

digital computer—not simply on a metaphorical level, but also in terms of its inherent biological structure. Indeed, in his 1960 essay “Minds and Machine” Putnam asserted that in fact most of the traditional mind-body problems in Western philosophy were “wholly linguistic and logical in character.” In other words, both language and metaphysics was amenable to computational solutions. Likewise, Jerry Fodor borrowed heavily from the work of the proto-computer scientist Alan Turing (or, as Golumbia argues, his own idiosyncratic interpretation of Turing’s work) in his development of his Intentional Realist stance, which posited a formalistic (and computationally oriented) “Language of Thought.” In both cases, Golumbia sees in late twentieth-century analytical philosophy the same confluence of computationalist institutions and ideologies that so influenced contemporary linguistics. And once again, he relates this seemingly internal intellectual development within the discipline to its larger sociopolitical context: computationalism, when harnessed to the authority of the state, reifies a faith in instrumental rationality in which reason is the ultimate arbiter of both truth and power.

In a pair of chapters entitled “Computationalist Linguistics” and “Linguistics Computationalism,” Golumbia makes explicit the political and ideological dimensions of computationalist discourse. He argues that the early advocates of computational approaches—Alan Turing, John von Neumann, Claude Shannon, and Konrad Zuse—did not so much engage with the philosophical questions posed by the computer as ignore them. They simply asserted what to them seemed intuitive: that not only was the human brain a computer, but so also was the human mind. In particular, Warren Weaver, who helped popularize the work of Shannon on the mathematical foundations of communication, entirely avoided “all discussion of prior analysis and formal systems, as if these fields had simply appeared *ex nihilo* with the development of computers” (pp. 86–87), in his 1955 volume *Machine Translation of Language*. Despite the fact that the technological challenges associated with actually performing machine translation quickly revealed the practical and metaphysical shortcomings of the computational approach, the essential analogy between mind and machine remained an article of unwavering faith among computational linguists. In fact, over the course of the twentieth century the metaphorical connection between language and computing became even more influential: in a variety of social sciences and the humanities, the idea that “the whole world was a text” that could be

“marked up” syntactically was made practical reality in the move toward “digital humanities.” The computer, in this context, is for Golumbia “largely a proxy of an idealized form of rationalism” (p. 13).

As the book moves beyond its early, focused study of linguistics and philosophy, its analysis becomes necessarily more perfunctory. In a series of chapters that cover an enormous range of territory, Golumbia identifies the legacy of computationalism in a wide variety of cultural, economic, and technological products and activities, from the Microsoft Office suite to the collapse of Enron. His keen eye for the far-ranging influence of “computer evangelists” is at times poorly served by some of the less rigorous popular histories of computing (Edwin Black’s polemical and widely discredited *IBM and the Holocaust* [Crown, 2001], for example), but his overall thesis—that it is essential that we identify and interrogate the values embedded in computer technology and rhetoric—remains convincing and coherent. Although the book is not primarily historical, historians of modern science, technology, and politics will all benefit from exploring it.

NATHAN ENSMENGER

Jerome Kagan. *The Three Cultures: Natural Sciences, Social Sciences, and the Humanities in the Twenty-first Century.* xii + 311 pp., tables, index. New York: Cambridge University Press, 2009. \$21.99 (paper).

Jerome Kagan, a distinguished emeritus professor of developmental psychology at Harvard, has written an often contentious, always riveting account of the relations between disciplines in the American academy at the outset of the twenty-first century. Despite its taxonomical title and systematic structure, readers should know that *The Three Cultures* offers less a map of the disciplines than a personal journey through them, with Kagan serving as the expansive, idiosyncratic, and funny guide. The book is replete with such oddball imaginings as the thoughts of Lao Tzu on John Nash, and there are seemingly few points that Kagan cannot illustrate through the right *New Yorker* cartoon. The result, perhaps unexpectedly, is a book that can drop jaws: sometimes in dismay, as when Kagan cites a study that purports to explain the results of Senate races with reference to the shapes of candidates’ faces, but often in admiration, as when he elegantly conveys the importance of personal insight in astronomical analysis. “Neither a page of numbers nor a set of photographs

reveals any truth,” Kagan writes. “A room full of data is a quiet place” (p. 217).

The book begins by identifying the approaches, vocabularies, and contributions of the natural sciences, social sciences, and humanities. This first chapter also introduces the book’s major argument: the laudable contention that each approach has its place. “It is time for the members of the three cultures to adopt a posture of greater humility,” Kagan concludes, “for, like tigers, sharks, and hawks, each group is potent in its own territory but impotent in the territory of the other” (p. 275). The four core chapters consider each domain in turn, beginning with the natural sciences. Kagan suggests that the explanatory power of the sciences exerts a kind of gravitational pull on other fields, but no approach escapes his censure and the sciences are no exception. He blasts the arrogance displayed by some of their most prominent practitioners, and this section includes a spirited rejoinder to Richard Dawkins’s recent writings about religious belief. The third and fourth chapters tackle the social sciences in two parts: those that study individuals or small groups, such as psychology and anthropology, and those that generalize about large populations, such as political science and economics. The latter particularly irritate Kagan, and their segregation into a chapter of their own seems partly intended to enable him to assail their commitments without inflicting collateral damage—for instance, when he charges that “the economists who refuse to question the validity of their equations in order to ‘look like’ physicists resemble adolescents who aspired to play in the World Series but settled for being members of a group of weekend joggers” (p. 191). After the polemical intensity of these chapters, the discussion of the humanities comes as something of a letdown. Kagan believes they have lost confidence, owing to a combination of the ascendancy of natural science and the nihilism of postmodernism, and he concludes by expressing the hope that they might yet offer the spur to social action and the compass for moral purpose that contemporary society so manifestly requires.

As that characterization of the humanities suggests, there is much with which to argue in this book. These arguments need not take the form of quibbles with Kagan’s specific provocations, which effectively—often winningly—compel the reader’s attention. The important question is whether the title, structure, and argument of *The Three Cultures* adequately account for the relations between and among academic domains. Kagan writes, for instance, that “the problems probed and solutions offered

by social scientists and humanists are more constrained by their historical moment than those of the natural sciences” (p. 25), but that contention will raise eyebrows among readers of this journal, with its commitment to exploring “the history of science and its cultural influences.” And mutual respect among colleagues is one thing, but mutual exclusivity between their concerns is another, since the objects of study of, say, the humanities and the social sciences often do overlap. In this light, perhaps a better way of understanding the contribution of the humanities is not that they create objects of beauty, or offer insights about the human condition, but, rather, that they sustain an intellectual temper and an institutional space more attentive to nuance, contingency, and the complexity of causation than those approaches Kagan powerfully criticizes under “Social Sciences 2.” *The Three Cultures* might not resolve such boundary disputes—which follow, after all, from the very existence of boundaries—but there is no question that this spiky, learned, and intellectually generous volume offers an admirable model for how to engage in them.

GUY ORTOLANO

Michèle Lamont. *How Professors Think: Inside the Curious World of Academic Judgment.* 330 pp., tables, app., bibl., index. Cambridge, Mass./London: Harvard University Press, 2009. \$27.95 (cloth).

This book is part of a larger sociological project. Michèle Lamont here summarizes the results of a study of humanities and social science professors as they evaluate proposals submitted to several different private funding agencies. Her concern is to describe the evaluative criteria used by the different disciplines in judging the work of colleagues in other disciplines and to understand the differences in evaluative style that she observes. This report relies on data collected from interviews and observation of meetings of reviewers. There is no consideration of the history of peer review.

How Professors Think is aimed at academics who are interested in the workings of academia, whether as a subject matter for research, as a matter of curiosity about the working of their own environment, or because they are seeking practical advice as an aid to their own careers. All three audiences will find something to like here, although the technical specialist in the organization of research will find that her appetite is whetted but not satiated.

The first chapter sets the stage by discussing