The British Journal for the History of Science (2024), **57**, 651–654
doi:10.1017/S0007087424001237

ESSAY REVIEW

Why we fight about science

Henry M. Cowles, *The Scientific Method: An Evolution of Thinking from Darwin to Dewey*

Cambridge, MA: Harvard University Press, 2020. Pp. 384. ISBN 978-0-674-97619-1. £32.95 (hardcover)

Andrew Jewett, *Science under Fire: Challenges to Scientific Authority in Modern America*

Cambridge, MA: Harvard University Press, 2021. Pp. 368. ISBN 978-0-674-97891-3. £36.95 (hardcover)

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The concept of 'science' occupies a distinctive place within our rhetorical inheritance. Tangential to science's actual practices and institutions, this rhetoric holds that science comprises an arsenal of techniques, or a pervasive mentality, that have broadly shaped and even defined modern society. Such notions have been the subject of more or less constant discussion for two or three centuries, with early critics of scientific thought targeting its links to the religious and political radicalism of the Enlightenment and the troubles of industrialization.

Andrew Jewett's *Science under Fire* addresses these discussions as they unfolded in the twentieth-century United States. According to Jewett, earlier criticisms found few footholds in America, where religious discourse dominated through the nineteenth century. It was only as modernity became an inescapable feature of American life that such criticisms took root, and Jewett charts a spread so rapid that, by no later than the mid-twentieth century, they were ubiquitous enough to defy genealogical analysis. This is clearly the case even though Jewett limits his survey to those criticisms that cast science as a broad cause of systemic ills in culture and politics. (Jewett's introduction touches briefly on 'distrust' on specific matters like climate change and genetically modified organisms, a related but distinct theme with its own sprawling history.)

The ills that Jewett's critics identified were generally tied to aspects of industrialization, bureaucratization and totalitarianism that they saw as subjugating individual freedom and the human spirit, as well as to consumerism and other purportedly amoral features of modern life. Vectors they identified for these ills variously included psychology and the social sciences, unchecked technology and expertise, and the spread of

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https://doi.org/10.1017/S0007087424001237 Published online by Cambridge University Press

narrowly materialist and instrumentalist modes of reasoning. Few critics objected to science as such, and many specifically identified the real problem as the encroachment of science beyond its proper sphere, a phenomenon often labelled 'scientism'. In fact, Jewett correctly regards this discourse as a crucial context for the emergence of the discipline of science and technology studies (STS) in the 1980s, with its emphasis on illuminating a plurality of knowledge frames that are understood to be obscured in the shadow of established science.

STS scholars have been eager to foreground their own contributions to this discourse and the more leftist implications of critiques of scientistic thinking. However, Jewett documents a longer and pervasive influence of conservative critics, beginning with religious intellectuals who deplored the abandonment of a divine basis for morality, which they identified in the thought of John Dewey, for example, and more radically materialist thinkers like behaviourist psychologists John Watson and B.F. Skinner. Jewett also explores religious critics' aversion to 'social engineering' and eugenics, and he identifies Catholic thinkers as initially the most apt to trace modern evils to deeper European traditions, such as the Enlightenment and the decline of Thomist philosophy. Jewett notes but downplays debates pitting science against religion on matters of fact, as in the conflict between evolution and creationism.

Some secular humanists joined religious critics early on, but it was after the Second World War that criticisms of scientism came to fully populate the political spectrum, leading, per Jewett, to 'cross-fertilization' between camps. On the left, these included groups like the Frankfurt school, countercultural figures and the anti-psychiatry movement, as well as some figures from the mainstream American liberal tradition. If American liberals have more typically been associated with scientistic modernism, it is partly because they were a target of such accusations from the critics to their left, and likewise from the right, where neoconservatives castigated the rationalism of a 'new class' of reforming bureaucrats and professionals. Such criticisms did not necessarily reject scientific methodology: Jewett observes that conservative social scientists, particularly free-market economists, developed what he calls 'sciences of inaction' that justified policy restraint on the ground that imperfect knowledge would render interventions counterproductive.

Science under Fire is a difficult book, mainly comprising brief, high-level summaries of critics' arguments, with sometimes two or three such summaries in a paragraph. This goes on page after page, chapter after chapter, making for tedious, often repetitive, reading. In a way, though, the repetition makes Jewett's point, and he appears to share the sense of tedium. His conclusion begins by revisiting a 2013 spat involving Leon Wiesltier's and Steven Pinker's competing visions of the humanities and science. Dismissing such disputes as rehearsing a 'tired pattern of sweeping charges and countercharges', Jewett advocates abandoning vague 'abstractions' about science as unhelpful in addressing the real problems we face (p. 259). That is likely right, but happily work goes on outside this discourse, and, as the rhetoric is thoroughly entrenched, we are probably stuck with its company.

Within critical discourses around science and society, one of the central problems is the issue of proper 'method', which is considered integral to arriving at legitimate conclusions and responsibly interpreting their consequences. In *The Scientific Method*, Henry Cowles addresses nineteenth-century episodes in this history. His main title is misleadingly broad, though, as his study is tightly delimited. He rightly observes that the century was replete with methodological thinking, calling it the 'age of methods', but he largely avoids discussing methodologically important fields such as physics, chemistry and statistics. His is also a strictly anglophone history, with some influential developments in Germany and France acknowledged but confined to the margins. Cowles's subtitle, *An Evolution of Thinking from Darwin to Dewey*, gets closer to his true subject: a fairly specific

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cascade of ideas about method and mind. He charts this genealogy from the debates between William Whewell and John Stuart Mill over induction, through the works of Charles Darwin, Herbert Spencer and their contemporaries, and on to American pragmatist philosophy. Even within the confines of the rather narrow and twisting trail he cuts through the thickets of nineteenth-century thought, the subject is not so much method itself. There is, for instance, only sporadic mention of how Darwin and Spencer formulated arguments and marshalled observational evidence. Cowles pays much more attention to what figures wrote about method in justifying their own work and criticizing that of others.

It is difficult to follow these rhetorical threads absent much context on the specific scientific arguments they referred to, but compelling themes certainly emerge. The most important concerns the links between actors' emphasis on proper method in studying the mind and their view of method as an achievement of the mind and an apt descriptor of its cognitive process. Darwin's work on evolution proved an enduring touchstone in this history, because the method-like mechanism of natural selection could be used to discuss the development of mind as well as the transmutation of species. The mind's ability to follow method soon became a key reference point in psychological discussions of children's mental development, anthropological discussions of the development of societies from a 'savage' state, and discussions in natural history of the differences between humans and other animals.

Of course, inquiries into mind and method flourished both well before and after the temporal bounds of Cowles's study, making his end points feel somewhat arbitrary. They are, though, deliberately chosen. Cowles finds significance in the place of hypothesis in the thought of Mill, Whewell and others, taking it to represent a new acceptance of constrained speculation in science. And he ascribes particular significance to Dewey, who in 1910 enumerated a simple set of cognitive steps in describing an 'act of thought' that was soon adopted by textbook writers as a description of scientific method. If not an outright cause, Cowles takes this latter event as at least coincident with a radical shift within psychology away from the methodological plurality, permissiveness toward speculation, and reflexive philosophizing of nineteenth-century thought, and toward a conception of method imported from laboratory science that was excessively rigid and lacked reflexivity. In the book's conclusion, Cowles posits that behaviourists led by Watson quickly overwhelmed Dewey's pragmatism and 'shut down the naturalistic study of science Darwin had helped inaugurate'. Suddenly, 'Behavior was everything in a specific and powerful sense: it was all that psychologists could study, and as a result – behavior was all that there was'. In this 'strange victory of method', the 'mind ceased to exist' (p. 273). This development presaged Skinner's even more extreme agenda and ultimately the perpetuation of behaviourism's methodological errors through all of twentieth-century psychology.

Because Jewett and Cowles both examine decidedly expansive traditions of thought, their analyses of particular works within those traditions are necessarily simplified and selective. For this reason, readers should not take specific points either author makes about these works as gospel. This is not an overwhelming problem for Jewett, because he is obviously less concerned with the particular intellectual projects of the sources he examines, and more with the prevalence of the theme of anti-scientism that is found across them. His book amply illustrates the appeal of this theme across critical traditions that are markedly different from each other, and it serves as a helpful guide to the various traditions that found the theme appealing. In fact, Jewett's book is quite useful in illuminating the debt that Cowles's book owes both to the century-old tradition of criticism against behaviourism, and to the half-century tradition of STS advocacy for epistemological pluralism. Moreover, it is clear that Cowles also borrows heavily from

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earlier anti-scientistic authors in presuming the scope and power of scientism to be far-reaching and self-evident. It is only through such a presumption that Cowles can assert in his concluding pages, with virtually no justification, that behaviourism's epistemological sins not only tainted all of twentieth-century psychology, but went on to infect all the sciences, even as other figures, such as the journalist Walter Lippmann, allegedly adapted behaviourism's methodological outlook into strategies for social control.

Not just a final flourish, I would argue that Cowles's twentieth-century tragedy also implicitly structures his reading of his nineteenth-century sources such that, cumulatively, they establish a relatively coherent and epistemologically virtuous set of ideas about method and mind that would later be destroyed. Yet these same sources, which contain and respond to a vast and complicated tangle of ideas, could easily be read quite differently. For example, if one took evolutionary psychology rather than behaviourism to be the twentieth-century villain, one would naturally read nineteenth-century thought as the poisonous tree from which that fruit grew. In that history, one of nineteenth-century Britain's most influential thinkers about method and mind, Francis Galton, might play a crucial role, rather than be ignored as he is in Cowles's account. One could also flip the narrative altogether by constructing the twentieth century as characterized by a multiplicity of traditions of inquiry into the mind that contrasts with a nineteenth-century struggle to escape limitations inherited from early modern philosophical traditions.

Ultimately, I believe that Cowles has built his account in the particular way that he has because it allows him to make a point not only about the science of psychology, but also about 'science' more broadly, in which he takes for granted that our current conception of science is deeply pathological. Thus, he advocates, it is possible even now to 'loop back to the age of methods' (p. 279). Valorizing the nineteenth-century sciences of the mind is certainly an original, if idiosyncratic, take on the theme of escaping from pathologized science. But, as Jewett shows, fighting over 'science' has had an enduring appeal at least partly because the theme can be adapted to such a stunning variety of intellectual projects.

Cite this article: Thomas W (2024). Why we fight about science. *The British Journal for the History of Science* **57**, 651–654. https://doi.org/10.1017/S0007087424001237

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