

# Algorithmic narrativity: Literary experiments that drive technology

**Scott Rettberg**

Center for Digital Narrative, University of Bergen, Bergen, Norway

**Jill Walker Rettberg** 

Center for Digital Narrative, University of Bergen, Bergen, Norway

Dialogues on Digital Society

1–4

© The Author(s) 2024



Article reuse guidelines:

[sagepub.com/journals-permissions](https://sagepub.com/journals-permissions)

DOI: [10.1177/29768640241255848](https://doi.org/10.1177/29768640241255848)

[journals.sagepub.com/home/dds](https://journals.sagepub.com/home/dds)



## Abstract

This paper extends Raymond Williams' insights on technology and society by asserting that not only scientific, social, and economic conditions but also aesthetic factors are crucial for technological adoption. The concept of 'algorithmic narrativity' is introduced to describe the combination of the human ability to understand experience through narrative with the power of the computer to process and generate data. Using examples ranging from the exhibition of John Clark's Latin Verse Machine in 1845 through generative poetry in the early 1950s to today's generative AI, the authors argue that aesthetic innovation precedes and is necessary to technological advances.

## Keywords

Narrative, generative AI, technology, poetry generator, aesthetics

Did digitisation alter our world, or was our world simply ready for the changes that digitisation requires? In his response to the similar claim that 'television alters our world', Raymond Williams argues for the latter (Williams, 1990). Television could have been invented far earlier than it actually was, he writes, but there was no social or economic foundation for it. Williams' insight was that for television to be invented we needed not just a set of technologies (electricity, moving images, the ability to transfer images wirelessly, and so on) but also a social and economic infrastructure that could support television.

In this commentary, we take this one step further and argue that the introduction of new technology depends not only on science, social structures, and economic systems, it also depends on aesthetics.

And the aesthetics of today's digital technologies are algorithmic. Algorithms now shape the ways that we tell stories to each other and to ourselves. The research centre that we have established at the University of Bergen, the Center for Digital Narrative (CDN) is focused on 'algorithmic narrativity': the idea that storytelling is no longer the exclusive domain of human beings. Algorithmic narrativity is the combination of the human ability to understand experience through narrative with the power of the computer to process and generate data. This is not simply a matter of the medium

---

## Corresponding author:

Jill Walker Rettberg, Center for Digital Narrative, University of Bergen, Postboks 7805, Bergen 5020, Norway.

Email: [jill.walker.rettberg@uib.no](mailto:jill.walker.rettberg@uib.no)

shaping this message. Instead, it is the active intervention of computer programs in the development, modification, and distribution of narratives.

Algorithmic narrativity is an obvious feature of contemporary social networks, as they not only constrain our modes of discourse but also narrativize our experience of the world in ways ranging from controlling what posts are shown in our feed to providing ‘memories’, like photos taken in the past that highlight life experiences that the algorithm finds to be important, based on metrics that are unknown to us. Algorithmic narrativity is also an aspect of many other domains. Those we study at CDN include computer games, electronic literature, social media narratives, computational narrative systems, and narratives in emerging technological environments such as augmented and virtual reality and large-language model-based AI.

Narrative drives technological development. In his analysis, Williams emphasises social and economic prerequisites for television but doesn’t mention the serial narratives that became a backbone of television content. He writes: ‘The technology of transmission and reception developed before the content’ (p. 22). That is only partly true. The basic structure of soap operas and serial drama was established in literature a century earlier, when Dickens and other popular authors published their bestsellers chapter by chapter in newspapers and pamphlets. Perhaps we should count *Oliver Twist* and *Little Dorrit* as being equally necessary prerequisites for the development of television as were electricity and photography?

Today’s digital narratives are often still serial, building on the legacy of TV series and nineteenth-century serial novels. Blogs, fan fiction, and trans-media narratives are usually released one blog post or chapter or social media post at a time. Algorithmic narrativity and automatically generated stories and poems on the other hand, seem new – but they are not.

The first mechanical poetry generator, John Clark’s Latin Verse Machine, was exhibited at the Egyptian Hall in London in 1845 and promptly forgotten (Hall, 2007; Sharples, 2023). Williams might say it was forgotten because there was simply no established social and economic platform

to support it at the time. After all, as Williams writes, the first motion pictures were exhibited in sideshows and didn’t catch on until traditional theatres were adapted into movie theatres, thus providing a method of distribution for the new medium (Williams, 1990: 10). The Egyptian Hall, where the Latin Verse Machine was exhibited, was pretty much a sideshow, with entertainers showing magic tricks and curiosities; strong men and Siamese twins being gawked at by curious visitors. Motion pictures moved on from sideshows when they were absorbed into an updated version of the established socioeconomic system of theatre. But the thriving economy of print literature in the nineteenth century did not have room for a mechanical poetry generator. So it was forgotten.

Although this budding technology of algorithmic narrativity came to a halt, its aesthetics continued to be developed by poets and authors. During the twentieth century, poets and authors became interested in the potentialities of procedural and constrained writing. From the ‘cut-up’ writing methods used by Dada authors to the complex constraints used by the members of the OuLiPo (*Ouvroir de littérature potentielle*) or the scripts of Fluxus artists, there was a growing interest in how algorithmic thinking could guide or redirect human writing (Rettberg, 2018).

A fascination with the potentiality of computers as autonomous literary machines can be traced back to the beginnings of general-purpose digital computing. When Geoffrey Jefferson argued in 1949 that a machine could not be said to be a brain until it could ‘write a sonnet or a concerto because of thoughts and emotions felt’, Alan Turing quipped back that this was not beyond the possible, though ‘a sonnet written by a machine will be better appreciated by another machine’.<sup>1</sup> Text generators and computational narrative systems have been developed within niche corners of computer science and literary culture ever since.

In 1952, Turing’s colleague Christopher Strachey produced what is generally thought to be the first work of electronic literature, a simple love letter algorithm. This was a slot-style poetry generator that randomly combined different phrases, adjectives, nouns, and pet names within a set grammatical

structure to produce love letters that can be interpreted as simple jokes or as poignant parodies of the heterosexual courtship conventions that Strachey and Turing, as gay men, were excluded from (Gaboury, 2022).<sup>2</sup>

The development of more complex generative literary systems would continue throughout the twentieth and into the twenty-first century. Computer scientists and electronic literature authors tested out the use of different types of algorithms, ranging from linguistic statistic-based systems that use n-grams to generate lines that are probabilistically coherent, to story generation systems based on narratological structures, to systems that model the interaction of characters as agents within the text (Sharples and Pérez y Pérez, 2022). Contemporary generative AI proves the power of the probabilistic approach to story generation. By training on incredibly large datasets of human language and making use of transformers that provide a kind of reflection within the system's response, AI chatbots can return probabilistic outputs that are coherent not only at the level of a line, but of paragraphs within a context window. They can do so in powerful ways, for example writing a short story on a given theme, within a particular style, from a particular point of view. Whether we choose to call this intelligence or not is largely a matter of definition and opinion.

Algorithmic narrativity is not technological determinism but implies a co-construction of meaning between humans and algorithms. In 1949 Jefferson argued that a machine that could generate text would be no more than a parrot unless the text was based on 'thoughts and emotions felt.' The same debate continues today about generative AI (Bender et al., 2021; Hayles, 2022). While the current generation of AI chatbots generally cannot produce complex literary text without substantive human interaction, new forms of cyborg authorship, collaborative writing between humans and AI, are already resulting in a compelling new genre of digital writing.

With every technological shift, something is lost as other things are gained. In *Gramophone, Film, Typewriter*, Kittler discusses the shift in Nietzsche's writing style when he switched from writing his manuscripts longhand to writing on a typewriter. In

a letter, Nietzsche remarked that 'our machines are working on our thoughts', and it is indeed during this period that Nietzsche's writing style shifted from long, flowing sentences to the much more epigrammatic style of his later work (Kittler, 1999). Our technologies of inscription have a reciprocal effect on our interactions with them. Bernard Stiegler further noted that writing technologies, be it pen and paper, book, typewriter, or digital computer, are also technologies that each have specific effects on human memory (Stiegler, 2010). Even Plato, in *Phaedrus*, describes trepidations about the shift in mnemonic modes from memorisation and oral recitation to writing and reading.<sup>3</sup> Even as something is gained as writing extends human memory, something is lost as memory is exteriorised.

It took decades of peer-to-peer radio before broadcast media became the standard instantiation of the technology. While Stiegler saw mass media as causing a loss of knowledge, he viewed the early days of the web with more optimism: one could write back to the network, not only through text but also through code, and in doing so rewrite one's relationship to the medium (Stiegler, 2010). This seemed, for a time, in the early days of the World Wide Web to mark a shift in power relations of our relationship with media.

Of course, Stiegler's cautiously optimistic perspective on networked computers was largely situated on a Web yet to be fully absorbed into the logics of surveillance capitalism. The rise of social network platforms marked a shift in the way that the social and economic contexts of the internet operate, a handing-over of personal information in exchange for network services. Platform culture exemplifies many of the costs of contemporary algorithmic narrativity: every keystroke in every Google search harvested, every personal contact within a network mapped, resulting in highly targeted advertising, highly effective influence campaigns that have arguably shifted elections, and a more extensive and intrusive commodification of human communication than seen in any prior form of discourse network. This was not the type of read/write relationship Stiegler dreamt of.

We are in the early days of another substantive shift in our modes of interaction with the powers

of computation, which will also entail major social and economic shifts. How we react and adapt to the rise of complex AI systems, what capabilities we gain, what capabilities we will gain, and what types of storytelling will emerge in the coming years, are yet to be determined. But we can be sure that algorithmic narrativity will continue to transform our society.

### Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the Norges Forskningsråd (grant number 332643).

### ORCID iD

Jill Walker Rettberg  <https://orcid.org/0000-0003-2472-3812>

### Notes

1. The exchange was in the *Times* of London on July 10 and 11, 1949, and is discussed in (Gonçalves, 2022).
2. It is perhaps not coincidental that Strachey came from a family steeped in literary modernism. Though his father was a cryptographer and his mother an engineer and politician, their extended family was riddled with writers and artists and several were members of the Bloomsbury Group. Strachey's aunt was married to Virginia Woolf's brother, his father was the brother of biographer Lytton Strachey and novelist Dorothy Bussy, and his sister also became a writer. The idea of using a computer to generate love letters was not born from technology alone.
3. The idea that different technologies allow or limit the types of ideas that can be communicated is discussed by many scholars, from Marshall McLuhan's 'the medium is the message' (McLuhan, 1964) to Walter Ong's differentiation between oral and literate cultures (Ong, 1982) to N. Katherine Hayles' discussions of *cybersemiotics* and the kinds of meaning a computer can interpret (Hayles, 2019; Rettberg, 2023: 60–82).

### References

- Bender EM, Gebru T, McMillan-Major A, et al. (2021) On the dangers of stochastic parrots: Can language models be too big? In: Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency, pp.610–623. <https://doi.org/10.1145/3442188.3445922>
- Gaboury J (2022) Queer affects at the origins of computation. *JCMS Journal of Cinema and Media Studies* 61(4): 169–174. <https://doi.org/10.1353/cj.2022.0053>
- Gonçalves B (2022) Can machines think? The controversy that led to the Turing test. *AI & Society*. <https://doi.org/10.1007/s00146-021-01318-6>
- Hall JD (2007) Popular prosody: Spectacle and the politics of Victorian versification. *Nineteenth-Century Literature* 62: 222–249.
- Hayles NK (2019) Can computers create meanings? A cyber/bio/semiotic perspective. *Critical Inquiry* 46(1): 32–55. <https://doi.org/10.1086/705303>
- Hayles NK (2022) Inside the mind of an AI: Materiality and the crisis of representation. *New Literary History* 54(1): 635–666. <https://doi.org/10.1353/nlh.2022.a898324>
- Kittler FA (1999) *Gramophone, Film, Typewriter, Writing Science*. Stanford, Calif: Stanford University Press.
- McLuhan M (1964) *Understanding Media: The Extensions of Man*. New York: McGraw-Hill.
- Ong WJ (1982) *Orality and Literacy: The Technologizing of the Word*. London: Routledge.
- Rettberg JW (2023) *Machine Vision: How Algorithms are Changing the Way We See the World*. Cambridge: Polity Press.
- Rettberg S (2018) *Electronic Literature*. Cambridge: Polity.
- Sharples M (2023) John Clark's Latin verse machine: 19th century computational creativity. *IEEE Annals of the History of Computing* 45(1): 31–42. <https://doi.org/10.1109/MAHC.2023.3241258>
- Sharples M and Pérez y Pérez R (2022) *Story Machines: How Computers Have Become Creative Writers*. Abingdon, Oxon ; New York: Routledge.
- Stiegler B (2010) Anamnesis and Hypomnesis. *Ars Industrialis*. <https://arsindustrialis.org/anamnesis-and-hypomnesis>
- Williams R (1990) *Television: Technology and Cultural Form*, 2nd ed., reprinted. ed. London: Routledge.