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Review of Heidegger's Confrontation with Modernity: Technology, Politics, and Art by Michael E. Zimmerman

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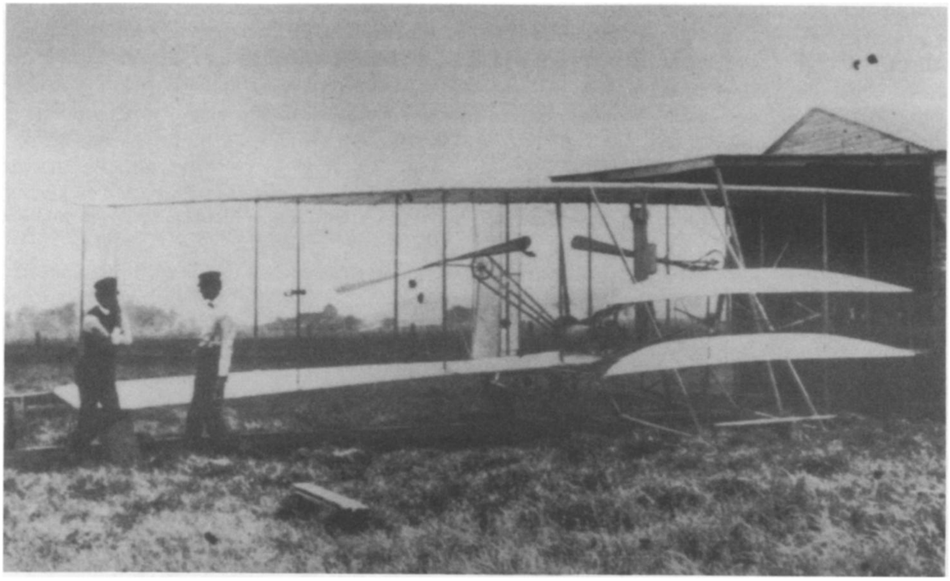

Orville (left) and Wilbur Wright with their second powered airplane, 1904 (National Air and Space Museum, Washington, D.C., reprinted in Jakab, Visions of a Flying Machine*).*

might have made more of the uncanny rapport between Orville and Wilbur, who sometimes seem to have functioned as a single consciousness in two bodies, and of "the boys' " strong-willed father, Bishop Milton Wright of the Church of the Brethren, whose austere standards, inner directedness, and meticulous concern for detail clearly influenced them.

A more methodologically self-conscious study of "the process of invention" would presumably require more than one case study, but meanwhile Peter Jakab has given us an illuminating and highly valuable monograph. *Visions of a Flying Machine* is a must for historians of science and technology, and good reading for all.

PAUL BOYER

Michael E. Zimmerman. *Heidegger's Confrontation with Modernity: Technology, Politics, and Art.* (Indiana Series in the Philosophy of Technology.) xxviii + 306 pp., index. Bloomington/Indianapolis: Indiana University Press, 1990. $39.95 (cloth); $18.95 (paper).

Michael Zimmerman has composed this book in two voices. One is the clear and generous voice that we have heard for two decades and that has made Zimmerman the foremost expositor of Heidegger in the English language. It speaks in the second half of the book and recounts Heidegger's discovery of technology as the epochal force of the modern era. The historical background that Heidegger provides for the rise of technology is a specific notion of reality, first conceived in ancient Greece. The real, in this view, is what humans have presented, articulated, and produced. Whatever unfolds of its own accord, whether serenely or darkly, moves into oblivion. "Productionist metaphysics" is Zimmerman's helpful term for the development that overarches the emergence of modern technology.

The second voice is bitterly critical of Heidegger and responds to the recent discussion of Heidegger's entanglements in reactionary and fascist politics. Zimmerman illuminates the cultural conditions of Weimar Germany, where both chauvinist and liberal thinkers were both fascinated and horrified by technology and where Heidegger eventually placed himself in the nationalist and antitechnological quadrant. But though Zimmerman speaks with a newly anguished inflection in the first half of his book, his customary command of the primary and secondary material and his characteristically magnanimous appraisal of scholarship are evident here too. Zimmerman's circumspection and fairness make his book a benchmark for all Heidegger scholarship to come. To that end it contains a most helpful list of Heidegger's works and English translations, but unfortunately there is no bibliography of the secondary sources, and the index is no better than fair.

The unresolved question of the book is why it contains two voices and, essentially, two books, one purporting to show that Heidegger's view of technology must be seen "from *within* the limits imposed by his own historical circumstances" (p. xvi) and another that presents Heidegger's "theoretical account of Western history and technology" (p. 133), an account that claims to reconceive our very notions of circumstance and history. The first book appears to deflate the second. The second threatens to undermine the first.

Zimmerman is open about the inconclusiveness of his book (pp. xxi, 272). And he rightly insists that, before rushing for answers, we must get clear on the question whether Heidegger is right in suggesting that all of us are implicated in a radically transformative and perilous enterprise, namely, technology. Of course, Heidegger did not suggest; he pontificated, and, to their credit, American readers tend to be deaf to pontification. If there is a crucial insight in Heidegger's thought, it needs a lucid and engaging interpreter like Zimmerman to become fruitful in this country.

ALBERT BORGMANN

Mary Croarken. *Early Scientific Computing in Britain.* viii + 160 pp., illus., tables, apps., bibl., index. Oxford: Clarendon Press, 1990. $52.

Given the meaning now attached to "scientific computing," this book's original title as a dissertation better describes its contents. It is a study of "The Centralization of Scientific Computation in Britain, 1925–1955." It traces the several roots of the National Physical Laboratory's Mathematics Division, established in 1945 as a national computing center providing government, industry, and universities with computing services; maintaining a variety of computing machinery; and carrying out research on both machines and methods of computation. Its slow germination as an institution issued in a short life, for it soon succumbed to the spread of the general purpose electronic computer, which effectively decentralized computation and distributed expertise in the field.

After a brief review of the various computational aids in use at the turn of the century, Mary Croarken begins her account with the Nautical Almanac Office (NAO) and L. J. Comrie, who from 1925 to 1936 as deputy superintendent and then superintendent established the methods and acquired the apparatus to move the office from logarithmic tables to desk calculators and punched-card machines. The NAO began to look like a mechanized computing center, and Comrie's own extramural work with various scientific groups might have extended its purview. Instead, conflicts with the Admiralty led him to resign and set up his own Scientific Computing Service, offering both computing and consultation to a variety of users, while the NAO continued to serve its own needs only.

Also in the mid 1930s, Vannevar Bush's differential analyzer spurred several emulative efforts, most important among them those by D. R. Hartree at Manchester and John Lennard-Jones at Cambridge. Although Hartree's machine, the only full-scale differential analyzer in Britain in the late 1930s, was available to other researchers, it was essentially an adjunct to his work as a physicist. By contrast, seeing the general interest in an initial small model, Lennard-Jones pressed Cambridge to place a full-scale device in a new University Mathematical Laboratory charged with service and research in all forms of mechanical computation.

World War II brought what Comrie could not achieve: an Admiralty Computing Service (ACS) based on the NAO and serving a range of government agencies. Foreseeing a continuing need for scientific computation after the war, representatives of the ACS proposed to the Department of Scientific and Industrial Research that it establish a Central Mathematical Station, which was to provide both computing services and research on numerical mathematics and computing machinery. The result was the NPL Mathematics Division under the leadership of J. R. Womersley.

Originally structured around desk calculators, analytical engines, and statistics, the