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Maya J. Goldenberg. *Vaccine Hesitancy: Public Trust, Expertise, and the War on Science.* Science, Values, and the Public Series. Pittsburgh: University of Pittsburgh Press, 2021. 272 pp. $45.00, cloth, ISBN 978-0-8229-4655-7.

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Maya J. Goldenberg's *Vaccine Hesitancy: Public Trust, Expertise, and the War on Science* offers a straightforward argument: we have been understanding current vaccination hesitancy through the wrong lens (the war on science) and desperately need a different one (a crisis of trust). The book is divided into two parts, corresponding to these two ideas. Throughout, the discussion is clear, the references suitable and plentiful, and the argument compelling.

To my knowledge, *Vaccine Hesitancy* is the first monograph on contemporary vaccine dissent from a science and technology studies (STS) perspective, with which Goldenberg is able to make an important intervention into the ongoing scholarly debate. Her training as a philosopher of science allows her to approach vaccine hesitancy by examining the epistemic assumptions and implications of current approaches, concluding that it results from a problem of "unsuccessful science-public relations" (p. 17). She points out, for example, that the routine framing of a "war on science" inevitably shores up a response that retains the epistemic authority of science and diminishes concerns about justice and values that permeate vaccine dissenting discourses. Additionally, the "war on science" frame suggests that the public is wrong, uneducated, and suspicious of expertise. In this view, publics mischaracterize science, which nevertheless remains the objective domain of facts and knowledge. The "crisis of trust" lens reveals a different picture, one in which public institutions, government, public health agencies, and scientists themselves are at fault for the loss of public trust that is necessary for democracies to function. Science, it seems, falters on the values front.

This argument is welcome, if only because it offers an alternative interpretation to well-worn research on vaccine dissenters that seeks to understand what is wrong with ***them***. Prior arguments have suggested wrong thinking, susceptibility to Internet charlatans and charismatic quacks, misguided observations, faulty independent research, and science denial, among other ideas. *Vaccine Hesitancy* is structured to explain the

"war on science" lens through the first four chapters, which treat the deficit model of the public understanding of science, psychological theories about cognitive bias, arguments about the death of expertise, and what Goldenberg calls "scientizing politics," by which she means what happens when "science is mapped onto desired political outcomes" through a process of "scientizing normative decision-making in politics." The problem, she states, is that "science is an incomplete proxy for normative and value-driven debates," the very debates that are crucial to ending stalemates about vaccines and their purported harms (p. 92). Noting that "science-driven practice and policy has failed to engender peace and prosperity and has instead generated conflict and political paralysis," Goldenberg points out that attempts to "correct the damage to public confidence in vaccines created by [Andrew] Wakefield et al.'s notorious paper and the concurrent thimerosal controversy in the USA has not been very successful. Instead, political controversy around the science that lies at the center of the debate has ***grown***" (p. 105). That is, instead of castigating vaccine dissenters about their stubborn allegiance to ideas that have been proven wrong, she suggests, rather convincingly, that appeals to scientific evidence to end the debate appear to have been counterproductive precisely because scientific evidence cannot end a debate that is actually about other things.

She lists some of these other things: "Concerns about how technology shapes our lives, regulatory capture, increased privatization of essential services, loss of the natural, family autonomy, health justice and inequalities, and historical public health injustices in relation to racism and colonialism," noting that "these issues are not captured in the regulatory frameworks around risk and are surely unnoticed by those who insist that public resistance to scientific claims stem from ignorance about science. The dispute was never about the science alone.... The science in dispute is only a placeholder for the values we hold dear" (pp. 106, 105).

There are two chapters on the crisis of trust, "Trust and Credibility in Science" and "The Scientific Expert as Hero and Maverick." Crucial to the former chapter is Goldenberg's argument that "public trust hinges on the value set that influences scientific research ... [including] not only epistemic rigor ***but also equity and social responsibility***" (p. 125, emphasis added). The argument boils down to this: you can have all the epistemic rigor in the world, but if ***I don't trust you*** I won't believe your findings. This scenario explains the persistent corrosive effect of historical and current medical racism on public trust in science and medicine. Goldenberg discusses, in addition to medical racism, social media and the commercialization of science as factors that amplify distrust. Her discussion of social media is instructive: after pointing out some dangers presented by misinformation on the Internet, Goldenberg suggests that "dubious claims only gain traction because they fit with a broader narrative of perilous healthcare" (p. 130). In other words, scientifically invalid claims about vaccines are not interpreted in a vacuum; it is the social context that needs attention to build trust so that the ground is not fertile for such claims to flourish.

The chapter on heroes and mavericks reframes status quo arguments about why publics do not trust experts. Because "public resistance to scientific claims arises within the space of a trust deficit,... alternative voices emerge, often powerfully" (p. 138). Here Goldenberg turns the tables on the "death of expertise" arguments: "Contrary to the death of expertise thesis, public science controversies unfold as a ***clash*** of expertise rather than a dearth thereof" (p. 140). She then goes on to discuss Wakefield as "exemplary of the maverick —the free-thinking and unorthodox eccentric," a figure with a storied history in science (think Galileo) (p. 153). Goldenberg carefully analyzes the circumstances that allow such mavericks to gain

the trust of some even when they are vilified by mainstream scientific institutions and individuals, but she never lets go of her key insight: that even when it is clearly *wrong* that someone like Wakefield should wield so much social power, we must use his example to understand the problem of public trust. She writes, "the ascendancy of the maverick is a signal for them [experts and expert institutions] to reflect on their own shortcomings in earning the publics' trust" (p. 167). The problem lies at the feet of experts, not publics, insofar as the former are responsible for sustaining that trust with both their epistemic and social values. They must earn it.

Goldenberg's conclusions about how to address this crisis of trust are practical and unsurprising: give primary care providers more time with parents and their questions about vaccines, ensure that health insurance companies will pay for these clinical encounters, adjust public health messaging that inadvertently undermines vaccine programs (for example, messaging that is "hyper-individualistic" [p. 174]), and reorient public health toward collectivism. Goldenberg is hesitant to endorse a specific health communication program, noting that we do not really understand which interventions work and why, and she provides a limited discussion of the potential benefits and pitfalls of vaccine mandates, closing with a discussion of equity and inclusion and a note about "industry influence on healthcare" (p. 182). Indeed, I would say that given the interesting way she frames her argument throughout the book and her insistence on reversing arguments against the vaccine hesitant to target government officials, scientists, and public health professionals with losing the public's trust, the concluding chapter is a bit flat.

Nevertheless, what she pulls off in the book's substantive chapters is significant and noteworthy. Trust itself is undertheorized with respect to vaccine hesitancy, as a recent review has demonstrated.[1] Goldenberg demonstrates how powerful trust as a concept can be in understanding vaccine hesitancy within the web of social relations and science-oriented social policy. ***Vaccine Hesitancy*** will be the go-to text for understanding how vaccine dissent—whether hesitancy, resistance, or refusal—demonstrates, enacts, and represents a far bigger problem for democracies in the twenty-first century, a crisis in trust that, at least in the United States, has become a defining feature of civic life.

Note

[1]. Heidi J. Larson, Richard M. Clarke, Caitlin Jarrett, Elisabeth Eckersberger, Zachary Levine, Will S. Schulz, and Pauline Paterson, "Measuring Trust in Vaccination: A Systematic Review," ***Human Vaccines & Immunotherapeutics*** 14, no. 7 (2018): 1599–1609, https://doi.org/10.1080/21645515.2018.1459252.

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