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REVIEW

Book review: *Science and the Public*

Reviewed Book

Potochnik, A. (2024).
Science and the Public.
Cambridge University Press

Reviewed by
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Abstract

Science and the Public by Angela Potochnik provides a thoughtful examination of the evolving relationship between science and society. By focusing on the ethical obligations of science, the author challenges conventional views by depicting science as a socially constructed entity with responsibilities to the public. The text explores topics such as public trust, the importance of inclusive research approaches, and the need for participatory scientific initiatives. Combining philosophical, ethical, and science communication viewpoints, the work advocates for institutional reforms aimed at making science more beneficial to diverse communities and better equipped to address pressing societal issues.

Keywords

Public understanding of science and technology; Public perception of science and technology; Public engagement with science and technology

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Angela Potochnik's *Science and the Public* serves as an important contribution to contemporary academic and societal discussions about the changing role of scientific practices in addressing pressing issues such as waning public trust, disparities in knowledge access, and the intersection of scientific authority with political interests. Released as part of Cambridge University Press's *Elements in the Philosophy of Science* series, this analytically sharp monograph redefines science as a socially created institution, examining its ethical obligations to the communities it serves and affects. At the core of Potochnik's argument is the claim that science goes beyond being just a collection of objective facts, instead operating as a vibrant system influenced by funding structures, collaborative interactions, and the societal application of research results. By merging insights from the philosophy of science, communication theory, and institutional ethics, the project provides an all-encompassing framework for reimagining science as a cooperative, fair, and democratically responsible endeavor.

Structured into six interconnected chapters, the analysis begins with a thorough examination of the science-public interface, outlining four main types of interaction: the consumption of scientific knowledge, influence on policy, educational outreach, and career opportunities. Potochnik differentiates between descriptive accounts of current interactions and normative guidelines on how these relationships ought to operate, suggesting that science's responsibilities to society are institutional rather than belonging to individual practitioners. This institutional recontextualization contests prevailing models that excessively prioritize personal responsibility, promoting systemic changes to address foundational inequalities in the creation and sharing of knowledge [pp. 5–15].

A crucial contribution is found in her analysis of the "deficit model", a common framework in science communication that links public skepticism to a lack of scientific understanding. Potochnik advocates for recognizing the ability of non-experts to critically analyze scientific significance, evaluate expertise, and participate in value-oriented discussions [p. 30]. Consequently, she stresses that epistemic reconfiguration necessitates extensive institutional modifications focused on enhancing transparency and inclusivity, thus redefining trust-building as a fundamental institutional responsibility rather than merely a superficial public relations tactic.

Chapter 2 presents a historically contextualized analysis of the Vienna Circle, emphasizing Otto Neurath, Rudolf Carnap, and Moritz Schlick, whose philosophical endeavors were intimately connected to sociopolitical involvement. This examination places their contributions within early 20th-century discussions regarding the function of science in society, illustrating how their logical empiricism — marked by a dismissal of metaphysics and a focus on empirical evidence — functioned as both an epistemological foundation and a means for democratic change. Potochnik compares their approach to knowledge sharing and public education with the Cold War period's shift in American academia towards specialized disciplines, emphasizing that "attending to this very different model reveals that how science and its philosophy relate to the public today is not necessary. Philosophy and science can be, and have been, more closely related to each other and more directly engaged with public concerns and audiences" [p. 25].

Trust acts as an essential analytical lens in Potochnik's study, distinguishing epistemic trust — confidence in science's capacity to generate reliable knowledge — from warranted doubt among groups that have historically been marginalized or negatively impacted by scientific

methods, such as unethical experimentation or systemic exclusion. By exploring topics such as denial of science, contested expert authority, and the alleged "trust crisis", Potochnik highlights the importance of trust as a crucial epistemic and ethical aspect of scientific endeavors. To restore confidence in science, Potochnik disapproves of superficial methods such as promoting consensus or simplifying communication; she advocates for institutional reforms that prioritize transparency, broaden research teams to incorporate underrepresented perspectives, and involve communities in the agenda-setting processes. These efforts aim to rebuild trust by aligning scientific approaches with societal values and addressing historical wrongs, thereby enhancing the credibility of science as a socially accountable organization [pp. 44–46].

Participation is framed as an ethical obligation and a means of improving knowledge. Citizen science, inclusive recruitment strategies, and community-involved research are highlighted as methods to address historical inequalities while enhancing scientific integrity. Potochnik argues that by incorporating marginalized viewpoints, scientific investigation better addresses pressing public demands, including environmental justice and healthcare disparities [p. 54]. Institutional inclusivity thus serves not merely as an ethical commitment but as a prerequisite for methodologically robust and socially relevant science. She promotes the concept of "responsive science" to align scientific inquiry with urgent societal needs, all while preserving the epistemic value of research driven by curiosity. She contends that even basic research should integrate public values, as evidenced by focusing on neglected health issues that disproportionately affect marginalized groups. To address the potential conflict between practical relevance and the independence of fundamental research, she suggests participatory funding approaches and interdisciplinary collaborations that incorporate ethical considerations into the design of methodologies [pp. 58–60].

Although the theoretical depth of the monograph is a positive aspect, its insufficient incorporation of empirical evidence may limit its usefulness for practitioners. For instance, integrating evaluations of established frameworks like the EU's Responsible Research and Innovation initiative — which formalizes public discussion in funding distribution — could enhance its practical relevance. Furthermore, Potochnik's examination of the basic-applied research spectrum would benefit from a more comprehensive engagement with the challenge of articulating societal relevance in disciplines such as cosmology or pure mathematics, while preserving their methodological independence and intellectual freedom.

Potochnik's *Science and the Public* offers a vital contribution to current discussions about the knowledge-based and civic responsibilities of scientific work in democratic contexts. Through the integration of philosophical exploration, normative ethics, and theories of science communication, the monograph redefines science as a socially integrated institution accountable to various publics through participatory involvement and institutional self-awareness. This redefinition promotes a view of scientific practice that emphasizes equity, transparency, and collaborative knowledge creation as essential for its validity in diverse societies. Her framework is particularly relevant in an era characterized by intersecting crises in climate, public health, and technological governance, providing actionable strategies to enhance epistemic justice and equitable collaboration.

References

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