

Byron Hawk, David M. Rieder, and Ollie Oviedo (Eds.). **Small Tech: The Culture of Digital Tools**, University of Minnesota Press, 2008, 272 pp., \$75.00 (hardcover), \$25.00 (paperback).

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Mobile devices and digital tools, from smartphones to undo functions, are increasingly enfolded in everyday practices, shaping interactions with our surroundings. Working from the premise that this proliferation of “small tech” is grounds for new approaches to digital culture, the multidisciplinary collection of essays *Small Tech: The Culture of Digital Tools* tasks media studies with examining the interrelations between “the virtual space of the internet, the enclosed space of the installation, and the open space of everyday life” (p. ix)—spaces that are arguably becoming less discrete. Taking specific objects or “small tech” as entry points, 30 scholars provide critical mappings of our changing material relations to technologies, focusing especially on the interstices of interface and network and emerging mobile engagements with the environment.



As outlined in the introduction, the editors posit that digital culture can no longer be understood in terms of aesthetic *or* social domains as relegated to the two distinct traditions of European new media and American cyberculture studies respectively. Calling for new methods (but retaining older traditions of critique), they propose an ecological alternative capable of interweaving art and everyday life. Such an approach, they argue, allows for the consideration of the ways small technologies are (re)articulated in new kinds of constellations which shape possible interactions and reconfigure cultural and social concerns. Any sense of “newness” is therefore located in the relationships that make cultural forms possible, not in the novelty of technology itself. The accounts that follow take the form of both broader theoretical discussion and descriptions of specific experiences (ideally within the same entry), collectively providing a sense of diverse entanglements of people and culture and tools.

If, as descriptions of these entanglements suggest, digital devices are receding into the background (there are several entries on the future of ambient technologies), this is resulting in arguably different kinds of material rather than virtual environments. In general agreement with N. Katherine Hayles, the authors see embedded small tech as decentering the human in ways that necessitate reconsideration of agency and embodied experience. The authors draw on a wide variety of theorists—in addition to Hayles, Heidegger, McLuhan and Manovich make regular appearances—to understand digital tools as they “generate the material grounds for potential human action, connection and communication” (p. xii). The virtual is positioned not in opposition to the real, but as an emergent part of the constellations that shape possibilities for material relationships. The book can then be situated more broadly among efforts to challenge the virtual/actual divide whether through discussions of digital “hardware” (Hand, 2008) or networked subjectivities (Coleman, 2011).

Proceeding from an introduction that helpfully lays the theoretical and methodological groundwork for a critical-ecological approach, the book is divided into three sections. The first section, "Traditional Software in New Ecologies," examines "old" tools as reconfigured by new relationships. As the most theoretically rigorous section, entries tackle broader questions about representation, form, authority and power. Lev Manovich's contribution is exemplary, drawing together examples of new media art and conceptions of modern representation to reflect on the politics of mapping and visualization as it shapes our "data subjectivity" (p. 9). While most entries stay faithful to the promised ecological and material approach, Brooke's conceptualization of links as material events and embodied experience helps provide more explicit counterpoint to occasions where "lost materiality" threatens to dominate.

The second section, "Small Tech and Cultural Context," presents vignette-like accounts of hardware and software as articulated locally. The entries attempt to position a wider variety of tools—including iPods, key pads, search engines, 3D games—as connected to experiences of their "affective ecologies." This is most successful when specific instances of a tool in action are bundled with a clearly defined issue, as with Jenny Edbauer Rice's juxtaposition of cell phone use for dating and activism as a challenge to relationships between public and private. Veronique Chance's performance piece description is also productive, layering physical movement and projected image, act and representation, to interrogate encounters at a distance. Given the rapid movements between tools and broad concerns and the brevity of contributions no more than a few pages each, entries at times succumb to the danger of slipping from provocative to frustrating.

The final section, "Future Technologies and Ambient Environments," carries themes established in the first section through to possibilities for education and empowerment. These essays speak most directly to the question of maintaining agency as digital devices become so quietly pervasive, whether by critically approaching engagements with embodied cyberspace or making visible the ubiquity of everyday surveillance. The tendency toward prophecy that comes with discussing "the future" is anchored in the real world creative projects and designs that form the basis for loosely paired contributions on teaching tools, wearables, ambient technologies and haptics. This results in some of the book's most interesting contributions, including Johanna Drucker's dialogue between new media culture and knowledge production in the humanities that argues for the importance of aesthetics in stimulating imaginative work beyond the arts.

When reviewing a book published in 2008 (with some entries originally appearing as early as 2003) that claims to investigate emerging relationships, it seems necessary to consider current relevance with the benefit of hindsight. Even if the mobile technologies discussed are not always up to date with the current generation of smartphones, touch screens and WiFi-enabled iPods, the essays do point toward enduring debates. While many authors clearly believe in the promise of their projects, they generally manage to maintain a critical stance alongside future orientations. Precedents are often acknowledged—the "future" of ambient video is traced backward to Christmas "yule log" fireplace first televised in the 1960s. Those who do declare "wholly new" ecologies, however, would benefit from closer interrogations of possible continuities and the specificity of differences outlined in many of their colleagues' contributions.

With strength in the diversity of tools, issues and projects addressed, the book provides interesting descriptions of art as it speaks to the everyday. It challenges humanities scholars to consider the far-reaching implications of small technologies and miniaturization, bringing together social and aesthetic components of new media cultures, if sometimes juxtaposed across rather than enmeshed within essays. The book does, however, tend toward largely descriptive "readings" in ways that might frustrate those with backgrounds in sociology or anthropology. Overall, it is best approached as a catalogue of possibilities for understanding and living with small tech in complex ecologies, rather than as a definitive account of new relationships.

Countering the strength in diversity, problems of depth and cohesion are, in part, exacerbated by the format itself. With 26 entries over only 272 index-less pages, the diverse snapshots are, at times, difficult to navigate. Like most edited collections, *Small Tech* lacks a conclusion that might better hold entries accountable to the mission established by the editors. Divergent outcomes could have been further embraced as lessons in the multiplicity not only of maps, but of emerging digital cultures. While there are definite references to plural media ecologies (as in Kahn and Kellner's contribution), *the* culture that figures in the title is largely that of an unacknowledged Global North that might leave readers wondering about the kinds of material possibilities imaginable from different points of entry.

References

Coleman, B. (2011). *Hello avatar*. Cambridge, MA: MIT Press.

Hand, M. (2008). *Making digital culture: Access, interactivity, and authenticity*. Aldershot: Ashgate.