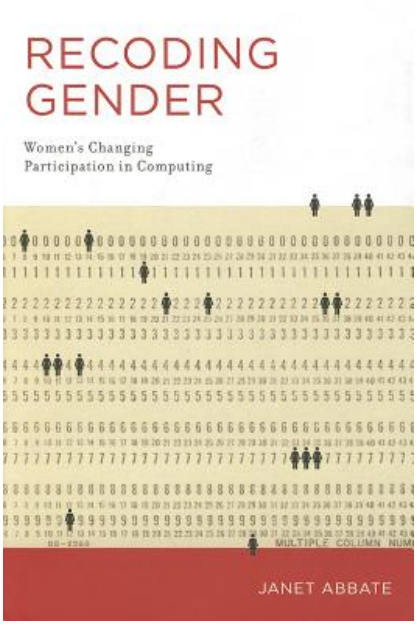
Book Review: Recoding Gender: Women's Changing Participation in Computing

by Blog Admin February 13, 2013

*In **Recoding Gender**, **Janet Abbate** explores the untold history of women in computer science and programming from the Second World War to the late twentieth century. Demonstrating how gender has shaped the culture of computing, she aims to offer a valuable historical perspective on today's concerns over women's underrepresentation in the field. **Jennifer Miller** recommends this book for both readers interested in an account of women's participation and contributions in the field of computer science and to those seeking answers to the challenges in setting policy for the scientific and technical workforce.*

Recoding Gender: Women's Changing Participation in Computing. Janet Abbate. MIT Press. November 2012.



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A 2012 study published in the *Proceedings of the National Academy of Sciences* by Corrine Moss-Racusin and colleagues, "Science faculty's subtle gender biases favor male students ," drew widespread attention to discrimination against women in science by speaking to scientists in their own language – that of the randomized controlled experiment. The study found that applicants identified as female were offered fewer jobs, lower pay, and less mentoring than identical applicants identified as male. The fact that male and female scientists themselves were the subjects under study only added to its impact.

As a field, computer science comes under particular scrutiny for both its low representation of women and a marked decline in their representation during a time when women have made considerable inroads in other scientific disciplines. In *Recoding Gender*, Janet Abbate, an Associate Professor of Science, Technology, and Society at Virginia Tech and author of the 1999 socio-cultural history *Inventing the Internet*, provides insight into women's early and current participation in the field of computer science.

The first chapter documents women's participation in computing from the earliest days of Colossus and ENIAC in the 1940s. I particularly recommend this chapter, along with the transcripts of oral history interviews available online through the IEEE Global History Network, for those interested in the historical perspective. This review, however, focuses on the later chapters' insights into current challenges in computer science and in all science and technology careers.

Chapter 2 explores how early recruiting practices in computer science sometimes surprisingly opened doors for women in the field and other times limited their access to opportunity. Abbate documents the many ways the initial scarcity of trained programmers in this new field shaped how organizations in business, government, and academia built their staffs. Some women benefitted from opportunities to enter the emerging field of computer science when scarcity motivated employers to seek out alternative sources of talent. On the other hand, Abbate documents ways in which "criteria for skill may be arbitrary and biased toward masculine behaviors," (p. 72) thus limiting women's entry and advancement in computer science. Where computer science embraced metaphors of mathematics and business, it created opportunities for women to enter the field through credentials and analogous skills, yet simultaneously steered them to roles that became stigmatized as women's work. Where computer science was rebranded as software

engineering, it became less welcoming to women.

Chapter 3 provides a compelling account of the role of gender in the widespread claims that we face a critical labor shortage in IT. These claims of a shortage, which have had a strong influence on science and technology policy in the US, meet considerable resistance from IT workers who find their jobs outsourced, moved offshore, or otherwise eliminated. Abbate finds that "probing behind the rhetoric reveals that the labor shortage really referred to a specific, privileged category of workers—male programmers with traditional technical qualifications and no childcare obligations" (p. 91). Adding youth to these aspects of privilege offers a possible explanation of this paradox, a simultaneous shortage and surplus of IT workers.

I found chapter 4, about female entrepreneurs, especially relevant to today's careers in science and technology. Abbate focuses the chapter on two case studies of successful women software entrepreneurs in the 1960s, Elsie Shutt of Computations, Inc. and Stephanie Shirley of F International. After launching successful software careers in industry, both women moved into self-employment and then entrepreneurship when their corporate careers conflicted with raising children.

Abbate observes that the technical structure of the software industry were uniquely suited to remote and independent work. This structure allowed both Comp, Inc. and FI to build programming staffs of part-time, home-based mothers in an early form of telecommuting. This was done with creative impression management, as Shirley recounts playing a tape of typing sounds give clients the sense that her home-based work was consistent with workplace norms.

There is also a fascinating account of an early example of what we now call offshoring. Shirley and business partner Frank Knight began to expand FI into Europe, starting with Denmark where women were well represented in data processing careers. However, this expansion encountered a roadblock when their home-based part-time work had little appeal to Danish women. Denmark's well-developed childcare system allowed women to continue in their careers uninterrupted. FI was forced to send much of the work they had secured in Denmark back to Britain for completion.

The case studies emphasize the highly innovative nature of these early women-led firms in such areas as distributed work, flexible staffing, project management, quality control, and contracting. These examples of innovation provide an interesting counternarrative to conventional wisdom about innovation. For example, the academic literature on agglomeration economies emphasizes two key ingredients for innovation, proximity and mobility. Yet these two innovative firms were both widely dispersed and staffed with exceptionally stable workforces in a field known for high turnover. This counternarrative raises the question of whether women's innovation , along with their talent, skill, and productivity, have been discounted through gendered norms in the software industry.

I recommend this book for both readers interested in an account of women's participation and contributions in the field of computer science and to those seeking answers to the challenges in setting policy for the scientific and technical workforce. Abbate engages the reader in both a chronological narrative spanning half a century and well-selected case studies and anecdotes that bring the story to life.

Jennifer Miller is an Assistant Teaching Professor at the University of Southern California's Sol Price School of Public Policy. She received her doctorate in public policy from the University of North Carolina at Chapel Hill. Her research interests focus on the scientific workforce. She has also written about collaboration among universities, industry, and government in university research centers. Before pursuing her doctorate, she worked for IBM in human resources. Read more reviews by Jennifer.