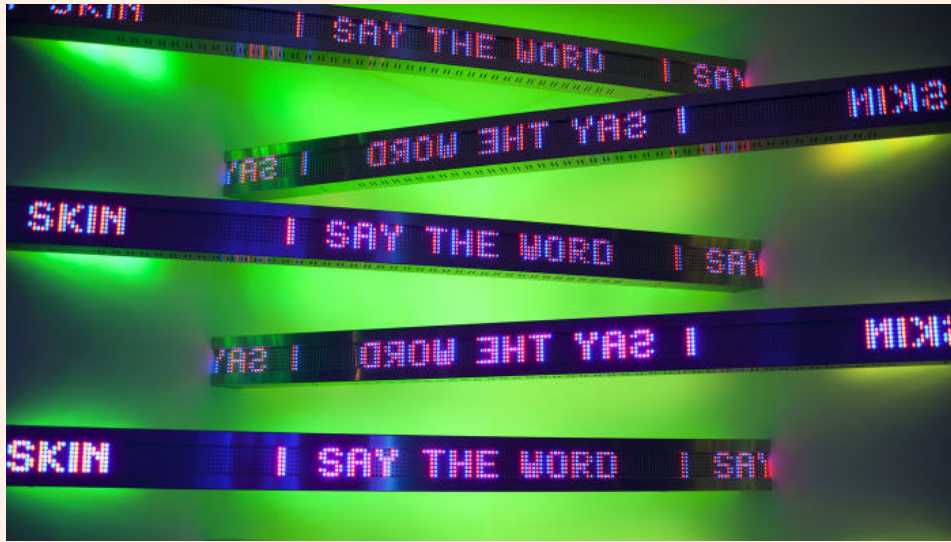# From the clay tablet to predictive text: how tech shapes literature

An age of innovation is focusing minds on past media revolutions. Could ours be the most far-reaching yet?

'New Corner', an art installation by Jenny Holzer © Jenny Holzer. ARS, NY and DACS/Artimage, London 2017. Photo: Collin LaFleche

NOVEMBER 17, 2017 Thomas Hale

You could read it as an invitation to reflect on both the limits and the possibilities of technology. "Type 'I was born'", suggested the Twitter account @therealbradg this month, "and then let your predictive write your autobiography". The idea was to take a process built into the modern mobile phone, which anticipates the next word we are likely to choose on the basis of our past behaviour, and use it to create a new kind of literature.

Two days later, the tweet had been seen by almost 2m people. Prominent writers including Neil Gaiman and JK Rowling, along with thousands of others, had added their own stories. Rowling's reads: "I was born in England but I don't think it's worth it. I've been working in the morning and the sky turned off. Only the best way is fine." If you have a smartphone to hand, it's worth seeing what the system decrees your own story to be (the process works on any app that involves writing as long as you have a keyboard installed with predictive text).

The Twitter experiment was a particularly acute example of the extent to which new technologies — here, not only intelligent predictive text on pocket-sized supercomputers but social media in all its scale and virality — are changing our experience of writing. This is a transformation so far-reaching that it is difficult to conceive of what it could eventually mean. As long ago as 2010, Eric Schmidt, the chief executive of Google, observed that every two days we generate as much information as was created in the entire history of civilisation until 2003.

Until fairly recently, it might have seemed unusual to conceive of writing primarily as a technological process — even if, in a sense, that is what it always has been. But our ongoing digital transformations are now galvanising a collective reflection on the materiality of the literary past. Both in university research departments and among authors reaching for a wider audience, the "material text" has become the focus of ever more energetic investigations into the development of writing technologies and their social and artistic effects.

For Martin Puchner, author of *The Written World*, the current revolution in writing technologies is "more fundamental" than even the print revolution. His book traces a path across millennia of literary history, with reference to the technologies and cultural conditions that facilitated writing. The 140 characters associated with Twitter (recently amended to 280, though Rowling's story above comes in at a neat 138) are, for him, reminiscent of the short poems written at the Heian court in 11th-century Japan.
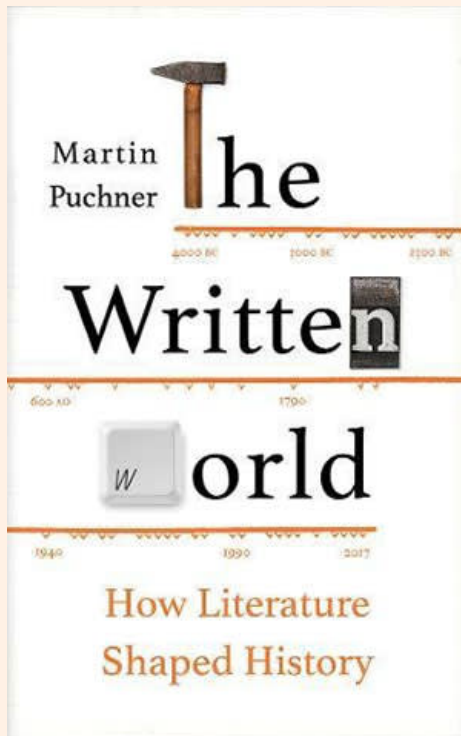
Puchner, a professor of literature at Harvard and teacher of an online course with students from 150 countries, emphasises the ubiquity of storytelling across human history, elevating it in the manner of the historian Yuval Noah Harari's *Sapiens: A Brief History of Humankind* into perhaps the defining human trait, necessary to instil the trust on which so much else is built.

Resistance to change is a running theme. Puchner points to an early objection to writing technology from Socrates, who argued that it "will create forgetfulness in the learners' souls, because they will not use their memories". Puchner summarises the Socratic position elegantly: writing, for the Greek thinker, was just "a mute shadow of speech, a technique that captured words but without their sound, their breath, their soul. It was just a mechanical contraption, a technology." Socrates, like his fellow prophets Jesus and the Buddha, never actually wrote anything down, though of course we know them through the writing of others. It's impossible to say what he would have made of semi-automated literature on Twitter, but his criticism will resonate, at least, with anyone who has used Google Calendar.

The Written World takes in everything from the clay tablets in ancient cities such as Nineveh to the role played by newspapers in the American Declaration of Independence, which was printed on front pages. It highlights printed indulgences, used by the Catholic Church to raise funds in exchange for cancelling out sins, and the printed counter-insurgency launched by an enraged Martin Luther (the cathedral represented "the first beneficiary of print, but also, shortly thereafter, its first victim"). Puchner depicts the conquistador Francisco Pizarro face to face with the Inca ruler Atahualpa — both of them illiterate — and the burning of Mayan literature by Spanish invaders. He scans the resurrection of oral poetry by Soviet dissidents wary of committing thoughts to the permanency of a written script, and the survival of spoken storytelling in modern-day

Guinea, west Africa. Across this landscape, the book builds a convincing case that writing technologies are more foundational in major historical moments than we may have otherwise thought.
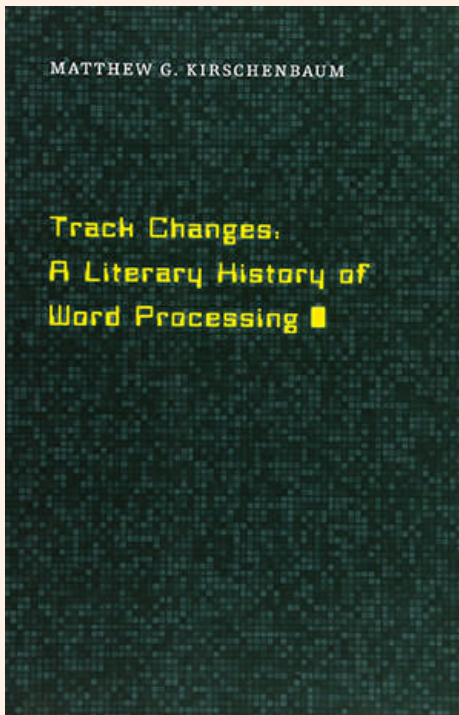
Track Changes, by the literary academic Matthew Kirschenbaum, considers the more recent development of word processing ("already a historical category") alongside the broader rise of postwar computer technologies, though it too looks back to earlier writing breakthroughs. The philosopher Friedrich Nietzsche famously observed that our writing tools shape our thoughts; less well known, and clearly relevant, is that he began using the Malling-Hansen Writing Ball, an early typewriter, in 1882 as his eyesight faded.

By 1984, between 40 and 50 per cent of all US authors were using word processors, according to the Association of American Publishers. Many of the earliest practitioners wrote science fiction, though the very first novel written with a word processor was Len Deighton's *Bomber* (1970), about the second world war. George RR Martin wrote the *Game of Thrones* books on WordStar, a program he runs on a DOS-era computer with no internet connection — his "secret weapon".
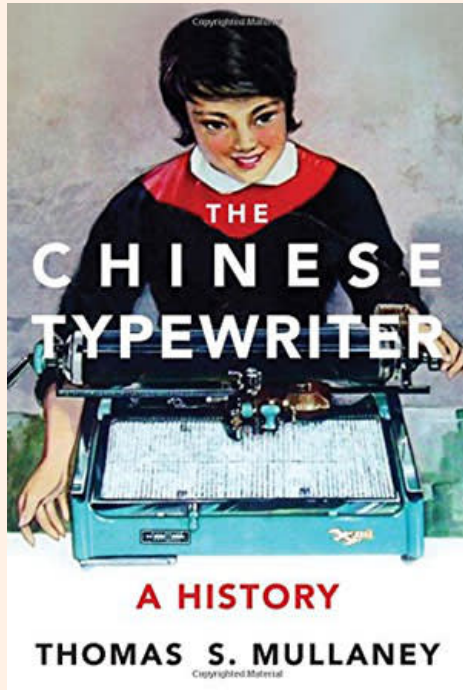
Word processing — with its capacity to edit, cut or paste at a click — changed the writing experience. For some authors, the phenomenon approached the spiritual. Kamau Brathwaite, the Barbadian poet and academic, named his Macintosh computer Sycorax, after the sorceress mother of Caliban in Shakespeare's *The Tempest*. She "dreams me these stories", he wrote, "and the fonts take me across Mexico to Siqueiros and the Aztec murals and all the way back to ancient Nilotic Egypt to hieroglyphics — allowing me to write in light". Writing in light is a striking image indeed: an immediately recognisable description of what it is like to work on a screen.

One of Kirschenbaum's strengths is his ability to draw out the extent to which computerised writing technologies have embedded themselves into our very being, as we can only imagine other writing revolutions once did. When *Stand by Me*, the 1986 film based on Stephen King's novella, was played in cinemas, some audiences apparently "howled in visceral anguish" at the end as the protagonist, now an author, switches off the computer on which he is typing the story without saving his work. It is strange to think that something so novel at the time had so quickly become so emotionally important. When Samuel Richardson's 18th-century work of epistolary fiction *Pamela* was read aloud to illiterate villagers, the uplifting ending prompted church bells to ring out across the English countryside in celebration.

Writing is also always and everywhere an economic phenomenon. Recent writing developments are heavily linked to 20th- and 21st-century corporations: IBM, Apple, Microsoft. Kirschenbaum's book is full of references to these companies, but he also acknowledges his overwhelming bias towards "Anglo-American authors writing prose fiction". A very different history is documented in

The Chinese Typewriter, a fascinating recent study by the history professor Thomas Mullaney that documents attempts to reconcile the Chinese script with typewriter technology.

The Chinese language is written with characters that each correspond to a single syllable. It is less obviously amenable than, say, English or Polish to the technology of the western typewriter, which relies in part on the small number of letters required in an alphabetic writing system. Yet in the first half of the 20th century, the prize of bringing a language used by about a third of the world's population into the modern economy represented an astonishing business opportunity.

The country's ancient script was also the focus of an intense political debate that spanned the nationalist and communist eras. Writing in China had been part of a 2,000-year bureaucratic education system closely associated with a Confucian interpretation of social hierarchies. For thinkers such as Lu Xun, there was a need for radical reform: "Writing had its inception among the people, but later it became the exclusive possession of the privileged," he wrote in a Shanghai newspaper in 1934. This is one argument that Socrates missed.

> **Using computer prediction to choose our next words could soon feel as natural as cutting and pasting text**

Mullaney's book is a precursor to a second planned project on Chinese computing. But he covers enough ground here to illustrate how computers have transformed the writing of Chinese, which, partly because of the inherent Latinism of the keyboard, is now inputted through typing in pinyin, an alphabetic rendering of the Chinese script, and then selecting a character. Characters also appear in relation to the last inputted character, as part of an inbuilt predictive process.

A woman using a Chinese typewriter in 1986 © Getty Images

Input, Mullaney argues in the conclusion to *The Chinese Typewriter*, is "quietly transforming the relationship between humans, machines and language — not only in China but worldwide". And just as the Chinese language once sought to align itself with the rhythms of the typewriter, English is now aligning itself with the rhythms of input. Using computer prediction to choose our next words could soon feel as natural as cutting and pasting text.
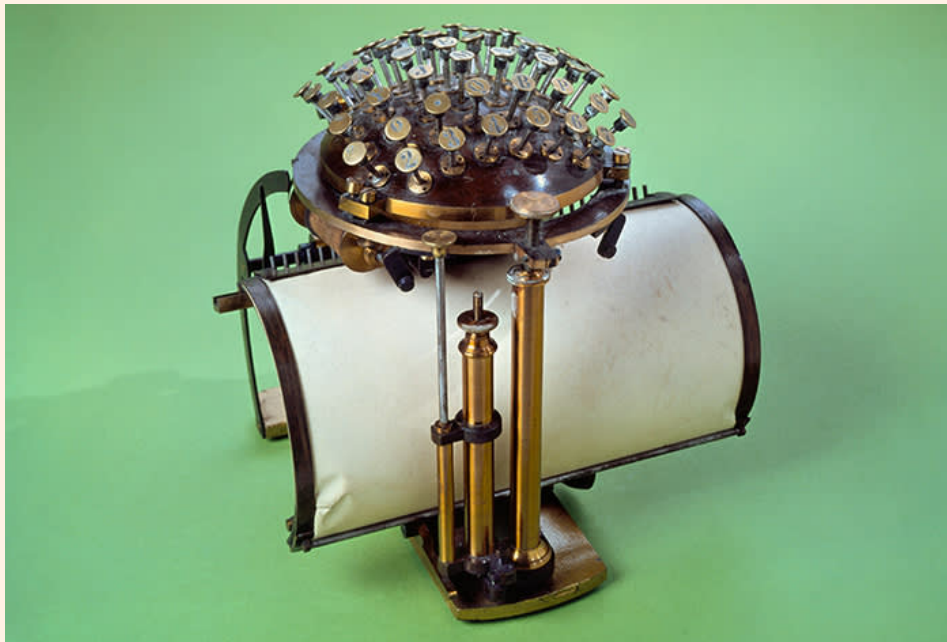
The first commercially produced typewriter, the Malling-Hansen Writing Ball, from 1872 © Alamy

Across these three books, several points seem most relevant to the digital conundrums of the present. One is that writing has never been universal but is rather the technology of certain

privileged groups. In the Epic of Gilgamesh, written as early as four millennia ago in ancient Mesopotamia, the hero and his companion Enkidu slay Humbaba, guardian of the forest. This gives them access to all the trees they want, and wood, as Puchner notes, was indispensable for city builders. Literature, he gleans, seemed to be "taking the side of the city against the hinterland". Today, in an age of mass literacy, modern writing technologies have supplanted the physical geography of the city but they still rely on hinterlands, which are typically shielded from view. It is worth remembering that, according to Unesco, about 750m adults globally are still illiterate, two-thirds of whom are women.

A clay tablet from Mesopotamia (3100-3000BC) © Getty Images

In *The Phaedrus*, Socrates is described responding to writing as a supposed invention of the Egyptian god, Theuth. But writing technologies tend to have disappointingly earthly origins. As Puchner points out, early writing was used for commercial or political activities; only later did it became the province of art and spirituality. The written bureaucracy of the ancient temple came long before the sacred text. Similarly, modern writing technologies may feel intensely functional now but this, on the basis of past experience, is unlikely to last. The internet has cloisters and incantations of its own. It is difficult to believe that no new gods are being summoned.

The Written World: How Literature Shaped History, by Martin Puchner, *Granta, RRP£14.99/Random House, RRP$32, 432 pages*

Track Changes: A Literary History of Word Processing, by Matthew Kirschenbaum, *Harvard University Press, RRP£20/$29.95, 368 pages*

The Chinese Typewriter: A History, by Thomas Mullaney, *MIT Press, RRP£27.95/$34.95, 504 pages*

Thomas Hale is the FT's capital markets correspondent

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latest FT Weekend videos. Sign up for our Weekend Email here

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