Yale's Medical Historical Library, where I work. Too expensive for individual purchase, the *DMB* is, rather, a major reference resource for all academic libraries.

TOBY A. APPEL

John Carson. *The Measure of Merit: Talents, Intelligence, and Inequality in the French and American Republics, 1750–1940.* xvii + 401 pp., tables, notes, index. Princeton, N.J.: Princeton University Press, 2006. $39.50 (cloth).

Among the many telling episodes included in John Carson's account of efforts to measure merit is one concerning the Société d'Anthropologie de Paris, founded in 1859. In order to discuss the comparative weights of brains or the prehistoric use of hatchets, Paul Broca and his followers had to agree to allow a police spy to attend all their meetings, for, as the government saw it, such science was fraught with political significance. It is this intertwining of science and politics, sometimes overt but more often covert, that forms the core of Carson's cogently argued, deeply researched, and highly original study tracing the history of scientific attempts to assess human differences.

Carson's approach to such a broad subject is both impressive and distinctive in at least three ways. First, his study is cross-cultural, for he shows how similar scientific questions were asked and answered in France and the United States. Second, whereas many historians have connected contemporary debates to scientific battles pitting nature against nurture that largely took shape in the nineteenth century, Carson traces their origins to an older and more nuanced set of ideas closely tied to eighteenth-century revolutionary traditions. Finally, Carson places language, discourse, and meanings at the center of his investigation, for he pays particular attention to both scientific conceptualizations and popular understandings of an amorphous set of linguistic terms—terms such as "talents," "faculties," "intelligence," and "merit."

Carson's study begins with the ideas of Enlightenment thinkers who boldly proclaimed the fundamental equality of man and the illegitimacy of hereditary systems of privilege. In the wake of the American and French revolutions, such ideas invested new political significance in any science that could explain the only human differences still considered legitimate—that is, those based on nature. In both countries, Carson argues, this generated a "visible rhetoric of republican equality" paralleled by a "shadow language" of natural inequality (p. xiii). Carson explores these languages by focusing on works by Jean-Jacques Rousseau, the abbé de Condillac, and Claude-Adrien Helvétius, as well as the correspondence between Thomas Jefferson and John Adams. Thus, as Carson astutely notes, while Jefferson addressed inequality by calling for a "natural Aristocracy" grounded in "Virtue and Talents," Adams saw such language as disguising rather than clarifying the issues involved. "Fashion has introduced an indeterminate Use of the Word Talents," Adams argued, for "Education, Wealth, Strength, Beauty, Stature, Birth, Marriage, graceful Attitudes and Motions, Gait, Air, Complexion, Physiognomy, are Talents, as well as Genius and Science and learning" (p. 27).

Among Carson's greatest strengths is his ability to present concise overviews of broad philosophical systems that shaped institutional practices in both countries. Thus, he shows how Scottish Common Sense philosophy, with its emphasis on man's "moral faculty," influenced nineteenth-century American education and how the ideas of Herbert Spencer and Charles Darwin were incorporated into a distinctively French version of Lamarckian evolutionary theory. Punctuating Carson's broader narrative are compelling case studies that reveal the tensions, ambiguities, and inconsistencies embedded in scientific treatises produced by anthropologists and psychologists. For instance, in *Crania Americana* (1839), the anthropologist Samuel G. Morton offered a hierarchical ranking that placed Native Americans below both Caucasians and Mongolians intellectually; yet when Morton turned from ranking racial groups (comparative anthropology) to describing them (ethnography), he cited many ways in which the Aztecs were superior to the Spanish, noting in particular their striking accomplishments in architecture, calendrics, arithmetic, and astronomy.

Particularly valuable is Carson's excellent analysis of the work of Alfred Binet, for he shows this psychologist as torn between the methods of the clinic, which produced intensive case studies, and the laboratory, which worked with extensive quantified data. Each method predominates in one of two works that made Binet world famous—the first in his intriguing studies of his two daughters, and the second in his quantified measuring scale for intelligence. These approaches, Carson argues, were more than merely different; they were essentially incompatible. Similar internal tensions are evident in the work of World War I American army testers, for, as Carson's fine analysis of military records shows, tests that seemed to measure a

variety of different aptitudes, such as those proposed by Edward Thorndike, were rejected in favor of tests that seemed to be measuring a single entity, as offered by Lewis Terman.

As these examples suggest, several questions repeatedly emerge in this literature, often in new forms and new language. For instance, does the word "intelligence" refer to some unitary capacity, or is it better described as a set of diverse skills? Can it best be assessed on some kind of hierarchical scale (as American psychologists chose to do), or should it be diagnosed individually, on a case-by-case basis (as French doctors continued to do)? To what degree and in what ways should group differences—whether gauged by skull size, test performance, or school achievement—be considered? Finally, what are the relative social advantages and disadvantages that follow from using either objective or subjective methods to assess merit? All of these issues, Carson shows, are evident in the intensely contested language found in affirmative action cases—cases that have now reached the courts in different ways in both the United States and France.

Carson's book undertakes the complex task of historicizing both the scientific and the political meanings attached to a set of terms that are difficult to define, internally unstable, and repeatedly contested but that nonetheless have entered into common parlance in consequential ways. Toward this end, he has written a clear and compelling history of methods of gauging human differences as they developed within two different scientific disciplines (anthropology and psychology), in two different national contexts, and across nearly two centuries. This is a daunting task, and *The Measure of Merit* is a very impressive achievement.

LEILA ZENDERLAND

Peter Dear. *The Intelligibility of Nature: How Science Makes Sense of the World.* xii + 242 pp., illus., figs., index. Chicago: University of Chicago Press, 2006. $27.50 (cloth).

In this collection of six case studies, Peter Dear interprets the theory and practice of an impressive range of scientists, from Descartes and Newton to Einstein and Bohr. He applies to these cases the basic notion of intelligibility that he previously developed in his article "Intelligibility in Science" (*Configurations*, 2003, *11*:145–161). That article defended "the legitimacy of looking at the role of 'intelligibility' over a considerable sweep of history, even in the likely absence of a transhistorical explanatory strategy for dealing with it" (*ibid.*, p. 161). His present study concurs in its characterization of scientific intelligibility as an ultimately irreducible category, a fundamental principle whose particular application in a given intellectual and cultural setting is unique to that setting (p. 14). What one scientific community regards as an intelligible belief may not always be meaningfully compared to beliefs that are considered intelligible within the conceptual framework presupposed by another scientific community.

However, Dear now adds a transhistorical thesis to his account of scientific intelligibility: that science as understood in modern culture is an ideology based on two mutually reinforcing beliefs concerning science as natural philosophy and science as instrumentality. People committed to these beliefs assert that scientific representations of the world are true—or, at least, reliable—and that scientific practices are successful in controlling and even constructing the relevant phenomena. Dear is critical of the circularity of these beliefs: "Why are science's instrumental techniques effective? The usual answer is: by virtue of science's (true) natural philosophy. How is science's natural philosophy shown to be true, or at least likely? The answer: by virtue of science's (effective) instrumental capabilities" (p. 6). *The Intelligibility of Nature* analyzes how this dual-purpose ideology exhibited itself in key episodes from the history of science since the seventeenth century.

Among the scientists discussed by Dear, Bohr is especially instructive as a thinker who sought to elevate the instrumental effectiveness of quantum mechanics to the status of "a kind of surrogate for intelligibility itself" (p. 165). In other words, he wanted to secure for quantum mechanics the benefits of both halves of Dear's ideology of science. Bohr's emphasis on the quantum theory's practical, predictive success without the assumption of hidden variables as well as his claim that measurement and observation themselves constitute a natural reality are highlighted by Dear. Despite the risk of inconsistency, Bohr thus exemplified the scientific outlook that dominates modern culture.

But Dear's other scientific ideologues risked different sorts of inconsistency. Several whose theoretical work benefited large-scale economic projects—like Michael Faraday and William Thomson, whose work on electromagnetism made possible the first transatlantic telegraph cable—merged the aims of their own basic research with the aims of national self-interest. Darwin, by contrast, found himself at risk of yet another kind of inconsistency when he responded to two opposing groups of critics. The