

ROBERT SCHUMANN:
Herald of a 'New Poetic Age.'

By John Daverio. Oxford University Press.
624 pp. \$45

Although he gave us such indisputably great works as his *Piano Quintet* (1842) and *Cello Concerto* (1850), few composers have been subject to as many unfounded charges as has Robert Schumann (1810–56). Scholars claim that he was unable to orchestrate, that he couldn't handle larger musical forms, and that his later pieces, composed when he was suffering from mental illness, are gloomy failures devoid of the freshness and lyricism found in his earlier work.

The shade of the German romanticist may now rest more easily, thanks to this authoritative new biography. To defend Schumann's skill in orchestration, Daverio, a musicologist at Boston University, shows how the rich programmatic content of such works as *Scenes from Goethe's Faust* (1844–53) is conveyed through inventive instrumental combinations. And to demonstrate that the composer could handle longer forms, Daverio points to the highly logical architecture of *Paradise and the Peri* (1843).

By far, though, Daverio is best at reevaluating Schumann's final works. To be sure, Schumann did descend into psychosis. On February 26, 1854, after several years of depression and two weeks of hearing voices (angelic and demonic), he plunged from a bridge into the icy waters of the Rhine. Rescued by fishermen and carried home amid a crowd of jeering Carnival revelers, he was

taken that same day to an asylum, where he died two years later. Eccentric, dark, and often repetitive, the compositions dating from this period have been dismissed as the products of a decaying intelligence. But Daverio finds in them "a heightened intensity of expression" and an inventiveness presaging the music of Anton Bruckner, Max Reger, and Arnold Schönberg. Daverio insists that the economical use of thematic material and masterful handling of form in pieces such as the *Fourth Symphony* (1851), the *Faust* overture, and the *Violin Concerto* (1853) could have come only from an artist "in full command of his or her rational powers."

What Daverio fails to note is that performers, too, have misread these later works. Take the underplayed *Violin Concerto*. From its first interpreter, Georg Kulenkampff, violinists have disfigured the polonaise finale by speeding it up, reaching for the sort of pyrotechnic display associated with concerto finales. A recent recording by Latvian violinist Gidon Kremer is a more faithful account. Perhaps Daverio's inspired scholarship will encourage other more authentic interpretations. If so, Schumann's neglected gems will receive the performances they deserve.

—Sudip K. Bose



Science & Technology

MONAD TO MAN:
*The Concept of Progress in
Evolutionary Biology.*

By Michael Ruse. Harvard University
Press. 640 pp. \$49.95

Evolutionary biology is seductively metaphorical. Its evidence points in so many suggestive directions that its practitioners are naturally tempted to make global speculations. Charles Darwin understood this very well, and knew moreover that it could lead to unfounded ideas as well as innovative ones. Concerned to establish his new theory as serious science, Darwin laid out a rigorous formula for evolutionary discourse, explicitly rejecting—for him-

self and his followers—the more speculative style of early evolutionists such as Jean Lamarck and Darwin's own grandfather Erasmus.

Over the long term, however, such restraint was a lot to ask. Beginning with T. H. Huxley, evolutionary biologists arrived at a two-track solution to the problem: they published one set of books and articles to establish professional credentials, and a distinct but parallel set to appeal to popular audiences and to serve as an outlet for speculation. This strategy has not been lost on mainstream biologists, many of whom see evolutionary biology as a field tainted by the imposition of cultural values. They pay lip service to it but in practice regard it as a

less-than-orthodox subject for research.

Rightly so, says Ruse, professor of philosophy and zoology at the University of Guelph in Ontario. He argues that evolutionary studies have been shaped from the beginning by an overarching “concept of progress” that does not, despite its secular nature, fit comfortably into the scientific enterprise. In this methodical study, he tries to show how notions of social and moral betterment—and their perceived connection to biological progression from microorganism to man—have influenced the scientific thought of major Anglo-American figures from Herbert Russell Wallace to George Gaylord Simpson and Geoffrey Parker.

The case is not always convincing. Consider Ronald A. Fisher (1890–1962), whose achievement was to add nuance and mathematical structure to evolutionism by combining Darwin’s theory of natural selection with Gregor Mendel’s principles of genetics. Fisher was passionately interested in eugenics and believed, erroneously, that almost all human abilities are innate. Ruse asserts, but does not really prove, that Fisher’s enthusiasm for human progress through breeding distorted his actual scientific work.

More compelling is Ruse’s examination of the contemporary debate over Edward O. Wilson’s theory of sociobiology, which posits that human social behavior can be understood in terms of evolutionary origins. Ruse makes the cogent point that while Wilson’s enthusiasm for cultural progress has led to an explicitly stated belief in biological progress, the same enthusiasm in Stephen Jay Gould has led to a career built on energetic denial of biological progress. In this modern context, it does seem that evolutionary biology has become infused, indeed polarized and defined, by an underlying cultural value.

—David Reich

ABSTRACTING CRAFT:
The Practiced Digital Hand.

By Malcolm McCullough. M.I.T. Press.
250 pp. \$25

“Between the morning news and your bedtime reading there will be road signs, billboards, computer screens, junk mail, posters, photo prints, presentation slides, pictures on people’s shirts, snippets of television shows, maybe a movie, a computer game, maybe a couple of downloads from the Internet, a videotape. . . .” As described by McCullough, a professor of architecture at Harvard

University, the visual explosion ignited by the computer age is both sinister and inspiring.

McCullough is concerned about the computer’s ability not only to multiply images but (with advances in digital technology) to alter them as well. “Bits replace atoms,” he writes, “and digital signal processing undermines the very physicality of reproduction.” Armed with keyboard, mouse, and staggeringly sophisticated graphics software, the computer artisan can experiment endlessly on a single base image, the untouched original on a disk. Were he alive today, Leonardo da Vinci could spawn a myriad of Mona Lisas, each with her own enigmatic smile.

Yet what about creating the Mona Lisa in the first place? Admitting that “computers’ incontestable practicality gives rise to an astonishing amount of banal and cheaply executed work,” McCullough makes the seemingly commonplace observation that the computer is a *tool*, not a substitute for the vision of the artist or the thinker. In effect, he denies the claims of most software marketers. Buying a copy of Adobe Illustrator will not magically transform someone into, say, Maurice Sendak.



Such conclusions may not be astounding, but they do illuminate matters that can be overlooked or misunderstood in today’s workplace. Too often, writes McCullough, “left-over industrial-era attitudes about technology” lead

managers to employ armies of workers with only modest computer skills to perform simple drafting and other applications, rather than hire highly skilled people capable of a variety of functions. Such “task automation” overlooks that “the computer is not a tool so much as hundreds of tools.”

Further, McCullough urges people with artistic ability not to turn their backs on computers. In his brave new world, the digital artisan will use a computer just as a stone carver wields a pneumatic drill to sculpt, or a skilled potter operates a motorized wheel to create an exquisite vase: as an aid, not an adversary.

—James Carman