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## **Archive Me! Media, memory, uncertainty**

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### **Pre-proof version.**

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Adolfo Bio Casares' *The Invention of Morel* is a novella told through the diary of a fugitive who escapes his native Venezuela to what he believes is an uninhabited island. His hallucinatory account is key to the story with time and tides out of synch and a strange reoccurrence and duplication of objects, people, animals, and even two suns and two moons. At the centre of the Fugitive's disorienting existence is Faustine, a woman he becomes more infatuated with as he watches her, although who never appears to see him.

However, Faustine like much of what the Fugitive sees, 'live' only as multi-sensory projections from an elaborate machine. Its inventor, Morel, had brought his close friends and Faustine to the island, where he recorded their entire week together without their knowledge. Here is Morel's critical revelation to his friends: 'My abuse consists of having photographed you without your permission. Of course, it is not like an ordinary photograph; this is my latest invention. We shall live in this photograph forever. Imagine a stage on which our life during these seven days is acted out, complete in every detail. We are the actors. All our actions have been recorded' (p.66).

Morel's machine is powered by energy from the sun and the tides and this replays the week on an endless loop. Thus the recorded circular time of the projection, and the chronological real time of the Fugitive, overlap. This accounts for the duplications and distortions that initially seemed the product of his feverish state, exposed to the inhospitable conditions of the island.

We learn that Morel and his friends have all died in a ship that had sunk when they left the island, thus they live on only in the recording. However, the Fugitive believes that Morel's motivation (including planning for their deaths) is his unrequited love for Faustine. Morel would achieve immortality with Faustine and the others would have the same with their best friends in exchange for the otherwise uncertain duration of their lives. Yet, in the end, it is the Fugitive that sees the same opportunity by learning to use Morel's machine: 'The real advantage of my situation is that now death becomes the condition and the pawn for my eternal contemplation of Faustine' (p.100). The Fugitive follows carefully the moves of all of the characters over the week and then places himself in the recording. The new version now

shows him and Faustine as being in love, and her life now forever entwined with his in the eternal projection.

The pursuit of a kind of total memory here has a devastating cost, an eternal entrapment in the life which has already been recorded: the past before that is lost, and the future falls away. Furthermore, Morel's invention is premised upon a belief in the immortality and the incorruptibility of the archive, yet it is corrupted and altered by the Fugitive, who inserts himself into the recording.

This may all sound very familiar as an account of the misguided faith in the archival promise of technologies of the present, and a blindness to or disregard of the risks to privacy and identity in the exposure of intimate lives in and through new media such as early twenty-first century lifelogging and Facebook. However, Bioy Casares' book was first published in 1940. It is essentially an imaginary of the power of media to seize and to hold and to control human remembering and forgetting. It is useful as just one template to place over today's digitally-infused world to ask: what is really new about emergent media and its shaping of memory?

In this chapter I respond to this question by arguing that paradoxical states of permanence and obsolescence, of empowerment and loss of control, and of stability and ephemerality, define remembering and forgetting in today's media ecology. There is a vast literature specifically on 'media ecology'. And although a survey is beyond the parameters of this chapter, I find Neil Postman's definition useful as: 'the matter of how media of communication affect human perception, understanding, feeling, and value; and how our interaction with media facilitates or impedes our chances of survival. The word ecology implies the study of environments: their structure, content, and impact on people' (1970:161). And to draw on my ongoing work with William Merrin: Media ecology is then the idea that media technologies can be understood and studied like organic life-forms, as existing in a complex set of interrelationships within a specific balanced environment. Technological developments, it is argued, change all these interrelationships, upsetting the existing balance and thus potentially impacting upon the entire 'ecology'. So, at the time of the introduction of a new medium there is always a period of adjustment, or settling down, or appropriation of the established by the emergent. For example, many commentators acclaimed a revolution in 'citizen journalism' as shaping populist uprisings in the early years of this century. Now, however, whatever you want to call this phenomenon, it has largely been appropriated by or incorporated into the mainstream, i.e. it is 'just journalism' (Hoskins and O'Loughlin forthcoming).

But what is surprising about today's digitally affected media ecology is the short time in which the above paradoxes of memory have become established and the rapidity of the advance of historical amnesia over the nature and experience of the preceding media ecology

(that which William Merrin (2014) calls the ‘broadcast era’, particularly that of the mid to late twentieth century). This follows from the ‘connective turn’ (Hoskins 2011), a heady cocktail of immediacy, volume and pervasiveness of the digital – driving an ontological shift in what memory is and what memory does, giving remembering new scale and potential, yet also ushering in new risks to active remembering and of a perpetual haunting: a loss of control over forgetting. What I mean by this is that what was once an active memory, a human memory that had to work to sustain a continuity of past – of identity, of place, of relationships – is fundamentally weakened with the shift from reliance to dependency on the search devices of our machines.

However, the weakness of human memory has long been signaled by attempts to bring it external aid. Growing technological externalization through increased use and reliance on media forms and devices is seen to strengthen and enhance memory. Pick your discipline (psychology, philosophy, sociology, cognitive science, media studies) and the chances are that it sees media as augmenting, extending, and prosthetising human memory. Writing, printing, and the electronic media in successive phases have transformed human cognition and the capacity, control, and power to remember. Technological progression is said to equate to an advancement of memory and its human mastery. Memory as such is constantly renewed by the media and technologies (and the metaphors) of the day, in this way it is always ‘new’ as well as through these same media reflexively shaping a reassessment of the very value of remembering and forgetting under these conditions (Hoskins, 2001, 2004a, 2004b, 2009, 2010).

For instance, Bernard Stiegler (2010: 67) considers that: ‘Human memory is originally exteriorized, which means it is technical from the start’. He distinguishes the stages of this process as beginning two million years ago as a lithic (stone) tool as a ‘spontaneous memory support’ from the much later Peleolithic ‘conscious methods of memory storage’, namely ‘mnemotechniques’, through to the digital devices of today that are ‘a full-fledged mnemotechnology, a technology that systematically orders memories’ (ibid.) But with each transition, with each greater medial embedding of human memory, there is also a cost, a giving up of control over the propriety over one’s own memories. (The ultimate cost of Morel’s invention is that the recording kills the subject).

Yet connectivity or hyperconnectivity for some signal the organic and the technological – long been seen in relation to one another (David Channell 1991) – finally in consort, and the mark of a posthuman condition. For example, Arthur Kroker (2014: 105) sees hyperconnectivity as ‘not old school mechanical or even electronic connectivity in the sense of point-to-point communication in a world suddenly stitched together by ubiquitous mobility, but connectivity as something immanently cellular, networked, biological, and metabolic’. Kroker writes of the emergence of the ‘network ego’ a kind of cellular subject

without an earlier sense of individual privacy (of the prior media ecology). For Kroker (2014: 106) the loss of privacy is not merely some kind of trade or exchange for the realization of the network ego, but when declared by some new media executives as a public good, it is ‘one of the key expressions of the new ethics of digital ideology’.

And it is precisely the rapid and wholesale relinquishing of privacy that makes the twenty-first memorial self so peculiarly vulnerable to the ravages of post-scarcity culture. The remembering and forgetting of self and society under digital conditions is today less a matter of recollection, and more one of search. At least greater reliance on human recollection once offered a degree of certainty in its relatively steady change, decline and dissipation, including with its embedding in the delimiting finitude of the media of the day (‘decay time’, Hoskins 2013). In contrast, search is premised on a model of the pursuit of total memory, where the ease and the compulsion of connectivity, the recording of everything and the entanglement of the network ego, obfuscates the precariousness of future access.

Today, the digital’s messing up of the decay time of media – and our presence within it – ushers in a new set of risks and uncertainties to communications and activities that were comparatively benign in terms of the knowable limits of their reach and the ephemerality of their record. To take a photograph and to be knowingly photographed was once to understand not necessarily or fully the technical operations of the representation (film, developer, paper) but at least to be aware of the finitude of the medium, its circulatory potential, its gatekeepers, the potential and the limits of embarrassment, scandal, or even ruin that could arise from the photographic act. But today we live in an age with a diminished media consciousness.

One can become an expert in computer code and algorithms and all that is computational but that is not the point. All of this knowledge would not offer an increased security of memory from any greater certainty as to the limits or lifespan of an image, or object, or account, nor the capacity to intervene or affect such parameters or trajectories of media. This applies both to the knowing and or/willing (but not necessarily enlightened) media participation and also to the barely unnoticed and everyday random recordings but also systematic surveillance that will feed the future memory of today.

Indeed, uncertainty is heaped on memory through the perpetual haunting of the network ego by the mediations of its former self. This is part of the generalized state of ‘emergence’, namely the vastly increased potential of the increasingly digitized present and past being available to literally emerge without warning at some future point. For example, Article 17 of the European proposal for a General Data Protection Regulation in seeking a ‘right to be forgotten and to erasure<sup>1</sup>’ is symptomatic of a belated political realization of a loss of control over the hyperconnectivity that drives the everyday for so many.

Today’s ‘ethics of digital ideology’ then are also expressed in what I call a *sharing without sharing*: the digitally-fostered values of unbridled commentary, so-called ‘open

access', and the embrace of network narcissism, that all perpetuate memory's new uncertainties. This is evident in the nostalgia for forgotten earlier media ecologies that did not require digital participation for the maintenance of self identity and basic sociality. For example, as Lev Grossman and Matt Vella (2014) suggest: 'One forgets how to be alone and undistracted. Ironically enough experiences don't feel fully real till you've used your phone to make them virtual—tweeted them or tumbled them or Instagrammed them or YouTubed them, and the world has congratulated you for doing so'. And this compulsion of connectivity helps feed a new kind of archive of self – a shadow archive – of one's digital traces.

As the uploading and the downloading of self and society continues to run amok, the flipside of the repeated warnings over a looming digital dark age, are the risks in moving, as Geoffrey Bowker (2007: 26) puts it, 'from the era of recorded memory to one of potential memory'. Although preservation and remembering are not the same, the very accumulation of digital content awaiting prospective emergence renders a generation perpetually spooked by an almighty dormant memory. The likelihood of potentially transcendent missed or hidden or thought deleted images, videos, emails etc. emerging to transform what was known or thought to be known about a person, place or event, constitutes a spectacular uncertainty for the future evolution of memory and of history. We need a new kind of sociology of haunting.

### **Entanglements**

A useful means to consider the new digital relations of remembering and forgetting is through the self's entanglements with media. These are not merely some latest extension of the co-constitutive nature of human memory and its external tools and props but, rather, an entanglement of human and machine and human. Entanglement equates to an invisibility of sorts, it is never truly outside the self, never wholly represented and visible, and temporally it is about becoming rather than being. To see memory as an emergent entanglement is to resist the traditional way of seeing of memory as discrete entities or phenomena, or even as memory's favourite mistaken metaphor of 'container': the body, the brain, the group, the cultural etc. Rather an ecological approach is premised on memory as constituted through emergence, enfoldings and interactions.

Memory is thus made and lost through an ongoing dynamic trajectory of hyperconnections rather than being merely residual (in brains, bodies, media) and also inevitably in decline. But it is the massive growth in the number of devices and opportunities for digital enfoldings that pushes the entanglements of memory into a new orbit. Luciano Floridi (2013: 32-33) for example, identifies this shift partly as 'the reversal from entity's primacy over interactions to interactions' primacy over entities'.

Yet, not all entanglements are equal, benign, or visible. It is our entanglements with the increasingly unknown and invisible – a diminished media consciousness – that places new

uncertainties just below the surface. For all the computational big data new ways of seeing, the more we rely and pursue connectivity, the more it slips from our grasp. To be clear, the unnoticed of these entanglements should not be mistaken for a functional symbiosis with computational tools. The notions of extended cognition or the extended mind, for example, are a fashionable extension of the history of media's augmentation of memory, as set out above. It is said that we lend our memories out to our machines, our social networks, and they circuit or loop back to the self, like continuous aides memoire.

And especially since the turn of this century a slew of concepts envisage all that is new about media as extending memory in some fashion: Alison Landsberg's (2004) 'prosthetic' is the extensionist archetype. And some of the traditional and popular categories of memory have been stretched to try to capture movement and the new mobilities of the age: the 'transcultural' (Richard Crownshaw 2011), 'travelling' (Astrid Erll 2011) and the 'multidirectional' (Michael Rothberg 2009).

Unfortunately, the extensionist idea is exuberantly applied to the digital. For example, 'Don't fear the Cybermind' is the title of a commentary by the psychologist Daniel M. Wegner (2012) in which he claims that the Internet is an extension of a 'transactive memory system' in which we 'can remember much more by knowing who else might know what we don't', and the digital is just an extension of this system. However, the lexicon of extensionality does not sufficiently invoke the hyperconnectivity of the self in changing the very nature of what memory is and what memory does. Digital hosts: devices, networks, databases – that routinely and inexorably displace the partner, the family, the group as companions of transactive memory – for all their pseudo-intimacies, have given memory away.

The tipping point from reliance to dependency on these devices and networks – on hyperconnectivity – is here. For example, Floridi (2013: 37-8) conceives of 'a new threshold between history and a new age' called 'hyperhistory'. He argues: 'human evolution may be visualised as a three-stage rocket: in prehistory, there are no ICTs; in history, there are ICTs, they *record* and *transmit* data, but human societies depend mainly on other kinds of technologies concerning primary resources and energy; in hyperhistory, there are ICTs, they record, transmit and, above all, *process* data, increasingly autonomously, and human societies become vitally dependent on them and on information as a fundamental resource' (2013: 38). The processual aspects of ICTs thus complicate the entanglements of individual and machine in that the digital device cycles of development, decay, obsolescence, and replenishment, pull the individual into a new temporal and informational dependency.

Today, the routinized accelerating obsolescence of our digital devices hooks us to a structural dislocation of time that atrophies memory (Jonathan Crary 2013). 'Hooked' that is as the more we attempt to exercise power over our proliferating connectivities the more the

machine entwines itself around us. But, as I have suggested, to think of the outsourcing of memory from the self to some kind of external separate world and existence, does not capture the effects of these entanglements. The posthuman world does not leave space for such separations. Social and cultural frameworks of remembering have dissolved and diffused inside the machine and inside us. This process is similar to Scott Lash's (2007) idea of the 'vitalization of power', where the avalanche of data flows causes 'immanence', there is no space or time 'outside' of the informational. And, as Adam Gopnik (2011) argues: 'surely having something wrapped right around your mind is different from having your mind wrapped tightly around something. What we live in is not the age of the extended mind but the age of the inverted self'.

The convergence of communication and archive is a primary entangler of human memory and machine. And such entanglements are revealed by efforts to manage or to escape them altogether. Today, the pervasiveness of privacy settings across an array of social media, signify a standardization of vulnerability of exposure of the self and increasingly entire personal biographies to the benign-sounding 'friends of friends'. But social media are nonetheless platforms for mostly contrived rather than unadulterated versions of the self as profiles and postings are made already with a public audience in mind. Thus Lee Hoffman (founder and CEO of the lifelogging app Memoir) says: 'What you put on Facebook is what you want the world to think of you. 'I'm cool because I'm on top of Mount Everest'. But you don't post that you threw up two hours before on your way up there, which is 90% of your life'.<sup>2</sup>

The promise of Archive Me is ultimately that of the self's curatorial control. Digital nostalgia services such as Timehop<sup>3</sup> return postings from a range of social/micro media from a year ago with a 'this day in history' reminder, a popular feature of an array of news and entertainment programmes and sites, from the archive of the self. But there is a fundamental difference between mixed media content of notable public events remediated publicly on anniversaries in our banal mainstream commemorative culture and media content created, posted, and 'shared' by the self, even if these appear as intertwined in today's media ecology. For example, when Facebook in its 'Year in Review' feature in December 2014 algorithmically selected a particularly well-engaged photograph to frame for its users under the line: 'Here's what your year looked like!', it apologized after suddenly confronting some with painful reminders such as pictures of recently deceased loved ones and of other personal tragedies<sup>4</sup>. And in March 2015, Facebook announced a developed feature called 'On This Day'<sup>5</sup> to compete with Timehop and similar apps.

Yet, the faster and further the archival churn of this media the greater the risk of the past sitting uneasily in its new present. Postings made in earlier configurations of say a 2007 Facebook when comments were made for an intended more limited and contained audience,

may not be appropriate for the hyperconnective 2015 version of the platform. For instance, Dino Grandoni explains: ‘some Facebookers rediscovered years-old conversations they had had between their old Walls and their friends’ Walls, which read like private conversations.<sup>6</sup> The shadow archive flattens chronological time, constantly remediating that which was once under the control of functional human forgetfulness.

The media self is made through the very condition of being social requiring extensive archival entanglement. Although those in public life have always been vulnerable to the mass exposure of their private and personal lives – good or bad, unwitting or deliberate – today leaving the multitude is not an option. It is easy to be reassured by those who experiment by what they see as coming ‘off-line’ and reporting their experience of abstinence. But any pronouncement of the greater value of disconnection is false, for it is given in the wake of an almost inevitable return to hyperconnective life. Thus, Jonathan Crary characterises the digital self as an ‘application’ of ‘various services and interconnections that quickly become the dominant or exclusive ontological template of one’s social reality’ (2013:43).

Although the social media haunting of the future education, job, or relationship prospects of users, have been documented (Victor Mayer-Schoenberger 2009) it is precisely because of the growth of platforms in the entangling of so many users that that they have become a victim of their own success. In its earnings announcement at the end of 2013, Facebook admitted that numbers of its daily users and especially teenagers had decreased. It appears that social media has become just too sociable for a generation that wants to live their digital lives in a more uninhibited fashion amongst their peers, without the constant monitoring of the increasingly social media-savvy panopticon of parents, teachers, and various other elders. The exodus of the young is to messaging apps such as Snapchat, MessageMe and Kakao Talk, with WhatsApp having globally 350 million active monthly users.<sup>7</sup> These at least offer a much more direct and delimited mobile platform for real-time chatting with individuals and groups of genuine friends (rather than the vagaries of the accumulation of expansive ‘friends’ or ‘followers’ on social media) as they are typically people who have shared their mobile numbers.<sup>8</sup> This trend appears as a significant attempt to escape the social or extrasocial entanglements of hyperconnectivity upon which platforms such as Facebook rely.

However, the photo messaging app ‘Snapchat’ can be seen as flawed attempt to create a medium without memory. Users can send photographs, videos and other media and send them as ‘snaps’ to another individual or to a chosen group and determine the amount of time (between 1 and 10 seconds) the recipient(s) can view them. After the designated time the snap is no longer viewable on the recipient’s device and will also be deleted from Snapchat’s servers. Sexting – the sending and exchange of sexually explicit messages – attracts a teenage user base to Snapchat, as unlike virtually all other digital media, guaranteeing the decay time

of the content sent and thus offering a rare delimiting of an audience, a secrecy of sorts, in an era that is defined by the virality of so-called social media. Snapchat is also indicative of the compulsion of connectivity, of the desire to be connected through a sharing without sharing, also an example of the reciprocal or rather the obligatory nature of retweeting, following, linking and liking required to establish and sustain digital presence and value.

But the compulsion of Snapchat is derived more from the rush of the digital present as well as the prospects of transgressing the usual tempers of the spreadable and viral potential of social media on the uploading of intimate and explicit content. For example, Dennis Phelps (a Snapchat investor) states: ‘The temporary nature of the photo or video often creates a sense of excitement and an urgency of consumption that is rare in this era of information overload’.<sup>9</sup> This characterisation hints at the common equation of information overload with stasis, the incoming and outgoing volume of digital images and other media content demanding strict regimes of personal archiving and deletion to avoid all being rendered equivalent. For instance, Douglas Rushkoff (2013:157) observes that: ‘in the short forever, nothing recedes. Everything relative is now also relevant’.

Despite the overwhelming array of means through which communicational archives such as social media can be classified, ordered, sorted, tagged and searched, their inherent hyperconnectivity effect a deep simultaneity. All that is vital and all that is redundant now seem to have the same location, the same presence, the same screen: personal priority and perspective are diminished in the shadow archive where everything seems perpetually here and now. However, Snapchat’s preeminent promise of accelerated decay time and ultimately permanent deletion does not appear very robust. Richard Hickman a computer forensics examiner working for a firm that specializes in the recovery of digital data for family law (according to their website to ‘assist in uncovering the truth<sup>10</sup>’) found that the metadata of snaps remains and that images sent via snapchat are recoverable<sup>11</sup>.

And Snapchat’s guarantor of a security of forgetting through a technological solution was exposed as even more fragile, when in January 2014, the service was hacked and usernames and phone numbers of 4.6 million Snapchat accounts were downloaded and temporarily posted online<sup>12</sup>.

If abstinence or disconnection from the digital self as an ‘application’ in Crary’s terms (above) are not workable options, are there other imaginaries that can compete with Archive Me? A radical solution to contain the spreadability of data and to become invulnerable to hacking is to attempt reversal, to remake and reinhabit an earlier media ecology, immune from the risks of hyperconnectivity. To escape hyperconnectivity requires the return to an ecology whose media offers genealogical and representational certainty, whose literate paper-trails are traceable for the purposes of containment.

And the returning to an earlier media /memory age is not as far-fetched a solution as perhaps it first sounds. Following the scandal of US whistleblower Edward Snowden's revelations of US surveillance operations in 2013, Russia has attempted to diminish exposure to digital uncertainties through returning to the use of more discernible media of memory. Their Federal Guard Service who are charged with protecting the country's highest-ranking officials ordered 20 Triumph Adler typewriters, according to a Izvestiya newspaper report.<sup>13</sup> The return to this technology rendered mostly obsolete by the word-processor highlights the unique voracity of the processes of physical production that leave a discernible trail, rather than the expansionist vagaries of the digital-grey. The fluidity associated with digital content is leaky, spreadable and hackable, in ways not possible with the artefactual (re)producible constraints of older media forms. The digital in giving up all reproductive resistance gives way to new uncertainties not manageable by even those whose business it is to keep secrets. Nikolai Kovalev, a former head of the Russian Federal Security Service makes this point: 'Any information can be taken from computers. Of course there exists means of protection, but there is no 100% guarantee that they will work. So from the point of view of keeping secrets, the most primitive method is preferred: a human hand with a pen or a typewriter'<sup>14</sup>.

This example illuminates that the digital as a leap into the uncertain does not provide a stable, secure, or predictable basis for how the past is made. This is a matter of a loss of control: a giving away of the propriety of memory to the unknowable workings and vulnerabilities of the network. The problem with grey media is that there does not appear to be a way of wresting control back. A return to old media is one strategy, a reinvention or reimposition of the spatially-bound archive of the Russian Federal Guard Service offers a digital-free cocoon but one that is hardly scalable. It remains vulnerable to its enveloping in the grey cyber fog of hyperconnectivity.

And the Russian move to old-media is somewhat after-the-fact. The revelations of Wikileaks<sup>15</sup> and the 2013 US surveillance scandal reveal that the digital has already entrapped the past and made it vulnerable to a new hactivist scale of Big Data. Surely, the whole development of the culture of hacking is indicative of new individual and mass vulnerabilities. This is in contrast to a healthier and more stable vulnerability of traditional medial decline and decay within which time the relative generational stability of memory was both defined and maintained.

### **Total memory**

Today the digital drives the archive inwards as well as out as post-scarcity culture is increasingly being translated into the post-scarcity self. Immersion in digital ambience and routinized hyperconnectivity obscures exposure to the risk of being forever networked. Growing familiarity with and apparent command over digital technologies makes them seem

an increasingly benign means of communicating-in-the-world. Hence the surprise and shock at the revelations in June 2013 of 'Prism', the US National Security Agency's (NSA) computer surveillance programme alleged to access the contents of emails and live chat held by the world's major internet companies including Google, Facebook and Skype.

The latest turn in the shadow archive of affective media is the encroachment of wearable tech and the march of the 'quantified self movement'. The cheapness, portability, and pervasiveness of digital devices, have increased so called self-tracking and fast-developing technologies for data acquisition of daily life. This has added significantly to the weight of emergence that hangs over the future which is also shaping new indiscriminate forms of memory. The random, accidental and deliberate documenting of the banal through to the most nodal converge. Throw in Google Glass and Street View, the encroachment of CCTV, Microsoft's SenseCam and an array of other lifelogging devices, and one may conclude that this is the end of uncensored life, the end of uncensored memory.

However, much of the discourse on total memory focuses on the perceived advantages of a comprehensive digital memory record. The work of Gordon Bell has been influential to this idea: 'Now I don't think of it as a back-up to my memory... it is my true memory. So, my computer is my e-memory, my biomemory is just a URL to the e-memory. So my true memory is here (lifts up laptop)<sup>16</sup>.

Following on from the initial researcher exclusivity of Microsoft's 'SenseCam', suddenly lifelogging devices are affordable and wearable for the consumer market. So pre-emptive data acquisition, a new data fetish, is no longer the exclusive domain of the technologists such as Bell. For example, 'Narrative' is one of the latest lifelogging devices and as a media form is easily forgettable, attached to the wearer with its tiny 36x36x9mm dimensions, promoted as 'easy and effortless'.

Through its associated app, Narrative promises not only photographic memory (retrieval) but organization and search: 'Relive your life like you remember it' is the promise of Narrative's digital memory. Its website explains:

The Narrative camera is a tiny camera and GPS that you clip on and wear. It's an entirely new kind of digital camera with no controls. Instead, it automatically takes photos as you go. The Narrative app then seamlessly and effortlessly organizes them for you...The camera and the app work together to give you pictures of every single moment of your life, complete with information on when you took it and where you were. This means that you can revisit any moment of your past.<sup>17</sup>

So the people from Narrative claim that it is useful because it captures the moments that users didn't realize were moments until afterwards. Its website offers testimonies from those having

tried the prototype. For example, 'Marcus' aged 27, says: 'If I had the opportunity to relive a moment, I would like to see when my parents were young, specifically a situation I've heard about not playing out the way they've told me...' Imagination involved in human memory from this perspective is no longer deemed a sufficient or even a vital part of the process for remembering: instead memory requires some kind of entanglement with image or video for it to remain. And this compulsion to record has extended from the public, from the nodal, into the personal and the everyday. But the logic is perverse as the memory of many moments deemed 'special' are made so precisely because they are misremembered, embellished, altered, and transformed through their retellings.

But it is not only the missed special moments that Narrative promises to secure for future remembering, it is also the prospects of providing a whole new viewpoint that drives its appeal. For example, another prototype user, Elias (aged 26) explains: 'I think the camera would capture things from a different perspective and that it wouldn't be as much of a re-experience as a completely new one'. And it is these ideas, that we can or should be able to manipulate or secure the past to fill in all of the details of a memory only available through the living memory of others, or to compensate for our own naturally fallible and imperfect memory, is becoming ever more influential in feeding the pursuit of total memory. But it is the profound uncertainties of decay time and the acceleration of technological consumption and desire that is the real basis for an emergent fetishization of total memory. It is not the recording devices that transform the potential memory of the post-scarcity self, rather it is the computers and networks the device connects to and the uses that this enables such memories to be put to that makes the difference.

The fetish of the quantified self movement is not just a matter of a single technology or form such as the lifelogger. Rather, there is an emergent trend towards not just pre-emptive data acquisition, but pre-emptive data aggregation. That is an imagining of how the multiple components of the quantified self can be connected and re-folded into the present, to enable the present to be more attuned to the past to maximize its management.

The capacity to retrieve, and display and to aggregate data from multiple sources of social media (Facebook, Instagram, Twitter) postings and updates, and from an array of life-tracking and journaling apps, is a complete game-changer in the haste to archive the self even in the context of recent debates as to the nature of and prospects for digital memories. The difference is in the quantified self's mimicking of how human memory works rather than in merely supplementing or augmenting it.

Key to this transformation is the idea of 'schema' in human remembering and as a key aspect of the organization of experience. Schema is a kind of framework and standard, which the unit of memory (mind, group, society etc.) forms from past experiences and by which new experiences are expected, measured and also reflexively shaped. The term is

associated with the work of Frederic Bartlett,<sup>18</sup> writing over three-quarters of a century ago had a significant influence on the psychology of memory.<sup>19</sup> Bartlett drew on the work of the neurologist Henry Head (1920) and claimed that the key process of remembering involves the introduction of the past into the present to produce a ‘reactivated’ site of consciousness: ‘Remembering is not the re-excitation of innumerable fixed, lifeless and fragmentary traces. It is an imaginative reconstruction, or construction, built out of the relation of our attitude towards a whole active mass of organised past reactions or experience’ (1932:213).

Past representations are not then to be treated as stored objects, but rather as patterns which are repeated and reconstituted anew in the flux of neural firing. Schemata could then be understood as emergent topographic patterns of neural connectivity that are subject to plastic redistribution over time (Brown and Hoskins 2010) or as Bartlett (1932: 208) states: schemata are ‘not merely something that works the organism, but something with which the organism can work’. Bartlett developed this work as what he called ‘cultural conventionalisation’ how cultural resources are employed to modify or transform what is strange so that it may be accommodated within an existing framework (Brown and Hoskins 2010),

To achieve conventionalisation persons must share schemata, which are at once personal, since they are the means of organising experience, and collective, since they are embedded in cultural settings and materials (Brown and Hoskins 2010). It is not a question of the past itself as an entity as such, but, ‘our attitude towards’ it and our ‘organisation’ of past experiences. Similarly, as Paul Connerton (1989: 6) puts it: ‘in all modes of experience we always base our particular experiences on a prior context in order to ensure that they are intelligible at all; that prior to any single experience, our mind is already predisposed with a framework of outlines... The world of the percipient, defined in terms of temporal experience, is an organised body of expectations based on recollection’. The effectiveness of memory is thus determined by the repertoire of schema available to the individual. Recognition and understanding of events unfolding in the present is made through a prism of what has gone before.

Yet digital technologies, despite being often noted for their flexibility, and instability, their capacity of ‘plastic’ redistribution alike neural connectivity, interfere or threaten the working of schema. In fact the aggregation of life-tracking and journaling apps signals the mediatization<sup>20</sup> of schema. The mobile app Memoir, for example, promises precisely this in its promotional line: ‘Your memories surfaced at the right moments.’<sup>21</sup> And there seems little of memory that cannot be recorded, processed, and translated into mediatized schema. Seth Fiegerman blogging on ‘Memory Machines’ hints at this spectrum of uses available through Memoir: ‘When you walk into a restaurant, the app might pull up a previous entry reminding you of the last time you were there. If you search for a friend within the app, it will display all the pictures he or she took when you were in the same place at the same time based on the

metadata, regardless of whether you were tagged. While ringing in the New Year, you might get a push notification reminding you of how you celebrated one, two or three years earlier'<sup>22</sup>. This kind of intervention threatens the fine balance of what David Middleton and Steven D. Brown (2005: 189) call an 'organised setting', which they define as 'a complex of cognition and emotion that is located within, and dependent on, the cultural and material particularities of the local environment.' This dependency is unsettled and skewed by the immediacy and archival power of the schema instantly on tap from the increasingly accessible mobile app. Put differently, the complex of cognition and emotion of sorts is digitally hijacked rather than remembering being as seen by Middleton and Brown (2005) as negotiated through a 'situated activity'.

The rapid spread of so-called 'smart' mobile devices that enable the capture and the refolding of digital data into later times and contexts, are increasingly sophisticated in the types of data that can be captured and in their automation. The quantified self includes the data acquisition of physiological states (temperature, blood oxygen level, sweat rates etc.) gathered from body sensors, and this kind of self-monitoring is often aimed at aiding health and wellbeing. But in addition to environmental sensor and geolocation trackers, it is the aggregation of multiple types of data that provides an increasingly sophisticated and comprehensive version of an individual's life trajectory. Whereas lifelogging is the process of this recording, computing scientists have begun referring to the outcome as 'human digital memory' (HDM) which is the combination of an array of data and content types for example the 'Digmem' system gathers various data from smart, connected appliances (Chelsea Dobbins et al 2013).

Yet this pervasive and mobile computing work is driving a broader set of discourses – including those incorporated by a new wave of companies promoting consumer lifelogging devices and apps – that naturalise a synergy between the digital and the human and its memorial ends. It seems that the very spontaneity and unpredictability of human remembering – including the use of schema – are seen as vulnerabilities for exploitation in the pursuit of total memory. Thus as Dobbins et al. (2013:8) suggest: 'Memories are often impulsive events and are better suited to being captured and shared on a portable device'. But rather than degrading spontaneity, human digital memory is seen as 'dynamic and data rich' (ibid.) to more than compensate through its capacity to aggregate data from such an array of devices.

But what precisely is the value that is attached to claims as to the 'richness' of human digital memory? It seems that HDM is attempting to capture and to reproduce aspects of situated activity in an organized setting in Middleton and Brown's terms (above). In an interview, Dobbins hints at this: 'In the future you could simply ask, 'When have I been happy?' And the system would return all the information associated with that emotion'<sup>23</sup>.

But the mediatization of schema and more broadly the pursuit of total memory appears to discount the potential value of ‘involuntary memory’. The differentiation of individual remembering was famously developed by Marcel Proust between ‘*mémoire volontaire*’ and ‘*mémoire involontaire*’ - ‘voluntary’ and ‘involuntary’ memory. Voluntary memory is that usually understood to involve purposeful, conscious reflection, a kind of deliberate pondering about what has gone before. Involuntary memory, however, is that which intervenes suddenly and without warning into the presentness of our consciousness. Esther Salaman (1970) for example, defines this as ‘another kind of memory of experience, which comes unexpectedly, suddenly, and brings back a past moment accompanied by strong emotions, so that a ‘then’ becomes a ‘now’. The latter bears no trace of the past which it reveals - the circumstances under which we experience this kind of individual involuntary memory are wholly different from those of the original experience. Furthermore, these different types of remembering are qualitatively different. And the frequently cited Proustian line is: ‘Voluntary memory, which is above all the intelligence end of the eyes gives us only the surface of the past without the truth; but when an odour, a taste, rediscovered under entirely different circumstances evoke for us, in spite of ourselves, the past, we sense how different is this past from the one we thought we remembered and which our voluntary memory was painting like a bad painter using false colours... [He] will suddenly rediscover forgotten years, gardens, people in the taste of a sip of tea in which he found a piece of *madeleine*... because they are involuntary, because they take shape of their own accord, inspired by the resemblance to an identical minute, they alone have a stamp of authenticity... as they make us savour the same situation under wholly different circumstances, they free from all context, they give us the extra-temporal essence’.<sup>24</sup> Human digital memory then in its sucking up and retention of situated activity is prohibitive of involuntary remembering and its associated spontaneity and apparent authenticity. The digital management systems of memory bury the potential shock of the old – Proust’s ‘extra-temporal essence’ – through the mediatization of schema. The consequence is a remembering that is already narcotized with the weight of ones past’s highs and lows preempting any prospect of surprise. And I now turn to further address total memory’s devaluing of the perceived imperfections of human remembering and the new risks of lives lived and preempted through data.

### **No exit?**

A key misnomer of HDM is that it affords a greater control over remembering and that this is inherently a good thing. Rather, it is a mistake to conflate the dynamics and richness of data with the dynamics and richness of human remembering or to imagine that the former (data) could or should ‘fix’ the latter (human). HDM rides roughshod over the active nature of human remembering and does not acknowledge its value. Paul Connerton, for example,

argues: 'Information technology, by projecting 'memory' outside persons, divests personal memory of many of its former assimilative roles; by directing the attention of those addicted to its immense capacities of storage and material, and to a rapid succession of micro-events, it generates a culturally induced mental habit which makes it increasingly difficult to envision even the short-term past as 'real' (2009: 144). *Real* life is messy, full of the conflicts, contradictions and contestations that arise through the fallibilities of human memory, but quantified self advocates do not appear to recognize much value in this messiness.

Instead, the search for total memory, treats the digital as though it were merely another stage in the history of media's augmentation of human memory, without either acknowledging the value of memory's former imperfections it seeks to smooth over, nor seeing the damage that its smoothing has on our formerly clearly defined present and past. Jannis Kallinikos (2010) explains: '...such a reliance on the algorithmic potency of the machine transforms the active memory of the past and its distinctions to an undifferentiated *mélange* that loses much of its grasp upon the present. The orientation and meaningfulness which memory confers to life are thus becoming attenuated and a continuously expanding present, ambiguous and without clear boundaries, imperceptibly installs itself at the heart of daily living'. This is not a new synergy of media and mind and memory, but rather memory hostaged to the constantly shifting digital platform (apps, files, accounts) through which the link to either the human mind or the organized setting as active, core and driving agents of memory are made increasingly tenuous. This is part of what Kallinikos (2010) calls 'living without lives'.

By hostaged I mean that the envisioning of total memory as indicative of a shift, partly through digital media, and partly through the explicit selling (and the fetishization) of the quantified self, from reliance to dependency on ICTs (see Floridi, above) for what were once seen as already functional (enough) aspects of human life such as memory. But human digital memory platforms such as the DigMem system can be imagined and designed because of the already-pervasive devices through which peer-to-peer (P2P) networks can be created. The routinized collection and combination of data of the quantified self, builds on and links with an established array of social media and P2P messaging and archiving services. It is these that forge a web of hyperconnectivity that have not only entrapped participants in a digital present, but which prevent the future from becoming through any (human) means outside of this media ecology.

The technological management of the self has become an end in itself as we live increasingly aggregated lives by virtue of the irresistible entanglements of humans and data, and these entanglements as a platform from which the past will be remembered and the future will be imagined. As suggested above, Crary (2013:43) sees the individual as an application in itself of these systems of control. This is a social reality that is contrived as not only

something worth striving for – like the state of total memory – but as something that is irresistibly and inexorably part of what it is to be hyperconnected. Equally, all that cannot be brought under the purview of digital management is devalued and marginalized for fear of not keeping up.

And through such pursuits of infallible or total memory, it is forgetting that is devalued and marginalized. This is not based on a radical new perspective, but rather feeds off: ‘a commonly held view that remembering and commemoration is usually a virtue and that forgetting is necessarily a failing’ (Connerton 2008: 59). But trends in the quantified self, and in wearable tech such as lifelogging, rather than delivering a panacea of aids to remembering, instead actually corrupt both remembering and forgetting through undermining the messy but vital functions of human scale memory.

The misguidedness of the current technological embrace for all our memorial ends is part of a trend that Evgeny Morozov (2013:280) calls ‘solutionism’: ‘Solutionism will not relieve us of the messiness of decision making for one simple reason: technology cannot provide an easy answer to morally intractable dilemmas about what we ought to remember and what we ought to forget’. Put differently, the archiving of the self heralds a state of the smothering of these very dilemmas, as Terje Rasmussen (2010:109) argues: ‘Compared to contemporary and all-encompassing digital media, former normative criteria for remembering and forgetting seem to have eroded’. The mediality of memory circumvents such concerns: we are already too embedded in its web. There is a kind of radical ambiguity to this state of affairs: the more we attempt to make memory manageable, controllable, and complete, the more the shadow archive comes to exert control over us. There does not appear to be an exit strategy but only an ever greater investment and trust in solutionism, in Morozov’s terms (above).

The more complex the systems for capturing, storing, retrieving and sharing data, and the greater our entanglements in them, the more precipitous the memory of the self becomes. Lifelogging is made from and through media and technologies eminently hackable, copyable and spreadable, as well as prone to deletion, corruption, and incompatibility with inevitable updates and upgrades, which all together render a much less predictable basis for a future of memory. For instance, it is not until the last few lines of Dobbins et.al’s article on the creation of human digital memories through pervasive mobile devices that the authors reflect: ‘If devices are stolen, and false memories created, then this affects the user’s entire HDM store’ (2013:36). The pursuit of total memory and self-tracking, as further entanglements of the digital self, constitute a very insecure basis for attaining any kind of guarantor of one’s past. At least with social media, the vagaries of hyperconnectivity and the accidents of emergence are of postings and profiles that are already filtered and created with a public audience in mind, albeit, as we have seen in some cases, a less public one than originally envisaged.

However, the life-tracking and life-journaling digitally entangles a kind of pre-conscious self, a sprawling auto/biography that is yet – or even may never – be fully realized by the individual. Again, as I have argued, this development should not be read as a greater synergy of digital and human. Rather, it is not an exaggeration when Hoffman (CEO of Memoir) describes the tracking of the ‘in-between’ (the intended for a public’s consumption, i.e. Facebook) tracked moments, as ‘literally memory replacement’. This is a ‘living without lives’ (Kallinikos, above) but it is also affords a potential remembering without memory. To Archive Me in this way is not the media extension or distribution of memory from the human across social and cultural settings, rather it is memory’s alienation from the self, and the unmaking of a society without memory.

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#### Notes

<sup>1</sup> See Pereira, Alessia, Ghezzi, Ângela and Vesnić-Alujević, Lucia (eds.) (2014).

<sup>2</sup> Seth Fiegerman 'Memory Machines: The quest for a better digital record of our lives', <http://mashable.com/2014/01/07/memory-apps/> (accessed 10 January 2014).

<sup>3</sup> <http://timehop.com>

<sup>4</sup> Eric Meyer, 'Inadvertent Algorithmic Cruelty', <http://meyerweb.com/eric/thoughts/2014/12/24/inadvertent-algorithmic-cruelty/> (accessed 12 January 2015).

<sup>5</sup> <http://newsroom.fb.com/news/2015/03/introducing-on-this-day-a-new-way-to-look-back-at-photos-and-memories-on-facebook/> (accessed 13 April 2015).

<sup>6</sup> [http://www.huffingtonpost.com/2013/07/31/facebook-on-this-day\\_n\\_3683035.html](http://www.huffingtonpost.com/2013/07/31/facebook-on-this-day_n_3683035.html) see also: [http://www.huffingtonpost.com/2012/09/24/facebook-bug-private-messages-timeline\\_n\\_1909813.html](http://www.huffingtonpost.com/2012/09/24/facebook-bug-private-messages-timeline_n_1909813.html) (both accessed 13 April 2015).

<sup>7</sup> Parmy Olson 'Teenagers say goodbye to Facebook and hello to messenger apps', <http://www.theguardian.com/technology/2013/nov/10/teenagers-messenger-apps-facebook-exodus>, (accessed 13 December 2013).

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<sup>8</sup> Ibid.

<sup>9</sup> Dennis Phelps cited in ‘Snapchat: the self-destructing message app that’s become a phenomenon’, *Guardian ShortcutsBlog*, <http://www.theguardian.com/technology/shortcuts/2013/jun/26/snapchat-self-destructing-message-app-phenomenon> (accessed 17 September 2013).

<sup>10</sup> <http://decipherforensics.com/index.php/blog-landing-page/56-snapchat> (accessed 2 January 2014).

<sup>11</sup> ‘Snapchat’s expired snaps are not deleted, just hidden’ <http://www.theguardian.com/media-network/partner-zone-Infosecurity/snapchat-photos-not-deleted-hidden> (accessed 3 January 2014).

<sup>12</sup> ‘Snapchat hack affects 4.6 million users’, <http://www.bbc.co.uk/news/technology-25572661> (accessed 2 January 2014),

<sup>13</sup> <http://www.guardian.co.uk/world/2013/jul/11/russia-reverts-paper-nsa-leaks> (accessed 15 July 2013).

<sup>14</sup> Ibid.

<sup>15</sup> Wikileaks is an organization devoted to disclosure via online publication and archiving of confidential, secret and classified information, sourced anonymously.

<sup>16</sup> Gordon Bell speaking on *Newsnight*, BBC2, broadcast 1 November 2013.

<sup>17</sup> <http://memoto.com> (accessed 23 April 2013).

<sup>18</sup> The resonance of work of Bartlett is indicated by the re-issuing of his classic text *Remembering: A Study in Experimental and Social Psychology*, 63 years after its original publication.

<sup>19</sup> According to Neisser (1978/2000) debates over the nature and use of ‘schemata’ in psychology revived in the 1970s after many years of being largely ignored.

<sup>20</sup> By ‘mediatization’ I mean the process of shifting interconnected individual, social and cultural dependency on media, for maintenance, survival, and growth (Hoskins 2014: 662, cf. Hoskins and Tulloch 2016) and here ‘schema’ being brought under the influence of media logics.

<sup>21</sup> <http://www.yourmemoir.com>, accessed 10 December 2013.

<sup>22</sup> Seth Fiegerman, *ibid.*

<sup>23</sup> Chris Baraniuk (2013) ‘Take it easy: make the fridge track all your snacking’, *New Scientist*, 11 January 2014, p.21.

<sup>24</sup> See Marcel Proust, letter to Antoine Bibesco (1912) in *Letters of Marcel Proust* (1950) (Translated and edited by Mina Curtiss), London: Chatto & Windus, p.189.