal ideology and *lower* ratings of argument credibility when Blacks were said to be higher and that argument came second.

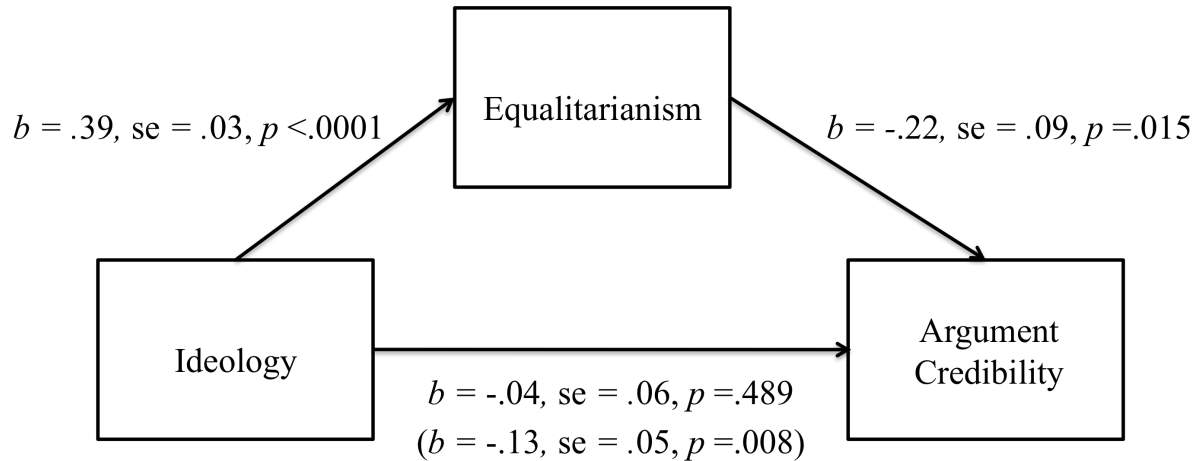


Figure 15. Influence of ideology (higher values = more liberal) on argument credibility, mediated by equalitarianism in the Blacks Higher condition when this argument came second.

Discussion

For Liberals, the results were almost exactly consistent with predictions derived from equalitarianism. They evinced an order effect such that they rated both arguments as more credible when they received the preference consistent argument (Blacks Higher) first than when the arguments were presented in reverse order. Within each order condition, there were only small differences between the Blacks Higher and Whites Higher arguments (though, they did consistently rate the Blacks Higher argument as slightly more credible), whereas there were larger differences in argument credibility ratings for the identical Blacks Higher and Whites Higher arguments between order conditions. This suggests that Liberals believe that the race of the higher IQ group should not (much) affect their assessment of the argument’s credibility.

However, despite this, our previous results and the order effect in this study show that the race of the higher group does in fact affect their rating. This supports our contention that the difference in credibility ratings between race conditions is the result of motivated cognition and constitutes a bias. Furthermore, and consistent with previous results, more liberal opposition to the Whites Higher argument was again mediated by higher equalitarianism.

Unexpectedly, we also found that higher equalitarianism mediated the relationship between more liberal ideology and *lower* ratings of argument credibility when Blacks were said to be higher and that argument came *second*. It might seem surprising at first that Liberals found it less credible that Blacks have higher IQ than Conservatives did, but it is consistent with our theory (though, we did not predict it). When the Blacks Higher argument came second, participants had already read the Whites Higher argument (which Liberals had evaluated as relatively non-credible). This lowered the anchor point for Liberals (compared to Conservatives). When Liberals rated the Whites Higher argument as non-credible, presumably in an effort to maintain consistency, they then rated the second argument as less credible than did Conservatives, even though it favored a victims' group (and, indeed, in the Blacks Higher first condition, Liberals rated the Blacks Higher argument as somewhat [though not significantly] more credible than did Conservatives). Therefore, equalitarianism mediated the relationship between liberal ideology and rating the Blacks Higher argument as less credible when participants had already read the Whites Higher vignette.

For the first time, Conservatives displayed a significant effect of Race condition, such that they evaluated the Whites Higher argument as more credible than the Blacks Higher argument. Though this effect was not significant for Conservatives in Studies 3 and 4, the difference was in the same direction in those studies, and the difference was fairly large in the

present study, so this is likely to be a real and replicable effect for Conservatives. The meaning of this difference is not obvious. Perhaps one's first reaction to the result would be to accuse Conservatives of anti-Black bias. And this is certainly possible; however, other results are not so consistent with an anti-Black bias interpretation. First, in previous studies, Conservatives rated the Equal condition as slightly more (though not statistically significantly more) credible than the Whites Higher condition, which is hard to square with a posited anti-Black bias (why then would they not rate the argument that said Whites score higher than Blacks the most favorably?). Still, they did rate Blacks Higher as the least credible, which, one might argue, does suggest *a kind of anti-Black bias*. But second, Conservatives did not display an order effect, suggesting that they thought it was rational (or defensible) to rate the stories differently. And this is congruent with current psychometric data, which show that Whites score up to a standard deviation higher than Blacks on intelligence tests (Hunt, 2011; Mackintosh, 2011; though note, the underlying reasons for this difference are still debated). Therefore, one could argue that Conservatives' credibility ratings are rational from a Bayesian perspective. One better way to test explanations for the Conservatives' results is to choose a trait on which Whites and Blacks score roughly equally or where differences are ambiguous. If Conservatives rate a Whites Higher condition as more credible in such an experiment, it would support an anti-Black bias hypothesis. In the current paper, we were more interested in Liberals, so we did not run such tests and can therefore only make suggestions and theory-based arguments. Future studies should fill this lacuna.

Study 7

In Study 6, we provided evidence of Liberal bias against information that appears to favor a privileged group over a victims' group because Liberals demonstrated an order effect, which weakens the force of Bayesian objections. In the current study, we extended the

investigation further by using the same design but different examples of privileged and victims' groups: men and women. All methods were identical to Study 6 except instead of manipulating which race was said to perform better on certain IQ tests, we manipulated which sex was said to perform better on certain IQ tests (men vs. women). We again predicted an order effect for Liberals such that they would rate both arguments are less credible when they read the Men Higher (privileged group) argument first than when they read the Women Higher (victims' group) argument first. We also expected that equalitarianism would mediate the influence of more liberal ideology on lower argument credibility ratings that men are more intelligent than women when this argument came first. We did not have strong predictions about Conservatives. We guessed that they would roughly match Liberals' response pattern for the Sex condition (as they did in Study 3), but we did not know whether to expect an order effect for Conservatives.

Method

Participants. U.S. participants ($M_{\text{age}} = 35.84$, $SD = 12.05$; 417 female; 625 White, 62 Black, 67 Asian, 49 Latino, 2 Middle Eastern) were recruited via Mturk. We again aimed for 800 participants total; 805 participated. Participants were slightly above the midpoint on liberalism ($M = 4.54$) and slightly above the midpoint on equalitarianism ($M = 4.72$), and these were positively correlated, $r = .57$, $p < .001$.

Procedure. This study was preregistered: <http://aspredicted.org/blind.php?x=rz2fv9>. We followed this preregistration exactly, with the exception that we said that we would report the results for Moderates in the supplemental materials only, but instead we report them in the main text as we did in previous studies (though note, we had no a priori predictions about Moderates, nor are they the focus of this paper). Methods were identical to Study 6 (equalitarianism scale $\alpha = .92$; Women Higher credibility $\alpha = .92$; Men Higher credibility $\alpha = .92$) with one exception:

sex was manipulated instead of race (i.e., the words “Whites” and “Blacks” were swapped with the words “men” and “women”).

Results

We first entered credibility ratings into a general linear model, with Order condition (between: Men Higher First vs. Women Higher First), Sex condition (within: Men Higher vs. Women Higher), ideology (centered), and all interactions as predictors. As can be seen in Table 12, there was a significant main effect of Sex condition such that the argument was perceived as somewhat more credible when the gene explained why women score higher on intelligence tests than men ($M = 4.15$, $SD = 1.50$) than vice versa ($M = 3.90$, $SD = 1.53$). There was no main effect of order. There was a main effect of ideology such that more liberal ideology predicted lower argument credibility ratings. All two-way interactions were significant or marginal. There was no significant three-way interaction.

To dissect the three-way interaction further, we again reran the model among only Conservatives ($n = 229$), only Moderates ($n = 163$) and only Liberals ($n = 413$) with Order condition (between: Men Higher First vs. Women Higher First), Sex condition (within: Men Higher vs. Women Higher), and the two-way interaction as predictors. These results are presented in Table 12 and Figure 16.

Among Liberals, there was a significant main effect of Sex condition, such that Liberals evaluated the argument as more credible when the gene explained why women score higher on some intelligence tests than men ($M = 4.04$, $SD = 1.55$) than vice versa ($M = 3.65$, $SD = 1.56$). As predicted, there was also a significant effect of Order condition such that Liberals evaluated the arguments as more credible when they read the Women Higher argument first ($M = 4.09$, $SD = 1.47$) than when they read the Men Higher argument first ($M = 3.62$, $SD = 1.59$). There was

also a marginal interaction such that the difference between the Sex conditions was larger when participants read the Men Higher argument first. As can be seen in Figure 16, simple contrasts revealed that Liberals who read the Women Higher argument first rated both the Women Higher argument, $p = .010$, and the Men Higher argument, $p < .001$, as significantly more credible than those who read the Men Higher argument first. Liberals also rated the Women Higher argument as more credible in both order conditions, $p < .001$. Note that the magnitude of the difference in credibility ratings between the Men Higher condition and Women Higher condition when each argument came first was nearly ten times the difference between these conditions than when each came second, which demonstrates a clear attempt to anchor the second judgment to the first.

Among Conservatives, there was a significant main effect of Sex condition, such that Conservatives evaluated the argument as more credible when the gene explained why women score higher on some intelligence tests than men ($M = 4.42$, $SD = 1.33$) than vice versa ($M = 4.28$, $SD = 1.39$). Conservatives displayed similar patterns in Study 5 and Study 2 (though it was only significant in Study 5). As in Study 6, and as predicted, the Order condition was not significant for Conservatives. Unexpectedly, there was a significant two-way interaction between Sex and Order, such that there was only a significant effect of Sex in the Men Higher First condition. When Conservatives read the Men Higher argument first and then the Women Higher argument, they rated the Women Higher argument as significantly more credible, $p = .001$ than the Men Higher argument. When Conservatives read the Women Higher argument first and then the Men Higher argument, they rated the arguments as equally credible, $p = 1.00$. There were no significant differences in credibility ratings in the Men Higher or Women Higher conditions between order, $ps > .247$. Across Studies 2, 5, and 7, Conservatives demonstrated a somewhat consistent pattern such that they rated the Women Higher argument as either more credible than

the Men Higher argument, or rated the arguments as equally credible. Conservatives never rated the Men Higher argument as more credible (nor did any other group).

Among Moderates, neither main effects nor the interaction approached significance, $ps > .658$. Moderates rated all arguments virtually equally credible. Thus, across the three studies that manipulated sex, Moderates consistently rated either the Women Higher argument as more credible than the Men Higher argument, or rated the two arguments as equally credible.

Table 12

The influence of the Sex Condition (Men Higher credibility; Women Higher credibility), Order Condition (0: Men Higher First; 1: Women Higher First), ideology, and the interactions on argument credibility

	<i>F</i>	<i>p</i>	η_p^2
Sex condition	36.17	<.001	.044
Order condition	1.30	.255	.002
Ideology	4.47	<.001	.033
Sex x Order	6.70	.010	.008
Sex x Ideology	3.02	.006	.022
Order x Ideology	2.07	.055	.015
Sex x Order x Ideology	0.72	.631	.005
<i>Conservatives Only</i>			
Sex condition	5.44	.021	.023
Order condition	0.10	.747	.000
Sex x Order	5.44	.021	.023
<i>Moderates Only</i>			
Sex condition	0.20	.659	.001
Order condition	0.01	.938	.000
Sex x Order	0.02	.880	.000
<i>Liberals Only</i>			
Sex condition	61.70	<.001	.131
Order condition	11.28	.001	.027
Sex x Order	3.09	.079	.007

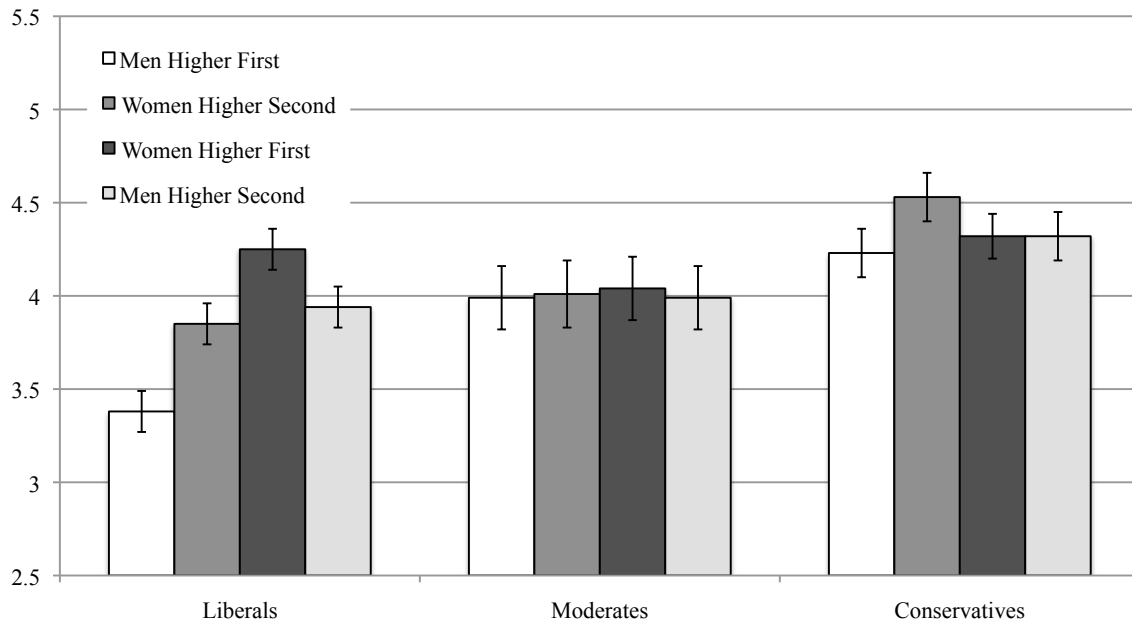


Figure 16. Argument credibility by Sex and Order conditions within each ideological group. Notes. Within each ideological group, the center two bars are credibility ratings of the Women Higher argument and the outer two bars are ratings of the Men Higher argument; the left two bars are ratings within the condition in which the Men Higher argument came first and the right two bars are ratings within the condition in which the Women Higher argument came first.

Moderated Mediations and Mediations. We next tested whether equalitarianism mediated the interactive effect of Order condition and ideology on argument credibility (within each Sex condition), specifying ideology as the independent variable and Order condition as the moderator. For Men Higher argument credibility, equalitarianism mediated the interactive effect, 95% CI [-.14, -.05]. There was no significant moderated mediation for Women Higher argument credibility, 95% CI [-.04, .04].

To model these interactions simply, we then tested simple mediations within each Order condition. As predicted, equalitarianism mediated the influence of ideology on Men Higher argument credibility when they read the Men Higher argument first, 95% CI [-.19, -.07]; see Figure 17. Confirming the results of the moderated mediation, equalitarianism did not mediate

the effect of ideology on Men Higher argument credibility when they read the Men Higher argument second, 95% CI [-.11, .03].

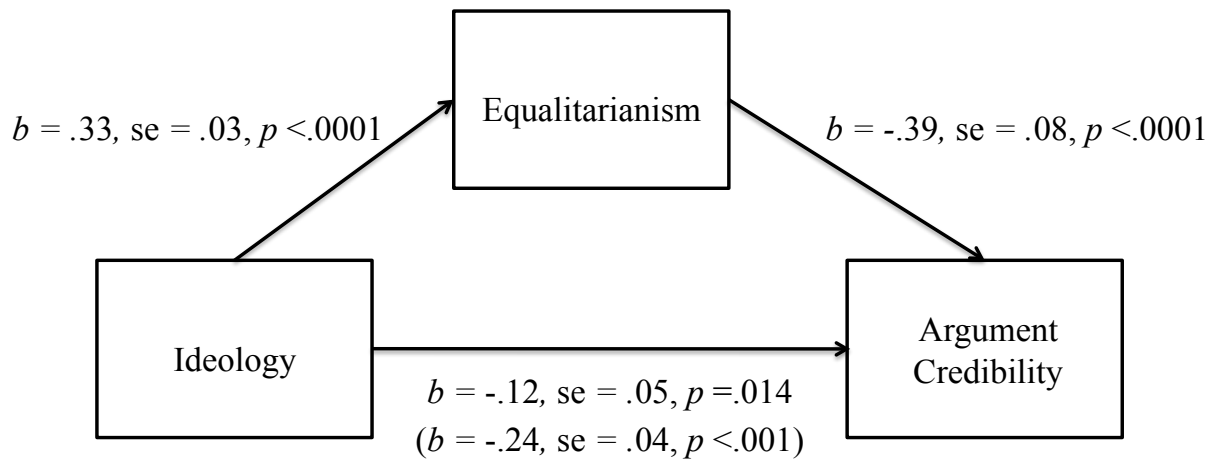


Figure 17. Influence of ideology (higher values = more liberal) on argument credibility, mediated by equalitarianism in the Men Higher condition when this argument came first.

As expected, on the Women Higher outcome, equalitarianism did not mediate ideology on argument credibility in either Order condition, Women Higher First 95% CI [-.04, .09], Men Higher First 95% CI [-.08, .04].

Discussion

Liberals displayed the expected pattern of results exactly. Specifically, they again demonstrated an order effect such that they evaluated both arguments more favorably when they received the preference congruent argument (Women Higher) first than when they received the preference incongruent argument (Men Higher) first. Even so, they still consistently rated the Women Higher argument as more credible than the Men Higher argument in both order conditions, particularly so when they read the Men Higher argument first (i.e., they were willing to significantly adjust their credibility rating up when the conclusions changed and the argument said women were actually higher). This suggests that Liberals might think it is acceptable (and rational) to permit the direction of the sex difference to influence their judgments somewhat,

though not to the extent that sex actually does influence their judgments as demonstrated by the roughly 2-3 times greater difference in credibility ratings between the arguments when each was presented first than the differences between the arguments within each order condition. Also as predicted, and consistent with all previous results, higher equalitarianism mediated the influence of more liberal ideology on lower argument credibility ratings in the Privileged Group (men) Higher condition.

Again, results were somewhat less clear for Conservatives. Differences were generally small. Participants who read the Women Higher argument first rated both arguments virtually identically. Participants who read the Men Higher argument first demonstrated a small trend similar to the pattern for Liberals (and the previous studies) such that they adjusted their rating up somewhat when the argument conclusions changed and said women are actually higher. However, there was no main effect for order, which would indicate a bias.

Moderates rated all arguments virtually identically regardless of Sex condition or Order of presentation.

Results Summary

Table 13 below summarizes the results of all simple contrasts (with effect sizes) between experimental conditions among Conservatives, Moderates, and Liberals. The table lists which group was marginally or significantly *unfavored* by each ideological group (relative to the favored group). By unfavored, we mean that participants rated vignettes that said that this group was higher on a socially valued trait (generally, IQ) as less credible than the comparison condition (either groups are equal or the other group was higher). Although the term “unfavored” is slightly clumsy, it allowed us to condense a great deal of information into one table.

In general, neither Conservatives nor Liberals appeared to desire that one group perform better than another group (on a socially valued trait). Rather, both seemed to prefer that both groups be equal. However, relative to Conservatives, and relative to information that portrayed victims' groups more favorably, Liberals were averse to information that portrayed privileged groups more favorably than victims' groups. In other words, they were *more* biased (and we now believe bias is the correct term) against such information than were Conservatives. This is the clear and consistent pattern observed in Table 13. But, and importantly, Liberals didn't seem biased *for* information that favored victims' groups (Blacks, women). Instead, our results support our contention that Liberals (more than Conservatives) are cosmic egalitarians who prefer that all demographic groups be roughly similar on socially valued traits. However, if demographic groups are not similar, Liberals seem particularly averse to the notion that the privileged group would have a superior quality.

Table 13
Simple contrasts and Cohen's *d* between indicated binary conditions within each categorical ideological group for each experimental study

Study	Bias Effect	Ideological Group								
		Conservatives			Moderates			Liberals		
		Unfavored Group	<i>p</i>	<i>d</i>	Unfavored Group	<i>p</i>	<i>d</i>	Unfavored Group	<i>p</i>	<i>d</i>
Study 2	Sex Condition			.44			.17	Men	**	.64
Study 3	Race Condition			-.20			.28	Whites	**	.58
Study 4	Race (White/Black)			-.33			-.31	Whites	*	.39
	Race (Equal/Black)	Blacks	*	-.58	Blacks	*	-.57	Blacks	*	-.36
	Race (Equal/White)			.26			.24	Whites	*	.69
Study 5	Sex (Men/Women)	Men	*	.45			.33	Men	**	.41
	Sex (Equal/Women)			.04			-.03			-.17
	Sex (Equal/Men)	Men	+	.39			.36	Men	***	.59
Study 6	Race Condition	Blacks	***	-.34	Blacks	+	-.09	Whites	***	.08
	Order Condition			-.08			.21	Whites	*	.22
	Race Within BH1	Blacks	***	-.50	Blacks	**	-.17	Whites	*	.08
	Race Within WH1	Blacks	*	-.22			-.01	Whites	**	.10
	BH Between Order			-.19			.12	Whites	*	.21
	WH Between Order			.03	Whites	*	.30	Whites	*	.23
Study 7	Sex Condition	Men	*	.10			.03	Men	***	.25
	Order Condition			-.04			.01	Men	*	.31
	Sex Within WH1			.00			.03	Men	***	.21
	Sex Within MH1	Men	**	.21			.01	Men	***	.29
	WH Between Order			-.16			.02	Men	**	.26
	MH Between Order			.06			.00	Men	***	.37

Notes. Blank cell = No preference at $p > .10$; $+p < .10$, $*p < .05$, $**p < .01$, $***p < .001$.
 Shaded cell = Privileged group unfavored; Unshaded cell (if not blank) = Victims' group unfavored.
 In Study 6, BH1 = Blacks Higher First condition; WH1 = Whites Higher First condition;
 BH = Blacks Higher evaluation; WH = Whites Higher evaluation.
 In Study 7, WH1 = Women Higher First condition; MH1 = Men Higher First condition;
 WH = Women Higher evaluation; MH = Men Higher evaluation.
 Positive Cohen's *ds* indicate privileged group unfavored; Negative indicates victims' group unfavored on relevant comparisons. Bold indicates a Cohen's $d > .199$ (or $-.199$), the threshold for a "small effect."

General Discussion

Taken together, the data from these studies strongly support the equalitarian account of liberal bias. First, Liberals appeared committed to cosmic egalitarianism. They were biased such that they found vignettes that stated that two demographic groups were equal more (although not

statistically significantly relative to Women Higher in Study 5) credible than vignettes that stated that one group outperformed another. Second, they were consistently biased against results that favored a privileged group over a victims' group (either Whites over Blacks or men over women). In every single study, they rated the Privileged Group Higher vignette as less credible than the Victims' Group Higher. And third, scores on our equalitarian measure mediated our results in every study such that higher scores on the equalitarian measure predicted more bias among Liberals. Before expanding our interpretation (and to include Conservatives), discussing possible alternative explanations, and forwarding some ideas for future directions, we should address methodological limitations.

Limitations

All studies were conducted on Amazon Mechanical Turk. We used this population because we could get a more diverse sample than we could from most University participant pools (Casler, Bickel, & Hackett, 2013). Furthermore, research suggests that Mturk participants are not insouciant survey takers; they pay attention and provide reliable data (Hauser & Schwartz, 2016). But this also means that all data were self-report. This comes with standard problems such as desirability biases. It is certainly possible that Liberals and Conservatives have slightly different presentational values (Liberals have more equalitarian presentational values) and that our results simply reflect those values and not biased assessments of our vignettes.

Probably the most severe methodological limitation of our investigation was that we focused on only one socially valued trait: Intelligence. Equalitarianism predicts that Liberals (and others who score high on this trait/philosophy) will be biased against information that suggests that demographic groups differ on *almost any* socially valued trait; and that they will be especially biased against information that suggests that a privileged group is "better" than a

victims' group on such a trait. However, we focused on intelligence alone, and thus it remains unknown whether or results would replicate for other traits. Future studies should address this limitation by using vignettes with sundry socially valued traits such as self-control, ambition, agreeableness, criminality, et cetera. In general, we would predict that the more intensively valued the trait, the more intense the bias. The exception is traits whose differences across demographic groups are too conspicuous to deny (thus increasing clarity of the difference and reducing bias) such as physical strength differences between men and women. Though note, Study 1b did demonstrate that Liberals agree less with this contention than Conservatives.

Focusing only on intelligence also strengthened the current investigation by allowing us to scrutinize it carefully across different demographic target groups (sex-based and race-based) while using varied study designs to refine the theory, replicate the effects, and rule out alternate explanations. Furthermore, intelligence is a highly socially valued trait, perhaps one of the highest, and discussion about demographic differences in intelligence is often morally supercharged, vitriolic, and even counterproductive (Hunt, 2012). It may be that equalitarian bias plays a role in the unfortunate tone and results of many such discussions.

Alternate Explanations

We can think of at least two serious alternative explanations to our analysis: (1) It is rational to be skeptical of scientific results which seem to favor the powerful over the oppressed; and (2) it is rational to believe it more plausible that genetics explain higher IQ scores among victims' groups than that they explain higher IQ scores among privileged groups. This second explanation seems compelling because the environment that victims' groups navigate is harsher and less conducive to thriving than the environment that privileged groups experience. Therefore, if a privileged group scores higher, it could be because of the environment; but if a

victims' group scores higher, then it must be because of genes (because it couldn't be caused by the [worse] environment).

It is almost impossible to rule out completely the first explanation. Powerful people have doubtlessly used science to justify their privilege and to pacify the less fortunate by claiming that the indigent “deserve” their lot because of their inferiority (Gould, 1996). So, according to this argument, when socially conscious and concerned Liberals are confronted with data that claim that Whites score higher than Blacks on IQ scores because of genetics, they rationally assess it as implausible (and probably as politically motivated). The same holds for data that claim that men score higher than women. We believe, however, that the within-subjects design studies at least mitigate the force of this argument. If Liberals believe they are rational to rate arguments that favor privileged groups as less credible than arguments that favor victims' groups, then it is unclear why we would see an order effect. The order effects suggest that Liberals realize that they should answer the two vignettes consistently (or at least somewhat consistently), which suggests that they believe it would be biased not to do so.

It is possible however that the order effects are simply standard anchoring effects (Furnham & Boo, 2011). That is, perhaps the order effects don't reflect a concern for appearing or being unbiased, but simply reflect a psychological anchoring heuristic. Although this is certainly possible, Conservatives (and Moderates) did not display an anchoring effect, suggesting that anchoring is not a necessary outcome of such an experimental design. Furthermore, it strikes us as rather implausible that such an anchoring *should occur*. In fact, if anything, if not for concerns of bias, we would probably predict that a within-subjects design would augment differences. Consider, for example, a study in which there were two conditions: In one cheetahs were said to be faster than dogs and in the other, dogs were said to be faster than cheetahs. The

researchers asked participants to rate the plausibility of the stories. If cheetah faster came first and got a high plausibility rating, it would seem sensible that dogs faster would get an even lower rating than if it came first, because the participant would think, “Well, I already noted that Cheetahs were faster...no way can dogs also be faster.” Still, this is a possible counterargument that future researchers should address in more detail.

The second alternative explanation seems much less plausible to us than the first. First, the order effects cast doubt on it in the same way they do for the first explanation. And second, although the argument makes some sense when applied to race differences in IQ, it does not when applied to sex differences. Men and women inhabit largely the same environment (same socioeconomic status and schools, for example) and, in fact, girls and women outperform boys in every stage of education, from elementary school through college (Duckworth & Seligman, 2006). Still, one might contend—and Liberals might rationally believe—that they are held back by pernicious and invidious stereotypes or more subtle forms of sexism (Spencer, Steele, & Quinn, 1999). Our present investigation does not allow us definitively to rule out this explanation. We believe, as of now, that our equalitarian theory of bias is a better, more parsimonious explanation, but researchers should continue to pursue these questions so that we can continue to update our understanding of these biases (or patterns of responses, if they are, indeed, not biases).

Conservatives

We predicted that Liberals would evince more bias than Conservatives and that Conservatives, in fact, would probably be relatively unbiased in our studies (or, possibly, even biased against victims' groups). However, we did not find a clear and consistent pattern. In fact, Conservatives showed some of the same biases as Liberals, particularly in the Sex studies,

though less consistently and to a smaller degree. Like Liberals, Conservatives seemed to have a slight preference for women having higher IQ than men than vice versa. However, unlike Liberals, in the Race studies, Conservatives rated the argument that a gene explains why Whites score higher on IQ tests as more credible than the argument that a gene explains why Blacks score higher. As we noted earlier, this might suggest a bias against Blacks; or it might suggest that Conservatives are more familiar with psychometric data (or simply have incidentally correct intuitions about the direction of these differences).

Although it would be rash to conclude one way or another, there are several reasons to doubt the anti-Black bias account. First, Conservatives rated the Equal condition as the most credible, suggesting a slight “preference” for equality (although this was not statistically significant). Second, Conservatives did not display an order effect and so appeared to believe that it was rational to rate the Whites Higher condition as more credible than the Blacks Higher conditions (from a Bayesian perspective, this could possibly be the rational response). Third, prior studies from Uhlmann and colleagues (2009) found a pattern such that Liberals were biased (or shifted moral justifications) *against* Whites in favor of Blacks whereas relatively more Conservative participants were fair (or didn’t shift justifications) (see Studies 1a, 1b). Those results are congruent with our results for Liberals (biased against privileged group) and also suggest that Conservatives may be fairer on racial issues than are Liberals (i.e., they treat Blacks and Whites the same). Because Whites score higher (on average) than Blacks on IQ tests, the Conservative pattern of answers might be more “dispassionate” and fair than the Liberal pattern. Fourth, more recent work using MTurk participants (who would be similar to our samples here) demonstrates that both Liberals and Conservatives generally have pro-Black bias, but that this bias is largest for Liberals (Axt, Ebersole, & Nosek; 2016).

In general, it is fair to say that Conservatives were less biased than Liberals across our studies, but they did evince some bias. Future research on equalitarianism should study Conservatives more sedulously than our current investigation did.

Relevance to the World

We believe that our results are germane to many modern political and moral discussions. Few topics are as explosive and controversial as demographic differences. Many researchers who have discussed such differences openly have been calumniated and accused of moral treachery (Winegard & Winegard, 2015). This is probably one reason very few have studied bias about demographic differences: merely studying the bias may earn them obloquy. However, in a free, scientifically literate society, people need to have these conversations, with appropriate care and caution, so that we can best understand humans and best design social policy in a cosmopolitan society. Some researchers believe that the modern genomic revolution is likely to reveal that many demographic differences are at least partially genetically caused, and we, as a society, will be ill-prepared for these results if we are too afraid to talk about such a possibility (Reich, 2018).

Our results suggest that one reason discussions about demographic differences are often unpleasant and unproductive is that Liberals (more than Conservatives) are biased against accepting the reality of such differences, especially if those differences appear to “favor” a privileged group. It’s not difficult to see how this bias could promote morally charged accusations. Imagine that Sarah is a Liberal. She hears Charles Murray suggest that *some* of the Black-White IQ gap is caused by genetics. She is biased against accepting this result. Therefore, she thinks, “That absolutely can’t be true.” And then she wonders why somebody would promulgate an untrue narrative about demographic differences that appears to disparage a victims’ group. An easily available answer is racial animus. This is speculative, of course, but

plausible. We believe that studying this bias might allow us to have such conversations more productively and with fewer accusations of iniquity.

Before briefly discussing some future directions, we should note that equalitarianism *might be a morally rational world-view and the biases that stem from it might be justifiable*. One might argue that even if one accepts that our results stem from bias, one could still argue that such a bias is rational because racism and sexism are grave threats in the United States and we need to be vigilant against them. From this perspective, it is better to err on the side of caution *against* results that seem to buttress the current system of power or that seem to disparage historically oppressed and marginalized peoples. We think that is a perfectly sensible argument. It may be right. Our goal in this paper was to understand equalitarianism and how it contributed to Liberal bias, not to assess it morally. We do think, as we noted above, that such biases can lead to indefensible accusations and even informal censorship, but we do not doubt that they could be morally justifiable.

Future Directions

In the future, researchers should expand our investigation by examining more privileged and victims' groups (e.g., Muslims, homosexuals, Native Americans). They should also examine more socially valued traits than intelligence (e.g., self-control, ambition, criminal propensities).

We have assumed that pervasive racism and sexism are appealing explanations for group differences among Liberals because the alternate explanation—that demographic groups might have different underlying traits and abilities—poses a far greater challenge to egalitarian ideals. Presumably, biology is harder to change than individual and societal prejudices. However, this might not be true in the future. Advances in gene technology could make it both possible and commonplace to alter genes in a way that benefits individuals and eliminates undesirable group

differences. If biological differences were no longer viewed as a barrier to equality and instead were viewed as easily resolved, we suspect there would be less resistance among Liberals to such explanations, particularly if these explanations provided compelling reason to allocate such technological resources to victims' groups. Future research should investigate this emerging reality. Technology may obviate our theory.

Conclusions

For a long time, many social psychologists contended that Conservatives are more biased than Liberals. Recent scholarship has strongly challenged this argument. Conservatives and Liberals appear roughly equally biased. Our research adds to this important debate and suggests that in some domains, Liberals may be *more* biased than Conservatives. Because most social psychologists are Liberals and because demographic differences are such an explosive topic, this bias has remained unstudied and largely unknown (although researchers speculated about it). Our hope here is to provoke a needed conversation, not to provide final answers. Unfortunately, bias is like the first slight symptom of a disease. It is easy to ignore. Easy, but not healthy. Our goal as researchers—Liberal, Conservative, or somewhere between—should be to subject it, no matter what its source, to severe scrutiny.

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Appendix

Equalitarianism Measure

Instructions: Please answer the following questions as honestly as you can. Remember, all answers will be confidential. Use the following scale 1- do not agree all, 4-somewhat agree, 7-agree completely (so 1 is the lowest level of agreement, and 7 is the highest.)

1. The only reason there are differences between men and women is because society is sexist
2. Differences between men and women in society are caused by discrimination
3. Differences among ethnic groups in society are at least partially biologically caused*
4. Most people are not biased and racism is not a problem anymore*
5. When people assert that men and women are different because of biology, they are usually trying to justify the status quo
6. People often try to conceal their racism and sexism, but they act that way anyways
7. People often use biology to justify unjust policies that create inequalities
8. Racism is everywhere, even though people say they are not racist
9. Sexism is everywhere, even though people say that they are not sexist
10. People use scientific theories to justify inequalities between groups
11. Men and women have equal abilities on all tasks (for example, mathematics, sports, creativity).
12. All ethnic groups have equal abilities on all tasks (for example, mathematics, sports, creativity)
13. Some differences between men and women are hardwired*
14. Although things are unequal now, if we work really hard, we can make society better and more fair
15. We should strive to make all groups equal in society
16. We should strive to make men and women equally represented in science fields
17. If we work hard enough, we can ensure that all ethnic groups have equal outcomes
18. With the right policies, we will increase equality in society

*reverse coded items