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ARTICLE

Engaging with Science, Values, and Society: Introduction

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Abstract
Philosophical work on science and values has come to engage with the concerns of society and of stakeholders affected by science and policy, leading to socially relevant philosophy of science and socially engaged philosophy of science. This special issue showcases instances of socially relevant philosophy of science, featuring contributions on a diversity of topics by Janet Kourany, Andrew Schroeder, Alison Wylie, Kristen Intemann, Joyce Havstad, Justin Biddle, Kevin Elliott, and Ingo Brigandt.

Keywords: science and values; socially engaged philosophy of science; socially relevant philosophy of science

Philosophical discussions on science and values have made it well past the question of whether nonepistemic values (e.g., practical, environmental, public-health related, and sociopolitical values) can play a legitimate role in science (Brigandt 2015; Kincaid, Dupré, and Wylie 2007; Douglas 2009; Brown 2020). Indeed, instead of articulating arguments to counter objections against an important role for nonepistemic values in science (arguments which the remaining value skeptics would not convince anyhow), Elliott (2017) more fruitfully documents various ways and actual situations in which values have played a vital role in scientific practice. Beyond attempts to delineate legitimate and illegitimate roles for values in more general terms (and to explain how the use of values need not undermine scientific objectivity), discussions have moved to concrete case studies that critically assess the influence of values, covering diverse scientific and technological domains, including biology, environmental sciences, climate change science, biomedical and health sciences, pharmaceutical research, anthropology and archaeology, as well as behavioural and cognitive science.

At least in this domain of philosophy, the most noteworthy trend goes under the labels of *socially relevant philosophy of science* (Fehr and Plaisance 2010, and other contributions in this issue; Howard 2009; Kourany 2010) and *socially engaged philosophy of science* (Cartieri and Potochnik 2014; Plaisance and Elliott 2021; Plaisance et al. 2021). One prong of this is to use one's philosophical and scientific competence to scrutinize harmful science (e.g., Shrader-Frechette 2014), or to make positive suggestions for how alternative, more socially responsible research could look like in a specific context. Another core aspect is to go beyond a consideration of values endorsed by scientists (Schroeder 2017) and to discuss the connection between science and society by being mindful of the relevance of different stakeholder groups. This includes consideration of the many minorities who are too often negatively affected by science (Elliott 2017; Intemann 2015) up to concerns about global inequities (e.g., de Melo-Martín and Intemann 2011; Kourany 2021; Tuana 2010). One way of doing socially engaged philosophy of science is to interact with scientists (O'Rourke and Crowley 2013; Schienke et al. 2011), for instance for the purpose of facilitating how scientists solicit stakeholder participation and make use of stakeholder perspectives. Many recent philosophical contributions have touched on policy issues, including strategies for achieving

public transparency about value use within science (Elliott and Resnik 2014; Elliott et al. 2017), or addressed social processes, including public distrust in science and how to foster trust, e.g., regarding vaccination and climate change (Bueter 2021; de Melo-Martín and Intemann 2018; Goldenberg 2021; Navin 2013; Schroeder 2021; Whyte and Crease 2010). Socially relevant philosophy of science as a philosophical tradition is also fostered by scholarly associations and other institutional arrangements. These include the Association for Feminist Epistemologies, Methodologies, Metaphysics and Science Studies (first conference in 2004),[1] the Society for Philosophy of Science in Practice (first conference in 2007),[2] the Joint Caucus of Socially Engaged Philosophers and Historians of Science (since 2012),[3] the Center for Values in Medicine, Science, and Technology at UT Dallas (with its first annual conference in 2013),[4] and The Consortium for Socially Relevant Philosophy of/in Science and Engineering (first conference in 2014).[5]

The present special issue, *Engaging with Science, Values, and Society*, continues and moves ahead this philosophical trend. It starts out with **Janet Kourany** (2020) mapping out a new agenda for philosophy of science, involving a philosophical investigation of which scientific questions are pursued, which areas of research are funded, and which avenues of research tend to be neglected. Based on several examples (e.g., the replication crisis in psychology), she illustrates that scientific trends of what questions tend to be prioritized can have significant, even socially detrimental, consequences. Kourany articulates three issues that need to be attended to by philosophers: the scope of biased scientific agendas, the prevention of such instances of research, and the rectification of injustices resulting from past science. **Andrew Schroeder** (2020) contrasts ethical and political approaches to values in science. While the former (in line with the field of ethics) concerns how individuals ought to act or manage their personal lives, the latter (in line with the field of political philosophy) concerns how larger social and political decisions ought to be made, including balancing among a plurality of different perspectives and ensuring representation, legitimacy, and accountability. Across philosophical discussions on science and values, both of these approaches can be found, yet Schroeder argues that philosophers need to be more reflective on which approach they want to adopt and why. **Alison Wylie** (2022) details a concrete case of socially engaged philosophy of science in the context of Indigenous traditions in Canada. Taking historian of science George Sarton's call for humanizing science as an inspiration, Wylie discusses how archaeological research on Indigenous history in Canada found ways of incorporating the interests of and interacting with nonarchaeological stakeholders, so as to respond to Indigenous calls for more control over their heritage. She also presents the ongoing Indigenous/Science project, a UBC research cluster of which she is one among many university researchers and Indigenous contributors.

Kristen Intemann (2020) addresses the problem of hype in science. Although exaggerations of scientific findings and their application potential have recently been highlighted in science communication discussions, especially because such hype can erode trust in science, philosophers have not previously offered an analysis or clarification of what hype consists in. One insight of Intemann's discussion is that what counts as hype also hinges on value judgements about what the legitimate goals of science communication in a given case are and when exaggeration is inappropriate in such a context. She then draws implications for how to identify and prevent hype. Based on an appraisal of Heather Douglas's account of inductive risk, **Joyce Havstad** (2021) develops the notion of amplified inductive risk, which is particularly significant in cases of sensational science likely to create hype among the public. Havstad scrutinizes research in hominin genetics, which actually provides quite limited evidence about the ancestry of the archaic Denisova population. But

[1] http://femmss.org
[2] https://www.philosophy-science-practice.org
[3] https://mms.philsci.org/projects/moreinfo.php?org_id=PSA&pid=5223729
[4] https://values.utdallas.edu
[5] http://srpoise.org

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given that potential genetic links to contemporary Indigenous people of Papua New Guinea have been proposed in public presentations—which can portray these people as genetically primitive—Havstad puts forward recommendations for hominin-genetics researchers to employ evidential warning labels to mitigate such amplified inductive risk. Countering the potential promotion of racism by science and technology is also a concern for **Justin Biddle** (2020). His case is the use of machine-learning algorithms to predict the recidivism rates of criminal offenders that inform sentencing or probation decisions in the US. Not only do such algorithms have a biased and disparate effect on some populations, especially African Americans, they are proprietary products whose internal workings are unknown to anyone but the companies designing them. Biddle puts forward three recommendations of increasing strength for the use of machine-learning algorithms in the penal system: employing several algorithmic systems (designed by different entities), only employing algorithms that are accessible to the public and have received input from stakeholders, and prohibiting algorithms that are shown to be biased against groups that already are disadvantaged.

The topic of transparency is taken up by **Kevin Elliott** (2020). While calls for scientists to be transparent about the values they are using have become commonplace in the science and values literature, it is less clear how to go about transparency, and the public may even have reasons to distrust any research that employs and advertises values not shared by a layperson. Elliott navigates this issue by eschewing any one-size-fits-all solution and instead he maps out a taxonomic framework of the different ways in which transparency can be fruitfully implemented. This depends on several dimensions, such as the purpose for being transparent in a certain case, the particular audience of scientific information, the content to be transparent about, and how the content is to be provided in terms of actors, timeframe, venues, and mechanisms. This special issue concludes with **Ingo Brigandt**'s (2020) look at kinds in science. Rather than adding to recent rival accounts in the philosophy of science of what constitutes a natural kind, I offer a methodological framework for investigating kinds, which puts central emphasis on the specific aims and purposes for which a kind is employed. The significance of nonepistemic aims, including social-political values, is illustrated by such examples as gender, race, and psychiatric kinds. This also calls for the involvement of the aims of values of stakeholders when formulating 'scientific' kinds, and the negotiation of what counts as legitimate values, especially when several aims cannot be jointly met. Despite this focus on kinds, I also argue that the label 'natural' kind better be avoided.

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