Philosophy of Science (2024), **91**, 1128–1138
doi:10.1017/psa.2023.119

PSA PHILOSOPHY OF SCIENCE ASSOCIATION

PHILOSOPHY OF SCIENCE

SYMPOSIA PAPER

How to Not Secure Public Trust in Science: Representative Values Versus Polarization and Marginalization

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(Received 07 April 2023; revised 18 July 2023; accepted 13 August 2023; first published online 21 September 2023)

Abstract

The demise of the value-free ideal constitutes a threat to public trust in science. One proposal is that, whenever making value judgments, scientists rely only on democratic values. Because the influence of democratic values on scientific claims and recommendations is legitimate, public trust in science is warranted. I challenge this proposal. Appealing to democratic values will not suffice to secure trust because of at least two obstacles: polarization and marginalization.

1. Introduction

Many philosophers of science have rejected the value-free ideal (see Elliott 2022 and references therein). Value-laden judgments are inevitable, sometimes desirable, whenever scientists choose which research questions to pursue, which representations to use, how to collect data, how to set evidentiary thresholds, how to conduct themselves as professionals, how to communicate their results, and how to use these results (Elliott 2017). While a few still defend the value-free ideal (Betz 2013), most scholars recognize that value-laden judgments are core to scientific practices, results, and recommendations.

However, if science is value laden and if the intruding values are controversial, idiosyncratic, or ideological, then science lacks the kind of epistemic standing that warrants public trust (most recently, Bright 2018; Lusk 2021).[1] Here is the problem. Consider a particular scientific practice, result, or recommendation, for example, some medical study leading to a breakthrough regarding a new medication, then recommended by the medical profession to treat for a given illness. We look for the conditions under which the public, that is, the population to whom the recommendation applies,[2] ought to deem the scientists' recommendation as

[1] We focus on normative theories concerning conditions of warranted trust, not on descriptive theories concerning empirical conditions of actual trust.

[2] This includes potential candidates for treatment as well as the more general population who may be concerned by the recommendation in various ways.

trustworthy. Now, public trust in science requires not only epistemic trust—that the public has good reasons to believe that scientists have good reasons to believe their claims to be true—but also what Bennett (2020) dubs "recommendation trust"—that the public has good reasons to believe that the recommendation is in their interests. Such "interests" may include whatever promotes the public's economic, social, physical, or moral well-being, among others. Recommendation trust is hence *not* warranted if the public has good reasons to believe that the science does not serve their interests. Now one's interest cannot be properly served unless one's values are respected. So, the public has good reasons to believe that scientific claims do not serve their interests if such claims are influenced by values that are inconsistent with theirs. If so, public trust in value-laden science may not be warranted.

Could value influence be deemed legitimate if the intruding values were grounded in democratic processes? On this view—the Democratic Values Account (DVA)—the influence of democratic values over science is not as problematic as the influence of idiosyncratic or ideological values of scientists (Kourany 2010; Intemann 2015; Elliott 2017; Schroeder 2021, 2022; Lusk 2021). Which specific processes secure proper value selection on the DVA is typically left open but authors agree on the idea that legitimate values ought to be "representative" of the public's values.[3] Influence by representative values, the argument goes, does not threaten public trust.

Schroeder (2021) articulates three desiderata for any account of legitimate value intrusion warranting public trust in value-laden science, which I call "burden," "politicization," and "legitimacy":

1. Burden: Members of the public should not bear the burden of assessing scientific claims' trustworthiness because they have neither the training nor the time to investigate such issues.
2. Politicization: Science shouldn't become politicized despite being value laden. The privileged epistemic status of science relies on science's stemming from "facts." Influence by political ideology undermines science's privileged status and warranted public trust.
3. Legitimacy: Intruding values must have some level of legitimacy for the public. Schroeder does not expand much on this. I propose to use Bennett's analysis. If both epistemic and recommendation trust are necessary for public trust in science, then trust-conducive legitimacy includes at least two elements: an epistemic one—the trusting person ought to have good reasons to believe that scientists' claims are based on sound reasoning, and a value-related one—the trusting person ought to have good reasons to believe that scientists' claims were forged with the person's values in mind.

Schroeder claims that the DVA meets "two and a half" of these conditions (2021, 10). Burden is met provided scientific claims go through appropriate professional assessment. Politicization is satisfied because members of the scientific community share values: Disagreements only concern matters of science. Environmentalists and industrialists, for example, will reach the same conclusions and "speak with a single voice" (12). Legitimacy is met due to the democratic process: "If democratic

[3] Which type of representation is to be adopted also remain unspecified in the literature.

procedures ... were carried out properly, then my values were an input into the process.... This ... means that those values should have a kind of legitimacy for me" (13). Democratic processes guarantee that the values influencing science reflect the public's values and hence warrant public trust.

In this article, I present two challenges for the DVA: polarization and marginalization. Polarization in democratic societies results in democratic processes' outputs being representative of only one portion of the public, while the rest is justified in considering their values and interests to be neglected (section 2). Second, democratic values may allow for marginalization of minorities (section 3). Overall, democratic processes don't suffice to select values that warrant public trust if by "public" one means more than factions within the population. In section 4, I investigate whether appealing to deliberative democracy (Lusk 2021) instead of representative democracy helps with the problems of polarization and marginalization. I conclude that the problems remain: the path from democratic values to public trust is still unsecure.

2. Polarization and politization

The DVA fails to avoid politicization because of the problem of polarization. Polarization is the phenomenon by which a group is divided into a small number of subgroups with sharply contrasting views. Current democratic societies are in a state of polarization (Abramowitz and Saunders 2008), including regarding values that are relevant to science. Examples include polarization between the values of individual liberty and public health during the COVID-19 pandemic, of environmental protection and economic development regarding climate change mitigation policy, and so forth. In a polarized environment, part of the public justifiably considers democratic processes' outputs as *not* representative of their values. If the public is divided into two opposite sides, for example, one faction justifiably deems the democratic processes' outputs as a win, while the other justifiably sees them as a loss. Accordingly, only one faction justifiably considers the output values as representative of their own, not the other one. If so, appealing to values grounded in democratic processes does not warrant recommendation trust for the public in its entirety.

The case of wolf population management around Yellowstone National Park (YNP) illustrates this point. It features (1) science-based, value-laden recommendations, (2) democratically endorsed values, and (3) lack of warranted public trust.

Wolf conservation in the United States has been science based, value laden, and polarized since its inception. YNP was established in 1872, as President Roosevelt pushed for the creation of National Parks. As Anja Heister (2022) explains, Roosevelt was dedicated to promoting the North American Model for Wildlife Conservation (NAMWC). On the NAMWC, wildlife serves as resource for human benefit. Wildlife conservation amounts to hunting and trapping stock management and primarily aims at yield maximization. Together with the Boone and Crocket Club, Roosevelt forcefully promoted the NAMWC against the preservationist model—defended by John Muir and the Sierra Club, according to which wildlife ought to be protected from use. The NAMWC justified the systematic extermination of wolves, who were seen as rivals over ungulate hunting stock. The last Yellowstone wolf was killed in 1926.

Elk population sharply increased. Overgrazing resulted in illness and starvation. The preservationist movement was revived. Some advocates of the NAMWC changed

their minds concerning predator management. The Endangered Species Act (ESA) was passed in 1973, enlisting the gray wolf in most of the forty-eight lower states. Michael Soulé, cofounder and first president of the Society for Conservation Biology, described conservation science as a crisis-oriented discipline, the core of which consists in value judgments (Soulé 1985). At the end of the twentieth century, the two sets of values led to serious conflicts among conservationists.

The conflict raged throughout the reintroduction of wolves in YNP in 1995 and wolf population management around the park thereafter. Hunters, trappers, and ranchers opposed wolf reintroduction. Heated discussions resulted in a compromise: the Yellowstone wolf population was designated as "nonessential population," not protected by the ESA. Wildlife advocates fought this compromise. Gray wolves were already repopulating Montana from Canada. Giving up on federal protections for expedited reintroduction seemed short-sighted. Despite opposition on both sides, the wolf reintroduction moved forward and arguably was a success. A few breeding pairs were flown from Alberta, kept in acclimatization pens for a few months, and released in the park. Wolves being opportunistic, and elk being overabundant, their population increased and stabilized around 100 individuals. Some scientists, such as Ripple and Beschta (2012), have argued that the reintroduction of wolves caused a trophic cascade, restoring cottonwood and willow, beaver colonies, river health, and so forth.[4] While this is perhaps overstated, the YNP wolves are thriving. However, YNP wolf management has crystallized the conflict between consumptive and nonconsumptive users.

A cultural movement around wolf research and watching arose in YNP. The YNP wolves have grown used to humans with scopes and have offered exceptional opportunities for direct observation. The Yellowstone Wolf Project has gathered first-rate research on wolf behavior. Millions of people regularly come to YNP to watch their favorite wolves. An entire industry surrounding wolf-watching has burst into existence, creating an economy of more than $82 million a year (RRC Associates et al. 2022). Wolf researchers and watchers are driven by nonconsumptive, preservationist values, as portrayed in Rick McIntyre's series on the YNP alphas (2022): Wolves are esteemed as full individuals, with sophisticated lives deserving protection and respect.

By contrast, many hunters, trappers, and ranchers abide by NAMWC, seeing the wolves as rivals over hunting stock and dangerous predators for cattle. They successfully lobbied for delisting the wolves in Idaho, Wyoming, and Montana, so that wolf population management returned to the states, which pushed aggressive antiwolf policies. In April 2021, the Montana legislature passed a mandate to "reduce the wolf population . . . to a sustainable level, but not less than the number of wolves necessary to support at least 15 breeding pairs" (SB 314, April 2021). Interpreting SB 314 as a mandate to reduce the wolf population to about 150 individuals, the 2021 Fish, Wildlife, and Park (FWP) Commission allowed neck snares, baits, night vision, or blinding lights for night hunting on private land, sharply increased the bag limits on wolf harvest, and raised the quotas around YNP. During the 2021–22 hunting season, the YNP wolves, accustomed to humans and unknowingly wandering out of the park, were disproportionately decimated.

The NAMWC's influence on recent Montana conservation science is profound. The decision makers, the FWP commissioners, benefit from the advice of state ecologists,

[4] Contrast with Marris (2018).

who use models to estimate population count, population dynamics, and the effect of harvest on population. The "harvest theory," according to which conservation's main tool is hunting and trapping and its main goal is to maximize harvest yield, runs deep in the science of resource management (Heister 2022, ch. 6). Arguably, the models used, especially the recently introduced integrated Patch Occupancy Model, both overestimate the wolf population and underestimate the effects of harvest on that population, thus serving hunters' and trappers' interests (Creel 2021). Consistent with the NAMWC, population models also consider individuals as fungible, neglecting pack dynamics and harvest's impact on it. Whether a sickly, low-ranking wolf or a healthy alpha is killed makes no difference. This contradicts recent research according to which social dynamics of wildlife ought to be considered in conservation (Fitzpatrick and Andrews 2022). The NAMWC is so entrenched in US wildlife resource management science that alternative views, such as compassionate conservation (Bekoff 2019), are rejected by many experts without serious consideration (Coghlan and Cardilini 2022). The NAMWC is undoubtedly core to FWP commission's decisions.

I have argued that YNP wolf population management is both science based and deeply influenced by NAMWC's values. It is also grounded in democratic processes. The commissioners are nominated by the democratically elected governor. The Montana democratically elected legislature gives guidelines to the commission. The commission allows for public comments on any wildlife management plan. Commissioners make themselves available to constituents for direct consultation. Civic engagement is strong: Public hearings are buzzing with people and online public comments abound. So, political representation as well as direct citizen engagement inform wolf management.

By no means, however, do such democratic processes justify that all constituents be justifiably satisfied with the commission's decisions. Polarization rules. Commissioners complain about threats from animal activists. Wolf advocates report threats during community meetings in Gardiner, Montana. Public comments during the commission's hearings are heated. Moderate views are the exception. Such polarization is neither recent nor anecdotal. Historically, the NAMCW didn't emerge from consensus but was promoted within wildlife management by a subgroup of conservationists devoted to consumptive users' interests (Feldpaush-Parker et al. 2017). The NAMCW has been very divisive: "Essentially, by championing a wildlife-conservation system that values the interests of hunters over those of non-hunting wildlife enthusiasts, the NAM serves as a polarizing force with wildlife conservation" (Heister 2022, 84). So, democratic processes have proved insufficient to avoid polarization and influence of one set of values over the other.

Nonconsumptive wildlife enthusiasts justifiably deem NAMWC's values as opposite to theirs, despite such values being grounded in democratic processes. So, if public trust in science requires not only epistemic trust but also recommendation trust, and if FWP's scientific claims are framed within NAMWC's values, then recommendation trust is not warranted for nonconsumptive wildlife enthusiasts.

In short, the DVA advocates' argument that democratic processes unveil common values and hence warrant public trust fails in polarized contexts. Democratic processes in polarized contexts result in one faction winning over the other. Recommendation trust in scientific claims influenced by the winning faction's values isn't warranted for the loosing faction because their values are neglected. Appealing to democratic values in polarized societies hence fails to warrant public trust.

3. Marginalization and legitimacy

The DVA faces a second challenge: the problem of marginalization. Democratic processes allow for the marginalization of values of historically subjugated groups. Marginalization undermines the claim that appealing to democratic values secures legitimacy for value-laden science for the public in its entirety. If legitimacy is compromised, public trust is not warranted, and the DVA fails to deliver on its promise.

Consistent disenfranchisement has deeply tarnished the rapport between historically subjugated groups and the scientific community. Western science has persistently catered to the belief that racial differences are biologically grounded and correspond to different levels of intelligence and quality of character (Saini 2019). In the United States, Black communities have suffered medical exploitation in the name of scientific advancement (Washington 2006). Pervasive prejudice in science and medicine resonates in many of today's communities.

Such communities are arguably warranted in *distrusting* science influenced by the dominant group's values. If public trust in some scientific claims requires not only epistemic trust but also recommendation trust, and if historically subjugated communities justifiably recognize such claims as framed with values opposite to theirs, then recommendation *distrust* is warranted. In short, historically subjugated groups such as Black and Indigenous communities in the United States may justifiably distrust DV-laden science.

The story of the National Bison Range (NBR) in Montana provides a compelling case of a science-based and democratically grounded conservation project that has consistently marginalized Indigenous groups. From 1908, when it was founded, until 2022, the NBR has been under federal control. The refuge's management has been based on environmental assessments conducted by government ecologists. Conservation decision power belongs to the US Fish and Wildlife Service, responding to Congress and the public at large through both election and direct consultation. The NBR's management is hence science based and democratically grounded. Yet it has consistently featured an egregious disregard for the values of the Confederated Salish and Kootenai Tribes of the Flathead Reservation.

Targeted as part of an eradication program supporting the subjugation of the Indigenous Peoples of the Central Plains, the bison population dropped from some estimated tens of millions to a few hundred by the end of nineteenth century (Merchant 2007). In the 1870s, according to oral accounts of the Q̓lispé peoples, Little Falcon Robe was tasked by elders to guide a handful of orphaned calves across the Continental Divide back to the Flathead Reservation in hopes to save bison. The herd grew to approximately 300 free-roaming animals. During the allotment era, however, the US government, seeing free-roaming bison as incompatible with White settlers' way of life, shipped the herd to Canada. Meanwhile, pioneer conservationists worried about bison extinction, including enthusiast sportsman, explorer, and taxidermist William Hornaday. Founding director of the Bronx Zoo and founding member of the American Bison Society, Hornaday played a prominent role in the establishment of the NBR. However, Hornaday's legacy is at best mixed. As Preston explains (2023, 61–62):

> Hornaday's time at the zoo marked a new era for conservation, but his tenure was marred by his association with prominent racists and eugenicists. At one

> point, he put a villager from the Congo, Ota Benga, on display in the primate house. When he was criticized for his racism, Hornaday claimed he was simply being scientific. Hornaday's attitude matched that of many leading environmentalists at the time. Nature was pure in a way only the white man had the capacity to appreciate. Conservation was the privilege of Hornaday's race to pursue ... the American Bison Society had no qualms about centering itself at the Bronx Zoo and anointing Hornaday as its dean.

The American Bison Society tasked University of Montana biology professor Morton Elrod to identify a piece of land suited for establishing a refuge for bison conservation. Elrod selected land on the Flathead Reservation, which the government illegally appropriated to create the NBR. The tribes were excluded from the herd's management. Not allowed to work on the refuge, tribal members considered that the fences had been raised "as much to keep the Indians out as to keep the bison in" (Glick 2018). A fenced-in refuge reflects Western conservation values—nature is to be conserved as separate from human dwellings, in contrast with the tribes' value of human-nature entanglement. Only after a century of legal battles against the federal government was the NBR partially returned to the tribes. All along, government and public displayed contempt for the tribes' values. Any consideration of tribal management was met with explicitly racist public comments (ibid.). Western conservationists consistently doubted the tribes' ability to manage wildlife and disparaged the tribes' profound historical, cultural, and spiritual ties to bison. Only in 2020, when the Montana Water Rights Protection Act was signed into law, was the tribes' involvement in the refuge's management restored. The history of the NBR is a paradigmatic example of US conservation being infused with racist prejudice despite its fundamental values being democratically endorsed. Given such history, the tribes are arguably warranted to distrust White settler's scientific claims regarding bison management. The DVA fails to deliver on its promise in contexts of marginalization of significant portion of the public.

Schroeder offers two solutions to the problem of democratically endorsed prejudicial values: (1) prejudicial values ought to be laundered, and (2) minorities ought to be given extra weight. I contend that both solutions remain unsatisfactory.

Regarding the laundering of prejudicial values, Schroeder writes:

> First, remember that the democratic values proposal launders and filters the actual values held by the public. Certain values—for example, racist or sexist ones—conflict with basic democratic principles of equal worth, and so cannot be candidate democratic values. Thus, even in a racist society, telling scientists to work from democratic values will not tell them to work from racist values. (2021, 16)

The claim is that filtering democratically endorsed values is legitimate whenever justified in terms of some fundamental principles of democracy. The DVA thus relies on two distinct notions of democratic values: (1) process-based values—whatever values the public and its representatives hold and (2) values that found democratic authority. The first is a matter of fact, the second a matter of political morality. The latter serves as constraint upon the former. This strategy faces at least one significant challenge.

The challenge pertains to prejudicial value identification. Schroeder suggests that racist *motives* are more easily identifiable than racist *policy* (2022, sec. 6). I disagree. First, deciphering motives is difficult. Personal motives are typically different from explicit policy rationales and epistemically inaccessible. Explicit rationales rarely tout prejudice. Transgender bathroom use policies are promoted in the name of women's safety. Justifications for the war on drugs appealed to the necessity to be tough on crime, not to systematically disenfranchise Black communities. The anti-immigration movement, which is historically entrenched in White supremacy (Jones 2021), invokes public safety and job security, not the preservation of the White race. Explicitly prejudiced talk has become rare. Alternative strategies abound (Hanez-López 2014). Finally, when prejudice is disguised as genuine concern for public safety, job security, and so forth, laundering processes are easily portrayed as antidemocratic and illegitimate. Laundering prejudicial values is harder that Schroeder suggests.[5]

Schroeder's second proposal is to give minorities' values "more weight." Against the "one person-one vote" view of democracy, Schroeder suggests that

> in cases where minority values are held by a group that is or has been the subject of exclusion or discrimination, democratic principles may sometimes require giving those values extra weight, or a voice disproportionate to their statistical representation in the population, as a way of accounting or compensating for their past or present exclusion. (2019, 16–17)

However, the mechanisms by which minority voices can be amplified remains unspecified. Surely, the burden of proof falls upon Schroeder. Also due is an explanation of how the majority should agree to a system that gives disproportionate representation to minorities. Decades of battle over affirmative action indicate that promoting minorities' interests is challenging (Fullinwider 2018). Resentment and distrust from majority stakeholders is a serious concern. These difficult issues regarding democratic processes fostering (or not) democratic authority, minority representation, and public trust deserve more extensive treatment within the DVA.

To conclude, appealing to democratic values to restore public trust in value-laden science faces the problem of marginalization. Historically marginalized communities have no good reasons to believe their values will be given adequate consideration within democratic processes. However, trust within such communities is often especially crucial for scientific recommendations to be successfully implemented. Any proper articulation of the DVA ought to address this issue.

4. Deliberative democracy

One strategy, adopted by Greg Lusk (2021), consists in switching from representative democracy to deliberative democracy (DD). Value-laden science has legitimate authority if values are selected using DD processes. Several issues arise.

First, Bennett (2020) has convincingly argued that DD, at least in the form of deliberative polling à la Fishkin (2009), in which citizens consult with experts to

[5] This is not to suggest that discriminatory practices are impossible to identify in policy. Which strategies work best is, however, still up for debate in the philosophy of law literature (Tasioulas 2020).

"resolve doubts as much as possible" regarding scientific claims fails to secure recommendation trust: "Deliberative polling could successfully disabuse a citizen of epistemic prejudice against expert testimony without thereby giving them a reason to accept that the same epistemic-trustworthy expert is issuing recommendations that are in their interest" (14). While deliberative polling may secure epistemic trust, it fails to warrant recommendation trust.

This is especially true for marginalized and polarized citizens. Studies suggest that traditionally underrepresented groups are marginalized in citizen deliberations just as they are in traditional voting-base processes (Ghergina et al. 2021). Marginalized participants justifiably consider their values are neglected in DD outputs. Recommendation trust is not warranted for them.

What about polarized citizens? Van Dijk et al. (2023) found that the perceived legitimacy of DD outputs is lower among polarized citizens than among nonpolarized citizens in the population at large. Polarized citizens arguably have good reasons to reject DD outputs as unacceptable. First, DD outputs are generally the result of a compromise between disagreeing parties. Compromise acceptability arguably depends on the relative distance between one's view and the compromise. The more polarized one is, the least acceptable the compromise become. In addition, at least in the case of affective polarization, polarized citizens see their values as identity defining, so that any compromise undermines their moral integrity. In short, polarized citizens have no good reasons to accept DD outputs as consistent with their values. Hence, recommendation trust is not warranted. DD's success relies on the possibility of respectful disagreement and reasonable compromise between multiple differing parties. Polarization and marginalization work against that notion. If DD fails to remedy polarization and marginalization effects, it is unclear whether it can resolve the problem of legitimacy of value-laden science. DVA advocates ought to address these issues before they can claim that DD offers an adequate framework for their account.

Conclusion

This article offers a critical examination of the DVA, that is, the view that, if scientists work with democratically endorsed values, public trust in value-laden science is warranted. I have argued that the DVA faces two serious challenges: the problems of polarization and marginalization within democratic societies. More work lies ahead for DVA advocates.

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Cite this article: Le Bihan, Soazig. 2024. "How to Not Secure Public Trust in Science: Representative Values Versus Polarization and Marginalization." *Philosophy of Science* 91 (5):1128–1138. https://doi.org/10.1017/psa.2023.119