BOOK REVIEWS

Embattled Values

Science and Anti-Science. GERALD HOLTON. Harvard University Press, Cambridge, MA, 1993. xii, 203 pp., illus. $24.95 or £19.95.

Gerald Holton is a zealous champion not only of science but of a particular notion of its cultural significance within the drama of modern history. Like many avatars of the Enlightenment and of 19th- and early–20th-century "progressive" thought, he believes science to be a powerful agent of human liberation and well-being. *Science and Anti-Science* is the most recent of a three-decade string of books, articles, and lectures through which he has sustained his reputation as a resolute defender of this venerable rationalist faith against a variety of skeptics and scoffers.

This collection of reworkings of previously published essays advances Holton's project by two means. One is an affectionately detailed, almost antiquarian account of the activities of selected great scientists and philosophers. The second is a sketch of the intellectual history of modern times as a struggle between the Enlightenment and its irrationalist enemies. In both modes, Holton picks up where he left off in *The Advancement of Science, and Its Burdens* (1986), a collection of papers featuring his performance as Jefferson Lecturer.

The central paper in the first mode is an account of the influence of Ernst Mach on a succession of "positivist" thinkers, especially in the United States. The actors in Holton's narrative are the leaders of the Vienna Circle and those American philosophers and scientists who took up its vision of a "unified science" that could serve as the foundation for an entire way of life. Holton traces both the personal connections and the philosophical affinities of Otto Neurath, Percy Bridgman, Charles Morris, Philipp Frank, W. V. O. Quine, and the other principals of his story. He quotes extensively from statements these men made about each other and about Mach.

The epistemic universalism espoused by Holton's cast of characters is now widely condemned as a "totalizing" project fated to confine, if not to destroy, the diversity of potentially valuable approaches to knowledge. Hence it is surprising that Holton displays so little critical distance toward their ideas. Scattered in his footnotes are references to Peter Galison, Robert Proctor, and other historians who, while far from contemptuous of logical positivism, have recognized it as a particular construction of reason rather than taken it as reason's natural embodiment. But Holton betrays scant sensitivity to the historicity of the idea of reason. He concludes this study by declaring "correct" the claim about the historical significance of logical positivism offered in the bland apologia with which the positivists signed off their own encyclopedia: "they have paved the way for a new and fruitful manner of philosophizing."

The conceptual limits of Holton's engagement with the positivist tradition are remedied, to some extent, in his exercises in the second mode, the defense of "scientific" values within the openly contentious *Kulturkampfen* of modern times. In these essays, Holton is no longer a respectful chronicler of reason's exemplars but an embattled controversialist acutely aware that his values are now on the defensive in many quarters.

Holton's polemic against science's detractors takes its most pointed form as a warning. Within "the anti-science phenomenon" of our own time represented by such apparently benign presences as Václav Havel and Kurt Vonnegut there slumbers a "Beast." This irrationalist monster, if awakened, could reenact the horrors of Nazism and of the Inquisition. Holton seems to see himself in a debate with the Grand Inquisitor of Dostoevsky's *The Brothers Karamazov*, whose celebration of "miracle, mystery, and authority" he quotes. A large part of Holton's mission in *Science and Anti-Science* is to persuade his too-complacent contemporaries that the old enemies of the Enlightenment are far from vanquished. Rather, they are formidably latent among astrologers, New Age healers, and creationists. That the United States for eight years had a president from Hollywood who professed support for these pernicious cultural tendencies is, for Holton, an emblem for the seriousness of the problem.

Holton seems much more comfortable debating a familiar foe like the Grand Inquisitor than engaging those thinkers of our own time who doubt the continued adequacy of the classical Enlightenment construction of the relation of reason to freedom and human well-being. For example, he invokes Michel Foucault only for having coined the useful phrase "rhetorical space" and says nothing about François Lyotard or Richard Rorty. Although he mentions along the way the names of Bruno Latour, Sandra Harding, and several other contemporary theorists of science whose ideas might challenge his traditional categories, the thrust of his argument is always to diminish the novelty and particularity of today's intellectuals in order to group them as either proponents or opponents of a science-centered "Modern World Picture" defined in terms that might well have been appreciated by Condorcet, Mill, and the young Bertrand Russell. There is merit to Holton's implicit insistence that these old fellows got more things right than today's literati readily grant, but he does not engage contemporary thought about science and culture with the care required to indicate why anyone with humane instincts and a modicum of good sense would think differently from himself.

Holton's noble and persistent call for the defense of scientific culture is reminiscent of Herr Settembrini's voice, debating the irrationalist Herr Naphta in Thomas Mann's *The Magic Mountain*. But Mann created a fictional world in which Settembrini labored alone, and appeared to falter, whereas Holton inhabits a real one in which other voices, speaking in different idioms, lend credibility to the hope that the essential intellectual resources of the Enlightenment will not be lost in the postmodern era. Among these voices are Thomas Nagel, Ernest Gellner, Philip Kitcher, and, in at least a few of his many roles, Foucault. Shortly before his death, Foucault spoke antiphonally to Kant in "What Is Enlightenment," upholding the quest for knowledge and liberty in terms that even Holton, were he to become a bit less worried about a slippery slope toward the Beast, might find encouraging.

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Questions of Enslavement

Visions of Caliban. On Chimpanzees and People. DALE PETERSON and JANE GOODALL. Houghton Mifflin, Boston, MA, 1993. xii, 367 pp. + plates. $22.95.

The current debate over the rights (if any) of animals turns on issues raised by Aristotle, who argued that beasts and stupid people are natural slaves, subordinated by nature to their wise masters just as the body is subor-