

Technology & Gender

INFO I-590 • Spring 2017

In this seminar we will explore the literature on the history of gender and technology, with a particular focus on information technology. From the "computer girls" of the early 20th century to the hyper-masculine culture of contemporary computing, developments in technology have reflected and transformed our understanding of sexuality and gender. Our goal in this seminar is to survey the best of the emerging literature on gender and computing, with an eye towards the practical application of gender theory into your future research projects.

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Course Schedule

In addition to doing the required readings and preparing for discussions, you will be responsible for writing a short (1-2 pg) reading response paper each week.

The supplementary readings and extended bibliography are meant to make you aware of the larger literature, and to provide a guide for those of you who need further preparation for your qualifying exams or dissertation research.

A note on books: all of the articles listed below will be made available electronically. The books you are responsible for borrowing, purchasing, or otherwise acquiring. I did not order them via the bookstore, as in most cases you can find better bargains elsewhere.

I January 11

Sherry Turkle. 1984a. "Hackers: Loving the Machine for Itself." Simon and Schuster

Supplemental Readings

The chapter on amateur radio operators in Douglas (1987) provides a fascinating complement to the Turkle chapter on hackers that describes a similar phenomenon without reference to the uniquely immersive characteristics of electronic digital computers.

II January 18

Joan W. Scott. 1986. "Gender: A Useful Category of Historical Analysis." *The American Historical Review* 91 (December 1): 1053–1075; R. S. Cowan. 1976. "The 'Industrial Revolution' in the Home: Household Technology and Social Change in the 20th Century." *Technology and Culture* 17 (January 1): 1–23; R. Oldenziel. 1997. "Boys and Their Toys: The Fisher Body Craftsman's Guild, 1930–1968, and the Making of a Male Technical Domain." *Technology and Culture* 38:60–96

Supplemental Readings

For further development of her argument on the (lack of) industrialization in female domestic work, see Ruth Schwartz Cowan (1983). Lerman, Mohun, and Oldenziel (1997) provides an introduction to their influential special issue of *Technology & Culture* on women and technology in which the Oldenziel article above first appeared.

III January 25

Francesca Bray. 2007. "Gender and Technology." *Annual Review of Anthropology* 36 (January 1): 37–53; Tine Kleif and Wendy Faulkner. 2003. "'I'm No Athlete [but] I Can Make This Thing Dance!': Men's Pleasures in Technology." *Science, Technology & Human Values* 28:296–325; Claude S. Fischer. 1988. "Gender and the Residential Telephone, 1890–1940: Technologies of Sociability." *Sociological Forum* 3:211–233

Supplemental Readings

Wajcman (2000) provides a complementary overview of the historiography on technology and gender. Bray (1997) is Francesca Bray's history of women and work in late Imperial China. Florman (1996) explores male pleasure in engineering, and Pirsig (1974) is a literary/philosophical take on the same subject that has become something of a hacker bible. Ullman (1997) shows that taking pleasure in technology is not an exclusively male domain.

IV February 1

Ruth Oldenziel. 1999. *Making Technology Masculine: Men, Women and Modern Machines in America, 1870–1945*. Amsterdam: Amsterdam University Press

Supplemental Readings

Rossiter (1982) explores the history of women in science, with a particular emphasis on the relationship between professionalization and masculinization. Tichi (1987) provides a cultural and literary history of the

engineer as a male hero. Hacker (1989) explores the links between feminism, co-operatism and technology. Maines (1999) is a classic history of the vibrator.

V February 8

Sharon Hartman Strom. 1992. *Beyond the Typewriter: Gender, Class, and the Origins of Modern American Office Work, 1900-1930*. Urbana: University of Illinois Press

Supplemental Readings

Davies (1982) focuses on the typewriter as a gendered technology. Milkman (1987) argues that women do not replace men during war; new and gendered positions are created for them. Benson (1987) describes women's work in retail. Tone (2001) is a history of birth control, and includes a section on female entrepreneurs in this technology.

VI February 15

Marie Hicks. 2016. *Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing*. MIT Press

Supplemental Readings

Both Ensmenger (2010a) and Abbate (2012) cover the analogous story of the development of computer programming in the United States during this period. Agar (2003), while not explicitly about gender, provides the context for the turn towards "machinic" thinking in the British Civil Service. Edwards (1990) is a pioneering work on the gendering of computer programming, and Light (1999) traces the erasure of the ENIAC women from the history of computing.

VII February 22

Lisa Nakamura. 2014. "Indigenous Circuits: Navajo Women and the Racialization of Early Electronic Manufacture." *American Quarterly* 66:919–941; Nathan Ensmenger. 2010a. "Making Programming Masculine." Wiley; Donna Haraway. 1991. "Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century," vol. *Simians, Cyborgs and Women: The Reinvention of Nature*, 149–181. New York: Routledge; Alan Bernstein et al. 1980. "Silicon Valley: Paradise or Paradox." Chicano Studies Research Center Publications, January 1

Supplemental Readings

For other accounts of the roles that women played in the early computer industry, see Shetterly (2016), Grier (2005), and Güler (2002a).

VIII March 1

S. Levy. 1984. *Hackers: Heroes of the Computer Revolution* (selected excerpts); Ron Eglash. 2002. "Race, Sex, and Nerds: From Black Geeks to Asian American Hipsters." *Social Text* 2:49–64 V. A. Lagesen. 2008. "A Cyberfeminist Utopia? Perceptions of Gender and Computer Science among Malaysian Women Computer Science Students and Faculty." *Science, Technology & Human Values* 33:5–27; Nathan Ensmenger. 2015. "'Beards, Sandals, and Other Signs of Rugged Individualism': Masculine Culture within the Computing Professions." *Osiris* 30:38–65

Supplemental Readings

Kidder (1981) was awarded the Pulitzer Prize for its gripping tale of computer engineers as Wild West heroes. Kocurek (2015) provides the larger context for understanding masculinity and video games. Losse (2012) updates these narratives for the Facebook era. If you have trouble understanding Haraway, read Gibson (1995), which covers some of the same territory in the form of cyberpunk science fiction. In fact, read the Gibson anyway. It is beautiful, insightful, and powerfully influential in its own right.

IX March 8

N. Katherine Hayles. 2008. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. University of Chicago Press, May 15

Supplemental Readings

For more on the relationship between embodiment and virtuality, see Stone (1996) and Balsamo (1996). For an overview of the history of cybernetics and its relationship to contemporary information technology, see Kline (2015). For an interesting foreshadowing of our section on queer computing, E. A. Wilson (2009) explores

the “confluence of sexual and intellectual matters” that swirled around the tragic genius Walter Pitts, one of the key members of the early Cybernetics group. And in case you were not intrigued enough by last week’s discussion to read Gibson’s *Neuromancer*, read it now.

X March 22

C. J. Pascoe. 2011. *Dude, You’re a Fag*. Univ of California Press, November 1

Supplemental Readings

For a more general history of American masculinity, see Rotundo (1994). Mellström (2004) focuses more specifically on the role of technology in shaping masculine norms, and Burrill (2008) even more specifically on the performance of masculinity in video game culture.

XI March 29

Carol Cohn. 1993. “War, Wimps and Women: Talking Gender and Thinking War,” 227–246. Princeton University Press Princeton; Dawn Nafus. 2012. ““Patches Don’t Have Gender”: What Is Not Open in Open Source Software.” *New Media and Society* 14 (June 1): 669–683; Alison Adam. 2003. “Hacking into Hacking: Gender and the Hacker Phenomenon.” *ACM SIGCAS Computers and Society* 33 (August 15): 3; Dale Beran. 2017. “4chan: The Skeleton Key to the Rise of Trump.” *Medium* (February 14)

Supplemental Readings

For a brief history of games in the contest of military defense intellectuals, see Ghamari-Tabrizi (2000) and Light (2008). Mead (2013) explores the use of video games as a recruitment, training, and therapeutic tool within the United States military.

XII April 5

Justine Cassell and Henry Jenkins. 2000. *From Barbie to Mortal Kombat*. MIT Press

Supplemental Readings

Salter and Blodgett (2012) discusses the “hypermasculine” practices of video game culture. Bardzell (2010) outlines a feminist approach to computer interface design. Varney (2002) explores the history of masculine toys for boys.

XIII April 12

Yasmin B. Kafai. 2008. *Beyond Barbie and Mortal Kombat*. MIT Press

Supplemental Readings

Shaw (2015) argues that gamers necessarily experience the intersection of race, gender, and sexuality. Kocurek (2015) situates video game culture in the larger history of video game arcades.

XIV April 19

Jacob Gaboury. 2015. “On Uncomputable Numbers: The Origins of a Queer Computing.” *Journal of the New Media Caucus* (January 6): 1–9; Laine Nooney. 2013. “A Pedestal, A Table, A Love Letter: Archaeologies of Gender in Videogame History.” *Game Studies* 13 (December 1); W. Wu et al. 2007. “Beyond Virtual Carnival and Masquerade: In-Game Marriage on the Chinese Internet.” *Games and Culture* 2 (January 1): 59–89; Gray (2014)

Supplemental Readings

Ruberg and Shaw (2017) is an anthology of essays on queer game studies.

XV April 26

TBD.

What follows is a list of relevant resources related to gender and computing. It includes the full citation information for all of the readings listed in the syllabus above, but also many supplemental materials.

In addition, you might find useful the list of women and gender non-conforming people writing about technology found at <https://goo.gl/m6J2dm>.

References

- Abbate, Janet. 2012. *Recoding Gender: Women's Changing Participation in Computing*. MIT Press, January 1.
- Adam, Alison. 2003. "Hacking into Hacking: Gender and the Hacker Phenomenon." *ACM SIGCAS Computers and Society* 33 (August 15): 3.
- . 2006. *Artificial Knowing: Gender and the Thinking Machine*. Routledge, July 13.
- Agar, Jon. 2003. *The Government Machine: A Revolutionary History of the Computer*. MIT Press.
- Alberts, Gerard, and Bas van Vlijmen. 2017. *Computerpioniers: het begin van het computertijdperk in Nederland*. Amsterdam University Press, February 20.
- Amrute, Sareeta Bipin. 2016. *Encoding Race, Encoding Class: Indian IT Workers in Berlin*. OCLC: 937368336.
- Balsamo, Anne Marie. 1996. *Technologies of the Gendered Body*. Duke University Press.
- Bardzell, Shaowen. 2010. "Feminist HCI." The 28th International Conference, New York, New York, USA.
- "Barriers to Equality in Academia: Women in Computer Science at M.I.T." 1983 (February 1): 1–46.
- Benson, Susan Porter. 1987. *Counter Cultures: Saleswomen, Managers, and Customers in American Department Stores, 1890-1940*. Urbana : University of Illinois Press, December 1.
- Beran, Dale. 2017. "4chan: The Skeleton Key to the Rise of Trump." *Medium* (February 14).
- Bernstein, Alan, Bob DeGrasse, Rachael Grossman, Chris Paine, and Lenny Siegel. 1980. "Silicon Valley: Paradise or Paradox." Chicano Studies Research Center Publications, January 1.
- Bivens, Rena. 2017. "The Gender Binary Will Not Be Deprogrammed: Ten Years of Coding Gender on Facebook." *New Media & Society* 19, no. 6 (June 1): 880–898.
- Blas, Z. 2006. "What Is Queer Technology?" *SACHIKO HIROSUE JIM RUXTON LORENA SALOMÉ ...*
- Boyer, Kate, and Kim England. 2008. "Gender, Work and Technology in the Information Workplace: From Typewriters to ATMs." *Social & Cultural Geography* 9:241–256.
- Bray, Francesca. 1997. *Technology and Gender*. Univ of California Press, July 3.
- . 2007. "Gender and Technology." *Annual Review of Anthropology* 36 (January 1): 37–53.
- Brod, Harry, and Michael Kaufman. 1994. *Theorizing Masculinities*. SAGE Publications, June 13.
- Buchbinder, David. 2012. *Studying Men and Masculinities*. Routledge, October 12.
- Burrill, Derek A. 2008. *Die Tryin': Videogames, Masculinity, Culture*. Peter Lang.
- Cassell, Justine, and Henry Jenkins. 2000. *From Barbie to Mortal Kombat*. MIT Press.
- Chang, Emily. 2018. *BROTOPIA: A Silicon Valley Expos*. OCLC: 1000234925. S.I.: PORTFOLIO PENGUIN.
- Cherny, Lynn, and Elizabeth Reba Weise. 1996. *Wired Women : Gender and New Realities in Cyberspace*. Seal Press Distributed to the trade by Publishers Group West Seattle, Wash Emeryville, CA.

- Cheryan, Sapna, Victoria C. Plaut, Caitlin Handron, and Lauren Hudson. 2013. "The Stereotypical Computer Scientist: Gendered Media Representations as a Barrier to Inclusion for Women." *Sex Roles* 69 (June 22): 58–71.
- Cohn, Carol. 1993. "War, Wimps and Women: Talking Gender and Thinking War," 227–246. Princeton University Press Princeton.
- Connell, R. W. 2005. *Masculinities*. Polity.
- Cooks, Leda, and Kirsten Isgro. 2017. "The "Cyber Summit" and Women." *Frontiers A Journal of Women Studies* 26 (May 5): 1–20.
- Cottrell, Janet. 1992. "I'm a Stranger Here Myself: A Consideration of Women in Computing." In *Proceedings of the 20th Annual ACM SIGUCCS Conference on User Services*, 71–76. ACM.
- Cowan, R. S. 1976. "The 'Industrial Revolution' in the Home: Household Technology and Social Change in the 20th Century." *Technology and Culture* 17 (January 1): 1–23.
- Cowan, Ruth Schwartz. 1983. *More Work for Mother: The Ironies of Household Technologies from the Open Hearth to the Microwave*. Basic Books New York.
- Croarken, M. 2003. "Mary Edwards: Computing for a Living in 18th-Century England." *Ieee Annals of the History of Computing* 25:9–15.
- Daniels, Jessie. 2009. "Rethinking Cyberfeminism(s): Race, Gender, and Embodiment." *Women's Studies Quarterly* 37 (April 1): 101–124.
- Davies, Margery W. 1982. *Woman's Place Is at the Typewriter: Office Work and Office Workers, 1870-1930*. Philadelphia: Temple University Press.
- Dealing with Pornography in Academia: Report on a Grassroots Action*. 1989. CMU Computer Science Graduate Students and Staff.
- Derickson, Alan. 2013. *Dangerously Sleepy: Overworked Americans and the Cult of Manly Wakefulness*. University of Pennsylvania Press, October 23.
- Douglas, Susan. 1987. *Inventing American Broadcasting, 1899-1922*. Baltimore, MD: Johns Hopkins University Press.
- Dublin, Thomas. 1981. *Women at Work*. Columbia Univ Pr, May 1.
- Easlea, Brian. 1987. *Fathering the Unthinkable: Masculinity, Scientists and the Nuclear Arms Race*. Pantheon Books, February 1.
- Edwards, Paul N. 1990. "The Army and the Microworld: Computers and the Politics of Gender Identity." *Signs* 16:102–127.
- Eglash, Ron. 2002. "Race, Sex, and Nerds: From Black Geeks to Asian American Hipsters." *Social Text* 2:49–64.
- Ensmenger, Nathan. 2010a. "Making Programming Masculine." Wiley.
- . 2010b. *The Computer Boys Take Over*. MIT Press, August 24.
- . 2015. "'Beards, Sandals, and Other Signs of Rugged Individualism': Masculine Culture within the Computing Professions." *Osiris* 30:38–65.
- Ernst, Waltraud, and Ilona Horwath. 2015. *Gender in Science and Technology : Interdisciplinary Approaches (Book, 2014) [WorldCat.Org]*. Verlag.

- Estrin, T. 1996. "Women's Studies and Computer Science: Their Intersection." *Annals of the History of Computing, IEEE* 18:43–46.
- Faulkner, W. 2007. "'Nuts and Bolts and People': Gender-Troubled Engineering Identities." *Social Studies of Science* 37 (June 1): 331–356.
- Faulkner, Wendy. 2000. "Dualisms, Hierarchies and Gender in Engineering." *Social Studies of Science* 30:759–792.
- Fischer, Claude S. 1988. "Gender and the Residential Telephone, 1890-1940: Technologies of Sociability." *Sociological Forum* 3:211–233.
- Florman, Samuel C. 1996. *The Existential Pleasures of Engineering*. Macmillan, February 15.
- Forsythe, Diana, and David J Hess. 2001. *Studying Those Who Study Us: An Anthropologist in the World of Artificial Intelligence*. OCLC: 45845492. Stanford, Calif.: Stanford University Press.
- Frenkel, Karen A. 1990. "Women and Computing." *Communications of the ACM* 33 (11): 34–46.
- Gaboury, Jacob. 2013. "Darling Sweetheart: Queer Objects in Early Computer Art." *Metaverse Creativity* 3:23–27.
- . 2015. "On Uncomputable Numbers: The Origins of a Queer Computing." *Journal of the New Media Caucus* (January 6): 1–9.
- Ghamari-Tabrizi, Sharon. 2000. "Simulating the Unthinkable: Gaming Future War in the 1950s and 1960s." *Social Studies of Science* 30 (April 1): 163–223.
- Gibson, William. 1995. *Neuromancer*. Ace Books.
- Goyal, A. 1996. "Women's Contributions to Early Computing at the National Bureau of Standards." *Annals of the History of Computing, IEEE* 18:29–35.
- Gray, Kishonna L. 2014. *Race, Gender, and Deviance in Xbox Live*. Routledge, March 21.
- Green, Eileen. 2001. *Virtual Gender: Technology, Consumption, and Identity*. Psychology Press, April 26.
- Grier, David Alan. 2005. *When Computers Were Human*. Princeton, N.J Princeton University Press.
- Grossman, Rachael, United Nations Institute for Training, and Research (UNITAR). 1980. *Women's Place in the Integrated Circuit*.
- Gürer, Denise. 1996. "Women's Contributions to Early Computing at the National Bureau of Standards." *IEEE Annals of the History of Computing* 18 (3): 29–35.
- . 2002a. "Pioneering Women in Computer Science." *SIGCSE Bull.* 34, no. 2 (June): 175–180.
- . 2002b. "Women in Computing History." *SIGCSE Bull.* 34, no. 2 (June): 116–120.
- Gürer, Denise, and Tracy Camp. 2002. "An ACM-W Literature Review on Women in Computing." *SIGCSE Bull.* 34, no. 2 (June): 121–127.
- Hacker, Sally. 1981. "The Culture of Engineering: Woman, Workplace and Machine." *Women's Studies International Quarterly*.
- . 1989. *Pleasure, Power and Technology: Some Tales of Gender, Engineering, and the Cooperative Workplace*. Boston: Unwin Hyman.
- . 1990. *"Doing It the Hard Way": Investigations of Gender and Technology*. Allen & Unwin Australia.
- Haddon, Leslie. 2008. "RESEARCHING GENDER AND HOME COMPUTERS" (July 11): 1–18.

- Hapnes, Tove, and Bente Rasmussen. 2000. "New Technology Increasing Old Inequality?," 241–249. Chapter 29. Boston, MA: Springer US.
- Haraway, Donna. 1991. "Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century," vol. *Simians, Cyborgs and Women: The Reinvention of Nature*, 149–181. New York: Routledge.
- Harris, Deborah A., and Patti Giuffre. 2015. *Taking the Heat*. May 20.
- Hayles, N. Katherine. 2005. *My Mother Was a Computer: Digital Subjects and Literary Texts*. OCLC: 1022627947. Chicago: University of Chicago Press.
- . 2008. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. University of Chicago Press, May 15.
- Hicks, Marie. 2013. "De-Brogramming the History of Computing [Think Piece]." *Ieee Annals of the History of Computing*.
- . 2016. *Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing*. MIT Press.
- . 2017. "The Mother of All Swipes." *Logic Magazine*, no. 2: 105–123.
- Jarrett, Kylie. 2014. "The Relevance of "Women's Work"" *Television & New Media* 15 (January): 14–29.
- Johnson, Nicola F., Leonie Rowan, and Julianne Lynch. 2006. "Constructions of Gender in Computer Magazine Advertisements: Confronting the Literature." *SIMILE: Studies In Media & Information Literacy Education* 6:1–9.
- Kafai, Yasmin B. 2008. *Beyond Barbie and Mortal Kombat*. MIT Press.
- Kidder, Tracy. 1981. *The Soul of a New Machine*. Little, Brown Boston.
- Kleif, Tine, and Wendy Faulkner. 2003. "'I'm No Athlete [but] I Can Make This Thing Dance!"; Men's Pleasures in Technology." *Science, Technology & Human Values* 28:296–325.
- Kline, Ronald. 2015. *The Cybernetics Moment, or, Why We Call Our Age the Information Age*. Johns Hopkins University.
- Kocurek, Carly A. 2015. *Coin-Operated Americans: Rebooting Boyhood at the Video Game Arcade*. September 30.
- Kvande, Elin, and Bente Rasmussen. 1994. "Men in Male-Dominated Organizations and Their Encounter with Women Intruders." *Scandinavian Journal of Management* 10 (June): 163–173.
- Lagesen, V. A. 2007. "The Strength of Numbers: Strategies to Include Women into Computer Science." *Social Studies of Science* 37 (February 1): 67–92.
- . 2008. "A Cyberfeminist Utopia? Perceptions of Gender and Computer Science among Malaysian Women Computer Science Students and Faculty." *Science, Technology & Human Values* 33:5–27.
- . 2012. "Reassembling Gender." *Social Studies of Science*.
- Lagesen, Vivian Anette, and Knut H. Sørensen. 2009. "Walking the Line? The Enactment of the Social/Technical Binary in Software Engineering." *Engineering Studies* 1, no. 2 (July): 129–149.
- Lenoir, Timothy. 2000. "All But War Is Simulation: The Military-Entertainment Complex." *Configurations* 8:289–335.
- Lerman, N. E., A. P. Mohun, and R. Oldenziel. 1997. "Versatile Tools: Gender Analysis and the History of Technology." *Technology and Culture* 38:1–8.

- Levy, Karen E. C. 2016. "Digital Surveillance in the Hypermasculine Workplace." *Feminist Media Studies* 16 (February 17): 361–365.
- Levy, S. 1984. *Hackers: Heroes of the Computer Revolution*.
- Lewis, Colleen M., Ruth E. Anderson, and Ken Yasuhara. 2016. "'I Don't Code All Day'" The 2016 ACM Conference, New York, New York, USA.
- Lie, M. 2003. *He, She and IT Revisited*. New perspectives on gender in the information society.
- Light, Jennifer. 1999. "When Computers Were Women." *Technology and Culture* 40:455–483.
- . 2008. "Taking Games Seriously." *Technology and Culture* 49:347–375.
- Losse, Katherine. 2012. *The Boy Kings*. Simon and Schuster, June 26.
- Lowe, Graham. 1987. *Women in the Administrative Revolution: The Feminization of Clerical Labor*. University of Toronto Press.
- Maines, Rachel P. 1999. *The Technology of Orgasm: "Hysteria," the Vibrator, and Women's Sexual Satisfaction*. Baltimore, Md Johns Hopkins University Press.
- Margolis, J., A. Fisher, and F. Miller. 2000. "The Anatomy of Interest: Women in Undergraduate Computer Science." *Women's Studies Quarterly* 28:104–127.
- Margolis, Jane, and Allan Fisher. 2002. *Unlocking the Clubhouse: Women in Computing*. Cambridge, Mass.: MIT Press.
- Matrix, Sidney Eve. 2001. "Cyberfeminism and Technoculture Studies: An Annotated Bibliography." *Women's Studies Quarterly* 29 (October 1): 231–249.
- Matthews, Glenna. 2003. *Silicon Valley, Women, and the California Dream*. Stanford University Press.
- McIlwee, Judith, and J. ~Gregg Robinson. 1992. *Women in Engineering: Gender, Power, and Workplace Culture*. Albany: State University of New York Press.
- Mead, Corey. 2013. *War Play*. Houghton Mifflin Harcourt, September 17.
- Mellström, Ulf. 2004. "Machines and Masculine Subjectivity: Technology as an Integral Part of Men's Life Experiences." *Men And Masculinities* 6:368–382.
- . 2009. "The Intersection of Gender, Race and Cultural Boundaries, or Why Is Computer Science in Malaysia Dominated by Women?" *Social Studies of Science* 39 (November 23): 885–907.
- Milkman, Ruth. 1987. *Gender at Work: The Dynamics of Job Segregation by Sex during World War II*. Urbana: University of Illinois Press.
- Millar, Melanie Stewart. 2000. *Cracking the Gender Code: Who Rules the Wired World?* New York: Second Story Press.
- Miltner, Kate M. 2018. "Girls Who Coded" Hicks M. 2017. Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing. MIT Press. Abbate J. 2012. Recoding Gender: Women's Changing Participation in Computing. MIT Press. Ensmenger N. L. 2010. The Computer Boys Take Over: Computers, Programmers, and the Politics of Technical Expertise. MIT Press.: Gender in Twentieth Century U.K. and U.S. Computing." *Science, Technology, & Human Values* (May 7): 016224391877028.
- Misa, Thomas. 2010. *Gender Codes: Why Women Are Leaving Computing*. Wiley.
- Nafus, D., J. Leach, and B. Krieger. 2006. *Gender: Integrated Report of Findings*. FLOSSPOLs.

- Nafus, Dawn. 2012. "'Patches Don't Have Gender': What Is Not Open in Open Source Software." *New Media and Society* 14 (June 1): 669–683.
- Nakamura, Lisa. 2014. "Indigenous Circuits: Navajo Women and the Racialization of Early Electronic Manufacture." *American Quarterly* 66:919–941.
- Namioka, Aki, Julie A. Adams, Juanita Ewing, Nadyne Mielke, Eliot Moss, and Lucy Suchman. 2008. "From Sorceress to Scientist: Women in Computing." OOPSLA Companion '08: Companion to the 23rd ACM SIGPLAN Conference on Object-Oriented Programming Systems Languages and Applications, New York, New York, USA, October.
- Neale, Margaret A., Karen A. Jehn, and Gregory B. Northcraft. 1999. "Why Differences Make a Difference: A Field Study of Diversity, Conflict, and Performance in Workgroups." *Administrative Science Quarterly* 44:741–763.
- Nelson, Alondra, Thuy Linh N. Tu, and Alicia Headlam Hines. 2001. *Technicolor: Race, Technology, and Everyday Life*. NYU Press, March 1.
- Nelson, K., and N. Veltri. 2011. "Women In Information Technology Careers: A Person-Process-Context-Time Framework."
- Noble, Safiya Umoja. 2018. *Algorithms of Oppression: How Search Engines Reinforce Racism*. OCLC: 987591529.
- Nooney, Laine. 2013. "A Pedestal, A Table, A Love Letter: Archaeologies of Gender in Videogame History." *Game Studies* 13 (December 1).
- O'Riordan, Kate, and David J. Phillips. 2007. *Queer Online: Media Technology & Sexuality*. Peter Lang.
- Oldenziel, R. 1997. "Boys and Their Toys: The Fisher Body Craftsman's Guild, 1930-1968, and the Making of a Male Technical Domain." *Technology and Culture* 38:60–96.
- Oldenziel, Ruth. 1999. *Making Technology Masculine: Men, Women and Modern Machines in America, 1870-1945*. Amsterdam: Amsterdam University Press.
- Ong, Aihwa. 1987. *Spirits of Resistance and Capitalist Discipline*. SUNY Press, July 15.
- Pascoe, C. J. 2011. *Dude, You're a Fag*. Univ of California Press, November 1.
- Patitsas, Elizabeth, Michelle Craig, and Steve Easterbrook. 2014. "A Historical Examination of the Social Factors Affecting Female Participation in Computing." The 2014 Conference, New York, New York, USA.
- Pirsig, Robert. 1974. *Zen and the Art of Motorcycle Maintenance: An Inquiry into Values*. New York: Morrow.
- Plant, Sadie. 1998. *Zeros + Ones: Digital Women + the New Technoculture*.
- Poindexter, Paula Maurie, Sharon Meraz, and Amy Schmitz Weiss. 2008. *Women, Men, and News: Divided and Disconnected in the News Media Landscape*. New York: Routledge.
- Probert, B., E. Green, J. Owen, and D. Pain. 1995. "Gendered By Design? Information Technology and Office Systems."
- Pursell, Caroll. 1993. "'I Am a Lady or an Engineer?' The Origins of the Women's Engineering Society in Britain, 1918-1940." *Technology and Culture* 34:78–97.
- Rakow, Lana. 1992. *Gender on the Line: Women, the Telephone, and Community Life*. Urbana: University of Illinois Press.

- Rasmussen, B. 1991. *The Production of Male Power in Computer Science*. Women.
- Rasmussen, Bente, and Tove Hapnes. 1991. "Excluding Women from the Technologies of the Future? A Case Study of the Culture of Computer Science." *Futures* 23:1107–1119.
- Reagle, Joseph. 2012. "'Free as in Sexist?': Free Culture and the Gender Gap." *First Monday* 18 (February 6).
- Reuben, E., P. Sapienza, and L. Zingales. 2014. "How Stereotypes Impair Women's Careers in Science." *Proceedings of the National Academy of Sciences* 111 (March 10): 4403–4408.
- Rossiter, Margaret W. 1982. *Women Scientists in America : Struggles and Strategies to 1940*. Baltimore: Johns Hopkins University Press.
- . 1995. *Women Scientists in America : Before Affirmative Action, 1940-1972*. Baltimore: Johns Hopkins University Press.
- Rotella, Elyce J. 1981. *From Home to Office : U.S. Women at Work, 1870-1930*. Vol. no. 25. Ann Arbor, Mich.: UMI Research Press.
- Rothschild, Joan, Cynthia Cockburn, Susan Ormrod, and Ruza Furst-Dilic. 1995. "Gender and Technology in the Making." *Technology and Culture* 36:681.
- Rotundo, E. Anthony. 1994. *American Manhood: Transformations in Masculinity from the Revolution to the Modern Era*. Basic Books, April 22.
- Ruberg, Bonnie, and Adrienne Shaw. 2017. *Queer Game Studies*. March 21.
- Salter, Anastasia, and Bridget Blodgett. 2012. "Hypermasculinity & Dickwolves: The Contentious Role of Women in the New Gaming Public." *Journal of Broadcasting & Electronic Media* 56 (July): 401–416.
- Scharff, Virginia. 1991. *Taking the Wheel: Women and the Coming of the Motor Age*. The Free Press New York.
- Schlombs, Corinna. 2010. "A Gendered Job Carousel: Employment Effects of Computer Automation." Wiley.
- Scott, J. W. 2013. "The Uses and Abuses of Gender." *Tijdschrift voor Genderstudies* 16:63–77.
- Scott, Joan W. 1986. "Gender: A Useful Category of Historical Analysis." *The American Historical Review* 91 (December 1): 1053–1075.
- Seron, C., S. S. Silbey, E. Cech, and B. Rubineau. 2016. "Persistence Is Cultural: Professional Socialization and the Reproduction of Sex Segregation." *Work and Occupations* 43 (April 5): 178–214.
- Shaw, Adrienne. 2015. *Gaming at the Edge: Sexuality and Gender at the Margins of Gamer Culture*. January 1.
- Shetterly, Margot Lee. 2016. *Hidden Figures: The Untold Story of the African American Women Who Helped Win the Space Race*. HarperCollins UK, September 6.
- Spain, Daphne. 1992. *Gendered Spaces*. Univ of North Carolina Press.
- Spertus, Ellen. 1991. "Why Are There so Few Female Computer Scientists?"
- Sproull, Lee, Sara Kiesler, and David Zubrow. 1983. *Encountering an Alien Culture*. August 23.
- Stepulevage, L. 2003. "Computer-Based Office Work: Stories of Gender, Design, and Use." *Annals of the History of Computing, IEEE* 25.

- Stone, Rosanne-Allucquere. 1996. *The War of Desire and Technology at the Close of the Mechanical Age*. MIT Press Cambridge, MA.
- Stout, Jane G., and Heather M. Wright. 2016. "Lesbian, Gay, Bisexual, Transgender, and Queer Students' Sense of Belonging in Computing: An Intersectional Approach." *Computing in Science & Engineering* 18:24–30.
- Strom, Sharon Hartman. 1992. *Beyond the Typewriter: Gender, Class, and the Origins of Modern American Office Work, 1900-1930*. Urbana: University of Illinois Press.
- Suchman, Lucy. 2006. "Review: Wajcman Confronts Cyberfeminism." *Social Studies of Science* 36 (April 1): 321–327.
- "Technofeminism." 2004.
- Terranova, Tiziana. 2004. *Network Culture: Politics for the Information Age*. Pluto Pr, June 1.
- "The Gutenberg Galaxy." 2017. 18 (October 19): 1–32.
- Tichi, Cecelia. 1987. *Shifting Gears: Technology, Literature, Culture in Modernist America*. University of NC Press Chapel Hill.
- Tone, Andrea. 2001. *Devices and Desires : A History of Contraceptives in America*. 1st ed. New York: Hill and Wang.
- Tozzi, Christopher J. 2017. *For Fun and Profit: A History of the Free and Open Source Software Revolution*. OCLC: 1004572922.
- Turkle, Sherry. 1984a. "Hackers: Loving the Machine for Itself." Simon and Schuster.
- . 1984b. *The Second Self: Computers and the Human Spirit*. Simon and Schuster.
- Ullman, Ellen. 1997. *Close to the Machine: Technophilia and Its Discontents : A Memoir*. San Francisco: City Lights Books.
- ULLMAN, ELLEN. 2018. *LIFE IN CODE: A Personal History of Technology*. OCLC: 1000345223. S.I.: PICADOR.
- Ullman, Ellen. 2018. *LIFE IN CODE: A Personal History of Technology*. OCLC: 1000345223. S.I.: PICADOR.
- Undergraduate Status of Women at MIT*. 2016. Word Document. February 25.
- Van Zoonen, Liesbet. 2002. "Gendering the Internet: Claims, Controversies, and Cultures." *European Journal of Communications* 17:5–23.
- Varma, R. 2009. "Why I Chose Computer Science? Women in India." *AMCIS 2009 Proceedings*.
- Varma, Roli. 2007. "Women in Computing: The Role of Geek Culture." *Science as Culture* 16 (December 17): 1–18.
- Varney, Wendy. 2002. "Of Men and Machines: Images of Masculinity in Boys' Toys." *Feminist Studies* 28:153.
- Vitores, Anna, and Adriana Gil-Juárez. 2016. "The Trouble with 'Women in Computing': A Critical Examination of the Deployment of Research on the Gender Gap in Computer Science." *Journal of Gender Studies* (October 13): 1–15.
- Wachter-Boettcher, Sara. 2017. *Technically Wrong: Sexist Apps, Biased Algorithms, and Other Threats of Toxic Tech*. OCLC: 1005097231.
- Wajcman, Judy. 2000. "Reflections on Gender and Technology: In What State Is the Art?" *Social Studies of Science* 30:447–464.

- Wajcman, Judy. 2007. "FROM WOMEN AND TECHNOLOGY TO GENDERED TECHNOSCIENCE." *Information, Community and Society* 10 (June 21): 287–298.
- Wallach Scott, J. 2010. "Gender: Still a Useful Category of Analysis?" *Diogenes* 57 (October 26): 7–14.
- Wilson, Elizabeth A. 2009. "'Would I Had Him with Me Always': Affects of Longing in Early Artificial Intelligence." *Isis* 100 (December): 839–847.
- Wilson, Fiona. 2003. "Can Compute, Won't Compute: Women's Participation in the Culture of Computing." *New Technology, Work and Employment* 18:127–142.
- Women in STEM Study*. 2018. Pew Research Center.
- "Women, Work and Computerization." 1997.
- Wong, Billy. 2017. "'I'm Good, but Not That Good': Digitally-Skilled Young People's Identity in Computing." *Computer Science Education* (June 27): 299–317.
- Wu, W., S. Fore, X. Wang, and P. S. Y. Ho. 2007. "Beyond Virtual Carnival and Masquerade: In-Game Marriage on the Chinese Internet." *Games and Culture* 2 (January 1): 59–89.