

HAYLES, N. Katherine. 2021. *Postprint: Books and Becoming Computational*. New York: Columbia University Press. Pp. 231. ISBN 9780231198240, Hardback \$95.00. ISBN 9780231198257, Paper \$26.00. ISBN 9780231552554, eBook \$25.99.

In *Postprint: Books and Becoming Computational*, N. Katherine Hayles employs the term *postprint* to refer to publishing after 2000, coming after what she regards as 50 years of revolutionary technological change in the printing industry, from the invention of photocomposition to print on demand. Despite setting up a historical framework, she is not actually aiming to produce a chronicle of an era closely focused on the distribution and reception of texts produced with these innovations or made available as eBooks. Such a study might constitute the traditional (read: stuffy) monograph university presses are moving away from, as Hayles demonstrates in her compelling chapter on that corner of the publishing world. Instead, she draws widely for the interdisciplinary contents of *Postprint*, and readers may be delighted following the paths she takes, as long as they do not mind that the book conforms to a general theme rather than affirms a single thesis. In the end, they will take away plenty on the history of mechanical and digital reproduction, but probably more on the subject of posthuman condition than the textual one, however.

Those who have followed Hayles's scholarship over the years will find *Postprint* the natural extension of her thoughts about technology and posthumanism. In fact, the first chapter unites her theories of *cognitive assemblages* and *media cognition* expounded previously and applies them to the postprint book — the text and its attendant coding that allows the contents to be displayed in multiple forms, electronically or in print. In principle, then, postprint serves as an accessible example of a cognitive assemblage: how humans and computers in tandem participate in the same process of interpretation, with humans interacting with the text as it is read through a digitally constructed interface. Today's devices, she stresses, have the capacity to respond to the reader by offering relevant display capabilities, which illustrates what she calls media cognition, and the reader's experience depends on the features of the interface that she chooses (or is enticed) to use. Hayles's emphasis on "books" means that she sticks to works with a consistent setting text, as it were, even in the digital realm. (This is a smart limitation on her scope for two reasons, which she acknowledges. First, she rightly insists that machine *cognition* — a computer's ability to process information and apply interpretations to create meanings — is not the same as machine *consciousness*, which, bordering

on artificial intelligence, is a much higher bar to clear that comes with another set of implications. Second, studying adaptive content would take her down a different road entirely, one too far removed from even the most flexible notions of the book.)

Consequently, the nature of the interaction with postprint is variable although a book's contents are stable, yet because there can be so many options for display it would be impossible to represent each rendering as a distinct version of a text. For instance, two people reading the same eBook but making use of different features of the interface at different moments essentially render the book's text in unique ways for themselves. Hayles characterizes this not as a shift in the textual condition but as "a change in the distribution of cognitive capabilities" (17): computers now handle aspects of book production and reception that once were solely performed by humans. *Postprint* provides many striking examples of computers' new roles in their shifting relationships with humans, especially on the production side of the publishing industry. The altered interpretive capabilities of humans under these circumstances are harder to pin down, to be sure. To her credit, Hayles recognizes with an assist from Dennis Tenen — his *Plain Text: The Poetics of Computation* (2017) — that much of the code that renders text is kept from readers who are often unaware of how devices shape the textual interfaces humans respond to. (Postprint to me seems like a useful term only when the text's coding is explicitly explored, not merely when granting it is always already there, which is how Hayles passes it off sometimes as a de facto period classification.) However, she accepts that "each (human) reader may vary in the extent to which she accesses the cognitive functions available in an e-reader/e-book, making generalizations difficult" (77). No doubt true, except the consequences are misplaced: it would be all too *easy* to generalize while accounting for the human side of the interaction, based on how we assume audiences could or should read. Hayles's disinclination to offer even qualified inferences on tendencies in reception is unfortunate and leaves me wondering what evidence she believes is lacking — or perhaps a consideration of audience agency simply does not fit a posthumanist framework.

After the introduction establishing Hayles's theoretical framing come two chapters that explore printing technologies, which will likely be of greatest interest to textuists. The first contains Hayes's compelling account of the failure of the Paige Compositor, the first machine for automated typesetting invented in the 1880s, now remembered primarily for bankrupting early investor Mark Twain. Its unruly complexity came from mimicking how human compositors would set and reset movable type letter by

letter with their hands; in contrast, Hayles shows that Linotype soon after achieved the same ends through simpler mechanical means (i.e., casting full lines of type) and became the dominant technology. She follows printing innovations forward into methods of phototypesetting in the middle of the twentieth century and then print on demand exemplified by Xerox DocuTech machines appearing in the 1990s. These examples readily show that there were crucial shifts in how physical books were produced in the latter half of the twentieth century, an era not yet receiving much attention among book historians, and also confirm her claim about the redistribution of cognitive labor.

The next chapter, centered on the state of academic publishing, suggests that computers have freed up publishers' time and energy to concern themselves more with the marketing of books — make whatever value judgment of that you will. Hayles focuses on the monograph, the loss leader of university presses and gold standard of scholarship (and a ticket to promotion for many academics). The chapter is a fascinating read for those researchers who believe they might have another book in them — an invitation to rethink one's assumptions of what presses are looking to publish and of what monograph "publication" actually means today. Hayles interviewed leaders of five major academic publishers and discusses them in succession, and this makes for a very accessible chapter that puts on display the different strategies of the presses. The usual presumptions — scholarly publishers moving away from books of interest only to a single field or university libraries, for example — do crop up but are examined in nuanced ways. Hayles also considers publishers' support for digital projects such as volume-like digital humanities scholarship, open access, networked peer review, and collaborative online annotation. Consensus is hard to find, however, which makes her less insistent on calling out the larger trends — and perhaps that is wise given how fickle the winds of change are right now.

The final two chapters examine the reception side of the cognitive assemblage of reader coupled with the postprint book. "Over decades", Hayles writes, "the resulting redistribution of cognition fed forward into reading devices and consequently into reading practices, where it increasingly affects how (human) readers think of themselves in the mixed-media ecologies characteristic of contemporary society" (53). That last clause conveys Hayles's emphasis in this book — that is, how shifting interpretive contexts resituate readers — but that is not the same as investigating observable practices of reading, which is where I would locate reception and insist that such studies must recognize audiences. These chapters appear to me as interpretations of texts mainly from the vantage point of

ideal readers (plural intended and appreciated). I do not mean to diminish their accomplishment by pointing this out, only to show that Hayles's fundamental concern is exploring the notion of the posthuman interpreter. Her focus is on contemporary fiction and artists' books on the subject of the changing dimensions of language and communication in the face of great technological change. Several of these titles are especially fascinating because they are examples of books that exist in multiple formats at once — true “postprint productions” — and challenge a facile print versus digital dichotomy. One work of fiction Hayles studies, *The Silent History* (2014), attributed to Eli Horowitz, Matthew Derby, and Kevin Moffett, was first produced as an iPhone app that featured geolocation-specific and user-generated content, and was later adapted into a print novel and conventional eBook. Her analysis has all the pleasures of a thorough comparative study, and refreshingly her argument does not merely tally up how the textual presentations differ according to medium. Reading practices, however, do not get much particular attention: Hayles refers to *The Silent History* along with Alena Graedon's *The Word Exchange* (2014) as speculative fiction that dramatizes how humans may come to communicate differently as they become accustomed to the communicative support computers provide in an increasingly online world. What if our use of language depends on chips implanted in our brains (*The Silent History*) or tech companies control the meanings of words old and new (*The Word Exchange*)?

The last chapter of *Postprint* examines texts that foreground radical reading experiences that undoubtedly make human interpreters aware that they are participating in a cognitive assemblage with a text. To read *Between Page and Screen* (2012) by Amaranth Borsuk and Brad Bouse, one must hold codes printed on the pages of a book up to a webcam, capturing body and codex together, to access readable text from a web site. The human-device collaboration implied in augmented reality contrasts with Argentinian conceptual artist Mirtha Dermisache's glyphic drawings that resemble writing, meant to be published in book form and scanned with the eye like lines of text. Her undecodable but still visually expressive letterforms offer an example of a text that cannot be recognized by technology, the ever-pervasive algorithms that convert strings of characters left by humans into machine-readable text. This chapter brings *Postprint* to a fitting conclusion by discussing what Hayles considers a form of resistance to the prevailing technological revolution, or to our becoming computational. (I was getting worried that the slope was too slippery.) While Hayles considers the print book a “cognitive support”, the postprint eBook can function as “a cognizer in its own right”, to the point where the latter

“becomes in effect a collaborator with the human reader, able to sense and respond to the reader’s desires and execute commands of a quite sophisticated nature” (80). I have no problem accepting that such a collaboration exists, just as long as the device or codex, though it may read to me or even with me, is not assumed to read *for* me. What this collaboration tells us about books and culture will require much more study, but the parameters for this exploration laid down by Hayles in *Postprint* are astute, convincing, and pragmatic.

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STAUFFER, Andrew M. 2021. *Book Traces: Nineteenth-Century Readers and the Future of the Library*. Philadelphia: University of Pennsylvania Press. Pp. 288 + 36 illustrations. ISBN 9780812252682, Hardback \$49.95. eBook available.

What do we hope to learn from our textual artifacts? Examining their textuality in conjunction with their materiality, we scour them for signs they were and were not designed to reveal about their ideation, composition, publication, reproduction, remediation, distribution, circulation, reception, and even their destruction. We read them individually; genealogically, to craft narratives about composition and publication, for example; and collectively, in networks and datasets, to uncover social, political, technological, and aesthetic connections. The data thus extracted is deployed to many ends, but however it is channeled, the data extractors, “we”, tend to share a deep commitment to our artifacts and a belief in their lasting value — something like a sense of duty to their legacies. These feelings and convictions cluster, finally, around questions of meaning. Let’s call it like it is: these are labors of love. What we “hope to learn” is driven by “hope” as well as “learning”.

It is refreshing, dare I say bracing, to read a scholarly monograph in which all of that — love, hope, devotion — is right up front, coupled unapologetically with meticulous and imaginative bibliographic scholarship. Andrew Stauffer’s *Book Traces: Nineteenth-Century Readers and the Future of the Library* is unusual in this regard, and in at least one other, its evolution. Stauffer’s motivations and arguments began as an activity in a graduate course he taught at the University of Virginia, grew into a crowd-sourced, multi-institutional digital project (<https://booktraces-public.lib.virginia.edu/>), then a database at UVA about its own collections (<https://>