A People's History of Computing in the United States by Joy Lisi Rankin (review)

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A People's History of Computing in the United States. By Joy Lisi Rankin. (Cambridge, Mass.: Harvard University Press, 2018. Pp. 336. $29.95 hardcover)

When the World Wide Web exploded on the public scene in the mid-1990s, journalists, historians, and technologists scrambled to explain the origins of the Internet, the machines that it ran on, and the people who built it. The narrative that emerged, and persists, focused on the exploits of young men working in the San Francisco and Boston areas in the 1950s through the 1980s. In popular histories that draw on this framework, the computers of the 1960s and early 1970s were room-sized, imposing IBM mainframes to which users had little or no personal connection. Then, around the middle of the 1970s, small groups of male hobbyists, tech geniuses, and innovators in northern California created the personal computer, "liberating" users from system administrators and the mainframe computers to which they controlled access. The heroes of this story are people like Steve Jobs and Steve Wozniak, people said to have popularized computers and brought them to the masses.

Joy Lisi Rankin's *A People's History of Computing in the United States* joins a growing literature seeking to look at the history of computing and software outside the orbit of Silicon Valley and Cambridge, Massachusetts. In doing so, she takes aim against this conventional narrative—which she calls "the Silicon Valley mythology" of the history of computing—and tells the story of a pre-Internet network culture that emerged at American colleges, universities, and high schools. Declaring that "we need histories not of computers but of the act of computing," Rankin recounts the experience of those who built, used, and remade these early, eminently *social* networks (p. 11). In doing so, *A People's History of Computing* recovers the roles of education researchers, teachers, and students in inaugurating our digital age.

Rankin's most significant contribution to the literature is the concept of "computing citizenship." Where many accounts of computing culture stress the consumerist dimensions of user experience, Rankin focuses on the participatory and constructive aspects of these early communities. In doing so, she takes up sites and people often ignored in most conventional accounts of the history of computing. Instead of Palo Alto or Cambridge, Rankin presents digital culture as it emerged in New Hampshire, Minnesota, Illinois, and in classrooms across the country. On another scale, she also provides a history of a nationwide movement to treat access to computing and networks as a public utility. To do this, Rankin draws on an impressive array of sources ranging from traditional archival records, university periodicals, and oral interviews to born-digital sources like network discussion files and computer games.

Most of the book is composed of in-depth investigations of college and high-school-based computer network experiments in the late 1960s and early 1970s. Rankin explores three main cases: the Dartmouth Time-Sharing System (DTSS); PLATO (Programmed Logic for Automatic Teaching Operations, an educational computing initiative of the University of Illinois); and Total Information for Educational Systems (TIES), a Minnesota-based timesharing system which spurred the state to create the Minnesota Educational Computing Consortium (MECC), the educational software organization that released *The Oregon Trail*. Time-sharing and shared storage on these networks meant that users were able to send each other messages, share games they had created, and collaboratively edit documents, like the so-called "gossip files" on DTSS, where students from schools around New England could share dirt on campus life. Out of this emerged a lively, geographically distributed culture that rivaled that of the more famous ARPANET.

Seeking to tell the history of networking "from the bottom up," Rankin shows how these early networks were designed to be used by people without much previous exposure to computing. The designers of DTSS, for example, had grand ambitions for inclusivity. They developed the BASIC programming language, which stressed user friendliness over computational efficiency and mandated that all students taking introductory math classes learn BASIC and the fundamentals of how to run the timesharing system. The upshot of this was that around 80 percent of students and 40 percent of Dartmouth faculty used the system, an almost unheard-of level of computer use for the period. Likewise, Rankin's chapters on PLATO and TIES show the important role that education researchers and instructors—not usually considered part of the digital vanguard—played in constructing networks in the Midwest.

But Rankin's book is not a hagiography. She shows how gender, racial, and class-based inequalities pervaded these systems from the very beginning and structured the design of the systems themselves. In one especially illuminating chapter, Rankin details how a gendered, "macho" computing culture emerged on Dartmouth's network in the late 1960s. Despite DTSS's designers' universalist ambitions, the development of a network culture on the campus was constrained by the college's exclusivity and demographic makeup. Dartmouth was an all-male institution until 1972 and was overwhelmingly white and affluent. The result of this, Rankin argues, was that "a decidedly noncerebral breed of masculine computing" emerged at Dartmouth, which centered on computer games like FTBALL, FOOTBALL, and GRIDIRON as well as other sports and war games (p. 46). These games and the network became integral parts of campus culture. As one student recalls, for

instance, DTSS public teletype rooms became hang-out spots before Dartmouth football games. Young men would bring their girlfriends on not-so-romantic dates there before heading over to the stadium, trying to impress them by playing computing games and showing off their programming prowess.

Overall, though, *A People's History of Computing* provides a vivid and sympathetic portrait of a computing culture we have lost. Indeed, a feeling of loss runs through the book. We are given a window into a foreclosed possible future of computing, a future which might have turned out differently than today, had it not been shut down by commercialization and the atomization brought about by personal, unnetworked computers. My only real criticism of the book is that the almost tragic arc of Rankin's narrative can sometimes make it difficult to see long-term continuity and the ways the communities and cultures developed on these timesharing networks persisted after a system's demise. That said, *A People's History of Computing in the United States* is a groundbreaking work that would make a perfect addition to an undergraduate history of technology syllabus, but instructors seeking to expand the scope of their U.S. history course offerings should also consider assigning the book for its lucid and accessible account of the roots of our contemporary digital culture.

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