

Bowker, Geoffrey C., Stefan Timmermans, Adele E. Clarke, and Ellen Balka, eds. *Boundary Objects and Beyond: Working with Leigh Star*. Infrastructures. Cambridge, MA: The MIT Press, 2015. 548 pp. ISBN 978-0-262-02974-2

Boundary Objects and Beyond: Working with Leigh Star, co-edited by Geoffrey C. Bowker, Stefan Timmermans, Adele E. Clarke, and Ellen Balka, is a celebration of Susan Leigh Star's wide-reaching and deeply significant contribution to science studies and associated fields. Star's approach to scholarship was personal, poetic (how many other scholars reference poetry as part of their work?), interdisciplinary, and perhaps above all, focused on unearthing the invisible, the marginal, and the problematic as a central and essential practice of science, technology, and society (STS) studies. As Helen Verran states, "Susan Leigh Star had an extraordinary capacity as an analyst to let herself be inhabited by the world, and in turn to insinuate her being into many of the world's nooks and crannies" (Bowker, Timmermans, Clarke, & Balka, 2015, p. 500). Using a selection of Star's most celebrated work, this publication charts how she "became one of the most influential science studies intellectuals of the last decades" (p. 1), and offers a space for a critical and personal examination of its radiant effects to the study of society and science.

Boundary Objects and Beyond is part of the MIT Press's Infrastructure Series, and is co-edited by a group of scholars that knew Star incredibly well both personally and professionally: Bowker is Professor of Informatics at the University of California, Irvine; Timmermans is Professor of Sociology at the University of California, Los Angeles; Clarke is Professor of Sociology & Adjunct Professor of History of Health Sciences, Department of Social and Behavioral Sciences at the University of California, San Francisco; and Balka is Professor for the School of Communication at Simon Fraser University in Burnaby, British Columbia. The contributors of the book, primarily scholars at academic institutions, represent a broad range of scholars whose intellectual development and social circles were much enriched by Star's provocative contributions to science studies. The essays represent the breadth and reach of Star's work into numerous domains of study and will give the reader a good sense of how her scholarship is being used in contemporary concerns.

Star's significance was beyond the production of exemplary scholarship; she served as a pivot point for a community of thinkers, changed the way people approached the study of science, and infused a radical and empathetic attention to the study of the unseen and unheard. A fragmentary glimpse at phrases used to describe Star and her scholarship coalesce to form a strikingly pluralistic approach to STS scholarship always focused on the borderlands of experience: "fostered particularly 'caring modes of attention' to ... marginalized experiences" (p. 47); "gives us a tool for being more fully human in our social science

research” (p. 253); “she encourages us to study the silences, the things we think are missing, the invisible, the people and the topics in the corner” (p. 303); and, Star provides the “ability to open for investigation areas that had not previously been thought noteworthy...[with an] aim is to heighten awareness of boundaries of silence, a means of transgressing them” (p. 436). When Star called for the “study [of] boring things” and the “unexciting,” (p. 474) she was, in fact, exposing to the overlooked spaces of infrastructure where she believed power (p. 264) and systemic agency ultimately resided, revealing the contours of bodies (p. 417) and material realities of infrastructure that were otherwise erased from social science inquiry. “For Star, studying these [boring] forms of social life meant restoring the work and the political/ethical/social struggles that went into the creation of the formal” (p. 7). Studying the ordinary became a space of possibility and productivity precisely because of Star’s theoretical and methodological approaches to liberating these spaces.

Star was influenced by a number of academic domains: “feminism, race theories, ecological thinking, symbolic interactionism, actor-network theory, ethno-methodology, linguistics, activity, theory, metaphysics, theology, cognitive science, phenomenological psychology, distributed artificial intelligence, and anyone who produced exciting intellectual insights” (p. 3). But this list certainly does not define the *entirety* of Star’s scholarly influences (a list of selected publications at the end of the book can help you locate more writings of interest); to represent *everything* would far exceed the ability of any one publication. Do trust that this book is worth reading, particularly if you are unfamiliar with the evolution of Star’s contribution to STS and related fields (or even for those that *are* familiar with her work, for it presents a solid narrative of Star’s scholarly evolution throughout her career). There is much to glean here for Information Studies scholars as well, for aside from Star’s contributions to classification and categorization (that are perhaps best known in this domain), there are methodological and theoretical approaches of value to our interdisciplinary field--and Star *knew* and *lived* interdisciplinarity like few others--related, especially, to the critical examination of the intersections between infrastructure technology, society, information, and the body/self.

Boundary Objects and Beyond is divided into four sections, each extrapolating upon a general theme represented in Star’s oeuvre: Ecologies of Knowledge; Boundary Objects; Marginalities and Suffering; and Infrastructure. Each section has key articles written by Star (sometimes multiple) that illuminate these themes (including one working paper first published here). There are far too many concepts in this book to give them just attention in this space, so I will briefly cover some selective through-lines of each section. This approach will necessarily omit the mention of many worthwhile contributions, though perhaps it

will pique the interest of some readers, prompting them to examine Star's body of work more closely.

Part One, "Ecologies of Knowledge," expands upon Star's approach to the study of technology and systems that "saw phenomena as continuous," simultaneously taking into account the "human and material worlds" (p. 3) that constitute their complexity. The essays in this section exemplify how Star's ecological approach unearthed new avenues of scholarly attention for STS. Maria Puig de la Bellacasa illustrates how Star's focus on "marginalized experiences" infused with a "radical feminist thinking" (p. 47) reshaped the STS landscape to include justice-oriented notions of infrastructure. Adele E. Clarke's essay (p. 85) emphasizes the extent to which Star's notion of 'invisible work' has helped her articulate "anticipation" (p. 85) as a recognizable and problematic affective form of labor and work. Part Two, "Boundary Objects," expands on perhaps Star's most celebrated and cited concept, "not only in science and technology studies but in computer and information science, library sciences, sociology, and beyond" (p. 172). Essays expand the notion of "boundary object" to Star herself as the embodiment of a boundary-crossing entity. Les Gasser provocatively describes the extent to which the self-as-social scientists becomes an integral, almost inextricable, part of the phenomena we witness: [Leigh] could not act without joining her personal experiences and sentiments to the context of her ideas" (p. 240). All objects cross boundaries in some capacity, and these spaces of overlap were made productive and exciting by Star.

"Marginalities and Suffering," part four of the text, interrogates "the multiple simultaneous selves and commitments" that exist within infrastructures, and what implications that might have for our scholarly approaches. What emerges is an increased emphasis on the "intensity" (p. 292) and complexity of being human within a mesh of affordances. In reference to Leigh's 'onion paper,' "Power, Technology, and Phenomenology of Conventions On Being Allergic to Onions," the editors note: "Here she offers a feminist, interactionist, and antiracist alternative frameworks for considering multiplicity--multiple simultaneous selves and commitments" (p. 263). Contributors emphasize the "links between lived experiences, technologies, and silences" (p. 303) in order to locate emergent and hidden forms within the elements social organizations (p. 317). Infrastructures become systems of memory, as in the archives (p. 323), as well as obfuscate the labor and "ordinary work" that takes place within it; our job as social sciences is to make that *history* and *work* "visible again" (p. 349) through our own analysis. And, finally, part four of the text, "Infrastructures," speaks to the embedded nature of infrastructures and how they fundamentally shape and re-shape our community and individual practices (p. 380). Infrastructures also *reflect* and appropriate "shadow" representations and indicators of the body (Chapter 21), as can be seen in Ellen Balka and Susan Leigh Star's, "Mapping the Body across

Diverse Information Systems: Shadow Bodies and How they Make us Human.” Scholarship should make these standards, classifications, and systemic appropriations “more visible”(p. 468) by critical analysis. From an ecological point of view, bodies, objects, and infrastructure are a co-constituted system and it is the social scientist’s position (perhaps duty) to “understand exclusions and silences” within infrastructures in order to reach a distributional justice (p. 460).

Overall, *Boundary Objects and Beyond* is an exemplary celebration of Star’s contribution to science studies scholarship, well organized and well articulated. A highly recommended read. May this text continue to inspire a critical critique of the *invisible* within infrastructure toward liberating those subsumed by the weight of myriad systems and their distributed schemas.