Tara McPherson, **Feminist in a Software Lab: Difference and Design**, Cambridge, MA: Harvard University Press, 2018, 280 pp., $25.50 (paperback).

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How might technology be different if there was a greater connection between computing and theories of race and gender? This is the question at the heart of Tara McPherson's *Feminist in a Software Lab: Difference and Design.* McPherson's book is an exploration of the possibilities that emerge from the collaboration of designers and critical scholars. While dominant conversations in the digital humanities tend to highlight the power of computational tools to transform humanities scholarship, McPherson's book argues for a reimagining of interdisciplinary work in which both fields are transformed through their interaction. Within communication studies, we find ourselves in a similar moment of technological enthusiasm and attention. Yet, as McPherson reminds, communication scholars have long had a tool kit for critically considering the cultural and contextual aspects of media. We are perhaps uniquely positioned to address the questions that fall in the "missing middle" between technologists and critical theorists (Massing, 2019). McPherson's book is a compelling manifestation of work done in this middle space, both a well-argued critique of disciplinary silos and an exemplar of technology built beyond those boundaries.
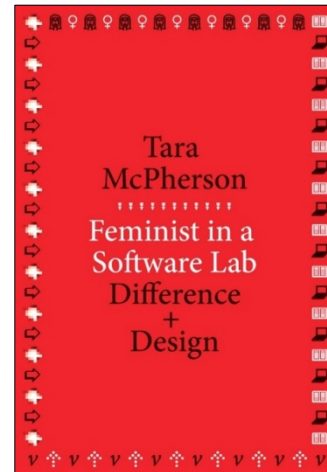
To frame her argument, McPherson begins by tracing two historical fragments: first, a brief history of UNIX, the operating system developed in the 1960s and early 1970s, and second, a look at the cultural context of the same moment through a cascading list of political activity that includes the founding of the United Farm Workers and the Black Panthers, uprisings at Stonewall and Watts, and youth protest movements in Los Angeles and Paris. In critical theory circles, just mentioning the year 1968 is enough to conjure a certain radical spirit. Yet, histories on the development of UNIX tend to draw a different timeline: marked by feats of technological progress, not moments in the struggle for social justice. From McPherson's perspective, both fragments are the product of a scholarly lens—and "very few audiences who care about one lens have much patience or tolerance for the other" (p. 48). McPherson theorizes scholarly lenses as "lenticulars." Like a hologram, lenticulars take a set of overlapping images and structure them separately. The hologram can be turned to reveal new images but can never reveal more than one complete image at a time.

The two fragments—one technical, the other cultural—reside in different histories, are seen with different lenses, and are traced in different academic departments. McPherson ties this separation back to the very design of systems like UNIX, which enforces separation through an emphasis on modularity. Modular systems are made up of self-contained, individual units that are highly specialized. (If this sounds like a contemporary university, then you're following.) McPherson argues that it's difficult to integrate an attention to context in our studies of technological production because technological systems themselves

are designed—and ultimately studied—in such a way that embedded and entwined relationships are difficult to represent. McPherson spends a significant portion of this chapter in conversation with new materialist and object oriented otology scholars, challenging their conception of computing systems as stratified layers rather than relations.

Taking this critique as a starting place, McPherson then explores what it looks like to build technology in a way that resists the relentless logic of modularity. Chapters two and three focus on two large-scale projects led by McPherson: a multimodal scholarly journal called *Vectors* and a publishing platform called Scalar. McPherson reflects on *Vectors* and Scalar as case studies of projects produced through extended conversation among designers, engineers, and scholars. The two case-study chapters are thickly descriptive and beautifully illustrated by a series of five "windows." Each window is a collection of *Vectors* and Scalar projects that are illustrated with full-color screenshots that are annotated and accompanied by the author and designer statements. As a reader, I found myself so curious and compelled by some of the project descriptions—Alice Gambrell's collaging of midcentury stenography ephemera (pp. 137–140) or Trevor Paglen's mapping of secret military aircraft (pp. 176–179)—that I turned to my computer. In these moments, the book becomes a kind of paratext, like a movie with the directors' commentary turned on.

For the chapter 2 case study of the journal *Vectors*, McPherson uses an extended reflection on databases to illustrate the challenges and opportunities that emerge at the meeting of computational tools and creative humanities work. McPherson explains that a typical database doesn't match the process of humanities scholarship. Humanities scholarship is iterative and emergent. Databases work best when they have predetermined rules. These rules serve to standardize data as users break data into consistent bits of information. Yet, this creates friction between the interpretive methods of many humanities scholars, in which knowing emerges from interaction with data rather than fitting data to a predetermined model. In response, McPherson and her collaborator, Craig Dietrich, created *Vectors*' "Database Back-end Generator." The generator allows authors to experiment with database rules. These experiments shape the structure of the author's scholarly arguments and the structure of the database used to power the interactive article published on *Vectors*. Critique and computational practices enter into a reciprocal relationship through this process. In line with the overarching project of the book, McPherson demonstrates the potential of interdisciplinary collaboration for reimagining computational tools and scholarly structures.

In chapter 3, McPherson takes the critique and insight from the previous chapters and manifests them in the publishing platform Scalar. McPherson explains Scalar through a comparison to the platform WordPress. Whereas WordPress organizes content in a one-to-one linear hierarchy, Scalar is designed to emphasize multiple relationships between content. These multiple relationships are represented in data visualizations that are automatically produced by Scalar. Both readers and authors can interact with the visualizations to explore the connections between the primary artifacts, links, annotations, and comments. Here, the database becomes a site of creation. Readers can see how each of these components are woven together to create a scholarly argument, piece by piece, and also offer new ways of exploring these same pieces. The author becomes someone who builds a pathway through artifacts. Readers can build

alternative pathways. The platform embodies the humanistic practice of interpretation, the offering of one reading among many possible readings.

At the heart of McPherson's argument is an invitation to the power of design. It isn't that databases *can't* reflect humanistic research processes; it's that they typically don't. And the shape of a database is due as much to the perspectives of its designers as it is to any technical capacity of computers. Anne Balsamo (2011) reminds us that design is a form of agency—a way of physically manifesting your vision in the present and bringing about your imagination of the future. Yet, this agency is not distributed evenly. Not all scholars have software building skills. This is especially true in a modern (and modular) university that pushes scholars deeper into narrow methodological and topical specializations. McPherson offers collaboration as a way of opening up the practices of technology design. As Daniela Rosner (2018) observes, these productive alliances are a method for doing technology design— and also undoing historical and contemporary understandings that frame design as the work of individuals.

Although McPherson most directly addresses the digital humanities, the three essays that comprise the book are deeply relevant to communication scholars who engage technology as an object of analysis, research tool, or research outcome. The overarching project of the book is to challenge the disciplinary boundaries that separate theorizing about technology from the production of technology. McPherson observes that modular thinking limits collaboration and meaningful conversation across these modalities, making our conceptions of race and gender additive rather than constitutive. Feminist or antiracist thought becomes like a building block that can be added or removed from the core concerns of technology design. Communication scholars can observe this additive model in our own tendencies to silo critical analysis. We title topics courses and conference panels things like "Race and Media" or "Gender and Technology"—but often fail in the cornerstones and keynotes to discuss the way that race and gender are used to define and classify what is (or isn't) "cinema" or "innovation."

Tara McPherson's *Feminist in a Software Lab* is a book that explores an alternate possibility for technology. The first chapter rewrites a brief history of the digital humanities, while the second and third manifest a future beyond modular computational logics. McPherson acknowledges that projects connecting theory to tool design are often utopian. They are difficult to maintain and difficult to scale. They fall short of fully realizing that utopia. But, McPherson writes, these projects "point the way toward aesthetic, technological and collaborative practices that figure computation and its histories differently. I believe that these differences do matter" (p. 21). I believe so, too.

References

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