
obsession with rational social management."

Dewey was out of favor with his fellow philosophers when he died, for his approach was regarded as old-fashioned. Now he is being read again by philosophers and political theorists who worry about the state of contemporary liberal democracy and speak of a new communitarianism. Ryan's respectful but not reverent book is, in fact, the third major work on the philosopher to appear in recent years. The others, which Ryan acknowledges and praises even while observing that "their" Dewey is often not "his," are Robert Westbrook's *John Dewey and American Democracy* (1991), "a distinguished intellectual biography," and Steven Rockefeller's *John Dewey* (1991), "truer to Dewey's philosophical and religious concerns."

Taking readers through 100 years of American intellectual life, Ryan locates Dewey's politics at the heart of the 20th century's attempt to articulate a "new liberalism" that allows for individual freedom even as it acknowledges the regulatory role of the state in working to improve the life of the national community. In this, Ryan's position is orthodox and at odds with Westbrook's, who portrays a more radical, socialist inclination in Dewey. Ryan's British background allows him to see Dewey as more than simply an American figure—to recognize how he was influenced by British philosophers and to place him in a larger world context, as a "modern" and a "North American."

Dewey's religious views leave Ryan, like many before him, a bit baffled. He complains that "Dewey wants the social value of religious belief without being willing to pay the epistemological price for it." Yet he acknowledges as well that Dewey was "a visionary of the here and now" who could "infuse" the present with "a kind of transcendent glow" that overcame the vagueness of his message and won widespread conviction. Ryan's book should help the man he calls "the century's most influential preacher of a creed for liberals, reformers, schoolteachers, and democrats" find an attentive new audience.

Science & Technology

FIRE IN THE MIND: Science, Faith, and the Search for Order. By George Johnson. Knopf. 357 pp. \$27.50

"There are few places on earth that so many people have claimed as holy and where so many people see the world in different ways." *New York Times* science writer George Johnson is speaking of the desert and mountains surrounding Santa Fe, New Mexico. A rich mix of peoples make their home here, from descendants of the native Anasazi, who left behind their puzzling runes scratched into the rocks, to the Hermanos Penitentes, a Catholic brotherhood whose members regularly perform a rite of self-flagellation in order to recall the sufferings of Christ. Both groups were profoundly influenced by Coronado's Spanish legions, and later by *Yanqui* expansionists sweeping down from the north.

The land remains a magnet. At Trinity Site, 150 miles to the south, scientists detonated the world's first nuclear device; at the nearby Santa Fe Institute, Big Thinkers still ponder the Big Questions, including whether the universe is governed by some underlying order.

Johnson observes that the people from these different cultures, sciences, philosophies, and religions all share common ground. He cannot help wondering whether they might, in some larger sense, share Common Ground as well. Could there be strands hidden within their varied tenets that, when woven together, might yield a tapestry explaining the origins of the universe? Johnson is adept at adding the proper touches of local color and telling detail, but his task proves elusive. Time and again he follows strands to the end only to find them circling back to where he began. Thus, he describes experiments occurring at the "edge of chaos" and remarks that "science, the art of compressing data, turns its gaze back on itself and finds, surprise, that the very ability to gather and compress data is fundamental. . . . Driven to spin our gossamer webs, we can't help but put ourselves, the spiders, at the very center."

Indeed, says Johnson, humanity is "bequeathed by nature with this marvelous drive to find order," and this desire sometimes leads us

to see patterns that may not be there. When the mysteries overwhelm our weak minds, our religions invoke a Great Designer, and the age-old struggle by scientists and spiritualists to explain the unexplainable continues.

Yet what else can we do but seek and question? Science, after all, has looked into the future and seen our eventual doom, if not by fire then by ice. Eternally hopeful nonetheless, we launch probes into space beyond the reaches of our most powerful telescopes and send as our emissary Johann Sebastian Bach on a compact disc. But for Johnson, "expecting galactic neighbors to recognize our signals as signals" may be the ultimate exercise in wishful thinking. In the end, he can do little more than offer up a kind of prayer to the pursuit of knowledge, even if all we are constructing are "Towers of Babel that reach higher and higher above the plains."

SCIENCE AND THE FOUNDING FATHERS: Science in the Political Thought of Jefferson, Franklin, Adams, and Madison. *By I. Bernard Cohen.* Norton. 368 pp. \$25

Not since Theodore Roosevelt, who gave a biology lecture at Oxford University, has there been a U.S. president with a serious claim to competence in experimental science. What a change from the intellectual temperament of the first presidents, for whom science was an integral part of their lives. They were, after all, men of the 18th century, and, in the Age of Reason, reason found no higher expression than in science. As Cohen, a professor emeritus of the history of science at Harvard University, shows, "the sciences served as a font of analogies and metaphors as well as a means of transferring to the realms of political discourse some reflections of the value system of the sciences."

Cohen fills his book with entertaining anecdotes about the Founding Fathers' scientific doings. James Madison made detailed measurements of the organs of the female weasel (the mole too), and Thomas Jefferson published the data in his *Notes on the State of*

Virginia (1787) to refute the view of a French naturalist who had declared that all plant and animal life would degenerate in the inferior natural conditions of the New World.

Cohen tellingly points the science toward the politics. In America, the rational, empirical, and apparently successful methods of the one inspired the practical optimism of the other. In 1786, Benjamin Franklin justified the new country's halting political progress by arguing that "we are, I think, in the right Road of Improvement, for we are making Experiments."

But Jefferson and Franklin held their duty to politics above scientific inquiry. When Franklin abandoned his own experiments to respond to public crises, he wrote, "Had Newton been Pilot but of a single common Ship, the finest of his discoveries would scarce have excused or atoned for his abandoning the Helm one hour in Time of Danger"—particularly, Franklin added, "if she had carried the Fate of the Commonwealth."

In his *Principia* (1687), Isaac Newton proclaimed the three laws of motion to be self-evident truths, though previously they had been evident to no one. Jefferson admired Newton and hung his portrait at Monticello. When he wrote in the Declaration of Independence that certain "Truths" were "self-evident," we can hear the echo, and perhaps surmise that he too was referring to hypotheses—human equality and unalienable rights—of which many were unpersuaded.

Cohen argues that Jefferson invoked Newton's authority only *by analogy*, and that neither he nor Franklin believed there were exact scientific laws for society as there were for the natural world. He refutes Woodrow Wilson's assertion that the Constitution should be interpreted as a reflection of Newtonian principles about forces in balance that produce some perfect adjustment. Rather, he says, "science in general and the Newtonian philosophy in particular served to provide acceptable metaphors for discussion or argument." But Americans are fortunate that the nation's Founders went to school on such metaphors.