RANDOM ACCESS MEMORY

BY SARAH HAYNES, LIVERPOOL JOHN MOORES UNIVERSITY

How the bricolage of the Internet encourages, stores and presents society's collective memory and individuals' private recollection.

From cave paintings and oral poems, to text, photographs and now data, humans have always used technology to capture memory and share their experience, to assert their individual existence and that of their wider social group, tribe, family, nation. By recording experience humans not only learn from each other but also establish and maintain social structures, attitudes and beliefs. We want to be remembered and shared memories provide social cohesion and continuity.

Whilst we might collectively remember the grand narrative of history, this is constructed and reinforced by individual instances of remembrance. Halbwach (1950) recognizes the role of the individual in the act of recollection whilst acknowledging the function of social groups in providing context and continuity to make sense of memories. Family or social history provides continuity to memory not just in time but also in relation to other people and events, themes and threads of consciousness. It is these 'social frameworks for memory,' (Halbwach 1950, p.33) that provide associations and build memories into a collective experience, moving individual narratives into a shared social history and enabling us to place and make sense of events in our own lives.

Writing technologies provided the capacity to remember events over lifetimes and generations. To produce 'evidence, capable of transcending the frailty of human memory.' (Smith Rumsey 2016, p21). Through the technology of writing societies were able to record and reflect on the past, and in that process of reflection attribute causal relationships. The recording of memory becoming a 'task of retrospection, to integrate the knowledge that we have, to impute a sense of cause and effect to the events in our lives and to offer a sense of meaning' (Ibid, p.27).

The externalising of memory has, since the Ancient Greeks, been identified as problematic. As Ong notes, 'Writing, Plato has Socrates say in the *Phaedrus*, is inhuman, pretending to establish outside the mind what in reality can be only in the mind' (1982, p.78). Writing cannot capture the interconnectivity of the thought process and the fluidity of ideas. Writing makes the ephemeral solid, separating the content from its origins.

On the other hand, computing has long been associated with memory and indeed its capacity is measured in terms of memory. Today it is easy to see digital devices as extensions to our ability to remember when phones and tablets alert us to memories, automatically create albums for us and sort out images of friends into photostreams, recognizing and categorizing for us. Van Dijck identifies that:

Since early modernity, people have tried to imagine and invent memory machines that could remedy two basic shortcomings of the human brain: its inability to systematically record and store every single experience in our lives, as well as the brains incapacity to retrieve these experiences unchanged at any later moment in time (2007, p.149).

Pioneers in digital technology Vannevar Bush and Ted Nelson also reflected on memory and thought processes to conceive of ways to structure content using 'associative indexing' (Bush 1947) and 'hypertext' (Nelson 1987) to counter issues of information overload and beyond that to create

technologies that mimicked the mind's ability to link flows of information in individual and idiosyncratic patterns. Digital memory makes possible fluid archives that users can navigate in unique structures according to their own needs. To 'intertwingle', (Nelson 1974) information in individual browsing experiences.

Turkle identifies the concept of Internet browsing as 'an exercise in bricolage', that, 'exploring the web is a process of trying one thing, then another, of making connections, of bringing disparate elements together' (1995, p.61). Recognising the patchwork of material we might piece together in our meaning making online Turkle proposed that computer tools offer a more exploratory way of searching data, an iterative experimental way of thinking that she discussed using Lévi-Strauss's definition of a bricoleur, as one who employs, 'the remains and debris of events in: French "des bribes et des morceaux", or odds and ends in English, fossilized evidence of the history of an individual or a society' (Lévi-Strauss 1962, p.14).

Memories online are assembled at varying scales, from the family album (now in photostreams) to groups on Facebook of friends and colleagues, workplaces and schools, to national and international societies. Individual recollections, expert opinions, institutions are linked online and coherence between diverse material is formed through tagging content, categories on blogs, hashtags on Twitter and keywords in metadata. This enables the navigation of a collective memory with diverse content 'intertwingled' into instances of coherence for individual users as they move from Facebook friends to consumer sites, to news, to those they follow on Twitter. Moreover, these tools, by which users tag, categorize and search, reveal the concerns and interests of social groups. These acts of collective intelligence online, whereby contributions make more than the sum of their parts in collaborative meaning making, epitomize Internet use today. To 'google' has become an established verb for searching through user contributed and crowd filtered material to find answers, to gauge opinion, to measure, calibrate and learn through the memories of others; their past experiences recorded online and their browsing history reinforcing internet links.

Social media illustrates Halbwach's theory of collective memory as a social framework that connects individual experiences and reinforces shared beliefs. Halbwach identifies that memories occur to individuals through their connection to the social framework:

everyone has a capacity for memory (memoire) that is unlike that of anyone else…But individual memory is nevertheless a part or an aspect of group memory, … to the extent that it is connected with the thoughts that come to us from the social milieu (1950, p.53).

Social media therefore might be seen to not just make visible our shared recollections but also to make sense of them and to drive the ways in which we might remember events and the events we might remember inspired by our own browsing. Trending can be seen as the use of hashtags not just to connect items but also to inspire the posting of similar items, creating the *social milieu*.

The interfaces through which we store and access memories leads us into a logic which extends beyond how we use the tool to include what we might store, and how it might be shared, categorised, navigated. Facebook, for example, encourages users to share, *'what's on your mind' Photo/Video, Feeling /Activity*, building into scrolling timelines in both individual and collective or group streams. Twitter's strap line that was used to prompt users when the service first started, *'what's happening'* is another instance of technology encouraging a recording, not of momentous events but the more mundane. This concept and the technical limit of 240 characters provided an immediacy befitting the instantaneity of the Internet but also led users to develop archives of their tweets. Although this is a tool seemingly about the present it has built an extensive

history. It has encouraged the storage of micro memories, snapshots, passing thoughts, off the cuff remarks. It encourages a practice identified by Sontag that photography ushered in, the recording of mundane reality. 'We now make a history out of our detritus.' (Sontag 1977, p.68)

The archive of tweets on Twitter is not organized like a library system or indexed as a book. All data exists on the same plane and connections between items are associative with material being found more serendipitously than a hierarchical system would allow. Manovich identifies this spatialization of data and its consequences, asserting that:

a hierarchical file system assumes that the world can be organized in a logical multilevel hierarchy. In contrast, a hypertext model of the World Wide Web arranges the world as a non-hierarchical system ruled by metonymy (2001, p.65).

Data online is made sense of spatially in the context of the data's relation to other data. For example, a tweet singularly has some limited significance but navigated to in the stream of a particular hashtag its significance is amplified and may change. It may become more relevant as a piece of information or more relevant to a wider group of readers.

Van Dijck predicts that this spatial arrangement of data may lead to a conceptualization of memory and ability that is less about recollection and more about finding data in relation to other data, so our memories may be more accessible to us, stored and made sense of in relation to the memories of others rather than in our own chronological recall. 'Memory, as a result, may become less of a process of recalling than a topological skill, the ability to locate and identify pieces of culture that identify the place of self in relation to others.' (Van Dijck 2007, p.50)

Manovich discusses the impact of the spatialization of digital data, how that influences the ways in which we approach the navigation of information.

Contrary to popular images of computer media as collapsing all human culture into a single giant library …it is perhaps more accurate to think of the new media culture as an infinite flat surface where individual texts are placed in no particular order… we can note that Random Access Memory… implies a lack of hierarchy (2001, p.77).

Digital technology then provides a way of presenting data laid out on a single plane rather than an ordered linear hierarchy. In this way the display of material occurs with no item prioritised over others. For example, the memories archived in social networks like Facebook or Twitter or that come about through a search online for items about events, people or places are, at one level equal and arranged in no order (setting aside issues such as metadata use and search engine optimization). In principle, a search won't result necessarily in expert views. In principle, the thoughts and memories of everyone online are equal and, withstanding privacy settings, all items are available for anyone to read. The concept of RAM being akin to that of memory as being all within our grasp, stored in our minds waiting to be triggered, not lined up to play in a particular order like a film but called up by prompts in the world around us. We might note here the use of the term *random access memory*, that this human faculty was chosen to describe this machine function.

Manovich connects a *postmodern* trend towards the concept of *spatialization* of data asserting that:

If there is a new rhetoric or aesthetic possible here, it may have less to do with the ordering of time by a writer or an orator, and more with spatial wandering (Ibid :78).

That, in retrieving this data, by searching and making connections between content, users author their own journey through information rather than following the intentioned line of an author in a

preordained sequence. Albeit steered in unseen ways by metadata and guided by the interface, led by what Manovich termed 'the non-transparency of the code' (Ibid :64).

In the digital age the collecting and storing of memory objects has become a widespread practice with all aspects of life, including everyday mundane realities, uploaded. This vast archive of content from individuals, experts and institutions, available to all with a network connection, represents a departure in the retrieval of memory data as users can now 'wander' through a scattering of artefacts, following their own trails and associations rather than indexes and contents pages.

At face value digital media provides a system for memory storage and retrieval that is more akin to the random and serendipitous nature of the human mind than previous mediums (writing, photography, film). However, digital media are designed with a layer of code, that sits unseen beneath the surface and are presented through interfaces that lead the user with a logic and purpose of their own. Not fixed in production digital media remains fluid and manipulable. The digital environment therefore presents a fantastic archive for society's collective memory and individual's private recollection that is open to all to contribute to but that should be approached with caution.

References

Bush, Vannevar (1945) *As We May Think*, Atlantic Monthly 176 (July 1945) pp. 101-108.

Halbwachs, M. (1950) *On Collective Memory* (1992) Ed & Translator Coster L.A. US, The University of Chicago Press

Manovich, L. (2001) *The Nelson, T.H Literary Machines*, Mindful Press; 93 edition (1 Sept. 1994)

Nelson, T.H, Computer Lib/Dream Machines, 1974 (Available online: http://www.newmediareader.com/book_samples/nmr-21-nelson.pdf Accessed: 10th January 2018) *Language of New Media*, US, Massachusetts Institute Of Technology Press

Ong, W.J (1982) *Orality and Literacy: The Technologizing of the Word*, London, Routledge

Smith Rumsey, A. (2016) *When We Are No More: How Digital Memory is Shaping Our Future*, New York, Bloomsbury

Sontag, S. (1977) *On Photography*, (2008), London, Penguin Classic

Strauss C.L. (1962) *The Savage Mind*, University of Chicago Press Translated from the French by George Weidenfield and Nicholson Ltd. (Available online: http://web.mit.edu/allanmc/www/levistrauss.pdf Accessed on: 19th March 2019)

Turkle, S. (1995) *Life on Screen: Identity in the age of the Internet*, US, Simon and Schuster

Van Dijck J. (2007) *Mediated Memories in the Digital Age*, California, Stanford University Press