

Thomas S. Mullaney, **The Chinese Computer: A Global History of the Information Age**, Cambridge, MA: MIT Press, 2025, 368 pp., \$32.00 (paperback).

Reviewed by
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Thomas S. Mullaney's ***The Chinese Computer: A Global History of the Information Age*** continues the ambitious project begun in his earlier *The Chinese Typewriter* (Mullaney, 2017), tracing the transformation of Chinese script from the typewriter era into the age of digital computation. If *The Chinese Typewriter* offered an archaeology of mechanical inscription, *The Chinese Computer* turns to the “middleware” of the digital epoch—the *input method editors* (IMEs, or *shurufa*), software systems operating between a computer's hardware and application layers that enable users to generate Chinese characters from alphanumeric symbols (p. 5). Entering the history of computing through the symptom of “character amnesia” (*tibi wangzi*, the inability to recall how to write characters by hand), Mullaney argues that this so-called cultural forgetting is not a natural consequence of technological evolution but a cognitive and sociocultural reconfiguration precipitated by digital writing modes, particularly the dominance of the QWERTY keyboard and Pinyin input.



Building on more than fifteen years of archival and ethnographic research, Mullaney reconstructs a global network of laboratories, engineers, and institutions—from IBM, MIT, and the CIA to Taiwan's military research units and the upper echelons of the Chinese Communist Party—to examine their deep and sometimes unexpected contributions to the development of Chinese computing. His narrative deftly weaves together media archaeology and global history, illuminating how Chinese computing evolved through both transnational exchange and local improvisation. At stake is not only the political and cultural genealogy behind the linguistic technologies of computing but also the reciprocal transformation of computation itself when confronted with a nonalphabetic script. In this confrontation between Western and non-Western epistemes, Mullaney locates a rethinking of modernity and alternative modes of human-machine communication.

The book is organized chronologically into six chapters, each examining a key phase in the evolution of Chinese input systems. Chapter 1 begins with IBM's 1947 Chinese electric typewriter and its operator, the first “electric Chinese typist,” Lois Lew (Liu Shulian), foregrounding typists as the earliest “living algorithms” who translated codes into characters through embodied memory and dexterity on machines without visual feedback. Chapter 2 follows the invention of *Sinotype* in the 1950s–60s, a system that replaced the logic of typing with one of searching and predicting, introducing concepts such as “minimum spelling” and autocompletion decades before the advent of artificial intelligence. Chapter 3 explores the 1960s–70s moment when engineers sought to “computerize” Chinese by computerizing the

typewriter itself—a hybrid experiment in mechanical and digital mediation that avoided the QWERTY keyboard. Chapter 4 charts the “input wars” of the 1970s–80s, from Zhi Bingyi’s *Wubi* system to *Cangjie*, *Zhuyin*, and *Pinyin*, revealing deep ideological tensions between structural and phonetic paradigms. Chapter 5 turns to the grassroots engineering of China’s computing ecosystem: BIOS Sinicization, character ROM cards, printer-driver hacking, and the expansion of hardware capacity that made Chinese processing possible on machines originally designed for English. Finally, chapter 6 traces the rise of Pinyin input and predictive text, arguing that its dominance was not a purely technical triumph of efficiency but the product of intersecting political, cultural, and infrastructural forces.

At the theoretical core lies Mullaney’s concept of hypography, a mode of writing that operates *in service of* conventional script but at a sub-symbolic register (p. 20). In hypographic systems, the sole purpose of signifiers is to retrieve other signifiers—orthographs—and then vanish, letting those orthographic signs perform the labor of meaning. The user’s input symbols never coincide with what appears on the screen; an infinite number of input operations can theoretically correspond to the same output sign, and they disappear the moment a character is produced. This purposeful ephemerality (p. 21) marks the passage from an epoch of *writing as composing* to one of *writing as retrieving* (p. 28). As Mullaney notes, such practices are not uniquely Chinese: non-Latin scripts such as Arabic, Japanese, and Korean, as well as Western shorthand or Graffiti systems, all exhibit hypographic operations. Yet the Chinese case stands out for its scale and cultural intensity. “In the digital age,” he writes, “every single Chinese computer user is a hypographer” (p. 26).

“Writing has changed. Our frameworks for understanding it must change as well” (p. 231), Mullaney concludes, signaling his ambition to revisit *writing* (*Schreiben*) as a central concept in media and cultural theory. Writing, the oldest medium since the advent of recorded history, is not merely a tool of expression but a *Kulturtechnik*—a cultural technique through which humans produce, record, and circulate knowledge (Siegert, 2015). At the turn of the new century, scholars from Friedrich Kittler (1999) to Vilém Flusser (1987/2011) have traced the shift from alphabetic inscription to technical images and binary code. In the age of large-language models exemplified by ChatGPT, predictive text has largely displaced instantaneous manual input as the default logic of machine writing. Yet Mullaney’s deeper intervention is neither a phenomenological lament for the lost epoch of handwriting nor a triumphalist celebration of technical progress. He situates writing as an information interface embedded in concrete infrastructures—from precomputer typewriters to digital input methods—and poses specific questions: Who writes? Through which hardware, interface, and encoding standards? Who decides the norms of legibility, and which languages are excluded? In this sense, writing becomes a battlefield for the uneven development of global information technologies and the politics of data control—inequalities that, as he shows, are often inscribed in the materiality of the medium itself (p. 169).

Crucially, Mullaney inverts the conventional modernization myth. Rather than Western machines “rescuing” Chinese script from technological obsolescence, he demonstrates how Chinese engineers and users “rescued” Western computers by rendering them multilingual—through hardware hacks, rendering engines, dynamic linking, and predictive algorithms that anticipated today’s large language models. In this sense, *The Chinese Computer* joins a growing body of decentralized computing histories, alongside Chile’s *Project Cybersyn* (Medina, 2011) and Victor Petrov’s (2023) *Balkan Cyberia*. These renewed attentions to

the alternative histories of computing in socialist states continually summon the spectral resources of the Cold War—those forces that have receded behind the curtain yet remain hauntingly present. By excavating what has been buried or effaced in official histories, such scholarship gestures toward alternative imaginaries of the technological future. At the same time, these intellectual efforts are deeply entangled with the current crisis of capitalism and the growing disillusionment with the very notion of modernity itself.

Nevertheless, the book's intellectual ambition sometimes outpaces its empirical foundation. Compared with *The Chinese Typewriter*, the individual portraits are less vivid, perhaps owing to limited archival sources. While the notion of hypography brilliantly unites mechanical and digital eras, Mullaney devotes less attention to the internal materialities of computation—CPU logic, feedback loops, and algorithmic generation—that differentiate digital media from mechanical inscription. Although chapter 5 touches on BIOS localization and hardware modifications, the computer often functions narratively as an extension of the input method rather than a medium with its own autonomous logic. Moreover, the book's structural clarity occasionally invites a teleological reading: the triumph of Pinyin and the transition from input to prediction can appear historically inevitable. Ultimately, the book illuminates more by posing questions than by resolving them, extending the analysis of Chinese writing from structure to infrastructure, from symbol to code, yet stopping short of a full theorization of computational materiality.

Despite these limitations, *The Chinese Computer* remains the first comprehensive historiography of Chinese writing in the digital age. It offers a vivid and intellectually generative roadmap toward what Mullaney calls a "post-writing" epoch, in which composition, retrieval, and prediction converge. Like its predecessor, the book transforms a seemingly technical subject into a meditation on language, power, and the uneven geographies of computation—an invitation for media scholars to rethink the very foundations of global information history.

References

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