

Struggling to Remember:

*Perceptions, Potentials and Power
in an Age of Mediatized Memory*

Jamie Alexander Bamber

A thesis submitted in partial fulfilment of the requirements of
the University of East London for the degree of Doctor of Philosophy

University of East London

College of Arts, Technology and Innovation

School of Arts and Digital Industries

September 2019

*Time is an illusion that helps things make sense
So we are always living in the present tense*

- Rebecca Sugar (2018)

Abstract

What role do new, networked and pervasive technologies play in changing individual and collective memory processes? Many recent debates have focused on whether we are in the online era remembering ‘less’ or ‘more’ – informed, perhaps, by a tendency to think of memory spatially and quantifiably as working like an archive. Drawing on the philosophical theorising of Henri Bergson and its development through Gilbert Simondon, this thesis makes two interventions into the field. Firstly, conceptually, it establishes a process-based approach to perception, memory and consciousness in a shift away from the archive metaphor – thinking memory not as informing ‘knowledge of the past’ but ‘action in duration’. It situates the conscious, living being as transindividual – affectively relational to its perceived bodily and social environments, through psychic and collective individuation respectively. Moreover, it considers technologies as forms of transindividual *extension* of consciousness. Furthermore, it proposes the ‘anti-metaphor’ of the *anarchive* as a conceptual tool with which to understand these duration-based, bodily and technological, action-oriented processes. Secondly, methodologically, it advocates a rephrasing of the question from *how much* we are remembering to *how we are remembering differently*. Armed now with a developed theoretical position and methodological approach, the thesis explores through three case-study chapters how personal and more historical pasts may be remembered, individually and more collectively, through new, prevalent technologies of memory such as search engines, forums and social-media sites. Analysing the material experiences of remembering, as well as examining the economic drives of the platforms and wider actors, and the resulting socio-political implications, the thesis sets out the original argument of a contemporary *struggle* for memory: a complex negotiation of tensions between agencies of the body, the social, and the multifarious and interconnected socio-political and economic interests of the technological platforms and hybridised media systems through which contemporary remembering increasingly takes place.

Table of Contents

Acknowledgements	1
Introduction	3
General Introduction	3
Overview of the Thesis	8
Literature Review: Existing Debates and Introduction the Theory	23
1. Thinking Remembering: Memory Concepts and Memory Context	24
2. Memory and New Technologies: Commentary	30
3. Tendencies of Thought: Memory and the Archive	45
4. Intuition: Toward an Anarchival Approach	55
Summary	62
The Theory: Memory, Method and the Man-Machine	64
1. Thinking Memory: A Non-Archival Perspective.....	65
2. Conceiving Memory: From Archive to Anarchive	117
3. Struggling to Remember: Memory in the Online Era.....	131
Me, Myself and iPhones: Mediated Memory and Pervasive Personal Pasts	142
1. The Dropped Pin: Google Maps and Personal Pasts.....	143
2. Mediated Madeleine Moments: Past Presents as Present Pasts	165
3. Social Media and the Memorial: Facebook as (Web)Site of Commemoration ...	189
Archival Individuation: Agency, Identity and Platform-Networked Self.....	202
Error 404 – Memory File Not Found: Historicising in an Age of Networked Pasts ...	204
Error 404 Case Studies Outlines	205
1. Connected Remembering and Collective Present Pasts.....	215
2. Interaction in Cyber-Time: Remembering in the Social ‘Now’.....	228
3. Architected Anarchives: Platforms as Perception Portals.....	244
Facts, Fakes and Filter Bubbles: False Memory in the Twenty-First Century	265
1. From False Memory to Fake News	266

2. Collective Identity and Pretence of the Past	273
3. The Spread of False Memory	283
4. Impulse, Agency and Affect Capitalism	297
Conclusion and Discussion	324
Struggling to Remember	331
Toward New Struggles.....	333
List of References	339
List of Figure References	376
Me, Myself and iPhones.....	376
Error 404 – Memory File Not Found	377
Facts, Fakes and Filter Bubbles	378
Bibliography.....	381

List of Case-Study Chapter Figures

Me, Myself and iPhones

Figure 1 – ‘Save your parking’ Google Maps feature

Figure 2 – Google Maps Timeline feature

Figure 3 – Google Maps Point-to-point route-tracker

Figure 4 – Google Maps countries/regions visited feature

Figure 5 – Google Maps ‘you visited this place’ feature

Figure 6 – Google Maps Gmail-scraped schedule overlay

Figure 7 – Google Maps Street View coverage

Figure 8 – Figure from Douglas C. Schmidt’s research into ‘Traffic data sent from idle Android and iPhone mobiles’

Figure 9 – Facebook ‘Memories’ feature

Figure 10 – Facebook ‘Memories’ feature

Figure 11 – Facebook ‘Memories’ feature

Figure 12 – Google Photos ‘Rediscover this day’ feature

Figure 13 – Screenshot of 00WARTHHERAPY00’s ‘Ghost Rider’ YouTube comment

Figure 14 – Memorialized Facebook Account

Figure 15 – Memorialized Facebook Account with Tributes section

Error 404 – Memory File Not Found

Figure 1 – Unflattering Beyoncé meme

Figure 2 – Unflattering Beyoncé meme

Figure 3 – Unflattering Beyoncé meme

Figure 4 – Worldwide searches for ‘unflattering Beyoncé’, from the meme’s emergence through to today.

Figure 5 – Worldwide searches for ‘unflattering Beyoncé’, over subsequent years.

Figure 6 – Screenshot of the most recent Imgur posts labelled ‘Beyonce’ as at 6 June 2019.

Figure 7 – ‘The Terror of War’, or ‘Napalm Girl’, by Nick Ut

Figure 8 – Worldwide searches for ‘napalm girl’ over five years

Figure 9 – Worldwide searches for ‘led by donkeys’ over the year prior to writing

Figure 10 – Screenshot of the tweet of the original billboard installed by Led by Donkeys

[Facts, Fakes and Filter Bubbles](#)

Figure 1 – Mockup (perhaps tongue in cheek) of supposed Shazaam cover artwork

Figure 2 – Actual cover artwork for Kazaam

Figure 3 – Popular meme version of the 'Irish slaves' myth

Figure 4 – Multiple tweets about the supposed migrant caravan brutality, using the same miscaptioned image and near-identical text

Figures 6 - Screenshots of the original post on the 'Love Westhoughton' Facebook group

Figure 7 - Twitter warning post by school support organisation National Online Safety

Figure 8 – Graphic from The Guardian newspaper, illustrating the CTF disinformation campaign

Figure 9 – Thaler and Sunstein’s ‘Two cognitive systems’

Figure 10 – Vote Leave unbranded adverts for Euro 2016 competition

Figure 11 – Vote Leave unbranded adverts about animal cruelty, leading to campaign material

Figure 12 – Vote Leave unbranded adverts about a potential steel industry collapse

Figure 13 – Vote Leave unbranded adverts about immigration and the Middle East

Figure 14 – Vote Leave unbranded ‘us vs them’ adverts: the NHS

Figure 15 – Vote Leave unbranded ‘us vs them’ adverts: flood defences

Figure 16 – Vote Leave unbranded ‘us vs them’ adverts: schools

Acknowledgements

Substantial thanks must go first and foremost to my director of studies, Tony D. Sampson, whose expertise, encouragement and unceasing patience have been of ineffable importance to the completion of this thesis. Under his supervision – along with the charitable and deeply-appreciated criticism and advice of Darren Ellis and Ian Tucker – I have (almost!) reached the end a journey that a handful of years ago I might have thought neither accessible nor perhaps even then achievable. Generous thanks must equally here go to the University of East London, who not only furnished me with so-enlightened a supervisory team but provided the very opportunity for the research project through their Excellence Scholarship funding scheme. A significant debt of gratitude is owed also to staff at the university's Graduate School, who have, through a combination of their first-rate Research Development Programme and their administrative willpower, kept me (largely) on the straight and narrow during the PhD process. Respective thanks in these regards go to Caroline Dunmore and Eleni Kasapi, and to Carlos J. De Luna and Richard Bottoms.

Four years of study have seen me attend and participate in numerous conferences, symposia and colloquia across the Eastern and Western hemispheres, two of which I consider to have been crucially enriching. Recognition of a high order goes to Aarhus University, whose 2018 *Affects, Interfaces, Events* conference and related PhD seminar helped me to crystallise my theoretical positioning at just the right moment. Equally Aarhus-University-based, special thanks are extended to Annette Markham and Dorthe Refslund Christensen, whose methodologies course at the third *Death Online Research Symposium* made a significant and constructive impression on me.

Every PhD thesis no doubt thanks the parents, and this is no different: Eileen and Graham have shown characteristic emotional and parental support over the last few years, and, were it possible, ought to be thanked doubly.

‘Rubber ducking’ was neither a term nor concept with which I was familiar when beginning the PhD, yet one which I hold now in high regard. Enormous thanks go to J. Alexander Green for introducing me to the practice – more so to my fiancée Tamara Al-Bassam for enduring the process late into so many evenings. Deepest thanks go too to Samuel Flitman, and once more to Tamara, for diligent support in proofreading so much in seemingly so little time.

Bringing the acknowledgements to a close, there remain two parties without whom it is unlikely I would have reached the finish line at all.

Unusual thanks go to the staff at of Hull Royal Infirmary, who cared for me and restored me after emergency hospitalisation with ascending lymphangitis while (supposed to be) presenting at the fourth *Death Online Research Symposium*.

Last but certainly not least, I thank our cat Mabel. Likely culprit for my hospital-stay in Hull, if only through accident of salivary bacteria, her diverse conversations through so many long days of silence have surely kept me sane, and her remarkable temperament has ensured I stay suitably well grounded.

--o0o--

Introduction

General Introduction

In the present era, what role may new, online and pervasive technologies be playing in changing individual and collective memory processes?

Many prevailing and popular debates around this question in recent years have tended to focus on a quantified perceived problem of whether we are today, in the Western, developed and internet-connected world, remembering ‘less’ or ‘more’ – informed, this thesis argues, by the European-historical assumption that memory acts quantifiably like a kind of archive (Rosenfield, 1988; Brockmeier, 2015), “storehouse of ideas” (Bennett & Hacker, 2013, pp. 103-112), or, moving into the computer-brain metaphors of the twenty-first century, like a database or hard drive.

Taking a novel, alternative approach to the question, this cross-disciplinary, theoretical research draws on the thinking of late-nineteenth-early-twentieth-century French philosopher Henri Bergson – and its arguable development (Hansen, 2006, p. 8)¹ in the work of mid-twentieth-century French philosopher Gilbert Simondon – to make two significant interventions into existing debates. On the one hand, in a theoretical shift away from the power of the archive metaphor, it attempts to reconceptualise remembering as a phenomenon not concerned with individual recall of knowledge of the past, but with realisation of *potential* for useful action (Bergson, 2004) in the lived present – in *duration* (Bergson, 2001). Moreover, since such potential is realised with and through sensorial

¹ In *New Philosophy for New Media* (2006), media theorist Mark B. N. Hansen puts forward a Bergsonian view of affectivity as “the capacity of the body to experience itself as ‘more than itself’ and thus to deploy its sensorimotor power to create the unpredictable, the experimental, the new” (p. 7). It is this “broadly Bergsonian theme” (p. 8) of affectivity as being ‘more than’, Hansen goes on to argue, that “is given its most forceful expression” through Simondon’s thinking on individuation (p. 8).

perception,² it argues that, rather than a kind of faculty of the individual, remembering ought to be considered an affective, ‘more-than-individual’ or transindividual process of inter-relational, socially- and technologically-mediated movements within the present moment(s). On the other hand, methodologically, highlighting the popularly-supposed problem of whether we are remembering less or more as an example of an unhelpful Bergsonian ‘false problem’ (Deleuze, 2011, p. 17), the thesis crucially orients the ensuing research investigation to be concerned qualitatively with how we are remembering *differently* in the online era. This acknowledged, it reasserts the investigation to be one concerned not with the supposed *amount* we are remembering, but rather with the wider individual-social-technological ecologies through which processes of ‘personal’ and ‘collective’ remembering take place through new, online and networked technologies, and the various cultural, political and economic agencies that may be inherent within them.

It has been noted that, since the so-called ‘memory boom’ of the late-twentieth century, there has developed a certain disjuncture in the wider fields of ‘memory studies’ – not least in more recent years between more humanities- and more scientific-based approaches (van Dijck, 2007; Brown, 2008). Indeed, addressing the question of what role *new technologies* may play in changing memory processes involves a disciplinarily wide-reaching approach, encompassing academic commentary across at least (but surely not limited to) neuroscience, psychology, sociology, philosophy, cultural studies and media studies. This thesis contributes to ongoing efforts to forge more ‘joined-up’ disciplinary approaches to thinking memory, the social and the digital. Indeed, its focus on memory not as ‘knowledge’ but as *process* helps to ground it critically from the outset in yearnings from the likes of media and cultural studies and psychology to conceptually adopt a notion of *mediation* as path toward an “interdisciplinary approach” to memory (van Dijck, 2007, p. 182), or indeed toward a “more adequate footing for a ‘science of memory’” (Brown, 2008, p. 70).

Such a contribution is made possible through a twenty-first-century combined reading of the philosophy of modernist thinkers Bergson and Simondon, each of whose (as we shall see) inter-relatable approaches – crucially seeing the human, the social and the technological in terms of *relational*, inter-affective *processes* in *duration* – offers answers

² Bergson argues that “memory can only become actual by means of the perception that attracts it. Powerless, it borrows life and strength from the present situation in which it is materialized” (2004, p. 163).

from the past to the contemporary call for interdisciplinarity. It has been noted that the usefulness of thinking with Bergson on wide-ranging subject matter lies not necessarily only in its detail, but in its *approach* – in applying his attitude, or the personality of his thinking, to new problems. Thus, as social scientists Alexandre Lefebvre and Melanie White argue:

In fact all of Bergson’s great political readers—such as Charles Péguy, Karl Popper, John Humphrey, Gilles Deleuze and Félix Guattari, and William Connolly—could be similarly categorized: they are Bergsonians in the spirit of extending Bergson to new problems, rather than adhering to the letter of his text. (Lefebvre & White, 2012, pp. 4-5)

So too have others noted the proclivity of an affective, transindividual, Simondonian approach toward cross-disciplinary subject-matter.³ As philosopher Muriel Combes notes:

Simondon turns to individuation as process in order to address what he sees as another dangerous tendency of modern knowledge: the isolation of disciplines from one another on the basis of their construction of different individuals (society, psyche, medium, organism, species, machine) that are not allowed to communicate with one another, whose relationality becomes unthinkable ... This is why Simondon works so intently within and across different domains of knowledge: he aims for a truly concerned multidisciplinary. (Combes, 2013, p. 89)

Philosophy scholar Keith Ansell-Pearson argues that we are in the midst of a contemporary ‘renaissance’ – indeed ‘revolution’ – of Bergsonism (2018). Signposting to numerous thinkers, cultural theorist James Burton notes in 2008 that Bergson’s influence has – particularly through a renewed interest after Deleuze – been “firmly re-established” (Burton, 2008, p. 323) in the late-twentieth and early-twenty-first centuries across a breadth of fields, including philosophy, new media theory, art, modernism and cultural theory (Burton, 2008, p. 323). However, he notes that Bergson’s theorising in *Matter and Memory* (2004) “is still waiting for a full appreciation of its potential significance for fields in which memory is a central category, such as (social) psychology,

³ Indeed, as we will discuss later in the thesis, while not necessarily rooted in Simondonian theory, there seemingly is developing a minor groundswell of support across multiple scientific and more humanities-oriented subjects for more inter-, intra- and infra-affective approaches to research.

cultural history and memory studies” (Burton, 2008, p. 323). In recent years, psychologists Steven D. Brown and Paula Reavey have made a forceful contribution to extending Bergson’s affective theory into these areas – and indeed the everyday – through their 2015 book, *Vital Memories*, approaching clinical-psychology case-studies of those dealing with a difficult past from a Bergsonian social-relational perspective on remembering. This thesis hopes to further this push to greater breadths of multidisciplinary, extending the reach of Bergson’s theory beyond the biological and the social and into the mediated realm of the cultural-technological.

Taking an attempted theoretically more ‘joined-up’ approach of multidisciplinary, then, and considering the subject matter through a twenty-first-century Bergsonian-Sinmondonian philosophical lens, this thesis aims through a series of case-study analyses to find what, if any, ‘problem’ may exist for memory in the online era. We here use the word ‘find’, since, through a Bergsonian approach we may think the work of philosophical investigation not in terms of ‘solving’ already-stated problems. Rather, for Bergson, and indicative of the more joined-up approach he may offer, the work of philosophy is in *finding* problems themselves:

But the truth is that in philosophy and even elsewhere it is a question of *finding* the problem and consequently of *positing* it, even more than of solving it ... Already in mathematics and still more in metaphysics, the effort of invention consists most often in raising the problem, in creating the terms in which it will be stated. The stating and solving of the problem are here very close to being equivalent; the truly great problems are set forth only when they are solved. (Bergson, 1946, pp. 58-59)

Thus, this original thesis strives, through an investigation of how we may be remembering differently through new, online technologies to *find* what *new* problem may exist for memory in the online era. Considering philosophically and materially the reasons for these differences in how we remember, as well as discussing the resulting philosophical and more socio-political implications, it arrives at a formulation of an original and complex contemporary problem for memory, that we for the sake of brevity and forcefulness call a contemporary ‘struggle to remember’.

Such a problem, as we shall see, is bound up within the tensions between different agencies of transindividual drives – biological, cultural and technological – and their affective movements through new, online, networked technologies. On the one hand, and

predominantly, the thesis argues, the problem may be found in scrutinising the economic model of “surveillance capitalist” technologies (Zuboff, 2019), and the implications of their automated “feed-forward” mechanisms, which bring forward data about the user’s past online behaviour to secure engagement in the present (Hansen, 2015). Such technologies, in their economic *modus operandi*, connect users not so much with the potential for personal or collective ‘remembrances’ of the past – toward the bodily and social drives of psychic and collective individuation – as with opportunities to ensure continued, monetisable user-engagement. Action is encouraged less in terms of usefulness for the transindividual and more in terms of usefulness for the platform. On the other hand, inter-related in these technologies, across complex on- and off-line techno-cultural media systems, there exist multiple manifestations (and their inherent agencies) of wider bodily, cultural and technological drives with which the transindividual must equally struggle, encompassing legislative, cultural, commercial and economic factors. For example (though certainly neither limited to these nor mutually exclusive): formal legislative and regulatory concerns around hate speech versus free speech; social questions around identity, and the constitution of *the individual* and ‘the group’ in an era of hyper-connectivity; and fears around the economic and political ecologies of so-called ‘fake news’, ‘filter bubbles’ and ‘echo chambers’ in informing perception, and indeed action. Ultimately, the thesis argues that the problem for memory may be found in the shifting imbalance of conscious agency in technologically-facilitated personal and collective remembering. In turn, this problem is produced in part through a two-fold, inter-related lack of *awareness*. Firstly, a lack of awareness of the function of memory as informing *action* rather than knowledge – which feeds directly into the monetisable conflation of media-artefact *as* memory. And, secondly, in the (designed) lack of transparency or awareness of more economic agencies and relations inherent in prevalent, surveillance-capitalist, techno-cultural interfaces through which remembering increasingly takes place.

--o0o--

Overview of the Thesis

The remainder of this Introduction Chapter sets out the chapter structure of the thesis, progressing through the Literature Review Chapter, to the Theory Chapter, and into the more investigatory Case-Study Chapters and subsequent Conclusion.

Literature Review: Existing Debates, and Introduction to the Theory

The thesis makes four initial moves through the Literature Review Chapter to lay the groundwork for the development of our philosophical approach in the Theory Chapter. Firstly, it sets out a contemporary context of the field of ‘memory studies’ – outlining briefly how we might understand the conceptual and methodological approaches to studying memory, with which popular and academic discourse may relate. Secondly, it thematically explores broad, popular debates around what supposed ‘problem’ may exist for memory in the online era. Thirdly, it takes an archaeological approach to generally critique these themes and positions, attempting to identify contestable tendencies of thought, and, drawing on philosophical, psychological and neurological research, to interrogate the philosophical-historical assumptions around memory ‘acting like an archive’ that may underpin them. And, fourthly, following the philosophical method of *intuition*, it argues for a twofold reframing of the investigation. On the one hand, shifting conceptually away from the quantified, archival metaphor, it argues for a methodological rephrasing of the investigation to focus not on *how much* we may be remembering but on how we may be remembering *differently*. On the other hand, it argues for a concerted conceptual re-orientation of empirical analysis to focus not on *things in space* but on *processes in time*. Thus, in anticipation of the theory chapter, it introduces Bergson’s thinking on *duration* as the enduring, experienced flow of *the present*.

After attempting to adequately conceptually and historically contextualise the field of ‘memory studies’, the Literature Review presents a succinct, cross-disciplinary thematic review of prevalent, popular debates around what may be ‘at stake’ for memory in the digital age, broadly situating them within existing (yet, as we shall see, perhaps overly-discrete) categorisations of ‘individual’ (or personal), ‘communicative’ (or social) and ‘cultural’ (or historical) memory (Assman, 2008). It draws on concerns around the so-called ‘Google effect’ (Sparrow et al, 2011) and ‘digital’ amnesia (Carr, 2008; Greenfield, 2015) and ‘hyper-attention’ (Hayles, 2010) in relation to contrasting ideas of whether mediatised memory technologies might represent a form of ‘extended mind’ or ‘outsourced memory’ (Clark & Chalmers, 1998; Wheeler, 2016), apparently increasing

memory capabilities. Equally, ideas around the enhanced connectivity of networked memory (Hoskins, 2009) and the mediation of “prosthetic memory” (Landsberg, 2004), in relation to academic and wider concerns around so-called ‘fake news’ and the ‘post-truth era’ (Lewandowsky et al, 2017). Or, concerns around “digital permanence” (Mayer-Schönberger, 2011; Cohen & Schmidt, 2013) offering too much memory, in contrast to anticipations of a future “digital dark age” (Hillis, 1998), which sees a potential threat of the opposite.

While acknowledging that exceptions of course exist, the chapter in its second part argues that, across multiple disciplines in which the research question is considered, we may identify a widespread, perhaps dominant, popular tendency toward seeing a problem of whether we are remembering in the online era ‘too much’ or ‘too little’ – whether, quantifiably, we are remembering ‘more’ or ‘less’. Taking an archaeological approach, the chapter argues that we may think this and other related tendencies of thought as emergent out of a historical-conceptual reliance on the metaphor of the archive – indeed, it emphasises that considerations over whether we remember less or more through technologies may be considered the same kinds of argument as depicted two-thousand years ago in Plato’s *Phaedrus* (1952). Engaging with this observation, it on the one hand briefly draws on thinking on language and metaphor to demonstrate the dangers of uncritical reliance on figurative concepts in analysis – “the metaphor being taken to be what it is merely a metaphor for” (Bennett & Hacker, 2013, p. 103). On the other hand, it draws on various recent and more historical neurological and psychological research to argue that such tendencies of thought, as popularly presented in the debate literature, represent precisely such an over-reliance – indeed to challenge the adequacy of the archive metaphor for memory at all.

The final part of the Literature Review Chapter represents an analytic, methodological and conceptual intervention into the debates over what is at stake for memory in the online era. Acknowledging that a now non-quantified view of memory may not sensibly ‘fit’ within a formulated problem of ‘how much’ we are remembering in the online era, the chapter introduces Bergson’s method of *intuition* as a useful philosophical tool. On the one hand, analytically, this involves an interrogation of the problem as it is stated. From a Bergsonian perspective, as explicated by Deleuze, we can see the question of whether we are remembering more or less as a “badly stated problem” or “false problem” (Bergson, 1946), in that it is formed of “badly analysed composites” (Deleuze, 2011, p. 18). The chapter argues that, rather than seeing the problem in terms of differences *in*

degree between remembering, within the method of intuition we should be seeing it in terms of differences *in kind* – how are we remembering *differently*. In doing so, then, the investigation becomes no longer a matter of ‘uncovering’ the problem, but in *finding* it. On the other hand, methodologically, intuition requires a shift of conceptual gear, to try to distance ourselves from the modes of thought and conscious-perceptual and conceptual lenses through which we tend to view the world, and move closer toward a closer, less attentive understanding it within ‘the real’ – which is, to say, for Bergson, as lived in duration (1946, pp. 162-163). “It is reality itself, in the profoundest meaning of the word”, Bergson thus argues, “that we reach by the combined development of science and philosophy” (1925, p. 210). In anticipation of the subsequent Theory Chapter, the chapter ends by introducing Bergson’s theorising on duration.

The Theory: Memory, Method and Mediation

The Theory Chapter is split into three sequential parts. Part One, forming the substantial body of the chapter, aims to develop a working non-archival philosophical approach to individual and collective remembering and its relationship with technology – chiefly through readings of Bergson’s and Simondon’s theorising on memory, consciousness and technology. Thusly equipped, Part Two aims to shift to some degree away from the conceptual power of metaphors in thinking memory – attempting the proposed notion of the *anarchive* to formulate an ‘anti-metaphorical’ conceptual tool with which to apply this approach to remembering through empirical investigation. In Part Three, the chapter begins to set out how we might now apply these modes of thinking to our investigation – sketching out the argument around a contemporary ‘struggle to remember’ that will be progressed through the subsequent Case-Study Chapters.

The theoretical basis of the thesis is chiefly grounded in Bergson’s theory of consciousness, memory and perception as set out in his 1896 work *Matter and Memory* (2004). Part One begins with Bergson’s crucial rejection of the shared notions of both idealists and realists that perception be concerned with “*pure knowledge* ... [that] to perceive means to know” (Bergson, 2004, p. 17). Acknowledging Bergson’s notorious observation that “[t]here is no perception which is not full of memories” (2004, p. 24), the thesis instead develops a comprehensive understanding of his view of memory and perception as an evolutionarily-informed, inter-relational phenomenon of the body as an affective “centre for action” in duration (Bergson, 2004, p. 4). For Bergson, memory and perception do not inform *knowledge*, but rather serve *useful action* for the being, in the

present (Bergson, 2004, p. 21), in anticipation of the future.⁴ Latent “pure memory” is realised through affective movements – through and with perception of one’s environment – allowing beings, through recognition, to use *past* experiences to inform useful actions within *present* experiences (Bergson, 2004 p. 70). In higher animals, beyond more basic recognition and impulse-action, pure memory may be psychically realised into a consciously discernible “memory-image” (Bergson, 2004, pp. 93-94). And what we might characterise as *consciousness* may be mainly understood as the ability, through perceiving such memory-images, to *choose* how to act – “[T]he chief office of consciousness”, Bergson argues, “is to preside over action and to enlighten choice” (2004, p. 182).

Here, through a reading of Simondon, the thesis attempts to develop Bergson’s thinking on memory into the wider social or collective realm, relating this understanding of remembering to two key Simondonian concepts: *individuation* and *technics*.

Firstly, it abstracts Bergson’s notion of pure memory into the original conception of ‘memory-potential’ – a kind of ‘always at-the-point-of-being-realised’. In doing so, it draws the tentative conceptual parallel between Bergson’s theorising on a kind of vital impetus of *élan vital* and Simondon’s notion of the *pre-individual*. This, for Simondon, is a condition of constant potentiality, the initial state of (almost) *being* that precedes the *individual*. Out of a state of potentiality, two senses of what we think of as ‘stable’ consciousness may relationally emerge. On the one hand, a bodily sense of *self-awareness* akin to Bergson’s thinking on consciousness may be realised through continuous, *relational*, voluntary movements of affective interaction with one’s physical environment – the body differentiating itself from its surroundings through *psychic individuation*. On the other hand, a sense of *the individual* may be realised out of an inter-affective feeling of ‘the social’ through movements of *cultural* relation – the sense of the ‘grouped individual’ emergent out of its perceived group through *collective individuation*. Both forms of individuation, we will see, are made possible through conceptions of historicity, to various degrees: psychic individuation allowing a stabilised sense of *self* through a relation of the body, in its perceived present (in duration) to its own experienced past and anticipated future; and collective individuation through a communicative relation of *ideas* of a groups historical past and potential future to the ‘social *now*’. The thesis then draws on Simondon’s thinking on *technics*, and the agencies inherent in “man-machine”

⁴ “That which I call my present”, Bergson notes, “is my attitude with regard to the immediate future; it is my impending action” (Bergson, 2004, p. 180).

coupling and technologically-enabled individuation (Simondon, 2017), on the one hand to progress our understanding of memory in relation to new technologies, and on the other move to situate it within a wider socio-politically relational context. It is through the technologically-mediated, inter-affective realisation of memory-potential that collective individuation may occur, the thesis argues. And affectivity, as has been noted by philosopher Brian Massumi, by its very inter-relational nature cannot be easily separated from politics (2015). Thus, the thesis suggests, it is not enough for the investigation to focus on differences to the *experience* of remembering in the online era. Rather, our approach to the memory-technology relationship must be contextualised firmly through an appreciation of the wider socio-techno-economic ecologies with and through which remembering takes place.

This theoretical position established, Part Two attempts to develop a useful, concise, conceptual tool with which such an understanding of memory and the memory-technology relationship might be used to approach the research question in a real-world context. In direct opposition to the metaphor of ‘memory as archive’, the thesis considers recent thinking by leading affect theorists (SenseLab, no date a) to propose the *anarchive* as an appropriate conceptual ‘anti-metaphor’ for this purpose. Within such a conceptualisation, it observes, the research focus plainly becomes no longer the differences to the *content* or the supposed *amount* of twenty-first-century remembering, but rather the differences for those anarchival *processes* and *movements* of remembering, in duration, in the online era.

In the final section of this chapter, Part Three briefly sketches how we might use our anarchival approach to memory to move toward kind of political economy of remembering in the online era. Through such a synthesis, it anticipates, we may move toward finding what is at stake for remembering in the digital age. Intended as a foundation for the case-study investigations, the section draws attention to the various relational agencies of bodily, social and technological drives when remembering through new, online, surveillance technologies such as search engines or social media platforms. Remembering through these interfaces, it argues, involves a shifting imbalance toward, or tensions or struggles between, numerous cultural, economic or technological agencies in the man-machine coupling – some more clandestine and perhaps more insidious than others. This, it argues represents an altogether new problem for memory. In uncritically living through these technologies, the section speculatively suggests, we risk surrendering agency in how we voluntarily perceive, remember and act – indeed we risk surrendering

agency in the very processes of consciousness out of which a sense of bodily *self* or grouped *individual* may emerge.

Case Study One – Me, Myself and iPhones

Forming a lead-in to the subsequent Case-Study Chapters, this chapter explores from our anarchival perspective how processes of remembering personal pasts may be experienced in their extension through new, pervasive and online technologies. The chapter takes the form of case-study analyses of remembering personal pasts through three prominent and popular apps or app features, each with hundreds of millions of active users internationally. These are: navigation app Google Maps; ‘on this day’ reminder features of Google Photos’ ‘Rediscover this day’ and Facebook’s ‘Memories’; and the ‘memorialisation’ of deceased users’ Facebook profiles. While these examples may appear to represent starkly different ways of engaging with personal memories, they are united by their common reliance on a kind of personal, online ‘archive’ of records or artefacts of past action, be they purposely or unintendedly logged – what media-memory theorist Andrew Hoskins terms “social network memory” (2009a, p. 41). Thus, with our anarchival perspective on remembering, the chapter approaches its analyses not through considering specific media *as* ‘memories’, but rather considering the ways in which, processes through which, and reasons why these archives or ‘digital footprints’ may be engaged with in the present – indeed created as records of “present events ... archived into the future” (Coleman, 2018, p. 68). What is the experience of remembering through such archives? How are perceptions of the past – indeed the remembering present – structured through these platform architectures? How is memory-potential being realised, and for what reasons? What action is informed through such memory-potential realisation, and for whose benefit?

The chapter proposes that, rather than being seen mainly spatially – archivally capturing quantified knowledge of supposed personal ‘memories’ of the past – such technologies might be better understood through a greater emphasis on temporality – the interactive platforms for anarchival *processes* of remembering in informing *action* in duration, in the present. In doing so, it shifts the conceptual approach toward ‘archives’ and data into a conceptually more inter-affective and process-based understanding ahead of the chapters to come. Furthermore, in situating remembering as a perception-informed and action-informing *experience* in the present, the chapter draws attention in each case-study example to more corporate, socio-political considerations in terms of platform

architecture – exploring the reasons underpinning why user experiences of perception and memory, in the present, may be designed in these ways.

In the first section, the chapter develops a nuanced, anarchival, process- and duration-based analysis of the experience of using Google Maps to remember one's personal past. In doing so, it employs a critique of 'Extended Mind Theory' (Clark & Chalmers, 1998) and ideas of contemporary 'digital amnesia', which rely on quantified ideas of 'loss' and 'gain' of memory. Citing Google's "surveillance capitalism" business model (Zuboff, 2019) – through which it capitalises on encouraging as-comprehensive-as-possible, user-generated and highly-monetisable production of personal data – it argues that the ever-expanding archive of search-data and GPS-location-data that such usage creates may raise significant implications for remembering in terms of agencies within the man-machine coupling.

In the second section, the chapter draws on the famous imagery of Marcel Proust's 'Madeleine moment' (1981) as a starting point to anarchivally consider the notion of involuntary memory in relation to Google's and Facebook's 'on this day' features. It again situates these experiences within the economic models of each platform, arguing that such artefactual 'reminders' act perhaps more as a way in which platforms may recycle existing records of previously shared 'presents' to stimulate profit than as a useful act of transindividual remembrance.

In the third section, the chapter considers what may happen to such data-archives once their supposed 'owner' passes away. Drawing on recent legal matters and contemporary theory, it considers how we might approach so-called 'digital inheritance' from an anarchival perspective on remembering. Moreover, it once more asks us to consider the socio-economic context of the arenas in which these acts of remembrance take place, arguing that the likes of 'memorialised' Facebook accounts may be understood primarily as a profit-making exercise and only secondarily as sites for commemoration.

Through these case-study analyses, the chapter makes the argument that memory-potential is, under these circumstances of man-machine coupling, realised not just in relation to a conventionally transindividually-perceived present environment, but in relation to a more profit-making, artificially-promoted perception – the 'pushed', monetisable *engagement* through pervasive technologies with previously-shared media content – digital, somewhat-archival *artefacts* – presented as 'memories'. Indeed, such content often encourages an engagement not so much with the needs of the potentially

more widely-perceived present – through affective co-individuation in duration – as with arbitrarily exhibited records of *past* presents. These connections are designed to promote engagement primarily with and through the platform, enabled through the ubiquity of online-connected smartphones and their capacity to affectively (and exploitatively) distract. In encouraging such a technologically-led, perception-limited engagement within one’s environment, the chapter proposes, these platforms engender a state of consciousness that is perhaps closer to Bergson’s state of ‘dreaming’ than to consciously ‘acting’ in, on and with the present (Bergson, 2004, pp. 217-220). Nevertheless, actions *are* in these cases encouraged, and it is above all these actions of *engagement with* and *participation in* these platforms – indeed, perhaps the very *movements* of remembering – informed and encouraged by such archival ‘data reminders’, that we can consider to be captured through such interfaces.

In recycling and pushing media records of previous ‘presents’ to hijack transindividual perception and realisation of memory-potential in duration, with the aim of securing or increasing app-engagement, the balance of agency in the affective man-machine coupling of remembering is compromised, creating a kind of ‘struggle’ between the co-existent and technologically-interdependent agencies of both the body and its techno-cultural extension into the social, and the more corporate-economic agencies of the platform. Platforms promote attention and action in the present that may serve to principally benefit not the remembering transindividual but the commercial interests of those corporations through whose technological platforms such remembering is enabled.

Case Study Two – Error 404: Memory File Not Found

The second Case-Study Chapter moves beyond ideas of ‘the personal’ to focus on the ways in which various apparently ‘open’⁵ contemporary online technologies such as social-media platforms, blogs and search engines may be used to collectively remember distant and more recent pasts. Through substantial theoretical discourse in a dialogue with case-study examples of recent ‘historical remembering’ online, it explores the ways in which collective remembrances might through and with new technologies be captured, rehearsed or *brought forward* as potentials for future remembering, and considers the wider socio-political and economic underpinnings of such acts of remembering. In doing

⁵ As is made clear through the chapter, while the networked communication facilitated by such platforms may appear to be semi- or even near-fully open, it seems much more closed when one considers their algorithmically-driven mechanisms through which people may access or interact with information.

so, it aims to develop a philosophical understanding more broadly of how collective remembrances in the present, of both shared pasts and more historical pasts – indeed the progressions of the former becoming the latter – may be changing in the digital era.

Considering the topic from our affective, anarchival perspective on memory, the chapter conceptualises collectivised acts of remembering within processes of collective individuation out of memory-potential. Building on existing theory, the chapter argues that, counter to the static notion of the archive as supposedly ‘capturing’ historical pasts, through anarchival acts of collective historical remembrance multiplicities of socialities are in a constant and dynamic state of always-becoming – collectively individuated and reconstituted in duration through movements of transindividual, inter-relational realisation of memory-potential. Through this conceptualisation, it argues that we may think of socialities and ‘societies’ as made up not necessarily of defined *individuals*. Rather they are constituted by memory-potential-informed *action* within affective social fields or atmospheres – these actions themselves driven by perceived usefulness to the identified ‘in-group’, in duration, through which and out of which the sense of the individual, of identity, emerges. It therefore conceptualises collective remembering not as ‘recall’ or ‘recollection’ of knowledge of shared pasts, but as active, creative, anarchival movements of collective individuation, through memory-potential-realisation, in duration, for the needs of the always-emergent sociality in the present.

The chapter thus approaches the investigation with a focus not on specific so-called ‘collective memories’ remembered through online technologies, but on the mechanisms through and with which online-facilitated collective remembering and historicising takes place: In what ways are records or media of past events being used to ‘remember’ through the realisation of memory-potential? How can we understand these from an anarchival, spatiotemporal-experience and duration-based perspective, rather than an archival, more spatial approach to collective or historical remembering – indeed in relation to the internet as a supposed ‘online digital archive’? How might we understand collective identity as reconstituted through anarchival, dynamic acts of transindividual remembering *in and for the needs of the present*, rather than perhaps more traditional ideas of collectively ‘owned’, structured, archival ‘pasts’? And what are the political implications of this? What kinds of actions are being informed through platform-facilitated, networked remembering, for what reasons? And for whom and to what degree are such actions intended to be useful?

The chapter draws on three prominent examples of collectivised remembering and historicising online in recent years to drive forward the investigation, as well as other relevant examples. These are: the 2013 ‘memeification’ of ‘unflattering’ photos of US popular music artist, Beyoncé, into ongoing acts of remembrance; Facebook’s 2016 censoring of Vietnam War photograph, *The Terror of War*; and the 2018-present UK political campaign, Led by Donkeys, which aims to ‘remind’ people of politicians’ perhaps contemporarily incongruous historical public comments. Through each section, the chapter reflects on the case studies to build a more nuanced and complex understanding of how acts of collective remembering can be understood from an anarchival perspective, and the ways in which they may be affected by remembering through new, online and pervasive technologies. Furthermore, through relating our approach to remembering to existing sociological and political scholarly thinking, the chapter builds on theory to demonstrate how an anarchival theoretical approach can help inter-disciplinarily situate ‘memory studies’ within the wider techno-social and political context of social, political, media and communications studies.

After initially describing the case study examples, the chapter is formed of three sequential sections, concerned respectively with the connectivity, temporality and materiality of collective remembering through new technologies.

Firstly, reflecting from an anarchival perspective on technology and feminist theorist Donna Haraway’s 1985 essay, ‘A Cyborg Manifesto’ (2016), the first section attempts to comprehensively conceptualise technologically-facilitated collective remembering as anarchival, arguing that, more than ‘recollecting’ or ‘preserving’ pasts, so-called ‘cultural remembering’ should be seen as identity-informing acts of collective individuation. It suggests that ‘technologies of collective remembering’, such as blogs, social media sites or search engines, should not be seen as archivally capturing ‘histories-as-data’ through increased content stored online, in cyber-space. Rather, they may be understood as platforms for more connected anarchival movements of collective individuation – affective interactions *between* data, in a plurality of technologically-mediated affective fields or atmospheres. In doing so, it conceptualises ‘culture’ itself from a Simondonian perspective as not a ‘thing’ of the past, but a process-oriented *value*, enabling social cohesion in the present.

Thus, the chapter in the second section considers how collective acts of remembrance might be understood if records of past events are considered not as potentials in themselves, but as cultural, technological vehicles *in duration* for the transindividual

realisation of memory-potential into value-informed, collectively-individuating *interaction* across these fields. Reflecting now on Raymond Williams's conception of "Structures of Feeling" (1977), it situates the case-study examples not solely as acts of identity-affirming representations of past events, but as creative, evolving, cultural, relational and thus political acts within and in relation to – indeed as a stabilisation of – the perceived 'social present'. Furthermore, it examines the *creative* nature of remembering – conceptualising acts of cultural remembrance as necessarily creative practices of socio-technologically-informed 're-versioning', out of which a sense of spatiotemporal extension of 'more than being' may reconstitute a sense of social identity in anticipation of useful action for the future.

In the final section, the chapter moves to consider the more socio-political nature of perceiving, remembering and (inter)acting through specific digital-social platforms – examining the tensions between inter-dependent agencies and drives of users, platforms and political actors within these man-machine experienced affective atmospheres of remembering. It argues that, while these technologies may offer the possibility (perhaps illusion) of augmenting anarchival memory processes, some major prevalent interfaces for collectivised remembering may represent a radical shift toward an imbalance of user-individual versus socio-technological agency, in the moment, in how socialities may (re)emerge and/or (re)constitute themselves. Taking Google search engine, the Facebook News Feed and the Twitter timeline as key examples, the chapter examines the ways in which the user's perceptions and resulting social interactions (highly conscious or otherwise) may be materially guided, limited, perhaps censored through such interfaces beyond the agencies of the user – for example, through the likes of personalised search results, algorithmically socially-tailored newsfeeds, and government or platform-specific regulation. While social media platforms and search engines may constitute starkly different experiences of collectively remembering online, both operate as business models reliant on using user- or third-party-generated content to secure continued user-engagement and participation. Thus, for both, the *content* of the media is to some extent less important for the platform than its ability to sustain user participation; the interaction informed through collectively remembering with these interfaces risks being less about facilitating useful action for the collectively-individuating, self-organising sociality, and perhaps more about ensuring the continued, monetisable user-participation.

The chapter argues, then, that through the likes of controlled and personalised platform architectures and censorial regulation we, perhaps unknowingly, surrender agency to

algorithmically-managed machine-interfaces in what is collectively remembered and why. Thus, it contends, we risk surrendering degrees of conscious agency to more ‘top-down’ corporate concerns in how and why the always-emergent sense of sociality or “true society” (De Boever et al, 2013, p. 225) in the present – indeed the very sense of personal individuality and identity brought about through such individuations – may collectively (re)constitute itself through remembrances of the past. This tension around *control* of content, however, it observes, must be considered in relation to the transindividual agencies of the user and myriad external economic, cultural and legislative agencies within hybrid media systems – as evidenced by both the spread of the likes of hate speech, and platforms’ seeming inability to control this spread. Ultimately, then, the chapter reinforces the argument that new ecologies of remembering must be considered in the context of a contemporary ‘struggle to remember’, recognising the ongoing negotiation between the charges of individual, technological and cultural drives of individuation.

Case Study Three – Facts, Fakes and Filter Bubbles

In examining the issue from the perspective of memory informing action rather than knowledge, this final Case-Study Chapter explores how ‘ideas of the past’ out of which collectives may be emergent, or through which they re-establish themselves, need not be truthful representations of past events at all. Rather, abstract memory-potential may be realised into a memory-image of false, imagined pasts – its purpose being not to *recall* experience of specific pasts but to *use their potential* to facilitate useful action for the individuating being in the perceived present. Furthermore, in examining the technological mechanisms through which such ‘remembering’ takes place, the chapter argues that a contemporary seeming proliferation of fake news should not be seen (only) as a supposed ‘crisis of truth’. Rather, through the management of user experience, it may be understood as a hijacking and encouragement of processes of remembering and individuation by, and for the benefit of, the social media platforms through which these processes take place.

The chapter initially relates our anarchival approach to remembering to findings of psychological research on so-called ‘false memory’. It seeks to conceptualise false memory as a by no means new process in which movements – or the *feeling* – of the emergent memory-image being realised out of memory-potential are moulded, perhaps exploited, through perceptions of media content – older (e.g. language) or newer (e.g. online ‘fake news’). The influence of this media content may be drawn from the past or perceived in the present, and the resulting memory-image thus informed – perhaps somewhat usurped – by the affectations of the media image. Yet what *is* new are the

online media technologies through which false memories may today affectively manifest themselves. This being the case, the investigation concerns itself not with the *content* or *abundance* of fake news, but rather the psycho-socially- and economically-informed ecologies of remembering and acting, through which fake news content may emerge, spread, and indeed ‘go viral’. In what ways, and for what reasons, does (false) remembering spread through new infrastructures of memory such as social media platforms? How might these look different from an anarchival rather than archival approach to memory? What kinds of action are informed by remembering in these ways, and for what reasons?

Examining multiple examples of apparent ‘online false memory’, the chapter argues that – beyond a perceived usurpation of social *belonging* – anarchival processes of memory and action, indeed consciousness, are being hijacked by more neo-liberal corporate web platforms, and by widespread actors who seek to capitalise on such mechanisms. Through the management of user experience, intended or otherwise – and with content veracity, as we have seen in previous chapters, often seemingly as a secondary concern – not only perceptions may be manipulated, but *choice of action* may be reduced toward impulse, shifting the balance of agency within our man-machine-coupled participation in ‘remembering’. Actions are encouraged within technologically-facilitated, more impulsive and – in Bergsonian terms – somewhat “closed” socialities (Bergson, 1935), principally not for usefulness to subjects-as-users themselves, but for the financial advantage of those platforms through which remembering takes place, and for the economic, cultural or political advantage of wider agential interests.

The chapter makes its claim through four inter-related steps.

Firstly, it contextualises the matter in considering the ways in which people may succumb to demonstrably false shared beliefs, and how this might be understood from our affective, transindividual, collectively-individuating approach to remembering. For the purposes of the investigation, it conceptualises personal belief as a memory-potential-informed process – the realisation and discernment of a memory-image being a process of ‘making sense’ of a present perception, based on past experience, *and* in trusted anticipation of most useful action for the perceived individuating self.

Secondly, the chapter draws on case-study examples to situate this conception of belief in false pasts within a wider social framework, exploring the phenomenon of false memory in terms of the increased connectivity of the internet age. In line with our

synthesis on social remembering, it argues that we might see online-communicated beliefs in false pasts not in terms of the *content* of those beliefs, but in terms of the processes of sociality-informing collective-individuation that may (re)emerge through their being shared.

Thirdly, the chapter examines how the psycho-social, sociality-informing processes through which memory may *spread* online through media content might be understood from an action-driven perspective on remembering. Drawing on several recent examples of online viral content, and considering it in relation to Bergson's thinking on the social-evolutionary 'sources of morality' (Bergson, 1935), the chapter develops a nuanced, novel understanding of the sharing of fake news as an often-impulsive, socialised act of moral obligation, amplified through increased connectivity and instantaneity of pervasive, online media.

Equipped with this critical understanding, the chapter fourthly considers how these processes of perceiving and acting may be influenced through the affective materiality of new social media technologies. It draws attention to key issues around how action is informed, facilitated and enabled through perceptions granted by such interfaces in their user experience, and examines the ways that these may be more widely (ab)used, through misinformation, 'fake news' or propaganda, beyond the mere user-engagement economic agencies of the platforms themselves. In doing so, it furthers the argument of a 'struggle to remember' as one not only between techno-economic agencies of the platform-as-business and techno-cultural agencies of the user and wider cultural authorities – between 'users and big tech'. Rather, in designing feed-forward surveillance-technology platform architecture to increase impulsive action in supremacy to conscious choice, the chapter reflects, platforms enable the anarchival processes memory-potential into sociality-informing action to be harnessed not only for their own monetisable gain, but for socio-political and commercial gain of those actors able to take advantage.

Conclusion and Discussion

Following on from the case-study investigations, the Conclusion Chapter has chapter has two aims. Firstly, summarising what has been discussed in the Theory Chapter and through philosophical inquiry into how we are remembering *differently* through new technologies in the Case-Study Chapters, it aims to now properly state what has been found to be the overriding 'problem' for memory in the online era. Secondly, it aims to speculatively, and if only briefly, gesture toward possible *solutions* to the problem.

The problem for remembering through new, online and networked technologies, the chapter argues, is two-fold. Firstly, through the adoption of prevalent and pervasive surveillance technologies, encouraging connection, engagement and participation over *useful action for the transindividual*, we risk an imbalance of transindividual agency in these man-machine couplings. Through the ubiquitous use of these platforms, users and indeed wider societies risk surrendering consciousness-informing agency of *choice* – in how they perceive, remember and *act* in the present – to more corporate or special-interest actors. Secondly, beyond the economic drives of the platform-as-corporation, and the cultural drives of its model's wider socio-political-economic interdependents, this problem has been made possible through a lack of awareness (i.e. perception) on two fronts. On the one hand, a lack of awareness of the function of memory in informing transindividual *action* rather than individual *knowledge* (or collections of individual knowledge); and, on the other hand, a lack of awareness (indeed transparency) of the more covert mechanisms of surveillance-capitalist business models, which are otherwise presented as open and free-to-use technologies.

Yet the potential cause of the problem equally suggests potential solutions. In acknowledging that a lack of cultural awareness on the concept of memory and the economics of contemporary technology may lead to one's exploitation in these regards, the chapter argues, it seems straightforward to suggest that a move to increase awareness may shift the cultural-social and thus cultural-technological drives toward new modes of technological living. While acknowledging that the power of the archive metaphor may persist in making it difficult to shift cultural perceptions on how we conceptualise 'remembering', the chapter points to several movements within technology-design ethics, government legislature, indeed apparent grassroots public pressure (or 'the market'), that suggest stirrings toward a greater awareness of surveillance capitalist models, and thus greater potential agency of the user within the technological couplings they may facilitate.

---oo0oo---

Literature Review: Existing Debates and Introduction the Theory

As outlined in the Introduction, this chapter aims to lay the groundwork for a non-archival approach to considering what may be at stake for memory in the online era through four steps – considering broadly, conceptually and academically, where have *come from*, where we are *at*, where we may now *go*, and *how*.

Drawing on a range of sources, Part One aims to contextualise the research through briefly setting out some of the key conceptual and methodological thinking informing prevalent, contemporary approaches to thinking and studying memory. In Part Two – forming the more substantial part of the chapter – it attempts to thematically and concisely outline prevalent academic and more popular debates around how new, internet-enabled technologies may be changing processes of remembering. In Part Three, the chapter argues that, through the thematic analysis, we may identify a predominant supposed problem or question in the literature of whether we are today remembering ‘less’ or ‘more’. It critiques the philosophical assumptions underpinning such a problem, suggesting that they may be uncritically reliant on a questionable European-historical assumption that memory operates like an archive. It then identifies and interrogates various disputable tendencies of thought within the literature, which it argues are informed through an uncritical dependence on the archival model. In Part Four, the chapter draws on the philosophical method of *intuition* to make two related interventions in a shift away from the creative metaphor. Firstly, to reorient the inquiry to be one not concerned *quantifiably* with whether we are through new technologies remembering less or more, but rather *qualitatively* with how we are remembering *differently*. And, secondly, to argue that, in order to properly empirically analyse the ways in which we are remembering through new technologies, we must put a focus on how processes of remembering can be considered not in terms of supposed *knowledge in space*, but experience of *processes in time*. Thus, it introduces Bergson’s thinking on *duration* as the ‘flow’ of the present, laying the foundation for a development in the subsequent Theory

Chapter of his non-archival, non-representational thinking on remembering as not informing knowledge, but serving *action* in duration.

Before we undertake these steps, however, it is first useful to set out the contemporary context of the research project within the *study* of memory. What follows, then, represents an effort to briefly outline and historically contextualise conventional modes of thinking about memory in contemporary European-Western culture. For the benefit of the reader, and in order to accommodate the length of the subsequent philosophical investigation, this section – indeed this chapter in general – aims to keep itself comprehensive but concise. Thus, it seeks to provide an inclusive and broad literary and topical scope, yet with an attempted stylistic emphasis on succinctness.

--o0o--

1. Thinking Remembering: Memory Concepts and Memory Context

This section does not aim to provide a comprehensive overview of the recent history of studying memory. Nor would word-count or research-focus permit such an endeavour. Rather, acknowledging its limitations, it draws attention to selected thinking informing present-day *conceptualisation* and study of memory, seeking to thus effectively historically-conceptually contextualise the contemporary debates with which we shall then engage, and the ensuing philosophical inquiry.

Looking Inward

Today, ‘memory’ is a wide-ranging field of study, encompassing subject areas across the sciences and humanities. Memory has been contemplated by philosophers for at least thousands of years (as we shall discuss later in the chapter), yet its consideration in what we might think the *scientific era* may be traced to the late-nineteenth-century German philosopher, Hermann Ebbinghaus (1885). “The path to the modern era was set” (2001, p. 13), psychologist Daniel L. Schacter claims, when Ebbinghaus conceived that “memory, like sensory perception, could be studied using the methods of science” (2001, p. 13). Ebbinghaus’s research might equally be considered a study in *forgetting*, focussed, as it is, on the rate at which a learnt list of nonsense syllables may be recalled over increasing time-periods – leading to the graphically-charted notion of the ‘forgetting

curve'. Social scientist Alan Radley characterises such an approach to conceptualising and studying memory as “the specific communicative context of dispassionate, accurate reporting, usually dealing with materials that have very little personal significance for the rememberer” (1990, p. 42).

Ebbinghaus's tradition would hold dominance within the developing field of experimental psychology for several decades, until the intervention of Frederic Charles Bartlett in his 1932-published book, *Remembering*. Bartlett criticises Ebbinghaus's approach precisely *because* of its seemingly-celebrated removal of subjectivity from test materials. Importantly noting that Ebbinghaus's method might be considered as restricting the study of memory to “a study of the establishment and maintenance of repetition habits” (1932, p. 4), Bartlett argues that to remove conditions of subjectivity from the test “is to ignore dangerously those equally important conditions of response which belong to the subjective attitude and to predetermined reaction tendencies” (1932, p. 4). Through including more subjective material into studies of remembering, Bartlett's contribution to the field may be understood as demonstrating that what an individual more readily remembers may be attributed to its subjective meaning when perceived, and – perhaps more importantly – that the differences between what one perceives and later recollects may be affected by ‘schemata’. Bartlett showed that, through these mental expectations or structures out of one's cultural background, what we perceive and what experience as memories are at least partly imaginatively *constructed* in relation to our present and social relation to, and conceptual understanding of, the world.

As more systematic approaches to psychology gained traction through the later twentieth-century, rather than a rejection of imposing de-subjectified variables, Bartlett's work would be seen through a lens of simply creating a *wider* set of testable variables – creating, as psychologists David Middleton and Steven D. Brown note, “exactly the kind of dualism between individual and the social settings in which they act that Bartlett strove to resist” (2005, p. 16). Moreover, with the development of more cognitive-scientific approaches further into the century, rather than a Bartlettian “ongoing dynamic adaptation between people and their physical and social environment” (Middleton & Brown, 2005, p. 16), Middleton and Brown note, schemata become understood as fixed kinds of “knowledge structure stored in the brain or mind of the individual to assist in the interpretation of experience” (2005, p. 16).

While the idea of a memory “engram” – individual ‘traces’ of information encoded in the brain, representing memories – had been proposed half a century earlier (Semon, 1904),

the developing ‘cognitive revolution’ in neuroscience of the mid-twentieth century saw a shift into memories being encoded across distributions of neuron activity in the brain. For example, following years of research focused on the removal of brain tissue in rats, neuropsychologist Karl Lashley concluded that memories may be stored in distributed neural *structures* across the brain (1950). Similarly, Donald Hebb postulated that engrams might be understood as the groupings of multiple neurons, firing collectively, arguing “any two cells or systems of cells that are repeatedly active at the same time will tend to become ‘associated’ so that activity in one facilitates activity in the other” (1949, p. 63). And both theories can be considered bolstered by later research into memory *consolidation* and brain *plasticity* emerging out of the 1970s through to today (Bruehl-Jungerman, Davis & Laroche, 2007).

From such a position, we may begin to understand and recognise the more *systems-based*, computer-processor-brain models of memory developed in the emergent information age of the following decades (and still popularly dominant today), in which memory may be understood as *information* that is *encoded* and *stored* in the brain, whence it may later be *retrieved*. Indeed, it is important to note that cognitive approaches to remembering are explicitly modelled around metaphors of the computer – media-memory theorist Andrew Hoskins (2011, p. 19) points us to psychologist Henry L. Roediger III’s observation that, of various historical and more recent analogies for understanding memory, “[a] number of the most prominent analogies ... have been derived from the technology of record keeping and human communication” (1980, p. 244).

In 1968, cognitive scientists Richard Atkinson and Richard Shiffrin proposed their ‘multistore’ or ‘modal’ model of a three-stage memory system (1968). In this perhaps now-commonly-familiar cognitive model, information about the world perceived by the body enters the system through *sensory memory*. If attention is paid to this information, it then enters *short-term memory* (or working memory), whence, if the information is ‘rehearsed’ or ‘repeated’, it is encoded into the *long-term memory*. A few years later, cognitive neuroscientist Engel Tulving would develop this notion of long-term memory-storage into two different kinds of stored and categorised memory-as-information: episodic, as the retrieval of information about *events*; and semantic, as the retrieval of more general *facts*. And with the advent technologies like fMRI, new ways have been found to seemingly *measure* memory by studying changing brain processes (Shulman, 2013, pp. 17-18)

It is important to recognise, however, that throughout the recent development of psychological and neuroscientific approaches to conceptualising and studying *individual* memory, parallel academic movements were being made in approaching the more *social* aspects of remembering.

Looking Outward

In the years before Richard Semon's conception of the memory engram, Henri Bergson had forcefully argued against viewing memories as 'things' that may be scientifically measured and stored in the brain. Instead – as we shall explore in more detail further below and in the Theory Chapter – in *Matter and Memory* Bergson argues for a philosophical-psychological approach that sees perception, remembering and consciousness as processes of a physical and social body as *centre for action* in duration (2004), affecting and being affected by bodily and external stimuli. Indeed, as psychologist Steven D. Brown notes, following Bergson, and echoing Bartlett, the notion of *affect* is important in approaching remembering:

[W]hilst it is undoubtedly the case that the brain is involved in some way in remembering (as indeed it is in all human acts!), the activity is also mediated in innumerable other ways (by language, by writing, by the contribution of others, by tools and artefacts – to list only a few). (2008, p. 269)

A handful of years before the Bartlett's *Remembering* was published, French sociologist Maurice Halbwachs would publish a concept of *collective memory*, which does not belong to the individual but to its associated milieu or 'cadre' (1925; 1950). A former student of Bergson, and heavily influenced by sociologist Emile Durkheim, Halbwachs proposed that, beyond bodily memory, groups or societies may hold their own form of memory, through (what we may think of as *episodic*) social practices of remembering social pasts – “[A]ll remembering relies on the dynamics of groups such as families, social classes, and religious communities” (Russell, 2006, p. 796) – irrespective of whether the individual experienced the events. As literary scholar Nicholas Russell summarises, “An individual's social interactions with the members of his or her group determine how one remembers experiences from the past and what it is that he or she remembers” (2006, p. 796).

Through the introduction and development of the notion of collective memory – particularly following the 1980-publishing of an English-language translation of Halbwachs's 1950 *On Collective Memory* – we may see a move toward the study of

memory in the latter half of the twentieth century as a discipline within *social theory* (Misztal, 2003). And we may see the influence of thinking in terms of collective memory, in combination more directly with Bartlett's thinking, in concurrent theorising in social psychology (Middleton & Edwards, p. 2) – blurring the boundary between what may be considered the individual or the social. Furthermore, the conception of memory as *social* lent itself readily to its consideration within social anthropology (Connerton, 1989), as well as within the emergent field of cultural studies in the mid-late twentieth century – with cultural studies and what would become 'memory studies' seemingly sharing the mutual tendency toward “[going] to the heart of many of the issues at the forefront of contemporary political debate and struggle” (Radstone, 2008, p. 32). Halbwachs had been careful to distinguish between *collective memory*, as a kind of social-episodic memory of the group, and what he called *history* – the more semantic remembering, through “traditions, transmissions, and transferences” (Assman, J., 2008, p. 110), or “just a set of facts” (Russell, 2006, p. 800). Following the emergence and development of cultural memory studies over the later decades of the century, however – which places an emphasis on the significance of more cultural-historical aspects of collective remembering – cultural memory theorists Aleida and Jan Assman proposed that collective memory should be understood as two kinds of memory: “communicative” and “cultural” (Assman, A., 2006; Assman, J., 2008). In this respect, *communicative* memory may be seen as informing a kind of identity around the Halbwachsian “social self, person as carrier of social roles” whereas *cultural memory* may be seen as informing a sense historical or mythical *cultural identity* (Assman, J., 2008, p. 109). Jan Assman thus expresses a three-level conceptualisation of time, identity and memory – as *individual* (informing a “neuro-mental”, subjective sense of time and identity of “inner self”), *communicative* (informing a sense of social time and identity) and *cultural* (informing a sense of historical time and cultural identity) (Assman, J., 2008).

In fact, Assman and Assman's conceptualisation is not a million miles away from the conceptualisation we shall develop in the following thesis. Acknowledging that, while “[t]he distinction of different forms of memory looks like a structure ... it works more as a dynamic, creating tension and transition between the various poles” (2008, p. 113), Jan Assman makes clear that memory should be seen neither as totally open nor totally closed. And it is in an embrace of the human subject, as beyond closed body or system, as what affect theorist Brian Massumi has called “a leaky ‘box’” (2002, p. 203) – and the affective, relational synthesis of *time* as experienced by the bodily and social being – that

this thesis bases its conceptualisation of memory, consciousness and identity. Yet, in doing so, this thesis places an emphasis not on the differences between individual, communicative and cultural processes and drives of remembering, but on the ways in which one might conceptually be seen to bleed into another, and how these processes of remembering may be technologically facilitated.

We cannot here offer a comprehensive overview of the fields of collective or cultural memory studies.⁶ Rather, what this section hopes to communicate is the broadening of ‘memory studies’, throughout the later twentieth century and into the twenty-first, to encompass concerns perhaps more traditionally viewed within the fields of anthropology and history – as well as indicating how these may relate to more philosophical considerations about what memory *does* in the first place.

Moreover, in its relation to the *cultural*, we may think that memory studies finds itself also firmly within the study of media and technology (Garde-Hansen, 2011, pp. 28-29) – those vehicles through which the experience of culture is made possible. As film historian Miriam Bratu Hansen notes, “[W]hether we like it or not, the predominant vehicles of public memory *are* the media of technical re/production and mass consumption” (Hansen, 1996, p. 310). Thus, in a shift from private to more publicly mediated through new, digital and online-networked technologies, we might begin to think memory in terms of what media theorist José van Dijck calls “mediated memories” (2007) – what media theorist Joanne Garde-Hansen and others have called “digital memories” (2009), or what for Hoskins can be thought as the “mediatisation” of memory (2009a).

The conceptualisation and study of memory, then, can be understood as informing, and informed by, numerous modes of thinking – perhaps most significantly expressed in the seeming division between memory as a biological act of the body versus a communicative or cultural act within society. Yet the fractured or fragmented nature of such a field leads to fewer possibilities for more ‘joined-up’ thinking on the relationship between remembering and the biological, social and technological. While neuroscientific and some psychological approaches may perhaps necessarily privilege the role of individual memory, the legacy of Halbwachs’s aim “to prove that it is an illusion that our memories are independent” (Miształ, 2003, p. 53) can perhaps be seen in a perceived “reluctance to

⁶ Though a thorough and useful overview may be found through Jeffrey K. Olick, Vered Vinitzky-Seroussi and David Levy’s *The Collective Memory Reader* (2011). And useful introductions may be found in Astrid Erll’s *Memory in Culture* (2011) and Joanne Garde-Hansen’s *Media and Memory* (2011).

engage with memory-in-the-head” across media studies, cultural studies and sociology (Hoskins, 2011, p 21).`

While such divisions may remain, a focus on *media* may offer possibilities for more unifying approaches. We highlighted in the Introduction Chapter that Gilbert Simondon resists distinct categorisations across subject areas, favouring approaches that offer more ‘joined-up’ analysis. Hoskins argues that – precisely because of the development of new, online technologies, introducing new ways to analogically or metaphorically *think* memory - some of the “reliable dichotomies of memory and memory studies, the individual and the collective/social, the public and the private, and memory in-the-head and in-the-world, are increasingly insolvent” (2011, p. 29). Indeed, this thesis follows Brown’s argument that – while there is “certainly a renewed sense of two cultures in the air” (2008, p. 269) – the “distinction between ‘memory science’ and ‘memory studies’ seems ... to be overdrawn” (2008, p. 269).

Moreover, following Brown, we may think that it is through the very “notion of *mediation*” (2008, p. 261; italics my own) of memory that the possibility may emerge for a more unified approach in the memory-studies “community-to-come” (2008, p. 261).

It is from this perspective then, that we now come to outline key, prevalent academic and more popular commentary on the role new technologies may be playing in changing memory processes.

--o0o--

2. Memory and New Technologies: Commentary

In the 1960s, Marshall McLuhan, one of the pioneers of media studies, famously observes that “[s]ocieties have always been shaped more by the nature of the media by which men communicate than by the content of the communication” (2011, p. 23), and, while such arguably techno-determinist thinking has been since critiqued for its tendency toward reductionist, cause-and-effect theorisation (Murphie & Potts, 2002), the age of networks, distributed communication and increasingly pervasive media has brought with it novel (or seemingly-novel) perceived implications as to what might be at stake for memory, raising significant questions concerning exactly what it now means to remember, at both a social and an individual level.

In Part Two of this chapter, we briefly examine key, contemporary, prevalent, popular and academic commentary around the relationship between memory and new technologies. Through outlining wide-ranging discourse on the matter, the section aims to identify what core *problems* or *questions* may be understood to exist for memory in the online era. ‘Memory studies’ of course intersects with a spectrum of other fields. Thus, to establish a dialogue between commentary, Part Two borrows from Assman’s conceptual distinctions to *loosely* frame discussion across the overlapping classes of *individual*, *communicative* and *cultural* memory. Through a review of these commentaries, the thesis aims to lay the groundwork for more thorough, critical engagement with their emergent themes through the later Case-Study chapters.

Changing Your Mind: Individual Memory, Extension and Amnesia

The ways in which *biological* memory processes may be changing through engaging with new, online technologies has received much academic and more popular attention as online hardware-technologies have become more ubiquitous and connective media more pervasive in recent decades. In this section, we examine selected popular commentary on the matter, digging deeper to relate it to more academic, supportive literature, and contextualising it within conceptualisations of memory as outlined in Part One. It aims not to give a comprehensive overview of *all* commentary in the field, but rather seeks to assess the ‘lay of the land’ by way of prevailing debates, so that in Part Three we may begin to appraise such positions on their philosophical integrity.

New, connected, mass-media-storage technologies of course are changing habits of personal remembering. As we have moved into increased use of high-volume or cloud-based digital media storage, van Dijck notes that our seeming “memories” are increasingly mediatised in digitally stored and retrieved photos, videos (2007) – and now, through the “self-archiving phenomenon” of social-media technologies, more public (Garde-Hansen, 2011, pp. 80-83). Equally, considering the notion of traditional memory aids, Paul Longley Arthur, Research Fellow at the Australia Research Institute, notes:

Where once we kept such things in handy notebooks – or in our heads – they are now stored and accessed digitally ... We are increasingly dependent on memory banks that are external and separate to do the memory work for us. (2009, p. 56)

And, beyond where media-objects are *stored*, the ways in which data is *retrieved* have radically changed over the last twenty years. Following the development of search

engines since the 1990s, and the emergence and popular take-up of smartphone since the mid-late 2000s, the ways in which people access information about the world may be increasingly through the seeming databases of Google or Bing. Thus, memory theorist Anna Reading talks about the smartphone as enabling “wearable memories”, where “*wearability* ... means that the phone is increasingly being used as and experienced as, an extension of the embodied self” (2009, p. 82).

Popular science-technology writer Nicholas Carr made headlines in 2008 with his pop-science article, ‘Is Google Making Us Stupid? What the Internet is Doing to Our Brains’, in which he speculates that internet technologies might be “tinkering with [the] brain, remapping the neural circuitry, reprogramming the memory” (2008). Central to Carr’s anxieties is the notion of plasticity of the brain, and a cognitive ‘systems-based’ approach to conceptualising perception and memory. Indeed, he explicitly relies on the computer-brain metaphor to argue that:

if ... you were to set out to invent a medium that would rewire our mental circuits as quickly and thoroughly as possible, you would probably end up designing something that looks and works a lot like the Internet ... the Net may well be the single most powerful mind-altering technology that has ever come into general use (2011, p. 116)

For Carr, internet use ‘wires’ the brain into a permanent mode of distraction. And, seeing *attention* cognitively as “[t]he key to memory consolidation” (2011, p. 192), he concludes that we risk facilitating widespread amnesia through prolonged internet use: “If we’re unable to attend to the information in our working memory, the information lasts only ... a few seconds at best. Then it’s gone, leaving little or no trace in the mind” (2011, p. 193).

While Carr’s concerns about attention (and resulting problems for memory) we might be tempted to consider the stuff of popular conjecture, academic discourse is established around how plasticity of the brain may be affected by changing processes of attention through using new technologies. Postmodern theorist N. Katherine Hayles, for example, argues that an increase in using distracting media has led to a “shift in cognitive styles ... between deep attention and hyper attention” (2007, p. 187). Deep attention “is characterized by concentrating on a single object for long periods”, Hayles notes, “ignoring outside stimuli while so engaged, preferring a single information stream, and having a high tolerance for long focus times” (2007, p. 187). Hyper attention, conversely, “is characterized by switching focus rapidly among different tasks, preferring multiple

information streams, seeking a high level of stimulation, and having a low tolerance for boredom” (2007, p. 187). Claiming that “human beings are born with their nervous systems ready to be reconfigured in response to the environment” (2007, p. 192), Hayles claims that the distraction-value of new technologies (rather than simply *time spent* using them) on brain plasticity has led to a generational shift toward hyper attention, and thus to a rise in attention deficit disorder and attention deficit hyperactivity disorder. Accordingly, she considers how education programmes may adapt to accommodate increasing levels of hyper attention into the future.

Equally drawing on the risks of new, online technologies through brain plasticity, neuroscientist Susan Greenfield, argues in her pop-science book *Mind Change* (2015) that we risk a kind of “source amnesia” (p. 253) through our increasing reliance on search engines. In a seeming conceptualisation of memories as sequential and sectionalised, Greenfield argues that, when caused by brain damage, source amnesia inhibits a subject’s ability to form *narrative* out of their past:

[A]ll your memories will blur instead of being compartmentalised into specific incidents. You may remember a fact but not how and when you learned it. Your recollections would be more like the memories of a small child or a non-human animal. (2015, p. 254)

Likewise, Greenfield claims, search engine use may cause unhelpful changes to the plasticity of the brain. “Without a personalised conceptual framework that enables us to use the Internet to frame and think about open-ended and difficult questions” (2015, p. 256), Greenfield claims (with seemingly remarkably little interest in *human* agency and experience in such interactions), “we run the risk of being passively driven by isolated facts as we lurch from one disconnected screen experience to the other” (2015, p. 256). Once more, Greenfield argues that such experiences affect the brain’s structure and capacity for “deep thought, and thus we fail to construct the adequate conceptual framework that gives the world around us meaning” (2015, p. 257).

Similarly, archivist Caroline Brown (2013, p. 86) points us to eminent heritage scholar David Lowenthal’s claim that “Surfing the Web ... shortens attention spans, interrupts cognitive flow, mangles literary structure and privileges action over reflection ... [which is] inherently destructive of memory” (Lowenthal 2006, p. 62).

Others, however take a different view on the supposed “outsourcing” of memory to the Web” (Carr, 2011, p. 191) – arguing that it may be seen not necessarily as a hindrance to biological memory, but a cognitive *extension* of memory.

In their seminal, 1998 work on the theory of ‘The Extended Mind’, philosophers Andy Clark and David Chalmers propose a theory of ‘active externalism’ of the mind – arguing that technologies should be seen under some circumstances not just as tools but as actual *extensions* of the mind. For theorists following this approach, the practice of memory does not take place solely within the head but also outside of it, working through and with new *mnemo-technologies*. When engaging with particular types of technology, Clark and Chalmers reason:

[T]he human organism is linked with an external entity in a two-way interaction, creating a coupled system that can be seen as a cognitive system in its own right [...] whether or not it is wholly in the head. (Clark and Chalmers, 1998, pp. 8-9)

To support their position, Clark and Chalmers propose a thought experiment, involving two fictional characters, Inga and Otto, each of which wishes to visit an exhibition at the New York Museum of Modern Art. Inga thinks for a moment about the location of the museum, before recalling the address and making her way there. Otto, however, suffers from Alzheimer’s disease and, struggling with remembering, relies on a notebook in which he notes new information. Otto engages his notebook, finds the location of the MoMA and makes his way there. Taking a recognisably cognitive approach, the only difference, Clark and Chalmers contend, between Otto’s and Inga’s scenario is that Inga processes her memory recall in her mind, whereas Otto recalls through his notebook:

[I]n relevant respects the cases are entirely analogous ... the notebook plays for Otto the same role that memory plays for Inga. The information in the notebook functions just like the information constituting an ordinary non-occurrent belief; it just happens that this information lies beyond the skin. (1998)

While Clark and Chalmers’s work was the first to propose a concept of extended cognition, in truth we may also see similar cognitive conceptualisations through the pioneering human-computer-interface (HCI) work of electronic engineer Douglas C. Engelbart, who established the Augmentation Research Center in the 1960s – credited, among others, with the development of the computer mouse and hypertext. Key to

Engelbart's thinking on "augmenting human intellect" is the notion of "process hierarchies" (1962), and the cognitive notion of HCI collaboration between human processes and machine processes in an "*integrated system*" (1962; italics my own).

Today, perhaps sensationalised claims have equally been made around the possibilities for augmenting cognition through twenty-first-century technologies. Elon Musk, founder of human-brain-interface company Neuralink (as well as SpaceX and Tesla), told the World Government Summit in 2017 that he expected to see in the near future a "merger of biological intelligence and digital intelligence", whereby implanted technologies inside the head would help humans to control the vast, high-speed capabilities of artificial intelligence (Khaleej Times, 2017). Similarly, Facebook CEO Mark Zuckerberg announced in the same year at the F8, Facebook's annual developer conference, that the company was working on brain-computer-interface technology that would "one day let you communicate [with others] using only your mind" (Zuckerberg, 2017).

A much-cited 2011 cognitive psychology study into the so-called 'Google Effect' (Sparrow et al) has in recent years provided seeming support for *both* the Extended Mind Hypothesis (Wheeler, 2016) and more amnesiac approaches. While the study seems to demonstrate that participants were *less likely* to remember information if they knew it was saved elsewhere (say, on a computer hard drive) (2011, p. 777), it also shows that participants were more likely to remember *where* the information was stored – the results suggesting that "'where' was prioritized in memory, with the advantage going to 'where' when 'what' was forgotten" (2011, p. 778). The study thus concludes that "[t]he Internet has become a primary form of external or transactive memory, where information is stored collectively outside ourselves" (2011, p. 776). In turn, the research was seized on by at least one personal cyber-security company in their own survey-research, coining the term "digital amnesia" to describe "the experience of forgetting information that you trust to a digital device to store and remember for you" (Kaspersky Lab, 2015, p.3).

A point of interest in the research of Betty Sparrow et al is *their own* interpretation of the results. Rather than an entirely new kind of *memory* or novel outsourcing, they argue that such apparent outsourcing may be seen as a new *way* of utilising existing *social* or *transactive* processes of memory, in which group-members entrust various kinds of information to those more likely to remember it – noting:

Storing information externally is nothing particularly novel, even before the advent of computers. In any long-term relationship, a team work environment,

or other ongoing group, people typically develop a group or transactive memory, a combination of memory stores held directly by individuals and the memory stores they can access because they know someone who knows that information. Like linked computers that can address each other's memories, people in dyads or groups form transactive memory systems. (Sparrow et al, 2011, p. 776)

Sparrow et al's pointing toward the *social* provides a useful avenue to now move toward considering discourse around how processes of more social or collective remembering may be changing through new technologies. And, in fact, we shall engage with such cognitive approaches to develop our own non-cognitive understanding of the seeming technological extension of *biological* memory through subsequent chapters. Yet, as we move forward, what is important to recognise in the approaches we have examined above is the seemingly prevalent tendency to think of memory as stored *information* – and the related notion of *how much* information we may remember (or not), through the increased use of online, connected technologies.

Permeation and Permanence: Trans-cultural Collective Remembering

Following Halbwachs's notion that the past is distorted through social frameworks of remembering (Halbwachs, 1992, p. 182), Hoskins observes in 2004 how “[t]echnological advances that have transformed our experience of time and space over the centuries have also fundamentally altered the constitution of what has been called ‘collective memory’” (2004, p. 109).⁷ For Hoskins, the top-down, broadcast-media era had produced a kind of “mediated memory [that] is not only a distortion of the past, but a disconnection from it” (2004, p. 110). Moreover, the then-new technologies of live television news had for him caused a kind of ‘collapse’ of memory:

[T]he collapse of the certainties of the past by a media that can paradoxically create and recreate an apparently certain past through their command of visual images, which are both part of the landscape of modern life and the very essence of human memory. Thus, although the individual remains (or appears as) the real, authentic or original holder of memory, there can be no doubt that

⁷ Indeed, Hoskins's numerous summary-contributions to and of the field of media and memory studies in recent years should be credited for serving as a valuable resource during this course of this research project.

remembering is a process that today is increasingly media-afflicted. (Hoskins, 2004, p. 110)

Through their nature as always being *live*, yet with a combination of live, pre-recorded and more historical footage, scrolling news-bars, and news-team gesturing toward future events or implications, those televisual technologies, Hoskins argues, “serve to collapse memory into an overloaded and shifting present” (2004, p. 110).

Yet, with the “connective turn” of the late 2000s (Hoskins, 2011), the spatio-temporal experience of remembering – and, perhaps, mediated *co*-remembering – takes on an entirely new form. Rather than an apparent disconnect or loss of memory, the ‘mediatization’ of memory (Hoskins, 2014) through social-media technologies of course offers opportunities for greater connections between individuals. With these new ‘media of memory’ social pasts become “potentially more visible, accessible and fluid ... [but also] more easily revocable and subject to a different kind of ‘collective’ influence and shaping” (Hoskins, 2009a, p. 29). As such, for Hoskins:

[W]hereas the value of memory was seen through its relationship to a stability, continuity, and reverence of the past, the value of the mediatization of memory is in its potential for transformation. (2014, p. 676)

In 1995, media-memory theorist Alison Landsberg proposed the much-cited notion of “prosthetic memory” to describe “memories that do not come from a person’s lived experience in any strict sense” (1995, p. 175). Such memories, she argues, “are not ‘authentic’ or natural, but rather are derived from engagement with mediated representations” (2003, p. 149). Modernist technologies like broadcast-media and cinema, Landsberg speculates, have “opened up the potential for a progressive, even radical politics of memory” (2003 p. 146). In fact, she argues, through “technologies of mass culture”, it is “possible for anyone, regardless of race, ethnicity, or gender to share collective memories—to assimilate as personal experience historical events through which they themselves did not live” (Landsberg, 2004). This we might see in contrast to Carr’s cognitively-conceived insistence that it is “what is stored in the individual mind” that informs culture: “Culture is contained in our synapses” (2011, p. 196).

While Hoskins notes that, as a “pre-connective turn perspective” Landsberg’s argument “barely touches upon the radical networking and diffusion of memory ushered in with the advent of digital technologies” (2011, p. 23), it nevertheless offers a useful reflection on what he notes cultural memory theorist Astrid Erll has called the “transcultural”

perspective on remembering, which sees “memory – individual and social – ... as a transcultural phenomenon” (Erl, 2011, p. 66). And new, networked technologies not only blur the boundaries between ‘authentic’ and ‘inauthentic’ in terms of culture, but the boundaries between individual and collective, and between public and private. When “everyday life is increasingly embedded in the mediascape”, the divides between public and private, as van Dijck notes, “have become increasingly fuzzy” (2007, p. 74). Thus, argues Garde-Hansen and others, we may think of online mediatisation of memory as a kind of “[s]ocial network memory’ ... a new hybrid form of public and private memory” (Garde-Hansen, Hoskins & Reading, 2009, p. 6). Or, to put it another way, as Hoskins suggests:

[I]ndividuals locate their own pasts and those of their groups and societies through their immersion in emergent networks that blur if not transcend the personal and the public, the individual and the social and the particular and the collective. (2009a, p. 40)

New technologies, then, offer opportunities for greater diffusion of supposed ‘authentic’ and ‘inauthentic’ memory across increased connective mediations. Indeed, Landsberg aspires politically toward “increased social responsibility and political alliances that transcend the essentialism and ethnic particularism of contemporary identity politics” (2004). Yet, the opportunities afforded by highly-connective, socially-mediated content – “deterritorialized, disembedded” (Bond, Craps & Vermeulen, 2016) – has led in recent years to the equal emergence, seemingly still popularly neglected by ‘memory studies’ research, of ‘fake news’ and ‘post truth’.

Thinking with Landsberg, and in terms of transcultural remembering, the subject of fake news we may identify as a significant topic for memory studies – and one that we shall cover in depth in the final Case-Study Chapter. For, if “an environment of instant and extensive connectivity” (Hoskins, 2009a, p. 28) has meant that “the media- matter of memory are made available with increasing speed and decreasing cost” (2009a, p. 28), leading to increased opportunity for processes of prosthetic memory to play out into apparent social alliances, so too has it made available opportunities for the manipulation and exploitation of such alliances.

Outside of the field, politics scholars Eric Langenbacher and Ruth Wittlinger (2018) have suggested that, particularly through the likes of Donald Trump, a social disconnect is emerging between collective memory and historical context – risking “the end of

memory, in particular the end of memory's direct impact on political discourse and policy" (2018, p. 174). Given that studies have shown correlations between repeated exposure to media-content and participants' belief in its truthfulness or plausibility (Polage, 2012), and that overt inauthenticity of fake content does not appear to yield a difference in its perceived credibility (Nash, 2017), it has been suggested by others that the only way to stem the problem of fake news might to (somehow) stop visibility in the first place (Lewandowsky et al, 2017).

Yet, while online media, whatever the seeming authenticity, may be "more prolific and more accessible", Arthur observes, "they are volatile" (2009, p. 57) through their highly-real-time nature – or what Hoskins calls "[m]emory 'on-the-fly'" (2014, p. 664). Similarly, Hoskins notes that the increased availability of media:

hostages future memory to the vagaries of the digital. This includes, paradoxically, exposure to a potentially new scale of vulnerability to instant decay: corruption, disconnection and deletion (Hoskins, 2013, p. 388).

Here we come across a key tension within memory studies in the online era: between notions of vulnerability of media and those of supposed *digital permanence*.

In their 2013 book, *The New Digital Age*, the then Executive Chairman of Google Eric Schmidt and Director of Google Ideas Jared Cohen argue that "the option to 'delete' data is largely an illusion" (Cohen & Schmidt, 2013, p. 55), since what we understand as 'deletion' tends to be only the removal of a file's listing in the internal directory, rather deletion of the data itself. As we move towards "[n]ear-permanent data storage" with cloud computing, this, they suggest, will be the "first generation of humans to have an indelible record" (p. 55) – arguing, "all activity and associations, and everything added to the Internet will become part of a repository of permanent information" (p. 55).

In recent years, the notion of digital permanence has become an important one in memory studies. Social-media platform-technologies, acting as repositories for users' shared media "archived into the future" (Coleman, 2018, p. 68), Garde-Hansen notes, "may well forever store memories they would prefer to forget" (2009, p. 149). Indeed, alluding to the now-default setting of Facebook to 'Memorialize' users' accounts upon their death, she and others suggest, "The instantaneity and temporality of social network environments disguise their potential as mediatised ghosts to haunt participants far beyond the life-stage of their online social networking" (Garde-Hansen, Hoskins & Reading, 2009, p. 6).

Indeed, in his 2008 article, ‘Seven Types of Forgetting’, social anthropologist Paul Connerton puts forward a concept of “forgetting as annulment” (2008, p. 64). This, he suggests, is a need brought about as a response to the *excess* of memory proliferating through new technologies – arguing:

[N]ew information technologies [...] have brought about such a cultural surfeit of information that the concept of discarding may come to occupy as central a role in the 21st century as the concept of production did in the 19th century. (2008, p. 65)

Thus, he suggests, “Genuine skill in conducting one’s life may come to reside less and less in knowing how to gather information and more and more in knowing how to discard information” (2008, p. 66). Taking a similar if more automated approach, Viktor Mayer-Schönberger, a professor of Internet Governance and Regulation, proposes an alternative solution to the perceived problem. In an attempt to “make forgetting just a tiny bit easier again than remembering” (2011, p. 169), he proposes implementing automatic expiration dates for data:

Users, when saving a document they have created, would have to select an expiration date in addition to the document’s name and location on their hard disk. Users wouldn’t be able to save the file without specifying an expiration date, much like how they can’t save a file without selecting a name for it. Based on these preferences, the users’ computers would do the rest: managing expiration dates and clearing out expired files (Mayer-Schönberger, 2011, pp. 171-72).

Here, then – finding ourselves seemingly in discussion around choices over what should or should not be ‘recorded for posterity’ – it seems appropriate to move on to more *historical* processes of memory, and the commentary around how these may be changing through engaging with new, online technologies.

Media-Memory and the Digital Gap: Historical Remembering in the Online Era

In this final section of Part Two, we focus on academic and more popular commentary how processes of more historical collective remembering may be changing in the online era. In the previous section several themes were drawn out around mediatisation of memory practices – perhaps most pertinently around notions of permanence. Here, we reflect on these concerns with a view to how such mediatised acts of remembering will

be used in the future – considering how records of the present may be engaged with as future histories.

While we have considered above how notions of digital *permanence* may be engaged by media and memory theorists, for those engaged with the *preservation* of ‘history’ or of historical records, a different set of concerns may emerge around the use of new, online technologies. Conceived of two decades ago (Maclean & Davis, 1998), the notion of the ‘digital dark age’ or ‘digital gap’ has gained a renewed sense of urgency in the online era (Cerf, 2015; Chun, 2011, pp. 198-99).

When first coined by computer scientist Danny Hillis, the digital gap was understood in terms of how archivists might choose to preserve and manage digital media-artefacts to ensure ‘digital continuity’ of their content. Observing that media may corrupt, and that rapid changes in hard- and software formats can mean digital artefacts may be quickly rendered unreadable and thus obsolete, Hillis reckons that “[t]he historians of the future will look back and there will actually be a little period of history around now where they won’t have the information” (in Maclean & Davis, 1998, p. 42). “We’re very fortunate that civilizations thousands of years ago recorded things on media like stone tablets that lasted for thousands of years”, he observes:

And we’re fortunate that people hundreds of years ago recorded things on acid-free paper that lasted for hundreds of years ... But our good fortune is running out ... Because we’re in a period now where we are storing things that will not last even our own lifetimes. (in Maclean & Davis, 1998, p. 42)

Indeed, with the continuing rapid pace of technological-format change, such concerns persist in their relevance through to today – with Google vice-president Vinton Cerf arguing in 2016:

We digitize our images and sounds and texts in the expectation that this somehow provides these objects with immortality. Sadly, we may, instead, be creating a digital dark age in which our descendants will know nothing of our history and the products of our society. The physical media for digital storage may degrade; the ability to read the stored bits may be lost; the ability to correctly interpret the bits and render them or execute them may be lost. Operating systems, hardware and applications may no longer work for a variety of reasons. Companies and their proprietary software may go out of business and their products not work on computers in the future. (Cerf, 2016)

In fact, Cerf proposes a potential solution to digital continuity, through X-raying the artefact's content, application and operating system, and including data on the machine on which it runs, to create a kind of "digital snapshot" (2015):

The X-ray snapshot we are trying to capture should be transportable from one place to another. So, I should be able to move it from the Google cloud to some other cloud, or move it into a machine I have ... The key here is when you move those bits from one place to another, that you still know how to unpack them to correctly interpret the different parts. That is all achievable if we standardise the descriptions. (Cerf, 2015)

Yet, the supposed digital dark age of the twenty-first century we might understand as nuanced in its difference from the gap Hillis predicted. As well as a problem with digital continuity of artefacts in archives, media archaeologist Wendy Chun notes that, with data increasingly stored online, a future digital dark age may come about because of people's conflation of media *with* memory, and thus not archiving at all:

This crisis is brought about ... because of the blind belief in digital media as memory. This belief in the Internet as cultural memory, paradoxically, threatens to spread this lack of memory everywhere and plunge us negatively into ... the so-called digital dark age. (Chun, 2011, p. 199)

Chun, following media theorist Wolfgang Ernst, reminds us of the important distinction that cultural memory relies not so much on the internet or media-content itself, but on people preserving the media-content. "[T]he Internet", she argues, "which is in so many ways *about* memory, has ... no memory – at least not without the intervention of [archiving and preservation initiatives]". (Chun, 2011, p. 198-199).

Beyond this, and forcefully questioning the idea of digital permanence, Chun rightly notes that "[t]he Internet may be available 24/7, but specific content may not" (2011, p. 198). Indeed, as Hoskins notes, the mediatisation of memory through online artefacts offers up "a potentially new scale of vulnerability to instant decay: corruption, disconnection and deletion" (2013, p. 388). So, while globalism and technology writer Thomas Friedman famously argued that the era of globalisation might be characterised as, among others, the *democratisation* of both technology and information (1999), Arthur notes:

With Web 2.0 technologies and services the democratisation of history has taken another huge step forward [...] [Yet] this exciting development has

occurred in association with an increasing dependence on online modes of communication and information storage that are temporary, vulnerable. (2009 pp. 56-57)

Furthermore, Arthur notes, even if data is properly preserved and maintained, it may be inaccessible through encryption at its production:

[I]f there is an intention for such exchanges to be stored for the future, personal privacy settings routinely block access in user-defined ways [...] The future historian may be confronted with an apparent void of information on lives that were in fact richly documented, but only through fleeting digital entries on security encrypted online services. (2009, p. 55)

Moreover, as we have seen that Hoskins notes, there may be a variety of personal or more cultural reasons for the ‘revocation’ of ‘deletion’ of media artefacts. A 2015 New Yorker article, for example, usefully, anecdotally cites some intriguing examples of such alterations or deletions:

In 2006, David Cameron [to become UK Prime Minister in 2010] gave a speech in which he said that Google was democratizing the world, because “making more information available to more people” was providing “the power for anyone to hold to account those who in the past might have had a monopoly of power.” Seven years later, Britain’s Conservative Party scrubbed from its Web site ten years’ worth of Tory speeches, including that one. Last year, BuzzFeed deleted more than four thousand of its staff writers’ early posts, apparently because, as time passed, they looked stupider and stupider. (Lepore, 2015)

The journalist concludes, “Social media, public records, junk: in the end, everything goes” (Lepore, 2015).

Indeed, as we shall emphasise throughout this thesis, in order to properly understand what may be at stake for memory in the online era, we must look beyond the relationship between the agencies and drives of human-as-user and the technology-as-interface, and focus also on the *cultural* drives toward both remembering through, and the development of, new technologies.

To be sure, internet-archiving efforts exist on a determined and wide scale. For example, the Internet Archive has been archiving web pages since 1996 (Internet Archive, no date),

with an online interface of the Wayback Machine allowing users to explore more than 377 billion data-crawled web pages at the time of writing (Internet Archive, no date a). As well as archiving websites, the non-profit organisation has at the time of writing archived millions of books, audio recordings, videos and images, and more than 200,000 software programmes (Internet Archive, no date).

Yet, here, again, we find ourselves at a (not particularly new) tension around the preservation of future-historical material: of what *should* be archived – only exacerbated by the explosion of media available online today. Thus, as Hillis asks in 1998, “[H]ow much do you store? Do you attempt ... to store everything on the Internet ... It’s very hard to guess what’s going to be interesting [for future historians] (in Maclean & Davis, 1998, p. 42).

Indeed, as digital humanities theorist Jane Winters argues, in seeking to preserve as much as possible, digital preservationists may not account for the fact that, due to the nature and structure of how web pages and data are created, the whole notion of web archiving does inherently raise numerous questions about “(in)completeness and loss” (Winters, 2017, p.244):

Should we be trying to keep everything, particularly as existing methods of selection and cataloguing are not scalable? If we do not know what future scholars will be interested in, should we simply collect it all? And what do we mean by ‘everything’, when the web archiving process is marked by patchy data collection and loss? (Winters, 2017, p.244)

Yet, it is crucial to note, as we shall explore in detail through subsequent chapters, that *remembering* and *preserving in an archive* are not the same thing. As Brown notes:

Just as history is not the past, archives are not memory. Neither are archives storehouses of memory nor keepers of identity as neither memory nor identity are discrete objects which can be placed, hidden or revealed. (2013)

Indeed, communication historian André Donk critiques the anxiety around a supposed digital dark age for its perceived uncritical foundation in technological determinism – arguing that the “debate ... lacks an empirical basis as well as a differentiated concept of interplay of media and society” (2009). Instead, echoing Chun’s reminder that the internet is *about* memory rather than *being* memory, Donk argues:

The history of memory is not at all the history of storage media – remembrance needs to be executed by people. A DVD or a book cannot remember on its own. On the whole, it is not a question of media or technology, it is a question of society: what and how to remember. The digitization of collective memory is social driven. That means, transmission into time is not at first referred to media but to selection: whether to keep some information for later generations. If a decision about selection is done, the appropriate media has to be chosen. Storage and transmission ... no longer ... owes its existence to coincidence. (Donk, 2009)

The importance we may ascribe to this observation, ahead of the move into the Theory Chapter, is that we might think it positions archiving as a practice not only concerned with the future – nor even much to do with the past per se – but as a process of decision-making and acting *in the present*, determining *now* what may be judged important or *useful* for the individual or society to remember in an imagined future.

Indeed – as sociologist Barbara Misztal succinctly remarks – in one way or another, “It is society that ensures what we remember, and how and when we remember it” (2007, p. 381).

--o0o--

3. Tendencies of Thought: Memory and the Archive

In Part Two, we examined prevalent and wider-ranging popular and academic literature around the relationship between new, online technologies and remembering – attempting to identify key supposed problems around what may be at stake for memory in the twenty-first century. Part Three now interrogates these supposed problems from a philosophical perspective, through three stages.

Firstly, it argues that, through thematic analysis, we may understand many of the identified problems for memory as ones phrased in terms of gain or loss – of whether we are remembering ‘more’ or ‘less’. And it situates this as a historically-longstanding supposed problem in considering the relationship between memory and various emergent technologies. Secondly, it argues that we might see this kind of problem-phrasing as reliant – perhaps uncritically or unknowingly – on a philosophical assumption that memory acts like a kind of *archive*. Taking an archaeological approach, it suggests that we may see these this assumption historically carried forward from at least the time of

Plato, and recognisable in many of the studies of memory outlined at the beginning of this chapter. Correspondingly, it gestures toward thinking on how language and metaphor of *the archive* can lead to unhelpful tendencies of thought within existing debates. Thirdly, it draws on psychological and neuroscientific research to demonstrate how significant, archive-informed tendencies of thought around memory may be incongruent with data on the ways in which remembering takes place. Thus, it argues that such tendencies must be opposed, interrupted, or at least engaged more critically, if we are to properly consider what is at stake for memory in the online era. It therefore advocates an approach to memory, moving forward, that does not strictly view remembering as a function of the *individual*, nor as a specific recall of *the past*, nor a view of *memories* as engrams, or *things*.

An Old Problem: Media and The Pharmacological Pact

Through exploring the literature outlined in Part Two, a commonly-perceived contemporary problem seems to emerge for memory, individually and collectively. Potential problems for memory may be identified across, for example, notions of amnesia or extension of biological memory, ideas of digital permanence or vulnerability of socially-mediated memory, or concerns around the preservation or degradation of historical records. And we may recognise these, thematically, as holding a conceptual commonality in considering a problem of *loss* or *gain*: whether we are in the online era remembering *more* or remembering *less*, or indeed *too much* or *too little*.

Literary theorist Andreas Huyssen reminds us that “[n]ew technologies and new media are ... always met by anxieties and fear that later prove to have been unwarranted or even ridiculous” – claiming that “[o]ur age will be no exception” (2000, p. 37). And, to be sure, we might straightforwardly liken this contemporary debate to those opposing views represented more than 2,000 years ago in Plato’s *Phaedrus* on the technology of writing. In this treatment, Theuth presents King Thamus with the invention of writing, proclaiming, “Here, O king, is a branch of learning that will make the people of Egypt wiser and improve their memories; my discovery provides a recipe for memory and wisdom” (Plato, 1952, p. 157 [274e]), to which the king replies:

And so it is that you, by reasons of your tender regard for the writing that is your offspring, have declared the very opposite of its true effect. If men learn this, it will implant forgetfulness in their souls; they will cease to exercise

memory because they rely on that which is written. (Plato, 1952, p. 157 [275a])

It is worth noting that, while a simple reading of this treatise suggests a techno-phobic resistance to writing, more recent readings by French philosopher Bernard Stiegler, himself after Jacques Derrida's nuanced analysis, point to an understanding of writing, and media technologies, as *pharmakon* (Stiegler, 2010) – “the Greek term that names both a poison and its remedy” (Hansen, 2015, p. 50). In this way, media theorist Mark Hansen notes, we may understand technologies of memory as operating “through an essential duplicity whereby they give back to the human a remedy for what they take away” (2015, p. 50). And we shall return to considering the nature of this pharmacological “pact” (2015, p. 71) throughout the subsequent chapters.

However, for the moment, let us consider the more simple supposed *problem* of whether engagement with new technologies may be causing us to remember *more* or remember *less*. Huyssen notes that ‘amnesiac’ positions may be critiqued for their inability to address the seeming paradox that it is “precisely these media ... that make ever more memory available to us” (2000, p.27). Yet, here, the chapter wants to argue that the proposition of thinking the mediation of apparent memories in terms of *quantity* is already a fundamental conceptual error – reliant on the equally historically-informed metaphor of the *archive*.

Before the Problem: Metaphorical Media and the Assumed Archive

A number of scholars have written on the persistence of the archive as a metaphor for memory, tracing its roots, once more, to at least Plato in his notion of the wax tablet (Rosenfield, 1988; Bennet and Hacker, 2013, pp. 103-112; Brockmeier, 2015), whence it would manifest through various forms across the centuries – perhaps contemporarily most recognisably in the idea of a ‘storehouse in the brain’. And, as neuroscientist Maxwell Bennett and philosopher Peter Hacker note, the assumption that memory behaves like an archive of ‘stored knowledge’ can be understood as conceptually informing much of European-philosophical thinking on remembering through to where we ‘picked up’ with Ebbinghaus at the beginning of this chapter:

The notion of storage and the associated idea of memory traces long antedates neuroscience. It began life as a metaphor (of wax tablets) in Plato, and as a rudimentary speculative theory in Aristotle, who conceived of memory as the storage of an impression of a percept in the heart, functionally dependent upon

the humidity of the tissues. The idea of memory as a ‘storehouse of ideas’ runs through the empiricist tradition of the seventeenth, eighteenth and nineteenth centuries. (Bennett and Hacker, 2013, p. 103)

As we noted earlier, metaphors for memory may be greatly influenced by the technologies of their time, yet often by the *recording* or archiving devices of their time (Roediger, 1980) – leading to commonplace, systematic, cognitive theories of *encoding*, *storage* and *retrieval* dominant today. Thus, as literary theorist Jens Brockmeier argues, we may today recognise the power of the archive in the ‘computer brain’ metaphors, where memories are “conceived of as stored computer files, and remembering would seem to be an act of reloading them from the deep storage of the brain and reopening them” (2015, p. 56). Likewise, Bennett and Hacker draw a parallel between the British empiricist ideas of memory or knowledge as a *stored* “mental image or picture that represents or is a copy of the original experience” (2013, p. 104) and contemporary neuroscientific thinking we examined in Part One, in which supposed *information* is *stored* in “a pattern of synaptic connections with efficacies that lead to the excitation of certain neurons under certain conditions, which excitation represents or encodes the original experience” (2013, p. 104). Yet, as neuroscientist Steven Rose notes, the notion that memory can be understood as *information* is not only reductionist, but seemingly untrue – “[B]rains do not work with *information* in the computer sense, but with *meaning*” (2003, p. 104). Moreover, the metaphor of memory as information lends itself readily to the converse – that information may be seen as *memory* – as profoundly dappled across much of the literature outlined in Part Two.

For Rose, the problem with thinking memory as an archive of information may be identified as an “uncreative metaphor” (in *A Picture Held Us Captive*, 2017). “Explanation in science often proceeds by metaphor”, Rose suggests, describing the process of *creative* metaphor: “We endeavour to understand how something we don’t know works by comparing it to something we do know – or something we can at least imagine we know” (Rose, 2003, p. 79). Yet, when, as Bennett and Hacker argue is the case for archival memory, “the metaphor [is] being taken to be what it is merely a metaphor for” (2013, p. 103), it becomes *uncreative*: “that metaphor has become reductive, and it limits both the science and one’s understanding of the wider world” (Rose, in *A Picture Held Us Captive*, 2017).

In his 2013 book, *Brain Imaging: What It Can (and Cannot) Tell Us About Consciousness*, biophysicist and pioneer of magnetic resonance imaging methods Robert

G. Shulman argues that there exists a certain complacency in some scientific approaches that uncritically or unthinkingly adopt philosophical assumptions about the function of the brain. Moreover, as well as affecting the *interpretation* of research findings, such uncritical approaches may actively shape the ways in which studies are shaped in the first place – as Shulman argues:

Scientific directions exploring how brain experiments can be related to behavior and mental activity are intricately interdependent with philosophical issues that influence the choice of questions addressed and the methods used for their study.” (2013, p. 4)

While Shulman here talks about the implications for scientific research, he stresses that such approaches equally conceptually feed into wider social discourse on the way the brain works. Indeed, as we may argue with the persistence of the archive metaphor, so engrained into social normality is the notion that memory acts like an archive, that “the choice is not whether or not we follow a philosophical position but rather whether we do so knowingly or unthinkingly” (Shulman, 2013, p. 5).

It is important to acknowledge that the archive or library is not the only Western-historical nor more recent creative metaphor for thinking memory. In contrast, for example, Norse mythology imagines ‘memory’ (Muninn) along with ‘thought’ (Huginn) as two ravens, seeking information across the world and relaying it to the god Odin (Simek, 1993, p. 164). To be sure, psychologist and memory specialist Douwe Draaisma’s comprehensive historical study of memory metaphors charts numerous conceptualisations over the last two-and-a-half-thousand years. Before his student Plato’s comparison to a wax tablet, Socrates likened remembering to the act of catching birds in an aviary. Others have thought memory like the natural or more artificial landscape – as fields, woods or labyrinths. Memory has been conceived in terms of buildings – as palaces, theatres or abbeys. Perhaps more laterally, Draaisma observes, “[M]emory has been seen as a magnet, stomach and a honeycomb, as a phosphorous ore, an Aeolian harp and a loom ... a succession of metaphors and metamorphoses, a true omnia in omnibus” (2000, p. 3). Nevertheless, a historical tendency is discernible toward spatial and storage metaphors (Roediger, 1980; Schacter, 1996, p. 40), in which “[m]emories are considered to be objects that are stored in a mind space, and the process of retrieval is conceived as a search for these objects” (Roediger, 1980, p. 231).

Brockmeier – as we shall see, like Bergson – argues that the archive metaphor has persisted because “Western common sense, both in everyday life and in science, assumes that there is a specific material, biological, neurological, and spatial reality to memory” (2010, p.6).⁸ However, he argues that we are undergoing a cross-disciplinary “fully fleshed cultural paradigm shift in that it calls into question the venerable notion of memory as a storehouse, as an archive of the past” (2015, p. viii). For Hoskins, too, a paradigm shift is underway, which can be understood through an “array of emergent new or digital media metaphors and concepts” (2011, p. 21) out of the “connective turn” of new technologies (2011, p. 201) and beyond notions of the traditional, temporally more-static archive. Indeed, he notes that this shift may have come about because of the “sudden misfit of many of the media metaphors of memory, especially in the face of their continued use” (2011, p. 24). Yet, following Bergson, in this thesis we seek to (attempt to) force a shift *beyond* the metaphor. Instead, as we shall see, through an embrace of *intuition*, and in the face of metaphorical conceptualisations, it develops an approach to thinking with an *anti-metaphor* of the ‘anarchive’ – thinking not only what memory may be *like*, but critically reminding ourselves what it is *not* like.

The term ‘anti-metaphor’ as a conceptual, linguistic tool we might define quite literally as ‘against the metaphor’ – as a kind of active and direct attempted *opposition to* or *resistance to* the trappings of creative-metaphor-encouraged philosophical assumptions. Thus, as the creative metaphor of ‘archive’ might lead us to unthinkingly follow notions of remembering as storage in space, the creative *anti-metaphor* of ‘anarchive’ might lead us to actively ‘keep in check’ those archivally-informed assumptions and tendencies of thought when they arise – paraphrasing Shulman, to follow a philosophical position *thinkingly* rather than unthinkingly (2013, p. 5).

In this spirit, the final section of Part Three identifies what it argues are three, key tendencies of thought, arising out of an uncritical reliance on the archive metaphor. Drawing on psychological research, it aims to demonstrate on the one hand that such tendencies must be critically challenged if we are to properly consider how processes of

⁸ It is interesting in this regard to note the distinction between Bergson and his contemporary Alfred North Whitehead – whom we shall equally draw on in the Theory Chapter in discussing problems for philosophy of language and metaphor. As philosopher Didier Debaise notes, whereas Bergson and Whitehead agree on the tendency toward conceptual spatialisation, for Whitehead this could be considered a *historical* tendency of (at least European) human intellect, whereas for Bergson it was considered a *necessity* of the human intellect (Debaise, 2017, p. 21).

memory may be changing in the online era. On the other hand, in doing so, it aims to illustrate the inadequacy of the assumption that memory works like an archive *in general*.

Toxic Tendencies: The Failings of the Archive

We have established above how a key failing of uncritically relying on the archive metaphor in extended or *collective* memory may be recognised in the related tendency to mistakenly conflate media *as* memory – mistaking the artefact for the remembrance it may culturally signify or biologically excite.

This section draws attention to the assumption that *biological* memory may operate like an archive, and the unthinking or uncritical tendencies of thought that such an assumption may engender. In doing so, ahead of the Theory Chapter, it aims to lay the foundation for development of an approach to thinking memory that blurs the boundaries between more traditional thinking of the *individual* and the *social* – both in terms of biological apparent recall and in terms of engaging with artefacts.

Here, we identify three overlapping tendencies of thinking about memory that we may recognise both as inherently archivally-informed and as prevalent across especially, but not limited to, the commentary on individual remembering in Part One.

1. *Remembering is the individually-controlled (that is, bodily-controlled) recall of information*
2. *Remembering, through this recall of information, is the (accurate) recollection of previous experience*
3. *Memories are quantifiable things (ostensibly stored in the brain)*

In fact, there is an additional, crucial, archivally-informed tendency of thought around memory that relates to yet is absent from this list: the tendency to think of *memory* as *knowledge*. And it is through firstly interrogating the three tendencies above that we may establish a basis for a radical, more-Bergsonian approach, developed in the theory chapter, of memory not serving *knowledge* of the past but *action* in the present (toward the future).

Overlapping significantly, as they do, rather than take each tendency in turn, this section draws on selected, significant research findings into memory that variously challenge the strict archival model as a whole, and thus its related tendencies of thought. In highlighting the conceptual failings of thinking archivally, it opens up the possibility for an approach to remembering that sees the process: not as individual but *affective* and *relational*; not

as recollection of previous experience but *ideas* out of past experience, *creatively constructed* for the perceived needs of the present; and not as dealing with memories as things in space but as non-representational *feelings* or psychically-perceived *qualities*, experienced in time, in the present.

Bartlett, as introduced in Part One, had already importantly demonstrated in the 1930s that supposed accurate memories of ‘the past’ might be better understood as psychic (re)constructions, influenced through the social-cultural background of the rememberer – showing that much of what is ‘remembered’ of a supposedly recalled past experience is imagined out of myriad other experiences (1932). As Brown and psychologist Paula Reavey note, Bartlett’s contribution to the field of memory is recognised in showing that “the main function of remembering is not to establish the truth of ‘what really happened’, but rather to bring about a novel relationship between the organism and its environment” (2015, p. 64).

Bartlett noted that “the construction of psychological material and of psychological reactions into organised settings plays a leading part in perceiving, in recognising and in remembering” (1932, p. 227). And this present-moment, social influence on remembering – challenging the notion of memories as some sort of re-experience of a previous event – is perhaps most forcefully (and thus here, perhaps, most usefully) expressed through the various psychological research studies conducted by Elizabeth Loftus into so-called ‘false memory’ since the 1970s.

In a famous study, after Bartlett, into the power of suggestion or misinformation in guiding witness testimony (Loftus & Palmer, 1974), participants who had been shown video clips of cars crashing into each other were subsequently quizzed on what they remembered. One question focused on the speed the cars were going when they collided – with different participants being asked about the collision using different verbs of greater or lesser strength-intensity: How fast the cars were going when they ‘contacted’ each other, versus ‘hit’, ‘bumped’, ‘collided’ or ‘smashed’ each other. The results demonstrated that the greater the intensity of strength of collision insinuated in the question, the greater speed participants tended to remember or believe the cars travelling. A second experiment showed participants a clip of a car collision – in which there was no smashed glass – and were similarly later asked the speed they estimated the cars to be travelling at when they either ‘hit’ or ‘smashed’ each other. A week later, participants were asked if they remembered seeing smashed glass in the video. Those originally questioned about the speed at which the cars ‘smashed’ each other were significantly

more likely to remember smashed glass in the video than those asked using the word ‘hit’ – who experienced similar levels as a control group who had not been asked about vehicle speed at all.

Loftus and colleagues were similarly able to ‘implant’ fictitious details about events across multiple experiments:

People have recalled nonexistent broken glass and tape recorders, a cleanshaven man as having a mustache, straight hair as curly, stop signs as yield signs, hammers as screwdrivers, and even something as large and conspicuous as a barn in a bucolic scene that contained no buildings at all. In short, misleading post-event information can alter a person's recollection in powerful ways, even leading to the creation of false memories of objects that never in fact existed. (Loftus & Pickrell, 1995)

Moreover, so commanding is the force of the social on remembering *in the present*, that Loftus and others were able in later experiments to produce remembrances of entirely fictitious events in participants’ recollections – what Loftus calls “rich false memories” (2005). Such an avenue of research was directly in response to, and in opposition to, the rise in therapy practices in re-claiming supposed *repressed* memories (Loftus & Ketcham, 1994) – leading to an academic (and indeed judicially-informing) tension in the mid-1990s known as the “memory wars” (Crews, 1995). Perhaps most well-known of such studies is the “Lost in a Shopping Mall” experiment (Loftus & Pickrell, 1995), in which participants were asked if they remembered a number of events from their childhood, supplied by a relative. One of the events, known not to have happened by the family member, centred around being lost in a supermarket. In all, around a quarter of participants recalled the event being truthful.

Through experiments like these, Loftus and others were able to show that *imagination* may play a key part in engendering participants’ belief in false, or implanted memories – calling this “imagination inflation” (Garry et al, 1996). For example, a 1996 study demonstrated that participants had more confidence in the truthfulness of fictional childhood events that they were asked to *imagine* had happened to them than those not imagined – leading the authors to consider “implications for situations in which imagination is used as an aid in searching for presumably lost memories” (Garry et al, 1996, p. 208)

More recent research has shown the role media beyond language may play in shaping recollections of events untrue to how they occurred. In a 2017 study, psychologist Robert A. Nash asked participants about their memories of either the Olympic torch relay during the London 2012 Olympics or the 2012 British royal wedding:

Some were shown a genuine photo of the event; others saw a doctored photo that depicted protesters and unrest. A third group of subjects saw a doctored photo whose inauthenticity had been made explicit, either by adding a written disclaimer ... or by making the digital manipulation deliberately poor (2017, p. 439)

The experiment showed that doctored photographs had a small effect on how participants remembered the events. Perhaps more interestingly, it showed that the effect was comparable whether participants were shown deceptive, doctored photos that may have been true *or* photos that were *overtly inauthentic*.

What this section aims to achieve through referring to such research is not to categorically *prove* that memory ‘works’ in one way or another, but simply to demonstrate the inadequacy of the *archive* as a creative conceptual metaphor for the study of memory. Such studies show that, contrary to the metaphorical notion of the archive as a static recall of stored information, what is experienced as memory is shaped reflexively by experiences of the past, imaginings of potential events, as well as the social (and thus physical) environments in which acts of remembering take place.

Yet what a consideration of these psychological findings also shows is the *persistence* within much academic thought of the spatialised, archive-informed idea of memories *as things* – in the face of its conceptual inadequacies.

Loftus, for example, is rightly careful to distinguish between the implications of her research for understanding memory and those for, perhaps, *trusting* memory as accurate in everyday society – “Whatever the misinformation reveals about normal memory processes, one thing is clear: the practical implications are significant” – 2005, p. 365). Yet, while through misinformation and suggestion, she and others are seemingly able to demonstrate that memories are not experienced as recalled events, she nevertheless remains uncritically committed to an encode-store-retrieve conceptualisation of memory – considering, for example, “the fate of the original *memory traces* after exposure to misinformation appears to have made them *inaccessible*” (Loftus, 2005, p. 361; italics my own).

Likewise, Brockmeier gestures to the Schacter's 2001 popular-science book *The Seven Sins of Memory* – arguing that, while offering a detailed literature on the various apparent “biases, distortions ... omissions [and] mistakes” that archivally-conceived memory seems to make:

Admitting such features as “sins” means once more to acknowledge the commandment, the normative rule, the role model of a memory that is supposed to work as an unfailing archive. It confirms the archival circle of encoding, storing and retrieving memories – even if in a flawed and defective manner. (2015, p. 10)

--

Part Three of this chapter has attempted to interrogate firstly an apparent, prevalent, *quantified* supposed question for memory in the online era, and secondly the metaphorical notion of the archive, out of which the question may be seen to emerge. In doing so, the chapter argued that a major problem for thinking about memory lies in *uncritically* (either knowingly or unthinkingly) relying on creative (or uncreative) conceptual metaphors.

In the final part of this chapter, we draw on Bergson to consider a methodological, philosophical approach might be helpful to overcome these issues. Firstly, in considering what kind phrasing of the *question* we might attempt, if not a matter of degree in remembering more or less. And, secondly, in what kind of critical *attitude* we may take to considering memory itself, if we are to resist the analytic pull of conceptual metaphors.

--o0o--

4. Intuition: Toward an Anarchival Approach

In Part Three, we considered the importance self-critical approaches to thinking not only memory but to thinking with creative concepts *in general* – and we emphasised the need to resist the conceptual framings of *metaphor* in understanding memory. In response, Part Four acts as a succinct methodological-philosophical intervention – introducing Bergson's thinking on *intuition* as a way in which we might more philosophically-critically approach thinking the relationship between memory and new online technologies beyond the power of the archive metaphor. Drawing on useful consolidatory contributions into Bergson's method from French philosopher Gilles Deleuze, as well as literary scholar Suzanne Guerlac, this section to this end intervenes in two ways. Firstly,

it argues for a restructuring of the investigation to be one not concerned with differences to *how much* we are remembering in the online era, but how we are remembering *differently*. And, secondly, it stresses the need to think empirical analysis not (just) in terms of *things in space*, but as *interactions* or *processes in time*. Thus, it introduces Bergson's notion of *duration* as the experience of life in the constant flow of the present. In doing so, Part Four sets out the basis for the development of an 'anarchival' method for considering the research question.

Cultural and media theorists Britta Timm Knudsen and Carsten Stage note that, following the so-called 'affective turn' in cultural analysis, "[t]he [present] challenge ... is how to develop and account for methodologies that enable cultural researchers to investigate affective processes in relation to a certain empirical study" (2015, p. 1). For them, an affective method may be defined as:

an innovative strategy for (1) asking research questions and formulating research agendas relating to affective processes, for (2) collecting or producing embodied data and for (3) making sense of this data in order to produce academic knowledge. (2015, p. 1)

The anarchival approach we shall develop through the next chapter should be understood as an attempt to develop such a novel, affective method, with the purpose of facilitating effective investigation of the subjective experience of remembering in the online era. In line with Knudsen and Stage's theorising, we can recognise the development of our empirical method through the following three considerations. Firstly, through an attempt to (re)formulate the research question in sympathy with what we will argue are the affective processes of remembering. Secondly, through a philosophically-grounded collection of data through case studies – attempting, in Bergson's terms, to consider the "immediate data of consciousness" (2001), the affective experience of the lived body. Thirdly, in attempting to analyse, contextualise and make sense of this data within a broader socio-political contextual framework, to produce new knowledge about what may be at stake for memory in the twenty-first century.

Intuition as Method? Rephrasing the Question

In *Time and Free Will* (2001) – written as his doctoral thesis – Bergson draws attention to the method of *intuition*, which he would develop throughout other works, including *Matter and Memory* (2004) and *The Creative Mind* (1946).

For Bergson, we may consider the experience of human consciousness and perception in two ways, as Guerlac summarises:

Immediate consciousness ... refers to the way something feels to us directly, before we stop and think about it, try to communicate it to someone, or represent it symbolically in any way. ... *[R]eflective consciousness* involves thinking and implies the use of the tools that enable us to think and to know: language, logic, mathematics, and other symbols of means of representation. (2006, p. 62)

For Bergson, direct experience, or immediate consciousness, can be thought of as the experience of qualities – “sensation, looked at in itself, is pure quality” (2001, p. 90). Yet, once we *reflect* on that experience, we surrender to the often more spatialised, conceptual notions of understanding experience in terms of quantity or intensity – “seen through the medium of extensity, this quality becomes in a certain sense quantity, and is called intensity” (Bergson, 2001, p. 90). As with the archival metaphor for memory, problems within philosophy may arise when the symbol itself is mistaken for the object being understood through the symbol – the metaphor being understood as *being* the thing it is supposed to reflectively stand in for. And “It is above all language that alienates us from direct experience” (2006, p. 69), Guerlac notes – “[W]e are almost always caught up in modes of symbolic representation ... [that] prevents us from having intuitive knowledge ... and a richer experience of the heterogeneous world” (Guerlac, 2006, p. 61).

For Bergson, then, the task of philosophy becomes one in which the thinker attempts to detach themselves from conceptually-informed reflection on experience – to “give up certain habits of thinking, and even perceiving” (Bergson, 2004, p. 241), to escape “the ghost of space haunting the reflective consciousness”, in order to reconnect with direct experience, or the “immediate data of consciousness” (Bergson, 2001). This, Bergson argues, is made possible through rigorous philosophical method of intuition.

Deleuze, whose re-engagement with Bergson in the late-twentieth century is often credited as the catalyst toward a cultural revival of the thinker’s works (Lundy, 2018), argues that intuition as method can be understood through three key, related rules (2011, pp. 13-35):

FIRST RULE: Apply the test of true and false to problems themselves. Condemn false problems and reconcile truth and creation at the level of problems. (2011, p. 15)

SECOND RULE: Struggle against illusion, rediscover the true differences in kind or articulations of the real. (2011, p. 21)

THIRD RULE: State problems and solve them in terms of time rather than of space. (2011, p. 31)

Though Deleuze asserts that intuition is “the method of Bergsonism” (2011, p. 13), here we do not take intuition, and thus Deleuze’s discerned ‘rules’, as a strict method in itself – rather, in its focus on thinking in time, and its insistence on considering differences in *kind*, an intuitive approach is here adopted as a kind of philosophical ‘attitude’ that may *inform* an empirical ‘anarchival’ method developed over the next chapter. Thus, a philosophical embrace of intuition is not intended to set up a perhaps false opposition between thinking in terms of time versus space, and between considering differences in kind versus differences in degree. Instead, it serves to encourage a methodological approach toward thinking in terms of *processes* in time *and* space, and toward considering differences in kind *as well as* differences in degree.

The third rule we will come to in the next section of Part Four, but let us firstly consider how we may think the first two rules in relation to our investigation into the role new technologies play in changing memory processes.

We saw in the Introduction Chapter how Bergson considers the nature of philosophy to be a “question of *finding* the problem and consequently of *positing* it, even more than of solving it” (1946, pp. 58-59). Through the first rule of intuition, then, we may now recognise the supposed problem of whether we are remembering more or less in the online era as a ‘false problem’, in that it is “badly stated” (Deleuze, 2011, p. 17). In thinking memory like an archive, a question is framed in terms that “represent badly analysed composites” (2011, p. 17), in that they engender an investigation around measuring *quantities* of memory, rather than considering the *qualities* of memory. Yet, this problem, we may argue in relation to the second rule, can be overcome through a re-phrasing of the research question – in order to ‘rediscover the articulations of the real’, we may consider the ‘the true differences in kind’ between how we experience memory through new, online technologies. Deleuze claims that “what Bergson is condemning in nonexistent problems is the obsession ... with thinking in terms of more and less” (2011, p. 19). In fact, Deleuze argues:

[C]onceiving of everything in terms of more or less, seeing nothing but differences in degree where, more profoundly, there are difference in kind is

perhaps the most general error of thought, the error common to science and metaphysics. (2011, p. 20)

Thus, this thesis proposes a methodological resistance to considering the problem in terms of whether we are remembering more or less – rather, proposing that we consider the differences *in kind*: how are we remembering *differently* in the online era. Indeed, as we shall see through the Theory Chapter, in such a rephrasing of the research question, the pharmacological pact when remembering through new media-technologies may be approached not with a focus on whether technologies allow us to remember more or less, but on the agential nature of the *relationship* enjoyed between the human and technological.

Intuition and the Conception of Time: Escaping the Archive

It should be noted that various thinkers, with whose work we have engaged in Part Two, we might think have rightly placed a focus not solely on *how much* we are remembering, but also on how we may be experiencing remembering *differently* – in particular van Dijck (2007), Garden-Hansen (2009) and Hoskins (2009a; 2009b; 2011; 2013). However, it is the third rule of intuition that sets aside the Bergsonian approach, and that brings us to the heart of the philosophy of both Bergson and Simondon: thinking not solely in terms of objects in space, but of processes in *time*.

For Bergson, life is experienced through the ongoing force of *duration* – or the affective, relational experience of the *flow* of the constant present – and it is with a sympathy to the direct experience of duration that philosophical work must be undertaken. What we think of *time*, Bergson argues, is in fact a reflexively-perceived conceptual, linear spatialisation of the experience of duration:

For if time, as the reflective consciousness represents it, is a medium in which our conscious states form a discrete series so as to admit of being counted, and if on the other hand our conception of number ends in spreading out space everything which can be directly counted, it is to be presumed that time, understood in the sense of the medium in which we make distinctions and count, is nothing but space. (Bergson, 2001, p. 91)

Guerlac notes that the cognitive approach to thinking “represents things in space ... which is why it cannot think duration, but only time” (Guerlac, 2006, p. 63). Time, she notes, “is what duration becomes when we think and speak of it” (2006, p. 69). It is a conceptual

tool or synthesis for considering the experience of duration, yet, in reflectively-consciously spatialising duration as linear, sequential time, we:

immobilize what we [immediately-consciously] experience as occurring in temporal flow ... these modes of symbolic representation interfere with our ability to grasp the temporal nature of reality. They crush our sense of duration. (Guerlac, 2006, p. 19)

Deleuze's thirdly-identified rule of intuition, then, we may understand through Bergson's insistence that "[w]e must return to the direct perception of change and mobility" (1946, p. 167). And this is only made possible if we are able, through intellectual effort, to set aside "the obsession with space that haunts Western thought, and the structure of language, which infuses space into concepts and immobilizes thought" (Guerlac, 2006, p. 71).

Thus, if we are to properly find what problem may exist for memory in the online era – through empirically considering how we may be remembering differently through and with new technologies – we must approach the investigation from a perspective on memory that does not (only) think of objects in space, but of *movements* in the flow of duration.

Consequently, and in anticipation of the following Theory Chapter, the final section of this chapter now briefly introduces Bergson's thinking on duration.

Thinking in Duration: Experience as Flow

As we shall see in the following chapter, Bergson's philosophy rests somewhere in between realism and idealism, seeking neither to think things objectively *in the world* nor subjectively *in the mind* – but somewhere in between, as a world of affective, and affectively perceived, *images* (Bergson, 2004, p. 1).

For Bergson, to consciously live is to experience an ongoing, affective relation of the body-image to its surroundings, as a "centre of action ... [that] receives and returns movements" (Bergson, 2004, p. 4).

Thinking in terms of the body as *movements* is made possible because Bergson philosophically approaches existence as taking place not as an object in spatio-temporal linear time, but as processes in *duration*. Duration, we might think of as the direct, qualitative experience of the world, before any reflective, conscious interpretation is formed. "[P]ure duration might well be nothing but a succession of qualitative changes,

which melt into and permeate one another, without any affiliation with number: it would be pure heterogeneity” (Bergson, 2001, p. 104). We might think of it in terms of what sociologist and philosopher Patricia Ticineto Clough calls the enduring “Recent Past and the Near Future of the Present” (2018, p. xxxiv). Indeed, as Brown and Reavey note, Bergson’s duration may be understood as “the flow of experience ... without division, but with continuous qualitative transformation” (2015, p. 5) – or, following Middleton and Brown, as “a ‘living’ version of time ... against a reduction of time to space in which time is treated as a series of instants” (2005, p. 8).

By contrast, the experienced sense of existing *in time* as a conscious, stable being with a distant-past, present and long-term future we shall see in the following chapter Bergson understands as a kind of conceptual “temporal synthesis” (Guerlac, 2006, p. 117), that helps the conscious human body to “cope” with existing in duration (Guerlac, 2006, p.122). Time, we saw Guerlac observes, is “what duration becomes when we think and speak of it” (Guerlac, 2006, p. 69). And we might see this as a kind of conceptual trade-off (a pharmacological pact, if you will), in that it at once offers opportunities to consciously think beyond the immediate moment of the present – allowing for greater choice of bodily and, as we shall see, social action – yet requires a distancing from the actual, *lived* experience in its temporal form. “Our lives flow”, note Brown and Reavey, “only subsequently do we add in the breaks and punctuations” (Brown and Reavey, 2015, p. 5). Indeed, time – like all symbolic representation – “crush[es] our sense of duration” (Guerlac, 2006, p. 19).

In fact, “We shift between virtual and actual states all of the time, never completely virtual or completely actual”, Ansell-Pearson observes (2010, p. 68) – we might “go from the physical existence which is merely ‘acted,’ to that which is exclusively ‘dreamed”” (Bergson, 2004, p. 218). As we outlined above, while we might never enter the realm of the *purely* actual, through intellectual effort of intuition we may critically draw ourselves away from the symbolic modes of thinking that hide direct experience *from* us.

As we shall argue in the next chapter, such a synthesis is made possible through processes of remembering, in parallel with processes of perception, acting – more strongly in higher conscious beings – as a kind of *hesitational* force that allows virtual distance from the actual, lived, direct experience of duration. Yet, since all life is lived through the enduring force of duration, we should not think of memory as spatially, linearly *in the past*, but as “the preservation or prolongation of the past, entailing the coexistence of past and present” (Ansell Pearson, 2010, p. 62).

We have established that, when thinking with Bergson, we must think all experience as temporal processes in duration. Thus, ahead of its exploration in the following Theory Chapter, we might now begin to appreciate the context of Bergson's crucial argument: that memory does not serve quantitative knowledge of past events, but informs movements toward *action* in the qualitative, transformational, lived experience of duration.

--o0o--

Summary

In this chapter, we introduced key prevalent debates around what is at stake for memory in the online era. The chapter outlined ideas around how seeming augmentation of remembering through new technologies may be viewed as extending memory or conversely as reducing our capacity to remember. It considered how increased *access* to, and saving of, media may be considered a kind of overload or even collapse of memory, and it examined concerns about the rise of the post-truth era in terms of a supposed excess of 'fake news'. And it engaged with wider more cultural-historical concerns about how contemporary media represents ideas of history in the present – as well as how the vulnerability of media-formats in which contemporary data is stored may render them inaccessible in the future, leading to a so-called Digital Dark Age.

Considering the wide-ranging literature from a thematic perspective, the chapter argued that we may recognise a contemporary, prevailing, perceived question for memory, as one of whether we are remembering more (or too much) or less (or too little). Such a perceived question around the relationship between memory and media-technologies, the chapter demonstrated, is an old one – traceable to at least the time of Plato. Equally old, it argued, is the philosophical assumption on which it may be thought founded: that memory works like an archive. Highlighting how language and metaphors may shape the way in which we conceive of and analyse memory, the chapter showed that numerous tendencies of thought in popular thinking on memory may be understood as emerging from an uncritical reliance on this likening of memory to an archive. Furthermore, it argued that three significant, yet highly-questionable tendencies in particular must be challenged in our attitude toward memory if we are to properly analyse its relationship with new technologies: the idea that memory is a function of the individual; that memories represent (accurate) recall of past experiences; and that memories are 'things' that are 'stored' in the brain.

At this point, the chapter introduced Bergson's thinking on *intuition* as a useful conceptual tool to re-think both our methodological approach to framing the *question* for remembering and our philosophical approach to exploring this question. On the one hand, it argued for a rephrasing of the research problem to be one around not solely on whether we are remembering less or more, but rather the ways in which we are remembering *differently* through new technologies. On the other hand, it emphasised a need to think remembering not in terms of *things in space* but in terms of *the experience of processes in time* – in the present, or in what Bergson calls *duration*. To this end, and in anticipation of the Theory Chapter to follow, it introduced the concept of duration as a force of the present.

---o0o---

The Theory: Memory, Method and the Man-Machine

In the previous chapter, we explored key popular and academic debates around what might be at stake for memory in the online era, with a significant and recurring theme emerging of whether we are remembering – or at risk of remembering – ‘too much’ or ‘too little’. This, the chapter argued, can be understood as a kind of Bergsonian false problem (Deleuze, 2011, p. 17), brought about through a historical, and historically-contested, conceptual ‘spatialising’ of memory. Such a spatialising is manifest through a popular reliance on the metaphor of the archive as a conceptual framework within which to think about memory – which, in turn, has led to various contested tendencies of thought around memory’s nature. If we are to properly examine the role of new technologies in changing memory processes, it argued, we must on the one hand move away from a concept of memory as a kind of static, spatial *recall* of the past (and toward one of memory as a dynamic actualisation of experience-informed *potential* in the present), and on the other rephrase the problem as one not concerned quantitatively with whether we are remembering more or less, but qualitatively with how we are remembering *differently*.

This chapter attempts these moves through three sections. In Part One, forming the substantial part of the chapter, it draws comprehensively on the thinking of Henri Bergson and other theorists to propose a theoretical understanding of memory as a transindividual, techno-social and inter-affective process – developing a notion of memory as a crucial-for-life, inter-relational realisation of *potential for action* in the present, rather than a ‘recall’ of knowledge of past experience. Furthermore, through a reading of Gilbert Simondon, it conceptualises remembering in terms of the constitution of a conscious sense of *self* and *the individual* through processes of psychic and collective individuation, and it emphasises the shared relation between the human and the technological in engendering such processes. Part Two, in a philosophical attempt to overcome the use metaphor as a conceptual tool for thinking memory in wider contexts, proposes the ‘anarchive’ as a working conceptual ‘anti-metaphor’. Interrogating and adapting the

usefulness of recent thinking on the concept of the anarchive, as developed through the SenseLab in Montreal (SenseLab, no date), it develops the term as a useful conceptual tool with which this expanded, potential-oriented view of remembering might be applied in a real-world discursive context. Thusly equipped, Part Three lays the groundwork for explication in subsequent chapters an argument for a contemporary socio-political ‘struggle’ for memory – in terms of the competing transindividual drives of processes of psychic and collective individuation, and the socio-economic agencies inherent in the contemporary technologies through which such processes take place. Enabled in part by its tendency to be viewed as an archive, the experience of memory has, the chapter argues, been quantified, packaged and monetised for the purposes of neo-liberal capitalist, corporate economic gain. Thus, the section argues, through the case-study examinations we must explore not just the *experiences* of remembering through new technologies, but also examine drives of the biological, the cultural and the technological transindividual underlying these experiences, and their inherent, inter-related agencies, as well as considering the resultant socio-political implications.

--o0o--

1. Thinking Memory: A Non-Archival Perspective

The primary focus of this thesis is the role new, online technologies may be playing in changing human memory processes, and the resulting implications. In light of the critique of the archive metaphor presented in the previous chapter, there are two major conceptual matters that it is necessary to critically unpack before we are able to properly address this question.

Firstly, forming the major part of this section, we must consider in what way ‘memory processes’ might be understood if we are to move away from an attitude informed by or overly sympathetic to the archive metaphor. This established, if we are to consider the role new technologies play in changing memory processes, we need secondly to consider how we might now understand the relationship between such memory processes and these technologies. To this end, the chapter engages in a reading of relevant thinking of Bergson and Simondon as important philosophical contributions to challenging the kind of quantified view of memory, engendered by the archive metaphor. In doing so, the chapter

develops a working theoretical approach that conceives of memory not as a recall of *knowledge* of past experience, but as a socio-technologically inter-relational, process-led realisation of potential, in duration – that is, above all, for the purposes of useful *action*.

The section begins with an in-depth exploration of Bergson's thinking on memory in relation to perception and consciousness. Drawing heavily on his 1896 work, *Matter and Memory* (Bergson, 2004), it outlines a view of remembering as “actualised” memory (Bergson, 2004, p. 181), as relational to the situation in which an individual finds themselves, in order to effect action, and as actualisable only *through* and *with* perception. In this way, it destabilises the subjectivity of a view of memory as the individual's discrete ‘knowledge’ acting *on* the present. Instead it sees memory as an affective, relational call-to-action *in* and *with* the present, and it begins to describe a way of thinking about remembering as a kind of relational realisation of potential for action. The section thus puts forward the original notion that we should think remembering not so much in terms of ‘memory’ as ‘memory-potential’, realised through and with perception. Consciousness, within this Bergsonian perspective, can be seen as rooted in the voluntary choice of action that developed senses of memory and perception inform. We might think of consciousness as emerging, then, through voluntary actions that inform the sense body's self-awareness or ‘otherness’ in relation to the wider world - what Simondon will call ‘individuation’. Through then exploring Simondon's arguable development of Bergson's thinking on affectivity, potentiality and action (Hansen, 2006, p. 8; Piatti, 2016) in his theorising on ‘pyschic’ and more ‘collective’ individuation and technics, the section broadens the context within which we may think about memory into a wider, socio-technological framework of affective inter-relationality. It enlarges the scope of memory-potential-informed action into ideas around how ‘the social’ or ‘society’ is produced through ‘collective individuation’, out of which a grouped sense of the *individual* may emerge. At the same time, it conceptually positions technologies as *extensions* of perception and action, and thus of consciousness, through which such movements of individuation may take place. In doing so, it seeks to argue for a repositioning of ‘memory’ into the heart of both contemporary affect and media theory.

Perception Serves Action

Here I am in the presence of images, in the vaguest sense of the word, images that are perceived when my senses are opened to them, unperceived when they are closed. (Bergson, 2004, p. 1)

These words are drawn from the opening paragraph to Bergson's 1896 work, *Matter and Memory*, in which he attempts to put forward a theory of consciousness that contests, or perhaps seeks to reconcile, the dualism in contemporary views on consciousness of both idealists, which thinks of the world as constructed by the quality of mind (Bergson, 2004, pp. 235-236) and realists, which derives the quality of the mind through quantitative measurement, and which Bergson considered to reduce the idea of 'mind' simply to 'brain' (Bergson, 2004, pp. 235-236). In Bergson's theorising, what we call 'consciousness' is not discrete. Rather, it is bound up in his thinking on the relationships between matter, perception, action, duration (and concepts of time) and memory – an understanding of consciousness being drawn out through an attempted global or 'joined-up' view of these. It is therefore key, if we are to properly develop his thinking on memory for the purposes of our own argument, to consider these relationships in relation to one another.

In simplified terms, when Bergson talks of being in "the presence of images" (2004, p. 1), he is referring to the mental representations of the matter around him as he perceives it in his mind. These images, it is worth reminding ourselves as we have seen in the previous chapter, should be thought of as matter perceived within the flow of *duration* rather than time – time being for Bergson, as literary scholar Susan Guerlac notes, a 'stand-in' for duration in reflective consciousness: "it is what duration becomes when we think and speak of it" (Guerlac, 2006, p. 69). And it is important to emphasise right from the outset that, in following Bergsonian reasoning, we must remind ourselves continually to think time in terms duration.

Bergson purposely chooses the word 'image' so as to depart from the language of idealism or realism – and he importantly allows the term to refer to both matter *and* perceptions of matter, blurring the boundaries between concepts of the outer 'real' world and the inner 'imagined' world.⁹ He defines an 'image' as "a certain existence which is more than that which the idealist calls a representation, but less than that which the realist calls a thing; an existence placed half-way between the 'thing' and the 'representation'" (Bergson, 2004, pp. vii-viii).

⁹ While Bergson maintains, that "[t]his conception of matter [as image] is simply that of common sense." (Bergson, 2004, p. viii), Guerlac suggests that his use of the word 'image' is to intentionally disrupt our "usual habits of thought" (Guerlac, 2006. 112). In line with the method of intuition, such a phrasing may force us to begin thinking outside of idealist and realist philosophy, and think in terms of 'action' rather than 'knowledge.'

Yet it is Bergson's thinking on the *function* of these images that sets him even more firmly apart from the idealist and realist thinking on perception that he seeks to challenge, in part enabled by this refusal of more traditional terminologies. Bergson proposes that, while the position of the idealist and the realist might be considered diametrically opposed, they in fact share the fundamental mistake of thinking perception as 'knowledge'. In essence, *I perceive, therefore I know*:

If we now look closely at the two doctrines, we shall discover in them a common postulate, which we may formulate this: *perception has a wholly speculative interest; it is pure knowledge ...* for both parties, to perceive means to know. (Bergson, 2004, p. 17)

For both the idealist and the realist, then, as Guerlac puts it, "perception occurs in the pursuit of truth or knowledge about the empirical world" (2006, p. 107). Bergson crucially rejects this synthesis, however, strikingly asserting that perception is not about knowledge at all. Rather, Bergson claims that perception is about action: *I perceive, therefore I act*. Moreover, perception is about action *in relation* to the movements of other images: *I perceive, therefore I react*.

[T]he material world is made up of objects, or, if you prefer it, of images, of which all the parts react upon each other by movements. And that which constitutes our pure perception is our dawning action, in so far as it is prefigured in those images. The *actuality* of our perception thus lies in its *activity*, in the movements which prolong it (Bergson, 2004, p. 74)

The significance of this claim cannot be understated – seeming to turn, as it does, European-historical convention on its head. Indeed, philosopher Keith Ansell-Pearson notes late-nineteenth-century philosopher and psychologist William James's assertion of Bergson's reasoning as "effecting a revolution in thought comparable in significance to Kant's Copernican revolution in the Critique of Pure Reason" (quoted in Ansell-Pearson, 2010, p.61). To argue this radical philosophical position, Bergson adopts an evolutionary perspective, reorienting perception not as a given faculty of *knowing* one's environment, as it is accepted in one way or the other for the idealist or realist, but as a developed evolutionary trait, bound up through the nervous system, which, he posits, allows an animal to *act* on the necessity afforded by its immediate situation and surroundings. In short, to be able to react to its environment.

Bergson argues that one can think of a necessary and shared fundamental model of perception, in its function, between lower and higher organisms: “to receive stimulation, to provide motor apparatus and to present the largest possible number of these apparatuses to a given stimulus” (Bergson, 2004, pp. 20-21). Through his reasoning, we can see perception on the one hand, at its evolutionary base, as a mode of enabling reaction (or, at a level of stimulus-response, as a mode of reaction itself) to the conditions of the present moment, for the purposes of usefulness or survival. On the other, we can see that that, as the ability to perceive has developed through evolution, it is not transformed into something ‘new’ in a sense of ‘knowledge’. Rather, its development has facilitated an enlargement of the ‘number of these apparatuses’ through which we may act. The difference between perception in lower and higher organisms is not a matter of difference in kind (knowledge over impulse-action), but difference in degree (enlarged ability to act).

[I]f the nervous system is thus constructed, from one end of the animal series to the other, in view of an action which is less and less necessary [moving from lower animals to higher animals], must we not think that perception ... is entirely directed towards action, and not towards pure knowledge? (Bergson, 2004, p. 21)

Body as Centre of Action

The body, is, for Bergson, a “centre of action; it receives and returns movements” (Bergson, 2004, p. 4), and the ability to perceive is the very ability to (re)act – as one of Bergson’s contemporary commentators notes, “It is concerned with action, not knowledge; it is practical, not speculative” (Clark Barr, 1913, p. 642). Once we grasp this central tenet that perception serves action rather than knowledge, we can begin to think about the conscious state of mind and body as always being geared toward (re)action in response to its surroundings – as Guerlac notes, “The brain is no longer a knowledge center, a machine that produces representations of the world. It becomes a center of action” (2006, p. 111).

Indeed, Bergson characterises the brain in this sense as a “kind of central telephonic exchange: its office is to allow communication, or to delay it” (Bergson, 2004, p. 19). These almost-telephonic ‘communications’, which represent underpin all of what we experience as perception, we might best understand as ‘affections’, the movements of interaction between the human body and the images with which it is surrounded.

Perception is inter-relational, the representation of a relationship between the extant and seemingly impending movements of both the body and its surroundings, acting upon each other. Indeed, media theorist Mark Hansen notes that “the core principle of Bergson’s theory of perception ... [is] that there can be no perception without affection” (Hansen, 2006, p. 100). “My body”, Bergson notes, “acts like an image which reflects others, and which, in doing so, analyses them along lines corresponding to the different actions which it can exercise upon them.” (2004, p. 46). All perception involves an interactive process by which the human is affected by an image, which in turn may be affected by human action.

Here are external images, then my body, and, lastly, the changes brought about by my body in the surrounding images. I see plainly how external images influence the image that I call my body: they transmit movement to it. And I also see how this body influences external images: it gives back movement to them. My body is, then, in the aggregate of the material world, an image which acts like other images, receiving and giving back movement, with, perhaps, this difference only, that my body appears to choose, within certain limits, the manner in which it shall restore what it receives. (Bergson, 2004, pp. 4-5)

“[T]here is no perception without affection”, Bergson re-affirms, “Affection is, then, that part or aspect of the inside of our body which we mix with the image of external bodies” (Bergson, 2004, p. 60). Hansen makes the reasoned, ‘neo-Bergsonist’ claim, then, that perception is “necessarily anchored in the activity of the body via the modality of affect” (2006, p. 266): perception is to be (consciously or otherwise) aware of being affected, and of one’s ability to affect.

This is not, however, to suggest that all action is reducible to determinate mechanisms. As Bergson notes, “[M]y body appears to choose” (2004, p. 5) – and his likening of the brain to a telephone exchange is useful for understanding this, in speaking of “an action which is less and less necessary” (2004, p. 21) as we move from lower to higher organisms. In lower animals, perception is based on necessity for action, and what is perceived – the stimulus – is ‘communicated’ into action immediately, leading only to *impulse actions*. In higher animals, such as humans, an enlarged sense of perception allows for a greater number of potential actions to given stimuli, as well as the opportunity for “suspense” (Bergson, 2004, p. 22) – to ‘delay communication’ of action, to *hesitate* -

affording humans a sense of choice, and leading to the ability make *voluntary actions* (Bergson, 2004, pp. 20-23):

And, if this be so, is not the growing richness of this perception [i.e. for humans] likely to symbolize the wider range of indetermination left to the choice of the living being in its conduct with regard to things? (Bergson, 2004, p.21)

This has significant implications for perhaps more traditional binary views of the conscious versus unconscious. Rather than a difference *in kind* between conscious and unconscious, we might instead see a difference *in degree* between lesser conscious drives toward action – which we might call instinct – and greater conscious ones – which we might call intelligence. This is true of both the difference in degree between lower animals and humans, and of the human condition itself – the bodily drives toward impulse-action in duration being the ‘default’ state, and, we shall see below, the ability to *choose* being a kind of hesitation or interruption that can be imposed onto duration.

Through Bergson, then, we can understand perception as a kind of representation of the world as images, whose primary function is to inform action, impulsive or reasoned. Perception is an affective function, offering the ability to respond to immediate situations, or stimuli, around us; a lower level of perception serves impulse, while a higher level of perception allows hesitation, enabling choice. But how does one go about making that choice? To deal with a multiplicity of options for action? Here we need to move into Bergson’s thinking on consciousness itself, and, as we will see, the necessity of memory in consciousness and conscious perception as what we will frame as the *potential* or *force* that guides these hesitations.

Consciousness: Memory in Perception

Our representation of matter is the measure of our possible action upon bodies: it results from the discarding of what has no interest for our needs, or more generally for our functions. In one sense we might say that the perception of any unconscious material point whatever ... is infinitely greater and more complete than ours, since this point gathers and transmits the influences of all the points of the material universe, whereas our consciousness only attains to certain parts and to certain aspects of those parts. Consciousness ... lies in just this choice. (Bergson, 2004, pp. 30-31)

To have a more enlarged sense of perception, Bergson makes explicit, should not be understood as having a more ‘complete’ perception of the present moment. Indeed, since perception is driven toward action, to possess an enlarged sense of perception is not so much to perceive ‘more’ – though more is available for one to perceive. Rather, it is to have a greater *selection* over what is perceived, which acts of course in the service of *action*, thereby enabling a greater *choice* of action for the living body. Indeed, following Bergson, Ansell-Pearson observes that memory and perception *must* be thought of “in the context of the lived body” (2010, p. 63). And the physical and psychological processes of the lived body must in turn be thought of in terms of *selection* and *limitation* of perception and memory:

The body is indeed for us a means of action, but it is also an obstacle to perception. Its rôle is to perform the appropriate gesture on any and every occasion; for this very reason it must keep consciousness clear both of such memories as would not throw any light on the present situation, together with the perception of objects over which we have no control. It is, as you like to take it, a filter or a screen. It maintains in a virtual state anything likely to hamper the action by becoming actual. It helps us to see straight in front of us in the interests of what we have to do; and, on the other hand, it prevents us from looking to right and left for the mere sake of looking. It plucks for us a real psychological life out of the immense field of dreams. In a word, our brain is intended neither to create our mental images nor to treasure them up; it merely limits them, so as to make them effective. It is the organ of attention to life. (Bergson, 1935, pp. 314-415)

As we will see in this section, Bergson shows that it is in the relational dealing with this *choice* of perception and action, as lived in duration, that what we may think of as greater or lesser degrees of ‘consciousness’ emerge, and out of which a sense of awareness of the *self* may arise. Furthermore, this is arrived at through the always-entangled processes of perceiving, remembering and acting.

“There is no perception which is not full of memories” (Bergson, 2004, p. 24), Bergson notoriously observes. Memory permeates all of our perceptions of the world, he says, allowing us to exploit the usefulness of *previous* experiences to inform appropriate actions in *present* experiences:

We assert at the outset, that if there be memory, that is, the survival of past images, these images must constantly mingle with our perceptions of the present, and may even take its place. For if they have survived it is with a view to utility; at every moment they complete out present experience, enriching it with experience already acquired; and, as the latter is ever increasing, it must end by covering up and submerging the former. (Bergson, 2004, p. 70)

The qualitative experience of remembering in perception, Bergson wants to show, allows us to make use of past experience in the present to inform action. So, while, speaking in terms of our experience within duration, “[n]othing *is* less than the present moment ... the indivisible limit which divides the past from the future” (Bergson, 2004, p. 193), perceptions *of* the present are in fact “merely an occasion for remembering ... [since] we measure ... the degree of reality by the degree of utility” (Bergson, 2004, p. 71).

“The mistake” that we tend to make when thinking about memory, Bergson reminds us, “is due to our believing that perception and memory are pure knowledge, whereas they point to action” (Bergson, 2004, p. 302). Memory is not in the first instance at all about ‘knowledge’ of the past, but about how previous experiences can inform the potential usefulness of action in the present. And since, perception is inter-relational, so too is memory: “[P]erception does not consist of a subject sensing an object, but exists as a *circuit* in which ‘subject’ and ‘object’ are bound together as a system of perception and memory” (Bollmer, 2011, p. 456).

Furthermore, the qualitative experience of remembering through *conscious* perception, Bergson will show, allows us to make use of past experience to inform *voluntary* action. Memory projects itself onto perception – and consciousness, we will see, can in a very simple sense be thought of as the felt experience of being able to use memory, through and with perception, to inform a voluntary choice of action.

Pure Perception

Bergson once again takes an evolutionary approach to demonstrating this position, asking us to imagine a strictly theoretical (and theoretically impossible) notion of “*pure* perception” (2004, p. 26). While what we seem to experience as perception in our existence is related to a sense of time – of past and future – to experience pure perception would be to exist in a world of lived duration, as an always-immediate present, without any sense of past or future. In short, an existence without memory:

[P]ure perception ... would be possessed by a being placed where I am, living as I live, but absorbed in the present and capable, by giving up every form of memory, of obtaining a vision of matter both immediate and instantaneous (Bergson, 2004, p. 26)

What would such an experience of the world be like? We would have no conception or drive for the need for action. Nor would we be able to recognise other matter, nor to appreciate our affections with it. We would see all objects in terms of the present moment rather than their transition, through movements and actions, from a past and into a future. In fact, to be able to indiscriminately perceive all matter in the present at once would be tantamount to not being able to perceive at all, reducing us to inert matter: “To perceive all the influences from all the points of all bodies would be to descend to the condition of a material object“ (Bergson, 2004, p. 46). And to perceive yet be unable to temporally conceive of existence in relation to the past and to the present-as-immanent-future – as “to eliminate all memory” (Bergson, 2004, p. 77) – would equally result in an inability to produce action and, essentially, a reduction to material object:

If we were only to divide, ideally, this undivided depth of time [passing moments of time in duration], to distinguish it in the necessary multiplicity of movements, in a word to eliminate all memory, we should pass thereby from perception to matter, from the subject to the object. (Bergson, 2004, p. 77)

Returning now to the ‘actual’ experience of perception, we can now see how a kind of *selective* perception would need to develop to serve useful action, based on some awareness – whether or not perhaps traditionally viewed as ‘conscious’ – of the past moving into the future. And a sense of what we call ‘memory’ would be that which affords perception such a selectivity based on previous experience. A sense of *conscious* perception, as we shall see Bergson argues, is what emerges on the one hand to make sense of a world in which past is always flowing in the moment into the future, in order to, on the other hand, allow us the ability to make voluntary actions rather than impulsive ones, to choose how to act.

Consciousness is the Note of the Present

Bergson calls consciousness “the note of the present” (Bergson, 2004, p. 181). And in one sense, then, we can understand consciousness as helping the human body to “cope” with existing in duration (Guerlac, 2006, p.122). Such is made possible through the

interaction between perceiving and remembering – “threading on the continuous string of memory an uninterrupted series of instantaneous visions” (Bergson, 2004, p. 69):

In short, memory ... covering as it does with a cloak of recollections a core of immediate perception, and also contracting a number of external moments into a single internal movement, constitutes the principal share of individual consciousness in perception. (Bergson, 2004, p. 25)

In doing so, these processes of consciousness afford a dual sense of living in both the *actual* and the *virtual* – allowing an experience of the perceived actual present that is at the same time experienced in relation to the virtual in its awareness of its own immediate and more distant past and immediate and more distantly-approaching future.

Perception is not possible without some sense of memory – think the concept of *recognition*, for example, as an essential pairing of the two. In fact, perceptions are so “interlaced with memories” (Bergson, 2004, p. 72) that our experience of the world is at all times coloured by memory: “[T]he basis of real, and so to speak instantaneous, intuition, on which our perception of the external world is developed, is a small matter compared with all that memory adds to it” (Bergson, 2004, p. 70). Indeed, Bergson goes so far as to argue that in one sense “every perception is already memory”, given the nature of duration, with “the pure present being the invisible progress of the past gnawing into the future” (2004, p. 194).

Yet it is important to remind ourselves that this should all be understood in relation to Bergson’s “fundamental law of physical life”: the “orientation of consciousness towards action” (Bergson, 2004, p. 233); that our bodies are first and foremost centres of action. As Ansell-Pearson puts, it:

“[T]he accumulation of memory-images is rendered subservient to praxis, making sure that only those past images come into operation that can be coordinated with a present perception, and so enabling a useful combination to emerge between past and present images. (2010, p. 67)

“We pass”, Bergson says, “by imperceptible changes, from recollections hung out along the course of time to the movements which indicate their nascent or possible action in space” (Bergson, 2004, p. 88). How human perception of the present is experienced, then, through and with memory, is always geared primarily toward useful action for the being:

That which I call my present is my attitude with regard to the immediate future; *it is my impending action*. My present is, then, sensori-motor. Of my past, that alone becomes image and consequently sensation, at least nascent, which can collaborate in that action, insert itself in that attitude, in a word make itself useful (Bergson, 2004, p. 180-181; italics my own)

“A lived body”, for Bergson, Ansell-Pearson explains, “is one embedded in a flux of time, but one whose constant movement within the dimension of the past and along the horizon of the future is informed by the requirements of the present” (2010, p. 66). Moreover, consciousness allows us, within its “temporal synthesis” (Guerlac, 2006, p. 117), stitching together the constant flow of passing moments into a single, ongoing movement, to make use of past experience, through memory, to inform not just action, but *voluntary* action. Consciousness, then, is that which allows us, through the force of memory in perception, to move beyond the immediacy of impulsive reactions and toward hesitation, and voluntary actions: “Conscious perception signifies choice, and consciousness mainly consists in this practical discernment” (Bergson, 2004, p. 46). Put bluntly, as Bergson puts it, “the chief office of consciousness is to preside over action and to enlighten choice” (Bergson, 2004, p. 82).

Perception as Limitation: Consciousness as Free Will

In this sense, we can see that it is through the *hesitational force of memory* in consciousness – “This consciousness [that] retains the past, enrolls what time unrolls, and with it prepares a future which it will itself help to create” (Bergson, 1920, p. 38) – that we experience a sense of free will, freedom of action. The virtual force of memory, in ‘delaying impulsive communications’, allows us the relative freedom to break away from automatic, affective, impulse reactions to the actual world in the flow of duration, and instead (or indeed additionally) make somewhat independent actions:

If there are actions that are really *free*, or at least partly indeterminate, they can only belong to beings able to fix, at long periods, that becoming to which their own becoming clings, able to solidify it into distinct moments, and so to condense matter ... to digest it into movements of reaction which will pass through the meshes of natural necessity ... The independence of their action upon surrounding matter becomes more and more assured in the degree that they free themselves from the particular rhythm which governs the flow of this matter. (Bergson, 2004, p. 279)

Memory is an *interruption* to the flow of perception-response in duration, through which a relational sense of ‘otherness’ may emerge, which we may in turn understand as the *feeling* of consciousness.

It is worth noting the similarity here with Simondon’s thinking (with which we shall engage more properly further below) on memory and consciousness. As philosopher David Scott highlights, Simondon argues that memory drives a sense of *doubt* within duration – “simultaneously an operation of distance and reattachment” (Scott, 2014, p. 118) – out of which the sense of conscious self emerges:

Memory is the realization of distance, gaining of objectivity without alienation. It is an extension of the limits of the subjective system, which gains an internal duality without cutting or separation: it is alterity and identity progressing together forming themselves, and distinguishing themselves in the same movement. The memory’s content becomes symbol of the present “I” (Simondon, translated in Scott, 2014, pp. 118-119).

Furthermore, an enlarged sense of memory allows us to not just dwell, in a sense of our “mental life” (Bergson, 2004, p. 218), within the state of impending action of the actual instantaneous present, but to, with intellectual effort, move through our own virtual environments to call on recollections not immediately contiguous to the present situation – “go from the physical existence which is merely ‘acted,’ to that which is exclusively ‘dreamed’” (Bergson, 2004, p. 218). “We shift between virtual and actual states all of the time, never completely virtual or completely actual”, Ansell-Pearson observes (2010, p. 68). And this constant oscillation between two different “planes of consciousness” (Bergson, 2004, p. 223) allows us an ability to experience in the present both a sense of immediate, in-the-moment connection with past experiences and a sense of being able to relate these to other past experiences – an ability, we can surmise, to stitch together a sense of *self*. Psychologists Steven D. Brown and Paula Reavey explain:

What is called autobiographical memory is this reshuffling of past experiences to create an orderly present and coherent life trajectory – or ‘long-term self’ – where what we are doing now appears entirely congruent with what we have done before. (Brown and Reavey, 2015, p. 26)

Yet as Brown and Reavey, following Bergson, make clear, despite this sense of self, of one’s own, personal past, remembering should like perception *always* be considered

affectively – as psychic movements related to the affections of the present situation. As they argue:

[R]emembering is a site-specific operation. An implication of this is that what a given individual can remember depends upon the settings in which they participate ... It makes little sense to say that we carry with us a set of memories of the past that are recollected when we encounter the right cues. It would be better to say that participating across a range of settings (families, groups, institutions, media) gives us access to the specific remembered accomplishments of those settings, out of which we reconstruct a personal life ... [Memory] only becomes relevant to us when it is engaged with the setting-specific processes that deliver ‘remembering’. (Brown and Reavey, 2015, p. 43)

The key points to emphasise at this stage are twofold.

Firstly, through a Bergsonian approach, we can understand both perception and memory as *relational* to the *actual* present, and their enlargement being just as much about potential for greater *limitation* as about potential for greater *inclusion*. Consciousness for Bergson is at all times framed by the particular affections of surrounding stimuli and of previous experience, in service of useful action for the organism, leaving out that which is not useful – leading Hansen to characterise his theorising as a “subtraction theory of consciousness” (Hansen, 2006, p. 79). Similarly, through this process of limitation and selection, as others have noted, one might just as easily think of remembering from a Bergsonian perspective as an active process of forgetting as one of remembering (Cariou, 1999; Burton, 2008). “[O]ur nervous system ... set[s] aside all those among the past images which cannot be coordinated with the present perception and are unable to form with it a *useful* combination”, Bergson tells us (2004, p. 97). Forgetting, then, Brown and Reavey describe as “protection against the dominance of the past over the present” (2015, p. 69), filtering out one’s awareness of one’s previous experience into a partial idea of one’s past. One might in many ways call it a ‘subtraction theory’ of *memory*.

Secondly, as we shall see in the next section, the *virtual* experience of remembering is not one of ‘quantified’, archival knowledge, but of somewhat imaginatively relating the experienced past to the needs of the perceived present. *To remember*, in the sense of experiencing a memory, *is not to recollect* – nor even to ‘remember’ in a traditional, archival sense of calling to mind previous experience. “*To picture is not to remember*”,

Bergson says, “No doubt a recollection, as it becomes actual, tends to live in an image; but the converse is not true” (Bergson, 2004, pp. 173-174). Rather, as we shall see in the next section, when we remember, we go through a process of drawing memory into mind in an actualised, experienceable memory-image, useful for understanding the relevance of previous experiences in the present situations, but not necessarily representative of what *happened* in the past, nor of the experience itself.

Keeping in mind the fundamental law that consciousness is oriented toward action, moving further away from the idea of memory as ‘knowledge of the past’, the thesis will now draw on a reading of Bergson’s theorising on ‘actualisation’ of ‘pure memory’ (2004, pp. 86-169) to argue for a view of memory as *potential for action*.

Actualisation: Memory as Potential

Perception is never a mere contact of the mind with the object present; it is impregnated with memory-images which complete it as they interpret it. The memory-image, in its turn, partakes of the ‘pure memory’ which it begins to materialize, and of the perception in which it tends to embody itself: regarded from the latter point of view, it might be regarded as a *nascent perception*. (Bergson, 2004, p. 170; italics my own)

We have seen through a reading of Bergson’s theory of consciousness that the experience of perception and memory can be understood chiefly in relation to useful action for the organism. We perceive the world in the present moment through affectively constructed images that at once represent external stimuli and are imbued with memory of past experience. Through an evolutionary augmentation of perceptive ability, we are able to perceive a potentially larger number of images, yet the conscious ability to choose, to make voluntary actions, relies on a highly selective representation of these images.

Embracing Bergson’s rejection of traditional notions of memory as ‘knowledge’ or ‘recalled experiences’ of the past, through a reading of Bergson’s ‘pure’ and ‘actualised’ memory, and drawing tentatively on more recent findings in psychology, this section argues for a conceptual re-orienting of ‘memory’ as ‘memory-potential’, and of ‘remembering’ as principally a realisation of this potential, for the purposes of action. Through this, it aims to demonstrate that remembering is less to do with a static, conceptually-spatialised, archivally-informed recall of the past ‘as it happened’, which can be regarded in many ways as illusion, and more to do with how memory acts to dynamically realise potential for action through process- and affectively-led

(re)imagining of our past experiences in order to choose, indeed to justify, action in duration.

Pure Memory and Actualised Memory

Let us begin by noting Bergson's important distinction between 'pure memory' and 'actualised memory' (Bergson, 2004, p. 163). Paraphrasing French philosopher Jean Hyppolite (2003), Ansell-Pearson claims that what Bergson brings to memory through his thinking is a conception of the nature of memory as "a synthesis of past and present and with a view to the future" (2010, p. 62). Bergsonian thinking on memory, Ansell-Pearson notes, refuses a conception memory as a "faculty of repetition or reproduction" rather than something more to do with "invention and creation" (2010, p. 62). And it is this sense of invention and creation in actualised memory that this section seeks to emphasise through a reading of Bergson's theory.

Thus far, we have considered remembering *as a function*, as it relates to consciousness and perception. Yet for Bergson there is an important distinction between what we think of when we talk about 'memory' – or "pure memory", the "recollection" – and about 'remembering' – or the "memory-image", the "actualized" memory (Bergson, 2004, p. 163). Bergson contends that, as each moment of perception passes, and every image is experienced, so too are recollections formed as pure memory, but that these are hidden from consciousness:

I hold that *the formation of memory is never posterior to the formation of perception; it is contemporaneous with it*. Step by step, as perception is created, the memory of it is projected beside it, as the shadow falls beside the body. But, in the normal condition, there is no consciousness of it, just as we should be unconscious of our shadow were our eyes to throw light on it each time they turn in that direction. (Bergson, 1920, pp. 157-158)

Pure memory, as it is formed, "is ordinarily concealed" (Bergson, 1920, p.175) by the necessity of perception and consciousness, since it is of no use to action in the present moment:

[T]he present ... is twofold at every moment, its very up-rush being in two jets exactly symmetrical, one of which falls back towards the past whilst the other springs forward towards the future. But the forward-springing one,

which we call perception, is that alone which interests us. (Bergson, 1920, p. 160)

Pure memory, then, is inaccessible to the conscious mind. And yet it is out of pure memory, and into perception, through which memory-images are drawn. For ordinary or ‘mechanical’ day-to-day action, as we have seen, this realisation of a memory-image is instantaneous, coming in the form of recognition and impulse action through perception. Such a realisation “need not show itself” (Bergson, 1920, p. 176), Bergson says: invisibly within perception, it is enough if it “recall the circumstances which have been given in contiguity with it, what has preceded and what has followed, what in short it is important to know in order to understand the present and anticipate the future” (Bergson, 1920, p. 176). Yet to consciously access a recollection requires intellectual effort through a process of ‘actualisation’, as it is transformed out of an inaccessible recollection and into a perceptible memory-image. Bergson describes this familiar process as “something like the focussing of a camera” (Bergson, 2004, p. 171)

[O]ur recollection still remains virtual [by which Bergson here means ‘latent’, ‘inaccessible’ or ‘imperceptible’]; we simply prepare ourselves to receive it by adopting the appropriate attitude. Little by little it comes into view like a condensing cloud; from the virtual state it passes into the actual; and as its outlines become more distinct and its surface takes on colour, it tends to imitate perception. But it remains attached to the past by its deepest roots. (Bergson, 2004, p. 171)

Yet “[m]emory actualised in an image in an image differs ... profoundly from pure memory” (Bergson, 2004, p. 181), Bergson tells us, since it is a selective and experienced through perception. Moreover, conscious recollections are always reliant on the needs for action of the present moment for their formation, rendering pure memory “powerless as long as it remains without utility” (Bergson, 2004, p. 181). Memory is “pure idea or intention, pure virtuality”, explains Guerlac (again, here suggesting ‘inaccessible’, latent or imperceptible), “It only actualizes itself as it comes into contact with perception (which serves action) through the intermediary of the motor schematism” (Guerlac, 2006, p. 139). For a conscious memory to “reappear in consciousness”, observes Bergson:

[I]t is necessary that it should descend from the heights of pure memory down to the precise point where *action* is taking place. In other words, it is from the present that comes the appeal to which memory responds, and it is from the

sensori-motor elements of present action that a memory borrows the warmth which gives it life. (2004, p. 194)

Memory as Potential for Action

Memory is “fugitive, ever on the point of escaping”, Bergson says, as if “backward turning memory were thwarted by the other, more natural, memory, of which the forward movement bears him on to action and to life”. (Bergson, 2004, 94). Memory images are affectively, relationally produced, drawn into perception by a consciousness that “set[s] aside all those among the past images which cannot be coordinated with the present perception and are unable to form with it a *useful* combination” (Bergson, 2004, p. 97).

What is perceived through such a memory-image is not the recollection itself, then, but a kind of (re)imagining of the events out of pure memory, through and intermingled with the need of perception, oriented toward useful action in the present. We have seen that memory in a Bergsonian sense might be approached just as much in terms of forgetting as remembering, since it is by its nature affectively selective, and while we may be able to call memories to mind, this may only be “in the measure in which it can aid us to understand the present and to foresee the future” (Bergson, 1920, p. 175), since the lived body is oriented always toward action. For Bergson, “[R]emembering and forgetting are caught up in an endless dynamic of the spatialisation of experience, the actualisation of the virtual” (2005, p. 232), psychologists David Middleton and Steven D. Brown note – thus, “It makes no sense, then, to choose between these terms – they are necessary partners” (2005, p. 232). “To *picture*”, Bergson makes clear, “is not to *remember*” (Bergson, 2004, p. 173). What we experience when we picture our past in a memory-image – or seemingly ‘retrieve a memory’, in archival terms – is not a representation of our pasts, but a quasi-accurate re-imagining of the past (or previously perceived presents), insofar as it may be useful for present action.

We can understand memory, then, through a whole combination of interactions between itself, perception and consciousness, not so much as a direct relation with the past or with past experience, but as an ability to make sense of the *present* through past experience, for the purposes of *action*, in anticipation of the organism’s *future*. This leads Bergson, importantly, to describe pure memory as “the forerunner of action” (Bergson, 1920, p. 175).

--

Here, then, we might pause to illustrate a significant two of the wider philosophical implications of viewing memory as serving action, rather than knowledge.

Firstly, let us return to the concept of *knowledge* and its nuanced distinction from remembering, both to emphasise that memory's function is to serve action, and to understand how a sense of 'knowledge' can be understood within such a conceptual framework. While function of memory is not to do with "repetition or reproduction" (Ansell-Pearson, 2010, p. 62), through the purposeful or reflexive repetition of the same or similar experiences of perception (say, working in the same environment each day, or learning historical dates at school) we can come to 'know' details or information, seemingly 'recalling information' or 'facts' or 'knowledge' about them at will. Here, we must think again about the notion of 'habit memory'. Like the active training of the muscular body to perform a particular task (learning a dance, for example, or learning to ride a bike), we can think of 'knowledge' as a psychic form of habit memory:

The memory of the lesson, which is remembered in the sense of learnt by heart, has *all* the marks of a habit. Like a habit, it is acquired by the repetition of the same effort. Like a habit, it demands first a decomposition and then a recomposition of the whole action. Lastly, like every habitual bodily exercise, it is stored up in a mechanism which is set in motion as a whole by an initial impulse, in a closed system of automatic movements which succeed each other in the same order and, together, take the same length of time. (Bergson, 2004, pp.89-90)

Knowledge is the accident of memory. From a Bergsonian perspective, we might think of what we think of as knowledge as a kind of conceptual 'training' of memory processes, to create a perhaps conceptual *artefact*. "Habits formed by the repeated actions are amassed in the body ; these do not *represent* the past, they merely *act it*" (Bergson, 2004, p. 91). Thus, what we call 'knowledge' is a kind of way of bodily carrying acts of the past into the present, through repetition. Here, then, becomes clear the importance of not conflating 'memory' – as relationally and reflexively geared toward action in the present – with 'knowledge'. Though this conflation may historically have been "generally studied by psychologists", we may better think of knowledge as "*habit interpreted by memory* rather than memory itself" (Bergson, 2004, p. 95). As we shall see below, this technological 'training' of memory into knowledge might be extended out of bodily habit and into physical and now digital and online artefacts of the *social* – the prolonging of a 'record' from the present moment into future present moments; the technological,

artefactual extension of habit. And, as we shall see, the continuing conflation of these new kinds of ‘habit-memory artefact’ with true memory pose interesting questions for how we may think about remembering in the online era.

Secondly, it is worth noting, tentatively, that, when interpreted within this reoriented perspective on memory, some of the psychological findings of the twentieth-century that appear challenging from a popular, archivally-informed view on memory, such as those covered in the Literature Review chapter, might become somewhat less problematic. Let us, for example, consider the seemingly major problem for the archive model of ‘false memory’ and the ‘misinformation effect’ (Loftus, 2005). Elizabeth Loftus and others have shown through fascinating and significant research over several decades that individuals may be, intentionally or unintentionally, led to “come to believe falsely that they experienced rich complex events that never, in fact, occurred” (Loftus, 2005, p. 361), through being exposed to (mis)information after the event, or that people might remember events differently if answering ‘suggestive’ or ‘leading’ questions about them. From an archival, memory-retrieval interpretation of the research findings, the idea is that memory ‘engrams’ might be either rendered inaccessible or are “susceptible to decay or damage or alteration” through the passing of time and exposure to new memories (Loftus, 2005, p. 363). While Bergson’s theorising on memory, formulated the better part of a century earlier, does not encapsulate the later-twentieth-century topic of false memory, he does acknowledge the theoretical potential of pure memories, drawn down from an imaginative plane of consciousness and into conscious perception, to “distort the practical character of life, mingling dream with reality” (2004, p. 96). Interpreting the phenomenon of false memory from within this developing Bergsonian perspective, then, might we conjecture that a mis-remembering of an event, indeed a total ‘re-imagining’ of non-existent past events, based on a combination of the realisation of feeling about previous experience and of the affective, present-moment cues, would in fact be an *expected* reaction for an organism whose orientation is toward action in anticipation of the future? For such an organism, the events of past would be important only insofar as they could inform action in the affectively-perceived present. Indeed, we might say that it is not the ‘past’ here that must be remembered at all, so much as the ‘lessons learned’ from past experience, packaged semi- or wholly-fictionally into an imagined history – an *idea* of the past – that is useful for the needs of the perceived present situation. The question of how to deal with the issue of false memory, from a perspective that treats memory not as knowledge but impetus for action, might really come down to a question, as Brown and Reavey have

suggested, of how, and for the sake of what purposes, one interprets conceptions of ‘true’ or ‘false’ (2015, p. 88). In numerous senses, then, we might say that it is not about *truthfulness* but about *usefulness*.¹⁰

Furthermore, how might we speculate on the implications that a more Bergsonian-empathetic attitude toward memory might have for interpretations of research findings around phenomena such as *confirmation bias*, in which individuals and groups tend to take actions that conform to their existing views over actions that would challenge them? Or *hindsight bias*, in which individuals and groups remember events differently from how they happened, in light of outcomes have encountered later on? Indeed, issues such as false memory, confirmation bias and hindsight bias are all prime areas for consideration and debate in terms of the ways in which we are remembering through new, online and pervasive technologies – and, as such, will be unpacked and explored in greater detail through the case-study chapters.

“Where are Memories Preserved?”

For now, let us return to one more seemingly logical consequential question around the notion of pure memory, or *memory-potential*, which, while it has previously been tackled – by Bergson (2004) and notably by Gilles Deleuze (2011) – should be covered for the sake of both clarity of idea and for emphasis of approach. That is: if memory is actualised through a process of conscious perception, through the brain, and if these memories are drawn out of pure memory – and yet we are to embrace a view of memory as non-archival – then where exactly ‘is’ memory? This question, Bergson observes can be understood as arising from a spatialised (archival) view of memory, since, being “strongly obsessed by images drawn from space” (2004, p. 191), when conscious memories become actualised in perception they give the illusion of necessarily coming forth from *somewhere*: “[W]e

¹⁰ Here, as an aside, we might think too of traumatic memory. Brown and Reavey’s investigation in *Vital Memory* focuses on autobiographical remembrances of difficult pasts, whose nature as difficult-to-forget means they come to play a significant part in the individual’s sense of identity (2015). They point to various role different relations between the individual and its social environments may play in how these memories are ‘managed’ (or not). An interesting relation might speculatively be drawn between the emphasis on the vitality of these pasts, and the growing body of research into ‘Virtual Reality Exposure Therapy’ to treat post-traumatic stress disorder (Rothbaum et al, 2010), in which re-representations of traumatic events are lived out through virtual-reality environments, reportedly leading to a gradual lessening of the intensity of the effects of PTSD. From a Bergsonian perspective, we might think of such an effect as a kind of ‘training’ of remembrances of difficult, fear-inducing pasts through managed perceptions of similar representations made ‘safer’. In doing so, the memory-image realised from memory-potential may draw on numerous, ‘safer’ experiences of the past to inform a less threatened, less instinctive trauma-response.

cannot hinder ourselves from asking *where* memories are stored up” (Bergson, 2004, p. 191). As cultural theorist James Burton, following Bergson, notes:

[T]he recollection once actualized can only exist as something like an imagined set of stimuli, parallel to those real objects that normally produce our perceptions. Just as in the description of perception, whereby the body-image’s reflection of the world around it results in the mirage of an inner, perception-creating faculty, so the appearance of memory-images gives the impression of having been drawn from some physical place of storage. (2008, p. 326)

Bergson, as we saw in the Literature Review chapter, is vehemently opposed to the archival, ‘locationist’ model of memory (2004, pp. 191-194), in which individual memory ‘traces’ or ‘engrams’ are stored in and retrieved from some part of the brain. However, he does not outright refute the idea that ‘pure memories’ may be localised somehow in the brain. Rather, he suggests that the brain “possesses ... a special contrivance whose purpose is to convert the pure memory into a nascent perception or image” (Bergson, 1920, p. 157). The important point that Bergson makes is that, if we go further than this to suppose that every recollection itself is stored, individually, in the brain, “we are simply translating undoubted psychical facts into very questionable anatomical language, and we end in consequences which are contradicted by observation” (1920, p. 157). Memories, experienced, are subjective, qualitative movements in the *lived body* – in a sense, we might think of them as in-the-moment affective and affectively-realised *states of consciousness* (Bergson, 2004, pp. 217-225). To attempt therefore to understand them as *matter* would be, in the words of Deleuze, “absurd” (2011, p. 54). For this reason, to even ask the question, “Where are recollections preserved?”, Deleuze reminds us, is to formulate a false problem, in that it is a badly analysed composite (Deleuze, 2011, p. 54). Indeed, we might think of it as a question that occurs out of precisely the same mindset that formulates a problem of whether new technologies are causing us to remember ‘more’ or ‘less’ – a tendency to spatialise a view of the world rather than consider the qualitative *experience* of memory, in duration; to give in to “the invincible tendency which impels us to think on all occasions of *things* rather than of movements” (Bergson, 2004, p. 154). Thus, Middleton and Brown observe that “to search for a way to catch hold of memories themselves within the brain” (2005, p. 232) may be understood through Bergson’s observation that, “like children trying to catch smoke by closing their hands,

philosophers so often see the object they would grasp fly before them” (Bergson, 1912, p. 55).

The “[f]allacy [is] involved in the question” (Bergson, 2004, p. 191).

When we properly consider memories as subjective experience, in movement, Deleuze argues, we realise that “recollections do not have to be preserved anywhere other than ‘in’ duration. *Recollection is therefore preserved in itself.*” (Deleuze, 2011, p. 54). Memory is not archivable knowledge that can be encoded, stored somewhere and later retrieved. Rather, we might understand remembering as the (re)imagined past experience (the actualisation of pure memory into a perceivable memory-image), informed by past experience within *duration*; remembering is thus a process of *movement* within duration, for the purpose of present *action*; and memory is a *force* of this movement: it is the *potential* from which remembering and perception draws itself forth in duration. Similarly, Burton has described Bergson’s whole conception of pure memory as “the continuous movement of the body-image within its perpetually changing environment, the past and present forming a continuous whole” (Burton, 2008, p. 327). Much like with the necessity for pure perception to be limited by consciousness, Burton describes the process of forming memory-images out of pure memory as “the filtering-out in accordance with the exigencies of present interests (whose horizon and permanent ultimate aim is the ongoing survival of the body-image) of most of the past” (Burton, 2008, p. 327).

We can see once more that Bergson’s observation that pure memory is ‘the forerunner of action’ is a crucial one. The fundamental law of physical life, we remind ourselves, is the “orientation of consciousness towards action” in duration (Bergson, 2004, p. 233). While the body may be a centre of action, enabled through perception; while pure memory may be consciously actualised through the formation of memory-images for voluntary action, or have its shadow cast invisibly onto images of non-conscious perception for impulse action; what precedes all of these is the latent *potential for action* that is pure memory.

By way of emphasis, and for the purposes of further development, this thesis argues, then, for a conceptual reorientation of the ways in which we talk about memory, to encourage a move away from thinking about memories as *things* (i.e. matter), and toward experiencing memories as relational *processes* in duration. To this end, it proposes a critical emphasis on ‘memory’ now as *memory-potential*, and on ‘remembering’ as an inter-relational *realisation* of this potential in duration, as a process in the always-present

that is always looking principally more to the future than to the past. Furthermore, we need to understand memory as an *evolutionarily-informed* function of the progressing body toward action, rather than a kind of ‘faculty of knowledge’. In order to emphasise this conception of memory-potential – of memory as latent potential for action – the thesis now shifts briefly (yet, as we shall see, necessarily) away from ‘memory’ per se, to consider Bergson’s wider thinking on *evolution* as creative, vital and affective process (indeed multiplicities of affective processes).

Vital Impetus: Life as Process

Previous sections sought to emphasise the idea of memory as potential for action, and of remembering as an inter-relational realisation of this potential for useful action in the present. This section aims lay the groundwork to expand and develop how we can think about *memory-potential* and its inter-relational actualisation within a broader psycho-social scope, using Bergson’s hitherto undiscussed thinking on *élan vital within duration* (Bergson, 1911) to emphasise the importance of thinking in terms of process in duration, and in terms of attempting to see memory as part of a bigger ‘whole’.

We now have a working conception of memory as *memory-potential* and of remembering as a *realisation* of this potential. We can understand that this realisation takes place in the service of useful action, in the present, and that it is a necessarily *affective* realisation, realised consciously or otherwise through and with the affections experienced through perceptions of other images, within a lived body. Remembering, then, is an inter-relational act, constituted through multiplicities of affections, driving toward the future.

In this section, we seemingly (though, as will become apparent, necessarily) draw back briefly from the subject of memory per se to examine Bergson’s concept of *élan vital*. In doing so, we establish a foundation from which we might in the subsequent section relate Bergsonian thinking on affectivity to its arguable development (Hansen, 2006, p. 8; Piatti, 2016) in the theorising of Simondon.

Élan vital, or “vital impetus” as translated in the English edition of the work (Bergson, 1911, pp. 87-97), is a perhaps contentious conception presented in in his 1907 work *Creative Evolution* to describe a creative force that is driven through, or drives, or simply is the evolution of all life.

[The idea we start from is] that of an original impetus of life, passing from one generation ... to the following generation ... This impetus, sustained right

along the lines of evolution among which it gets divided, is the fundamental cause of variations, at least of those that are regularly passed on, that accumulate and create new species. (Bergson, 1911, p. 87)

If each (or every) species has evolved from a single common ancestor, Bergson reckons, then it is reasonable to assume that, whatever drove the force of life into emergence, is passed along each subsequent generation *as* a “common impetus” (1911, p. 87). Bergson suggests, by way of demonstrating his point, that, while it tends to push toward diversity, this creative force is what leads to the separate, convergent evolution of the eye in both molluscs and vertebrates when similar needs had to be met (1911, pp. 87-88).¹¹ *Élan vital* is a kind of vital energy “that precedes every actual entity, a truly metaphysical force that continues to guide the evolution of reality, actualising itself in multiple ways” (Piatti, 2016, p. 53); it “designates the vitality of matter itself, its organization, its growth, its indeterminacy, unpredictability and creativity” (Vaughan, 2007, p. 16). “There is no doubt that life as a whole is an evolution, that is, an unceasing transformation”, Bergson tells us:

But life can progress only by means of the living, which are its depositaries. Innumerable living beings, almost alike, have to repeat each other in space and in time for the novelty that they are working out to grow and mature. It is like a book that advances toward a new edition by going through thousands of reprints with thousands of copies.” (Bergson, 1911, pp. 243-244)

It is not so much that Bergson is attempting to refute Darwinist evolution in principle, as he is trying to reorient interpretation of evolution to encompass a view wider understanding of life in terms of creativity and invention, which is missing from the determinism of “radical mechanism” (Bergson, 1911, p. 37) and “radical finalism” (1911, p. 39). What he calls ‘mechanistic’ approaches “hold good for the systems that our thought artificially detaches from the whole”, Bergson (now familiarly) argues, “But of the whole itself and of the systems which, within this whole, seem to take after it, we cannot admit a priori that they are mechanically explicable” (1911, p. 37). Bergson is attempting to not just understand what evolution looks like as to understand how and why

¹¹ While a scientific rather than philosophical text, this evolutionary convergence out of species’ relationality to the offerings and requirements of similar environments is covered excellently in science writer Simon Ings’s publication, *The Eye: A Natural History* (2007).

it is driven. As Ansell-Pearson notes, it is this “appeal to the whole” which the conceptualisation of *élan vital*, as a vital driving force, represents:

[O]n the level of life there is only actualization and differentiation but to make adequate sense of this we need to appeal to a conception of the whole, and what matters is the conception we evince of it. For Bergson it is the *élan vital* conceived as a “virtual” power of self-differentiation ... Without a conception of the whole we can only posit what comes into existence in mysterious and inexplicable terms of so many brute eruptions of being.” (Ansell-Pearson, 2010a, p. 409)

The point to be laboured here is the appeal, on a philosophical or interpretive level, that Bergson makes toward understanding life not just in terms of objectivity and measurements, but in terms of creativity, affectivity and invention – of seeing, in a very real sense, more than the sum of the (mechanical) parts. “For Darwin life is the consequence of actions and passions”, observes philosopher Elizabeth Grosz; “For Bergson, life is that which dynamizes, within and beyond itself” (Grosz, 2007, p. 287).

What Bergson sets out, then, is a principle of a creative driving force, through which action, interaction, he suggests, is guided through time. He makes clear that this is not to suggest a belief in a predetermined ‘plan’ for how life and evolution takes their course (1911, p. 96) as in vitalist philosophies. Rather, he is seeking to interpret evolutionary theory in a way that does not reduce all life to mechanistic automata, but that appreciates the qualitative nature of existence and life, indeed evolution, as a process, always in duration, in the service of useful action.

[Evolution of a particular feature] required the conscious or unconscious idea of an end to be attained. But it is really effected in virtue of the original impetus of life; it is implied in this movement itself, and that is just why it is found in independent lines of evolution. If now we are asked why and how it is implied therein, we reply that life is, more than anything else, a tendency to act on inert matter. The direction of this action is not predetermined; hence the unforeseeable variety of forms which life, in evolving, sows along its path. But this action always presents, to some extent, the character of contingency; it implies at least a rudiment of choice. Now a choice involves the anticipatory idea of several possible actions. Possibilities of action must therefore be marked out for the living being before the action itself. (Bergson, 1911. P. 96)

In short, we might speculate, when Bergson conceives of *élan vital*, he is attempting to describe a kind of collective, or collectivised, or indeed collectivising kinds of ‘will’ – a common or shared will that goes through all life. Yet this is not, as we have mentioned, to be confused with vitalist beliefs, where *élan vital* would represent some sort of tangible ‘lifeforce’ that separates what is living from what is not. “Life is not unified because it has its own special impetus”, Grosz notes:

[B]ut because it cleaves to materiality, because all of life has a common interest both in mimicking/harnessing materiality and in seeking those sites of material indetermination which it can exploit in order to ‘invent’ new forms and new practices, to evolve and become other. (Grosz, 2007, p. 294)

This impetus, then, we might consider is not imposed *on* life, rather is deposited *to* life. *Élan vital* is not in being directed *toward* an action, so much as in having the common realisable potential *to* act, to drive itself forward – indeed, it is only *in the act* that we recognise it. Grosz suggests that “[f]or Bergson life must be understood as that which both exceeds itself, and which enables matter to unleash its endless virtualities” (2007, p. 288).

The crucial nuance that we might draw out, in such a reading, is that *élan vital* should not be understood as an agency that manifests itself through the common action of all life, but rather that it is a common potential *toward* agency, or at least what we might call agency. *Élan vital* is not a force that affectively organises life, from its pasts and into its futures. Rather it is what we call the agency-potential *through which* life affectively finds itself able to organise itself.

Élan vital is not so much ‘lifeforce’, as lifeforce is *élan vital*.

In short, through this reading we can understand *élan vital* as that potential through which life, through shared nature, might commonly insist on the constant pulling-forward of itself out of the past, through affections, (inter)actions and adaptations, in anticipation of the always-oncoming future. And it is from this reading of *élan vital* that it is useful to now relate to Bergson’s thinking on affectivity, and its development through Simondon’s theorising on the conception of the *pre-individual* and of *individuation*.

Influenced by Bergson, it has been noted that Simondon’s philosophical concerns around affect, action, interaction and the realisation of potential, of *becoming*, share much in common with Bergson’s. Indeed, Hansen contends that Simondon’s thinking on

individuation is the “most forceful expression” (Hansen, 2006, p. 8) of precisely Bergson’s theme of affectivity. Equally, Scott argues for a recognition of ‘correspondences’ between the two philosophers in relation to *duration* (2014, pp. 56-58) and draws attention to what he thinks of as ‘negotiations’ between Simondon’s thinking on collective individuation and Bergson’s earlier theorising on social morality (2014, pp. 127-129).

It would be impossible in this chapter to give a comprehensive and nuanced reading of Simondon’s contribution to philosophy – both in scope of volume and in the (thankfully, increasingly less) limited translation of key texts into English.¹² What follows, then, is an attempt to sketch Simondon’s key thinking on two fronts, that they might equip us in tackling our research question with an expansion of our thinking on memory into both the social and the technological. Firstly, on *individuation* – as a drive toward *the social*. Secondly, on *technics* – as a mode of human-technological co-existence. Correspondingly, it aims to develop and expand our Bergsonian approach to remembering in two ways. Firstly, to synthesise a move in terms of affectivity from *the body in relation to its environment* into *the individual in relation to the social*. And secondly, to develop an understanding of the relationship between the biological, the technological and the social (which we will continue to develop in subsequent chapters).

Process as Individuation

[O]ne cannot, even with the highest rigour, speak of an individual, but only of individuation; one must go back to the activity, the genesis, instead of trying to apprehend the being as entirely made in order to discover the criteria by which one will know whether it is an individual or not. *The individual is not a being but an act.* (Simondon, 2005, p. 191, translated in De Boever et al, p. 213; italics my own)

Thus far, we have developed an understanding of *memory-potential* as a kind of latent force for action, and of remembering as an affective, inter-relational realisation of this potential. This section aims to philosophically situate and develop this understanding within a broader social-theoretical framework. If remembering acts as a way of recognising (consciously or otherwise) one’s *self* in the present, for the purposes of action,

¹² Two excellent texts on Simondon’s works include David Scott’s introduction and guide to psychic and collective individuation (2014) and Anne De Boever, Alex Murray, Jon Roffe and Ashley Woodward’s exploration of ‘being and technology’ (2013).

yet is always, always, as we have seen, an active, *inter-relational* process, responsive to and with the environment of the lived body, how can we start to understand the relationship between memory and the social? Indeed, how might we think about the distinction between the individual and the social at all? Grounded in Bergsonian thinking on affectivity, and borrowing from some of the key thinking of Gilbert Simondon into *individuation* the concept of the *pre-human* and the conception of the *transindividual*, this section aims to contextualise remembering within a theory of socially inter-relational process.¹³ In further destabilising the binaries between the subject and object, between individual and collective, it aims to lay the groundwork for thinking remembering as a trans-individual action, always co-constituted in relation to human and non-human, and virtual and actual, inter-relationalities.

Before the Individual: Bodies as Movements

“Life is a double orientation”, notes Grosz, following Bergson (2007, p. 288):

[Firstly] out to matter, as that which responds to, resolves or addresses the problems and provocations matter imposes through the evolutionary dispersion and proliferation of bodily forms, through morphology, speciation, individual variation; and [secondly] in to its own past, through the cohesion and continuity of consciousness in its immersion in the richness of memory, virtuality, the past. (Grosz, 2007, p. 288)

Lived experience, for Bergson, takes place in duration, through a multiplicity of affective, interactive movements between images and the lived body, itself an image. The feeling of conscious life, as we have seen, may be understood as that experience of a self, a way of coping with and making sense of this always-in-duration mode of existing, for the purposes of useful action for the organism. What constitutes a sense of self we might understand to be the constant, in-the-moment ‘binding up’ of a co-existence of different multiplicities of perceived affections within that present, actualising and affected by memory-images out of past experience, yet geared toward an anticipated future.

Much of the theorising of both Bergson and Simondon may be understood as an attempt to dig beneath this veneer of the what appears to be *the individual*, to consider in one way or another that potential that comes *before* the individual, out of which the individual

¹³ With much of Simondon’s work yet to be translated into English, including *L’Individuation psychique et collective*, this section owes gratitude for the helpful secondary readings of his work by Elizabeth Grosz (2007; 2013) and David Scott (2014).

becomes. Like Bergson, Simondon attempts to think the problem of consciousness from its beginning rather than start with an end-result of the *individual* and attempt a ‘deconstruction’. Hence, Simondon conceives of a notion of the *pre-individual*, the potential not-yet-self, out of which *the individual* might be formed through individuation (Scott, 2014, p. 6). Scott explains that Simondon’s thought “hinges on a simple strategy of reversal” (2014, p. 6):

[T]o attain full knowledge of the individual we begin not with a return to the individual ... but with a return to individuation, considering it the “primordial” operation by which the individual becomes, and of which individuals are “modalities.” It is not being that conditions becoming, it is becoming that conditions being. Being is becoming; becoming has being ... The individual is grasped then as only a relative reality, a certain phase of being in the midst of bringing into realities the potentialities of pre-individual identity that precede it and conditions its becoming actual. (Scott, 2014, p. 6)

The individual, if it exists at all, is for Simondon what *becomes* out of the process of individuation, through ‘transduction’, and within a constantly metastable environment. Simondon conceives of the existence of the pre-individual within a world made up of pure interactions in duration. As with Bergson, life should not be thought about in terms of *things* but in terms of affectivity, relationality and action. At an abstracted level, Scott suggests:

Instead of seeing elements (particles or clouds of particles) as starting points, might we see each starting point only as a singularity, as only already a relation-to another starting, which is then another relation-to, potentially, ad infinitum? (Scott, 2014, p. 42)

Individuation as Ongoing (Onto)genesis

Like with Bergson, then, it is important to think of Simondon’s thinking on individuation as rooted firmly in a sense of *duration* and *affection*. The sense of *individual* as a constant state process of becoming, in the constant re-establishing present moment, through multiplicities of affective interactions. And, as with Bergson, it is out of the *choice* of action, out of *individualising* ourselves through relational action, a sense of conscious self may emerge. Individuation is “a concept of being in which becoming is the most fundamental force”, explains Grosz; it is “the working out of a quasi-Bergsonian ontology

that ... regards life and its relations to non-life not through its substance or form but through its temporality or becoming” (Grosz, 2007, p. 297).

Individuation, then, might be seen as this constant state of ongoing affective interaction, of a constant state of genesis, afforded by multiplicities of interactions.

Individuation is that movement preceding, including and post-dating the genesis and elaboration of any individual, material or organic: the individual is only one stage, a provisional product, within a larger movement of elaboration which gathers forces of disparate and incompatible, sometimes incommensurable dimensions that can only be resolved, if at all, in the creation of an individual which narrows down and provisionally harmonizes these disparities through a kind of unification, a ‘metastable equilibrium,’ a systematization or cohesion of some of their forces. (Grosz, 2007, p. 298)

We can consider humans – indeed all life – to be in a permanent state of becoming, through individuation. Individuation is a continuous process of inter-relational interactions, in the present. Through this sense of ‘metastabilisation’, the ongoing processes of becoming may be unified into a sense of *self*. Individuation is, then, “the being of becoming” (Scott, 2014, p. 147). Therefore, what we call ‘identity’ is an always-in-flux representation of multiplicities of affective interactions.

There is no moment of attaining an individual, self-identical or stable status which dramatically transforms preindividual forces, the disparities in potential energy between incommensurable and non-communicating forces, into fixed individuals, as occurs chemically in quantum-type leaps of molecular reorganization. In life, the processes of individuation never cease, they coexist with the duration of the living organism itself – the organism never fully coincides with itself, or attains an identity in which it is what it is. (Grosz, 2007, p. 298)

We are leaky bodies, and it is through ongoing movements of inter-affective interactions – “that part or aspect of the inside of our body which we mix with the image of external bodies” (Bergson, 2004, p. 60) – that a sense of *self* is experienced. It is through these always-in-motion processes – in duration, through perception, memory and action – that a sense of “double orientation” may emerge (Grosz, 2007, p. 288): a relational, dual sense of ‘otherness’ and ‘belonging’, of what we have seen as “alterity and identity progressing

together forming themselves, and distinguishing themselves in the same movement” (Simondon, translated in Scott, 2014, pp. 119). Life exists, then, as constant interaction.

Any sense of the *self* for Simondon is an inter-active process, which of course, takes place through the experience of the lived body in duration. The individualised sense of selfhood is thus co-informed through *affectivity* and ‘emotivity’, which are the “permanent liaison of the individual to itself and the world, or rather the liaison between the relation of the individual to itself and the liaison of the individual to the world” (quoted in Scott, 2014, p. 68). As Hansen notes:

[For Simondon] affectivity is precisely that mode of bodily experience which mediates between the individual and the preindividual, the body and its “virtual” milieu ... As the mode of experience in which the embodied being lives its own excess, affectivity introduces the power of creativity into the sensorimotor body. (Hansen, 2006, p. 8)

The point here to emphasise is that the experience of individuation is an always-renewing process of becoming *out of interaction*, an ongoing process of *movements*, of interactively affecting and being affected by the world within and around one’s own body, in duration. “The living organism is more a singularity than an individual” (Grosz, 2007, p. 298). It is a constantly-refreshing, collaborative ‘more-than’. Philosopher Brian Massumi characterises this Simondonian theme as an “insistence of the centrality of the concept of potential energy ... There is no ‘one’ but always a one *moreness*: a ‘more-than-one’, everywhere energetically in potential” (2013, p. 33).

What Bergson conceives as ‘consciousness’ out of affectivity, relationality and action, then, we can see reflected in Simondon’s thinking on individuation. “[T]he living being is itself partially its own principle of individuation”, Simondon argues – it is “at once the individuating system and its partial result” (Simondon, quoted in Scott, 2014, p. 33). Yet for Simondon this kind of individuation is only a ‘psychic’ individuation – that is to say, the always-reconstituting bodily relation of itself, always in processes of movements in duration, to ‘other’. While Bergson’s analysis of memory informing action focuses largely on the notion of the ‘lived body in the world’ – i.e. ‘matter’ and ‘memory’ – that we might now call psychic individuation, Simondon’s theorising develops the notion of affectivity out of the domain of the body as seemingly discrete organism, and into that of the *social*, through what he conceives of as collective individuation. As we shall see in the next section, through psychic individuation we may relate ourselves to other ‘things’

or people – individualising ourselves – yet it is only through *collective* individuation that a true sense of identity and what we call *the individual* may emerge.

The ‘Individual’ and the ‘Collective’

How, then, can we think about the sense of the ‘identity’ that we surely experience? We have seen that, for Simondon, the apparent constitution of the self takes place through nuanced view of affectivity as *transduction*. This is a process that allows individuation through “permanent differentiation and integration, according to associated regimes of causality and finality” (quoted in Scott, 2014, p. 68). Since things must be thought of in terms of constant processes of interaction in duration, a sense of the selfhood is not so much a static ‘awareness of oneself’, but a constant dynamic “act of grasping the being of the individual in the continuum of ‘dephasing,’ making the potentially interminable and inventive unfolding process of becoming individuated” (Scott, 2014, pp. 37-38). As we have seen, this is similar in many ways to Bergson’s thinking, in which consciousness can be thought of as always in a state of flux, functioning as a way to permit or create useful action in that present moment. As Grosz summarises:

[W]ithin consciousness [for Bergson] – to which all forms of life tend in varying degrees – there can be no prolongation of a state which is not at the same time a change in state ... No state is disconnected from the tenor and color of all the others, for they are inseparable, interleaved or mutually fringing, never ceasing and always changing qualities, magnitudeless intensities. (Grosz, 2007, pp. 291-292)

For Simondon, as Massumi observes, there is only “form-taking informational *activity* (with as yet – that is to say, until its own future occurs to it – no content, no structure, no meaning)” (Massumi, 2013, p. 33). Consciousness, then, may be seen not so much an emergence out of the potential *self*, but rather is continuously effected through interactive, affective, inter-relational processes beyond the body. It is the ongoing sense of differentiation between one’s own body and its agencies, and a sense of ‘other’ – yet this differentiation involves duality, both being a part of and being apart from the other, and thus is always necessarily co-constituted between its different relations.

The significant way in which Simondon’s fundamental theorising distinguishes itself from Bergson’s is in its extension of consciousness out of the body and into the *social*, and the implications for what we think of as *consciousness*, *identity* and *the individual*.

Simondon rejects what he sees in Bergson's thinking as a view of conscious (or 'psychic') reality as "a pure indissoluble and continuous unity, a 'stream of consciousness'" (Scott, 2014, p. 67), which consciousness condenses and filters into the discrete sense of the individual. What Bergson describes, from Simondon's perspective of psychic individuation, is more a sense of conscious relationality of the individual to its environment, of individualisation. Rather, for Simondon, all life is in constant processes of individuation, the sense of the conscious *individual* – as discrete personality or identity – emerges *out of the group*. It is the very sense of *feeling* a part of a group that informs a sense of individual identity, of 'grouped individual'.

Bergson certainly observes the inter-relational nature of individual and collective as re-forming each other, "implied in each [other]" (Bergson, 1935, p. 169): "[S]ociety shapes an entire side of the individual by being prefigured in each one of them. The individual and society thus condition each other, circle-wise" (Bergson, 1935, p. 169). This theorising is set out in his 1932 book, *The Two Sources of Morality and Religion* (English translation, 1935), and we will reflect on this in greater detail in the final case-study chapter. However, following Simondon, since individuals cannot really be seen as truly individual, we can no longer think of collectives as groups *of* individuals at all. Rather, collectives, like individuals, are always in a state of individuation: collectives are "not stable products but are themselves metastable, prone to forms of becoming and transformation, open in their ongoing forms" (Grosz, 2013, p. 54). Humans, and thus societies, are not made up of individuals, but of movements, of relations. "[I]t is *relation* which constitutes the group and the individual, both respectively and reciprocally" (Scott, 2014, p. 130).

Once again, we might consider that assumptions through the trappings of language are here the problem, since the words 'individual' and 'collective' already pre-suppose a binary distinction between the two, with the latter as a grouping of the former. Again, we must remind ourselves to think not in terms of 'things' in space, but in terms of *processes* in duration, in space – and of *individuality* and *the social* not as 'things' but ongoing processes in the moment. Thus, we might think of collectives, as Grosz has done, as "*collectivities* ... culturally produced ... effects of various complex relations between technologies, proximities / geographies, forces and modes of regulation" (Grosz, 2013, p. 54; italics my own). Or, we might think of individuals and collectives as always-emergent "personalities" (Simondon, quoted in Scott, 2014, p. 135), as forces, with the co-extant individuation of individuals and collectives re-forming the personalities of each.

[W]e are not speaking of structures of personalities anteriorly defined, constituted, and entirely individualized prior to the moment the group of interiority constitutes itself, to encounter itself and recover itself. Each individual personality is coextensive with the “personality of the group” – that is, instead of individual personalities in joining together being constitutive of the group. (Scott, 2013, p. 135-136)

When we think of people in terms of ‘a collective’, it may be tempting to think in terms of formal *organisations* in space – for example, co-operatives or social enterprises – rather than informal, social processes, or *organisings*, in duration. To avoid any ambiguity, and in an attempt to emphasise that senses of being should be thought of not as ‘things’ but as processes, this thesis here takes the position to refer to the seemingly-felt discrete, conscious body as the ‘**transindividual**’ and to collectively-individuating collectives of transindividuals as ‘**socialities**’.

We can understand collective individuation as a process that creates subjects that are always both individual and collective, interactively co-affecting each other, leading to an apparent dissolution between a sense of subject and object. For Simondon, “[t]he social is a ‘network of relations’” (Scott, 2014, p. 130). “Participation, for the individual, *is the fact of being an element in a greater individuation*”, Simondon claims (2009). And it is *through* this participation in wider collective individuations that sense of ‘more than’ the self emerges – a sense of the ‘grouped’ individual, or ‘identity’ emerges. If the always-emergent sense of selfhood is reconstituted through ongoing processes of psychic individuation, stabilising the body in the present, the always-emergent sense of *individual* is reconstituted through ongoing wider processes of *collective* individuation, stabilising a sense of *the social* in the present. The result of the social is the individual.

Individual personalities and group personalities are constantly individuated through affective interaction with each other, “[t]he two individuations, psychic and collective ... reciprocally dependent on each other” (Scott, 2014, p. 42). And this reciprocity, we can ultimately understand as constituting the human as a *transindividual*, which “accounts for the psychosocial unity of interior individuation (psychic) and exterior individuation (collective) ... the purest expression of relational being” (Scott, 2014, p. 42). The transindividual, Simondon says, is ‘the systematic unity of interior (psychic) individuation, and exterior (collective) individuation’ (Simondon, quoted in De Boever et al, 2013, p. 232). So, for Simondon, whereas collectively-individuating transindividuals make up ‘societies’ (which, in truth, represent multiplicities of

socialities), collectives without such inter-relational processes of (re)informing, would instead be what he understands as ‘communities’, made up of ‘interindividuals’ lacking the “pre-individual charge of nature that enables them to transindividuate” (Simondon, quoted in De Boever et al, 2013, p. 232). These ‘conscious’ bodies may relate to each other in the same way as a Bergsonian body may relate to its environment, yet they do not achieve a sense of ‘more than’, of collective, inter-informing agency, of sociality – of belonging. “[T]he collective is, for the subject, the reciprocity of affectivity and perception, reciprocity which unifies these two domains each in itself in their giving a further dimension” (Simondon, quoted in Scott, 2014, p. 90).

Through a reading of Bergson and Simondon, we can dissolve the binary distinction between subject and object, and individual and collective, thinking instead of transindividuals and socialities as affectively, interactively co-constituted in the moment, always in a process of becoming, out of the latent – the unknowable – and always (re)informing each other. We will attempt to situate our theoretical understanding of Simondon’s thinking on individuation in relation to bodily remembering and supposed ‘collective remembering’ below, developing it more comprehensively through the case-study chapters into a sketch for a kind of ‘synthesis of social theory’. For now, let us recognise that a Bergsonian-Simondonian approach to the individual, as Grosz notes of Simondon, “question[s] the assumption that individuals, whether biological, social or collective, are given and that their characteristics are static rather than evolving, self-transforming and milieu-transforming elaborations” (Grosz, 2013, p. 55). Rather, we must see identity as always emergent processes of interaction, driven by charges of the pre-individual into the social.

Yet here the thesis turns to make a perhaps bold claim. At an evolutionary level, we have considered life in terms of *élan vital*, a kind of vital impetus that can be recognised the progressive, creative drives of life. We have seen that it is in the realisation of memory-potential that all conscious *action* is informed – be that at higher degrees of consciousness in intelligence, in actualising memory-potential into an almost representational memory-image, or at lower degrees of consciousness in instinct, actualising memory into reflex action. In turn, we have seen that human life is geared toward the social through the pre-individual charge. Here, then, we might ask ourselves, perhaps radically: What is *élan vital* but our very conception of memory-potential? Admittedly abstracted to its base level, might we not recognise in such a conception of memory the very potential for

creative, affective, relational action that leads, in its varying degrees of consciousness, toward evolution and toward all social interaction?

Memory as Force of Life

“Life brings the virtual, the past, memory (but also the future, the new, intentionality, which are equally virtual), to bear on the actual, the present, the material”, Grosz says, following Bergson, noting that “it brings out the latencies already there but unactualized, providing new modes of actualization, indeed new actuals and new directions for actualization, while also generating ever-new virtuals” (Grosz, 2007, p. 296). Yet, in embracing a view of remembering as an inter-subjective, inter-relational function that acts as the key informer of the action in the present, as thus as driving the process of individuation, might we might equally and straightforwardly argue that it is *remembering* that brings ‘the virtual, the past, memory, to bear on the actual’, that these ‘latencies’ might be equally characterised as *memory-potential*?

To live is to remember, in its most reductional abstracted form. If we consider once more that there may be a kind of vital impetus from which life draws the strength to act in the present, to push on toward the future, to *live*, as it were – and if individuation, psychic and collective, be so obviously involved with the processes of memory – then is that not precisely the function of what we have called *memory-potential*? If, as Grosz points out, “The *élan vital* is nothing other than the forces of self-organization functioning within those ‘systems’ that carry along the traces of their past in their present ... the extension of the past into the present” (Grosz, 2007, p. 295), then might we not recognise in *élan vital*, or the drives toward individuating action, precisely what we have come to understand, at its most abstracted, as *memory-potential*? If life finds its interest in harnessing images “to ‘invent’ new forms and new practices, to evolve and become other” (Grosz, 2007, p. 294), might we not see memory-potential as its driving creative and relational charge? As digital theorist Tero Karppi observes of Bergsonian thinking, “For something new to emerge, there always needs to be a memory” (2018, p. 99).

Likewise, for Simondon, “affectivity is precisely that mode of bodily experience which mediates between the individual and the preindividual, [introducing] the power of creativity into the sensorimotor body” (Hansen, 2006, p. 8). Yet might we not equally think memory-potential as acting like the pre-individual charge, realised at whatever level of consciousness through affective relation to its environment into individuating action? Grosz, following Simondon, tells us that “the living individual engenders continuous

individuations from within itself”, that “it directs itself to problems, provocations not only through adaptation, but through the potential to reconsider its own internal organization, through its own individuating interiority” (Grosz, 2007, p. 299). It does not, this thesis contends, seem at all controversial to suggest that we might recognise in this ‘individuating interiority’ the very processes of memory our developing approach has thus far described.

It is important to emphasise that this is not at all to make claim to ‘revise’ nor attempt to ‘co-opt’ the theorising of Bergson or Simondon. On the contrary, it is to suggest that, in intuitively abstracting memory into *memory-potential* and remembering as a realisation of this potential, in an appeal to thinking more closely to *direct experience*, do we not find ourselves, in principle, at their geneses, crucially wrestling with precisely the same sets of concepts and concerns as Bergson and Simondon are here discussing? If these concepts are not the same ‘things’, they are surely made of the same stuff. And, this being the case, does this not sensibly encourage a rationale for situating the concept of *memory-potential* philosophically at the very heart of interpreting life itself, and its realisation through ‘remembering’ – at whatever lower or higher levels of consciousness – into the very heart of interpreting conscious existence?

--

Through the above sections, we have conceptualised memory as a relational, reflexive and affective set of processes. These processes at their most conscious bodily manifestations inform *consciousness*, both in its sense of *self-awareness* and in the sense of *identity* and *the individual*, and at their least conscious can be dramatically considered the driving force of all life. From this perspective we might begin to see our central research question in more ‘high-stakes’ terms than those considering a question of whether we are remembering ‘more or less’ might have supposed – or at least a different *kind* of stakes – and these will be drawn out through subsequent case-study chapters. In order to do so, however, the final two sections of Part One aim to use our established affective approach to memory and remembering to develop a working theoretical understanding of the relationship between remembering and *collective* memory, and between remembering and *technologies*.

The being that remembers is more than the “I”; it is more than the individual; it is the individual more than some other thing (Simondon, quoted in Scott, 2014, p. 125)

The previous section looked at the way in which we might move, through a reading of Bergson and Simondon, into a way of thinking the human not in binary terms of ‘individual’ or ‘collective’, but as co-constituted *transindividual*, and of further thinking affective inter-relationality as a challenge to the binary between subject and object. How, then, can we develop our approach to memory within such a framework?

Following a Bergsonian-Simondonian reading of inter-relationality and affectivity, this section aims to expand our approach to memory into one of ‘transindividual remembering’, and to explore the relationship between the realising of *memory-potential* and the constitution of individually and collectively individuated ‘personalities’. We have thus far developed an approach to memory as a kind of *memory-potential* – the latent, inaccessible-in-itself learnings of past experiences – and of remembering as a kind of realisation of that potential – an actualisation of these learnings of past experience, through perception, for the purposes of useful action for the organism in the present. A Bergsonian-cum-Simondonian thinking-through of this approach in relation to the transindividual offers us the opportunity to now situate remembering within a sense of wider social inter-action and relationality. If we are to think existence in a less ‘individualised’ sense – identities and consciousness as transindividual process, and remembering inter-relational – however, then such a move necessitates consideration of what we mean when we think of movements of ‘personal’ memory and ‘collective’, ‘cultural’ or ‘communicative’ memory, and thus how we think of ‘useful action’.

We have seen that memory represents a kind of duality of identity (or belonging) and of ‘otherness’ – a way of differentiating oneself as a being from the world of inter-relations around oneself. “The memory’s content becomes the symbol of the present “I”; it is the other part; the progress of memory is an asymmetrical splitting of the subject being, an individualization of the subject being” (Simondon, quoted in Scott, 2014, p. 118-119). Yet, beyond individualising, humans may collectively individuate, informing a sense of the social, and thus the individual. How might we think of the role bodily realising memory-potential from this perspective? In its very nature of being realised inter-relationally and affectively, the act of remembering may understood as a continuous

process of realisation both informed by a group-sense of sociality, or simply inter-relation (through the always inter-relationality of memory and *perception*), and re-informing it (through its mediation in communication), in an ongoing, inter-relational and inter-subjective series of interactions. Similarly, as media theorist Grant Bollmer has observed, through contemplating a Bergsonian view of collective memory we can see that processes of individual and collective ‘remembering’, while differing in kind, may be bound up together in movements of action toward collective individuation, “produced, along with their relation, through a specific, contextual organization of matter and discourse” (Bollmer, 2011, p. 454).

Collective memory here ceases to be about the psychic memories that happen in an individuated human’s consciousness. Collective memory is, in a sense, non-conscious, although an individual-collective is still a specific kind of subject with its own phenomenology and its own sense of consciousness that exists beyond the psychic, as embodied actions and gestures only possible in the production of a specific assemblage. Collective memory is not about ‘thought’, but is about becoming-together in space (Bollmer, 2011, p. 462)

Returning to memory’s function in informing *useful action* for the individual, we can think here that what is being actualised is useful action beyond the individuations of the apparently discrete organism. Rather, in enlarging our conception of the organism from ‘individualising body’ to ‘collectively-individuating individual’, we can straightforwardly think of the realisation of memory into action useful not just for the body, but for its perceived sociality. If to remember is to be “more than the individual” (Simondon, quoted in Scott, 2014, p. 125) then we might sensibly think of remembering as the co-constituted realisation of *memory-potential* useful for the ‘more than individual’ – for any one of the multiplicities of socialities out of which a sense of the individual is always emergent.

We have arrived at a conception of memory that we can view as inter-subjective and inter-relational. We can see remembering as a collectively-informed and collective-informing movements of realising *memory-potential*, in the moment, into transindividual action, useful for itself and/or its perceived sociality. Yet the feeling of being an individual is bound up in both the sense of bodily distinction and social belonging. In this sense, as Bollmer suggests, we might now start to view collective identities, such as those built around shared ‘histories’, as collectivised precisely *through* the experience of memory, the very co-informing acts of remembering being that which allow a sense of experiences

of identity, psychic and collective. “[C]ollectives *are* individuals produced through the actualization of memory as shared embodied movement”, as Bollmer explains (2011, p. 451), “Neither individuals nor collectives exist a priori to the practice of memory, and it is through memory as action that both individuals and collectives come into being” (Bollmer, 2011, p. 452).

For Simondon, “all thought, precisely to the extent that it is real, ... involves a historical aspect in its genesis” (2005, p. 84). The psychically-individuating transindividual finds an emergent sense of ‘stable’ selfhood or personality through relating itself to its surroundings in the present as a being that has a past and a future. Likewise, collectively-individuating socialities of transindividuals may find an emergent sense of stable personality, or identity, informing the individual, through reasserting and relating the common milieu or ‘group’ in the present to an apparent common past and future. “Like all real being, like any fragment of the real that is individuated, thought is rooted in a milieu, which constitutes its historical dimension”, writes philosopher Muriel Combes, following Simondon, “[T]houghts are not ahistorical, not stars in the heaven of ideas. They emerge from a theoretical environment, drawing the seeds of their development from it” (Combes, 2013, p. 12).

Here, then, the chapter aims to reorient our view of so-called ‘collective memory’, to be one not so much to do with ‘remembering’ a historical or shared ‘past’, but rather to do with informing a stable sense of ‘the social’ in the present. In such a thinking, cultural remembrances become less about what *happened in the past*, and more about how ideas of a common past can inform useful action for the reconstitution or preservation into the future for collectively-individuating socialities *in the present*. We will more substantially sketch out this synthesis and its implications for thinking memory in the online era through the case-study chapters, yet here it is important to consider theoretically the mechanisms through which these processes of collective individuation may take place: through communication. That is to say, through mediation and mediatisation – through *artefacts*.

We have seen above that we may think ‘knowledge’ as a kind of technological taming, through repetition, of memory processes into habit memory, enabling a seeming ‘knowing’ or ‘recall’ of the past. Psychically or physically embodied representations of the past – conceptual artefacts – are repeated in the present and into the future. Here, the chapter argues that we may think ‘history’, or ‘collective’ or ‘cultural’ memory, as kinds of transindividual, *social* habit memory. Using *media* to repeat artefacts of ‘the past’,

supposed ‘knowledge’ of the past may be technologically brought forward from the past into the social present. These media, of course, enabled through the conceptual technology of language, have developed beyond conceptual technologies and into physical technologies. They extend out of conceptual and bodily artefacts like oral history, performance or storytelling, and into technologies such as writing, drawing and illustration, photography, motion picture, as well as into the digitisation of all these media. Indeed, the contemporary and ubiquitous digitisation of media artefacts, in which media seemingly exist more virtually than physically, may help us to recognise the crucial implication of such a synthesis of collective remembering: that artefacts should not be seen as ‘things’ in space, but as technological enablers of processes of individuation in duration. Thus, as we will set out in Part Two, and expand on through the case-study chapters, artefacts should be seen not so much as things-in-themselves but as tools for the organising and apparent stabilisation of ‘the social’. As we will see below, artefacts do not hold any memory-potential. Rather they act as ‘carriers’ for the transindividual realisation of potential in processes of collective individuation. Or, as Middleton and Brown perhaps more easily-comprehensibly suggest, artefacts may act as “markers of relationships” (2005, p. 149-152).

We can think, then, of collective remembering as technologically-mediated repetitions of ideas about the past, used to facilitate identity- and sociality-informing processes of collective individuation, in the present and for the needs of the perceived transindividual and its sociality. Yet, as social psychologist Ian Tucker observes, “We are not made to feel *by* digital technologies, we feel *with* them. Therefore, we need to consider conditions of emergence ... to look at the contextual conditions within which emotional affectivity unfolds” (2018, p. 39). We remember through and with technologies. Therefore, if we are to be properly-equipped to tackle the research question, it is necessary to now think about the relationship between the *human* and the *technological*.

Technics: Memory and the Man-Machine

[M]an can be coupled to machine as an equal, and not merely as a being who directs or utilizes it through the incorporation of ensembles, or as a being who serves it by supplying matter and elements ... There is an inter-individual coupling between man and machine when the same self-regulating functions are better and more subtly accomplished by the man-machine couple than by man or machine alone. (Simondon, 2017, p. 135)

Previous sections advanced our developing working approach to non-archival memory through situating its central principle of *realising potential in the present* within a wider, inter-affective, inter-relation social framework, blurring the boundaries between the subject and object, individual and collective. It radically positioned the abstracted term *memory-potential* as a part of, perhaps *the*, driving force of life, and remembering as the selective, affectively co-constituted realisation of this potential into psychic and collective interactive processes or movements of individuation. Furthermore, it theoretically synthesised a view of ‘collective remembering’ as the technological use of artefacts to constitute a ‘stable’ sense of ‘the social’ or ‘society’ through repeating presentations of the past to inform useful action for the group in the present. And while personal and collective remembering may be seen to be different in kind to each other, rather than an extension by degrees of one into the other, we can see how through a reading of Simondon how they are both bound up in processes of individuation and a conscious, emergent sense of *the individual*.

In this final section of Part One, then, we consider how we might think about the relationship between memory and *technology* within this developing approach. Through an exploration of Simondon’s (2017) theorising on the relationship between the human and technology and his conception of the technical object as “initiator of the psychosocial transindividual operation” (Scott, 2014, p. 197), the section aims to set out an understanding of how both personal and collective remembering may be technologically co-constituted. In doing so, it blurs the boundaries between the human, the non-human and the technological. Thus, it once more emphasises that when investigating what is at stake for ‘memory’ in the online era, we must attempt to think within the ‘bigger whole’, therefore considering the wider drives informing not just the relationships and interactions between biological or bodily and the cultural or social, but also those agencies inherent in the *technological* mechanisms through which such bodily and social action takes place.

Technology as Extended Intelligence

Through Simondon’s thinking on individuation, “[o]ld problems are remade”, such as, as we have seen, the relationality of individual to human, and “new problems appear – for example, how to account for a new relationship between the human and the technical object” (Scott, 2014, p. 7). Here, then, we explore this relationship so that we might situate our approach to memory within it.

Predating Marshall McLuhan's famous conception of technologies as "extensions of man" (1964) by half a century, Bergson suggests explicitly in *Creative Evolution* that we may consider tools as extensions of the body of living organisms and their functions: "[T]he instrument forms part of the body that uses it; and, corresponding to this instrument, there is an *instinct* that knows how to use it" (Bergson, 1911, p. 146). Tools are here extensions of instinct. A rock becomes a stronger fist, a stick a longer arm; yet these are used *as if they were* a fist or an arm, based on core instinct. For Bergson, what distinguishes humans (for the moment) from lower animals is that we have evolved the ability to create tools beyond the level of instinctive need, instead creating tools as extensions of *intelligence*. Bergson observes, then, that this ability is the defining feature of the modern human as a species:

If we could rid ourselves of all pride, if, to define our species, we kept strictly to what the historical and the prehistoric periods show us to be the constant characteristic of man and intelligence, we should say perhaps not *Homo sapiens*, but *Homo faber*. In short, *intelligence, considered in what seems to be its original feature, is the faculty of manufacturing artificial objects especially tools to make tools, and of indefinitely varying the manufacture.* (Bergson, 1911, p. 146)

Bergson argues that that, while "instinct perfected" allows organisms to create and/or use "organised instruments", "intelligence perfected is the faculty of making and using unorganised instruments" (Bergson, 1911, p. 147). An organised instrument would be, in-and-of-itself, already capable of being used for the function instinct requires – "Instinct finds the appropriate instrument at hand" (Bergson, 1911, p. 147). An unorganised instrument, however, requires intellectual effort to create and operate, its operations and mechanisms more complex:

The instrument constructed intelligently ... is an imperfect instrument. It costs an effort. It is generally troublesome to handle. But, as it is made of unorganised matter, it can take any form whatsoever, serve any purpose, free the living being from every new difficulty that arises and bestow on it an unlimited number of powers. (Bergson, 1911, p. 148)

Since these tools are extensions of intelligent movements rather than instinctive movements, humans might be said not so much to use them, as to work *with them*, in a relationship – "an artificial organ by which the natural organism is extended" (Bergson,

1911, p. 148). “Bergson conceives of technology”, as Hansen points out, “as the pre-eminent means by which human beings employ intelligence to extend their perceptual grasp over matter, to enlarge their own living duration.” (Hansen, 2006, p. 258). Indeed, as Bollmer has argued, following Bergson – and as we shall demonstrate through subsequent chapters – it is important to “stop thinking of ‘subjective’ as referring to the human psyche” (2011, p. 462). Rather, the extension of human intelligence through technologies, “form a unified subject that perceives and moves in ways that exceed the psychic” (Bollmer, 2011, p. 462).

Bergson makes an important observation about such a relationship that takes us here more broadly into Simondonian territory on ‘technics’:

Above all, it *reacts* on the nature of the being that constructs it; for in calling on him to exercise a *new function*, it confers on him, so to speak, a richer organization ... For every need that it satisfies, it creates a new need; and so, instead of closing, like instinct, the round action within which the animal tends to move automatically, it lays open to activity an unlimited field into which it is driven further and further, and made more and more free. (Bergson, 1911, p. 148; italics my own)

It is worth noting the recurring Bergsonian theme, here, of human intellectual advancement involving, as with the enlargement of perception, both an increase of opportunities to realise potential (for action) and a sense of limitation and selection – for, while intelligently-constructed tools may make the human ‘more and more free’, they also involve a limitation, since interaction is now framed within the limitations of the tool at hand and its immediate potential adaptations. This is a subject to which we will return below in terms of new, online technologies, as well in terms of the technology of language in the Part Two. But, for now, let us relate this Bergsonian position to key thinking in Simondon’s development of a philosophy of technology, and the coupling of the man-machine.

For Simondon, technologies, as extensions of intelligence, are always in a state of progression. Creatively informed through invention, technologies are thought of in terms of function, undergoing processes of “concretization” as, through lineages of versioning, they are adapted or perfected for the needs of the biological and social human (Simondon, 2017, pp. 25-51). Thus, as we will explore more in the case-study chapters, we must always think the human experience as a kind of ‘negotiation’ between drives of the bodily,

the cultural and the technological. Furthermore, accepting the inter-depending functions and agencies of the human and the technological, in Simondon's thinking on technics, Bergson's description of an interactive, ongoing relationship between human and tool of intelligence would be an example the man-machine. This is a coupling in which man and machine may be thought of equals in their functioning relationship, occurring when "the same self-regulating functions are better and more subtly accomplished by the man-machine couple than by man or machine alone" (Simondon, 2017, p. 135).

This machine-man relation is realized when man applies his action to the natural world through the machine; the machine is then a vehicle for action and information, in a relation with three terms: man, machine, and world, the machine being that which is between man and world ... The machine thus essentially serves the purpose of a relay, an amplifier of movements, but it is still man who preserves within himself the center of this complex technical individual that is the reality constituted by man and machine. (Simondon, 2017, pp. 78-79)

Both machine and human are able to perform particular functions on their own, but a man-machine function is one in which human and machine operate together, each responding to and with the other to perform better as a combined whole. In Simondon's inter-relational thinking, then, we might not view technologies as simply as 'extensions' of intelligence – rather, human and machine together become a 'more-than' human or technology, representing a new kind of self-regulating co-interaction with the world, with technology situated 'between man and world'. "Human reality *lives* through technology" (Scott, on Simondon, 2014, p. 1).

In fact, through a Simondonian-Bergsonian perspective, we may view our *whole experience* of the world as technically mediated, since all of our experiences of the world are essentially ones of man-machine coupling. This can be so, because, as we have seen in the conceptual tool of learned habit memory, what we must recognise as technologies need not actually be made of matter. "Besides *things*", Bergson explains, "there are *relations*" (1911, p. 155), and, in the same way that the intelligent, technical mind is able to create technologies of 'things', it can create through the same kind of processes technologies of 'relations' (Bergson, 1911, pp. 155-157). Moreover, we must appreciate that, beneath all more tangible, society-scale examples of such technologies of relation – for example, laws, philosophies, civil societies etc. – lie, at a fundamental level,

technologies such language and relational concepts through which our whole intelligent experiences of the world are technologically framed.

Memory and Technology

How then, do we situate our approach toward memory within this thinking? On the one hand, we must situate the bodily realisation of *memory-potential* as a driving force for technological interactions, in terms of individuation. On the other, we must importantly acknowledge that our conscious experience of remembering, the practice of remembering, is itself one that should be understood as a man-machine technological coupling, or multiplicities of man-machine couplings, themselves involving the relation between and against bodily, cultural and technological drives and their inherent agencies.

Firstly, then, let us remind ourselves that we might consider an abstracted form of remembering as the realisation of *memory-potential*, and a driving force of all transindividual interaction. That being the case, if the technical object is, as Scott suggests, “the most powerful initiator of the psychosocial transindividual operation ... the means by which individuals are made to coincide and communicate via their significations” (2014, p. 197), then we must understand remembering as the action through which individuation, and therefore potential man-machine action, is made possible. Indeed, it is the very process of inter-relational remembering between human and machine and environment that makes at all possible what we might call ‘technological progress’ of the technical object– the previous *human-known* function (in terms of both actualised and habit memory) of the tool giving force to new and potential, imagined functions as we draw into the anticipated future. As Simondon acknowledges:

[T]he process of learning, through which man forms habits, gestures, and schemas of action that enable him to use the highly varied tools that the totality of an operation requires, pushes this man to individualize himself technically. (2017, p. 77)

Secondly, let us acknowledge that remembering, at least at a consciously-perceived and self-regulatory level, we can understand explicitly as a man-machine technical operation in two distinct yet overlapping ways – the first being straightforward within our existing understanding of memory, and the second requiring a little theoretical unpacking.

In the first sense, we can understand technology and actualised human ‘personal memory’ to be interlinked through conceptually-technologically-coupled modes of perception. If

we follow the Bergsonian notion that technologies (such as language and concepts) act to enlarge our “perceptual grasp over matter, to enlarge [our] own living duration” (Hansen, 2006, p. 258), and recognise, in the nature of remembering, that “[t]here is no perception which is not full of memories” (Bergson, 2004, p. 24), then remembering must *always* be a semi-technologically-constituted experience.

This is true equally of collective remembering, which, while different in kind to personal remembering, is always mediated in the form of conceptual or physical artefacts, and so is always technologically constituted. Thus, in a second sense, we can see the sophisticated use of artefacts – in terms of both cultural remembering and as so-called ‘memory aides’ to personal remembering – as a formal coupling of man-memory to machine-memory. In *On The Mode Of Existence Of Technical Objects* (2017) Simondon specifically discusses the nature of machine memory and human memory as an illustrative example of man-machine coupling. He distinguishes machine memory as “the memory of the document, the result of measurement” (Simondon, 2017, p. 138), whereas human memory can be thought of more relationally:

[T]hat which ... evokes a situation because it involves the same significations, the same feelings, the same dangers as another, or simply because its similarity makes sense according to the implicit vital coding constituted by experience. (Simondon, 2017, p. 138)

Through technological coupling, man-machines are able to employ both human memory and machine memory, in a relationship whereby “[t]he significations according to which human memory functions stop where those according to which machine memory functions begin” (Simondon, 2017, p. 138). A coupling of human to machine in this way, Simondon says, starts to exist “from the very moment when a coding common to both of these memories can be discovered, in order for a partial convertibility of one into the other to be realized, so that so that a synergy can become possible” (Simondon, 2017, p. 138), and to demonstrate this he gives the simple example of a obtaining a print-out of a data-record of telephone calls, out of a then-contemporary system of magnetic tapes. In order to receive this print-out, one must rely on the one hand on the human memory that recognises signifiers in the form of names and words of records, and on the other the machine memory that “provokes one magnetic tape player to be powered and not another” (Simondon, 2017, p. 139).

Simondon suggests, then, that while each kind of independent, self-regulating memory – human and machine – can provide functions in and of themselves, the function of printing out a telephone call record is an interaction in which the machine and the human are coupled, in which the function is “better and more subtly accomplished by the man-machine couple than by man or machine alone” (Simondon, 2017, p. 135). “This pure case of coupling between machine and man helps us to understand the mode of coupling that perhaps more complicatedly exists in other cases”, Simondon argues (2017, p.139):

[T]here is a coupling when a single and complete function is carried out by both beings. Such a possibility exists in every time that a technical function has a defined self-regulation. Functions that contain self-regulation are the ones where the accomplishment of the task is directed not only by a model to be copied (according to an end), but by a partial result of the accomplishment of the task, intervening as a condition. (Simondon, 2017, p. 139)

Yet, if we accept the Bergsonian observation that language and relational concepts are indeed non-material technologies, or conceptual technologies, as we saw above, then we may see that the man-machine relationship of memory runs much deeper than that for which his intentionally simple example allows. If we consider that our experience of memory is at all times coloured, if not determined, by those relational, conceptual, *technological* frameworks through which we experience and analyse it – for example, the learnt categorisation of memory into episodic, semantic; the general recognition of objects and sensations through perception as and through their signifier(s) in language; the linguistic and conceptual separation between individual and collective; the notion of memory as autobiographical and linear; or, of course, the lived likening of memory to an archive – then we can now understand that our whole human experience of memory and remembering, and therefore our whole perception of life, is framed within multiplicities of technological invention. The very images we perceive when we experience the world are afforded in one way or another through technological concept. To remember as conscious individual is to remember as man-machine. Once again, “[h]uman reality *lives* through technology” (Scott, on Simondon, 2014, p. 1), and it *remembers* through technology. Indeed, what we even consider to *be* remembering is largely conceptually-technologically framed.

Simondon’s theorising on technology and man-machine coupling, then, might in simple terms be understood as a logical and complementary relation of his theory of individuation to the world of technologies. The world as we experience it is one in of

constant processes of individuations, of becomings, out of interactions between living organisms, non-living matter and the world around them. The use of technologies by living organisms is a further development of these interactions, giving further emphasis to the blurring of boundaries, through such interactions, around conscious sense of subject and object, individual and collective, agency and identity. For the intelligent, coupled man-machine, psychic and collective individuations always involve technology and technological action as mediator between the human and the world, indeed as equal part of the ‘more-than individual’ in the world – each part of the coupling being at once a shared subject and object of the interaction.

If we seek, then, to re-state our approach to memory within an understanding of technological relations, we could now say that remembering is an inter-relational realisation of potential for action in the present, useful to the transindividual and its sensed sociality, always in a state of being (re)informed by perceptive relationality to the surroundings – environmental, inter-social and technological. Furthermore, as we will see in Part Two and Part Three, we must accept that to investigate remembering is also to investigate agential (and thus socio-political and economic) considerations around how technologies through which processes of remembering take place may frame our perceptions and actions in the world, and for what reasons. Before we do this, however, this section finally, and briefly, contextualises the investigation within the changes to technology in the online era.

Into the Twenty-First Century

Simondon’s example of the telephone record of course transposes readily to contemporary examples of coupled memory functions, largely reliant on database ‘artefact’ technologies – the drawing up of a file from a computer hard-drive through Windows Explorer or Apple Spotlight, for example (as we saw in the Sparrow et al experiment, 2011), or the accessing of a particular server or website from a web-browser’s address bar. The main critical interrogation of the ways in which we are remembering through such new technologies and interfaces is reserved for the following chapters. However, here we will lightly examine how we might practically think our approach to memory in relation such technologies, and in order to draw attention to, and contextualise our approach to memory within, key observations on which these chapters will build. If a sense of *the individual* is always experienced through technology, then how might we

think this experience changed through the advent of new, online and pervasive technologies?

This thesis suggests that there have been three overt, major and inter-relating changes to the lived experience of remembering with the move into the online era:

1. **Connectivity** – the global-scale actual and potential technological and social networks with and through which we may remember.
2. **Instantaneity** – the speed at which communication allows us to connect with others, and to access information, the sense of temporality informed by this and increased connectivity, and the pervasiveness of the hard- and soft-ware interfaces that enable this.
3. **Materiality** – the datafication and storage of communication and media of remembering into flows of relational digital information, and the *experience* of remembering through such processes.

Through these moves, as we will explore through the case-study chapters, the abilities of the remembering man-machine have been perhaps enhanced in numerous ways. The human, with the machine, is able to connect with a greater number of people, within a greater number of networks, and do so practically instantaneously, raising questions around multiplicities of and potentials for inter-relationally-informed remembering. Machine memory, through its instant global networks, at once allows for human enhancement and allows for the increase and enhancement of its own supply of, and access to, “the memory of the document” (Simondon, 2017, p. 138) – data produced both for the purposes of remembering and through the processes of remembering.

Humans now connect with others on meso- and macro-levels on a global level through various social networking and messaging interfaces, such as WhatsApp, Facebook and Twitter, with the enlargement of one’s perception and one’s sense of social network, or ‘the social’, compared to pre-digital cultures. This runs alongside the expansion of online media storage and access, raising interesting implications for collectivised inter-informing actions of remembering recent and more historical pasts. So, too, have more micro-level technological relationships evolved through the an apparent datafication of the concept of memory. Whereas the diary, for example, had certain limitations for recording and relating to autobiographical pasts, through size, capacity and the effort of recollecting in order to record – as did the “‘shoebox’ collections” through which people

recorded “personal cultural memory” (van Dijck, 2007, p. 1) – new modes of technology here, too, allow for greatly enhanced recording and ease of re-accessing such media content, almost unimaginable by comparison. We interact on a micro-level with apps that record and can recall our locations and our physical (and digital) activity at practically all times. Cloud storage allows documents and personal media such as photo back-ups, to be accessed anywhere, allowing for extended kinds of personal remembering that is non-social, relational to just the user and the interface.

Yet all of this happens through wirelessly networked devices and interfaces that pervade our lives, becoming increasingly ubiquitous, and the design and functioning of these involve sophisticated relations of cultural, economic and political agencies. While the hours spent looking at screens through various interfaces has continued to increase, other interfaces becoming more common as we move further into Web 3.0, or ‘the internet of things’, no longer use screens at all – such as Google Home or Amazon Echo – the kind of ubiquitous technology Adam Greenfield has called “everyware” (2006). These technologies we can think of in a very real sense as increasingly forming the very perceptual infrastructure of our personal and social lives, yet, it must be acknowledged, involve agencies well beyond the immediately-apparent functions and agencies of the human and the hardware-machine.

The inter-relational experience of remembering, then, has been radically transformed in recent years and decades. Yet what kind of *memory-potentials* are being realised through such new, online and pervasive technologies? How can we think of the relationship between new technologies and changes to processes of psychic and collective individuation? In what ways are these realisations affected by a move into such technological relationships? How might we think of these technologies in a Bergsonian sense as ‘extending’ or ‘limiting’ the ability for realising *memory-potential*? What kinds of useful action are being informed through prominent forms of ‘remembering’ online, and for what reasons? And what might be the implications?

These are some of the questions this thesis now aims to answer in later chapters. However, before we return to the research question, equipped now with a comprehensive theoretical approach to understanding memory non-archivally, it is necessary to consider in Part Two how we might concisely conceptualise this approach into a form in which it might be more usefully applied to real-world considerations.

2. Conceiving Memory: From Archive to Anarchive

In Section One, this chapter drew on the philosophy of Henri Bergson and Gilbert Simondon to develop a broad, working theoretical approach to understanding memory and the memory-technology relationship as an inter-relational, techno-socially co-constituted process-experience, in duration, based on the realisation of potential for useful action of the individual or transindividual in the present, and in anticipation of the future. This lengthy expounding, of course, was developed as a comprehensive attempt to shift away from the European-historical reliance on the metaphor of the archive as a succinct conceptual tool with which to think about memory, which privileges contested assumptions around memory as the ‘storage of knowledge’ and leads to various contested tendencies of thought. Equipped with our own approach to memory, this section seeks to now create a route back toward the central research question – *What role do new, online and pervasive technologies play in changing individual and collective memory processes?* – by proposing an alternative conceptual tool into which such an approach might be incorporated. It aims to synthesise a concise and effective conceptual framework, as an alternative to the archive metaphor, through which we may apply this approach to memory in a real-world context through the following chapters.

The section does this in two stages. Firstly, it returns to the problem of language and of conceptual metaphors, as lightly introduced in the Literature Review chapter. Drawing on the thinking of Bergson (2001) and Alfred North Whitehead (1938), it explores the conceptual constraints compelled onto philosophical thought through the technology of language, and its potential to guide empirical interpretation in unhelpful directions. Acknowledging that memory-experience, as mediated through symbolism in language, will always be one step (or multiple steps) removed from direct experience, the section aims to establish a conceptual tool for thinking about memory that takes us far from the spatialising nature of the archive metaphor and attempts to lead us closer, in a Bergsonian *intuitive* sense (Bergson, 1946), to an expression of the direct experience of the processes of memory. It contends that, rather than seek a more adequate metaphor for understanding memory, we ought to more usefully follow an *anti-metaphor*, which might allow us greater freedom from the traps of assumption-informing language. To this end, and forming the second stage of this section, it proposes that we consider the ‘anarchive’ as a useful conceptual anti-metaphor with which to think memory in exploration of the research question. Examining and interrogating the recent scholarly thinking on the practice of ‘anarchiving’ out of the international, interdisciplinary SenseLab project

(SenseLab, no date), it explores their developing conception of the anarchive and demonstrates how it might be usefully adapted and adopted as a conceptual tool for applying our working approach to memory within a wider, real-world sociological framework. Accordingly, it ends by setting out in a succinct statement how we might think of memory as an anarchive.

The Trappings of Language

A recurring theme has emerged in this thesis around the limitations that language may impose when attempting to understand the world, and when expressing that understanding. We saw in the Literature Review chapter the tendencies of thought that have historically arisen, and indeed persisted, due to the metaphorically-informed assumption that memory acts like an archive – indeed, spending the substantial portion of this chapter attempting to understand memory when viewed not through such a lens. Equally, interpreting psychological states of memory through a spatialised conceptual framework such as the archive has led, we may remind ourselves, to a popularly-conceived false problem for memory of whether we are remembering less or more, when we would do better to explore a problem grounded in how we are remembering differently. Incorporating our understanding of language as a form of technology, as outlined above, into this task, this section draws further on Bergsonian thinking to explore the ‘problem’ with language, the role of and potential for expressions of philosophy within language, to consider what alternatives we might propose to the archive metaphor as a conceptual tool with which to ‘think’ memory in relation to the research question.

“It is above all language that alienates us from direct experience”, Guerlac tells us, following Bergson (2006, p. 69). Bergson returns several times in his essay *Time and Free Will* (2001) to the subject of language. While, as we have discussed, Bergson takes a position somewhere in-between the realist and the idealist, for him language is a technology that was developed in order to relate to the images of the world that they perceive around them, the *exterior* world, rather than a way to understand the images one’s own psychological states, the *inner* world. As such, when we use language to think of psychological experience, we impose on it the ways in which we would think about external objects, perhaps since it is through thinking in this way that we might then express such feelings practically *within* this external, inter-relational world.

[O]ur outer and, so to speak, social life is more practically important to us than our inner and individual existence. We instinctively tend to solidify our

impressions in order to express them in language. Hence, we confuse the feeling itself, which is in a perpetual state of becoming, with its permanent external object, and especially with the word which expresses this object. (Bergson, 2001, p. 130)

The language used to describe one's psychological state is oriented toward useful interrelationally-informed action. Yet it is therefore several steps removed from the direct experience by which it is informed, and which it seeks to express. In fact, we might see it not so much as an 'expression of the inner state' as a 'useful way in which to express that inner state'. Language, however, "is ill-suited to render the subtleties of psychological analysis" (Bergson, 2001, p. 13), and an expression of an inner state should not be confused with the always-becoming inner state itself – "[I]mages can never be anything but *things*, and thought is a *movement*." (Bergson, 2004, p. 159; italics my own). Furthermore, contemporary research in psychology has demonstrated that the forms, structures or familiarity of language may encourage particular modes of perception, thought, decision and action. Studies with bilingual participants showing, for example, different judgements of a statement's 'truthfulness' depending on the language in which it is read (Ellis et al, 2018). Others have shown that interpreted perception of colour is affected – and thus "visual consciousness" is affected – by the language of the perceiver (Maier and Rahman, 2018). Hence, while it may be practically useful in its conceptual simplicity to express one's memories, in lives with a distinct past, lived in the present, as spatialised 'things' or 'events' of the past, through doing so we encourage ourselves to truly think the *experience* of memory that way, to begin to think in terms of 'encoding', 'storing', 'retrieving'. And while it may be useful to think of 'time' as divisible moments in the past, present and future, through doing so we encourage ourselves to think the *experience* of time in that way, when we ought to consider it as living in duration.

The Need for Philosophy

This imprecise, outward representation of inner states, through the technology of language, leads, Bergson suggests, to two senses of *self*: that which can be expressed in language, and is "artificially constructed" (Bergson, 2001, p, 237), as translated through technology; and that which "cannot be expressed in the fixed terms of language" (Bergson, 2001, p. 237), as directly experienced by the human. In trying to understand the latter in terms of the former, we remove ourselves from direct experience in duration. Our consciousnesses "ought to express themselves in precise words", Bergson says, "but

these words, as soon as they were formed, would turn against the sensation which gave birth to them, and, invented to show that the sensation is unstable, they would impose on it their own stability” (2001, p. 132). Language distracts from the experience of living in a world of duration, instead tending toward an imposition of space: “all these modes of symbolic representation interfere with our ability to grasp the temporal nature of reality. *“They crush our sense of duration”* (Guerlac, 2006, p. 19; italics my own).

Bergson argues that the role of philosophy, and indeed the difficulty of philosophy, is in peeling back these layers of language in order to think more closely to the nature of the process of *direct experience*. “[I]mmmediate knowledge”, he says, would “find in itself its justification and proof” if it were not for “the symbolic diagrams which cover it up, diagrams which have for us become reality itself, and beyond which only an intense and unusual effort can succeed in penetrating” (2004, p. 245). To hope to understand direct experience, we must therefore “give up certain habits of thinking, and even of perceiving” (Bergson, 2004, p. 241) that symbolism in language has imposed on us.

Similarly, process philosopher Alfred North Whitehead argues in *Modes of Thought* (1938) that “[t]he great difficulty of philosophy is the failure of language” (1938, pp. 67):

The ordinary intercourse of mankind is concerned with shifting circumstance. It is unnecessary to mention self-evident facts ... Language halts behind intuition. The difficulty of philosophy is the expression of what is self-evident. Our understanding outruns the ordinary usages of words. Philosophy is akin to poetry. Philosophy is the endeavour to find a conventional phraseology for the vivid suggestiveness of the poet. It is the endeavour to reduce Milton's 'Lycidas' to prose; and thereby to produce a verbal symbolism manageable for use in other connections of thought. (Whitehead, 1938, pp. 67-69)

For both, there is an acceptance that language, as a technology of expression, will as such always be one-step removed from the pure experience of psychological life. Indeed, given that language as a technology has the evident capacity to at once extend and constrain our sense of intelligence, of understanding, it would be perhaps impossible to formulate an expression of what is for Bergson ‘direct experience’, and for Whitehead ‘what is self-evident’. As Guerlac has noted, there is therefore a great difficulty in *intuition*, in the task of philosophy: “How can a philosopher examine immediate experience ... experience that has not been mediated through the conventional symbols of language ... when philosophy

itself proceeds discursively?” (2006, p. 43). For Bergson, the answer is to make oneself “aware of how we usually speak about immediate experience ... and ... what kind of assumptions find their way into our thinking when we do so” (Guerlac, 2006, p. 43). Or, as novelist and academic David Foster Wallace more recently similarly suggests:

“Learning how to think” really means learning how to exercise some control over how and what you think ... It means being conscious and aware enough to *choose* what you pay attention to and to *choose* how you construct meaning from experience. (2009, pp. 53-54)

Our goal, then, within philosophy, cannot be to find a perfect way of expressing inner experience in duration, but rather to attempt to formulate *as adequate expression as possible* to describe it, and one that encourages us to question our existing assumptions, informed by the likes of the language through which we make the expression.

Alternatives to the Archive

To this end, then, how might we approach describing our understanding of memory, as developed above? What kind of conceptual tool might we synthesise, in at least the English language if not ideally beyond, with which to most adequately express such understanding of memory – or, moreover, in the spirit of such an understanding, what kind of conceptual tool might most adequately express memory *as it is directly experienced*, especially in its relation to new technologies? Such a conception, it should be emphasised, would need to account for memory as an experience within duration, as an inter-subjective process, beyond the binaries of individual and collective and of human, non-human and the world *and* would need to encourage critical self-reflection on what assumptions we make (or risk making) when using it.

A number of prominent non-archival conceptualisations of memory have emerged in recent years in various disciplines of scholarship, contributing to the slow shift away from the dominance of the archive. Brown and Reavey in their study of *Vital Memory* liken experiences of remembering to a “flow of experience”, drawing heavily on Bergson’s theorising on memory and duration, in a strong rebuttal to the power of the archive metaphor. Literary theorist Jens Brockmeier puts forward the idea of a ‘narrative approach’ to memory, which also focuses on the experience of memory, as well as in part attempting to incorporate an appreciation of memory as lived through a Bergsonian sense of duration. Equally, new-media theorist José van Dijck has proposed “mediated memories” (2007) as a conceptual tool with which to think about “personal cultural

memory” (2007, p. 1) in the digital age. The concept emphasises technology and the experiences of *how* we are remembering through media – “the acts and products of remembering” (2007, p. 6) – rather than *how much* we are remembering, with an aim of providing a commonality of approach between more neurological or psychological study of personal memory and more sociological or cultural approaches to collective memory. Indeed, recognising the “renewed sense of two cultures in the air” (Brown, 2008, p. 269), it has been argued by Brown that a focus of some sort on *mediation* might provide a way forward for a unified field of ‘memory studies’ (2008).

Building on these kinds of approach – yet placing an emphasis on the attempting to *escape the metaphor all together* in interpretive analysis – this thesis now makes a perhaps radical contribution to how we may conceptualise memory, biological and into the social. If the language of metaphors acts to cloud our view of the direct experience of remembering through imposing on it too strongly an idea of what memory *is*, perhaps a more adequate (or at least less inadequate) approach would be to formulate a conceptualisation of what memory *is not*. Indeed, such an approach might, like the function of memory itself, offer a force of hesitation, enabling psychic distance – facilitating an encouragement of critical self-reflection on the *assumptions* encouraged or imposed by language. This thesis therefore proposes that we move away from seeking a notion of metaphor for conceptualising memory, and instead embrace the notion of the *anti-metaphor*: instead of thinking memory as acting like an archive, thinking of memory as acting *not* like an archive. In doing so, it hopes to offer opportunity for more *intuitive* analysis – disrupting tendencies toward spatialised conceptualisations, to seek to understand the topic from a perspective closer to processes of *direct experience* in duration. To this end, it offers up the notion of the ‘anarchive’ as conceptual anti-metaphorical tool for thinking our approach to memory.

Anarchive as Conceptual Anti-Metaphor

This section considers how the concept of the ‘anarchive’ – or perhaps more pertinently the concept of ‘anarchiving’ – might be adapted and adopted as a useful anti-metaphorical tool with which to think memory in the way that we have developed above. In recent years, the concept of the ‘anarchive’ has received renewed scholarly interest, beyond the realm of archive studies – notably out of the interdisciplinary, international project ‘SenseLab’, a collective involving renowned digital-cultural theorists such as Erin Manning, Massumi and Andrew Murphie.

The next part of this section, then, attempts to engage critically with SenseLab's conception of the anarchieve, with the aim of testing its appropriateness to be developed it into a useful, working conceptual anti-metaphor with which to think with our developed approach to memory – and one that may adequately provide a more 'joined-up' approach to thinking the drives of the personal, the collective and the technological in remembering. To this end, after introducing the concept, it briefly works its way in turn through each of the seven points in the concise definition SenseLab has proposed for their own conception of the anarchieve, reflecting critically on their potential relation to, and adaptability for, thinking memory as *memory-potential* and remembering as its inter-relational, transindividual and technological realisation. It ends by setting out a short working proposed 'hybrid-definition' for thinking memory anarchivally.

The Anarchieve

The continually developing conceptualisation of the anarchieve is an ongoing research project of SenseLab – an international, affinity-oriented network of academics and creative practitioners, based out of Montreal – and the concept can be contextualised as part of a wider project, *Immediations*, that explores the concepts and methods of research creation. Perhaps a philosophical exercise at its core, a 'definite' definition of the anarchieve might be difficult to pin down, anti-metaphorical as the term seems to be: "What an anarchieve can be is yet to be invented", they note (SenseLab, no date). Rather, its conceptualisation comes out of the premise of a question of what *can* be archived – what is temporally *in between* the artefacts within a spatialised archive – or, indeed, out of the processes of attempting to answer it.

The question is how what moves an event into taking form can be archived, as opposed to documenting the content of the event. Can traces of the event's liveness be captured, in a way that might set the stage for a next event to occur in its wake? The anarchieve would then be a kind of process seed bank for the dissemination of forces of emergent taking form.

Useful similarities between this approach to conceptualising an anarchieve and our own neo-Bergsonian approach to conceptualising this developed understanding of memory are unambiguous. Each is occupied with the processes and potentials that *inform* concrete ideas of the past (i.e. 'memory'), and with the business of actualising or capturing these potentials. For the hypothetical anarchieve, as with our notion of *memory-potential*, what we are seeking is a conceptual solidification of potentials, or opportunities for potential,

realised in duration: the ‘liveness’ of events or actions, which is not accounted for in the traditional notion of the archive that privileges artefacts-in-themselves. Each might be seen as an attempt to concretise, or at least emphasise, the movements that come in between their respective representations of the past – to pin down duration. While our theoretical consideration of ‘memory’ began by examining the nature of ‘personal remembering’ informing all lived action as *processes* of psychic and collective individuation, we have seen that through ‘collective remembering’ these processes involve the re-presenting or re-versioning of artefacts of the past (conceptual or signified through physical objects), to inform useful action in the present. From an anarchival perspective, artefacts can likewise be understood not as having potential themselves, but rather acting as “carriers of potential” (SenseLab, no date a). The notion of the anarchival – or of remembering as *anarchiving* - then, acts as a useful tool with which to account for both ‘individual’ and ‘collective’ processes of remembering within our hybrid Bergsonian-Simondonian approach of realising memory-potential into individuating action.

In other areas, too, has the question been raised about how a ‘Bergsonian-esque’ approach to thinking memory might have implications for the way in which we view the archive. Independently of SenseLab, Burton has, following Bergson, theorised a pertinently sympathetic perspective of the archive in terms of *process* rather than *things*:

[T]he archive can be said to have its own ‘body-image’ with its own conatus and set of interests relating to its own survival or self-perpetuation. Just as in the case of memory, where the conscious picturing of memory-images by the body-image leads to a false understanding of the nature of memory, so the memory-images accumulated in the archive may lead to a false understanding of the nature of the subject studied.” (Burton, 2008, p. 332)

For Burton, Bergson’s emphasis on memory as a process of limitation, selection and action, similarly to SenseLab’s conceptualisation, brings an opportunity to re-think the archive not as a collection of artefacts, but as a living, ongoing process. Indeed, in thinking this way we can see archives (and, by extrapolation, all technological processes of collective remembering) not as having a potential in ‘knowledge’ in the artefacts, but as platforms for processes of collective individuation *through* signification in objects. Indeed, as media theorist Wolfgang Ernst notes, “Let us not confuse public discourse (which turns data into narratives) with the silence of discrete archival files” (2004, p. 48). In thinking about the actions that *inform* artefacts’ inclusion or exclusion, Burton suggests

that we might release the potential to “recover salient aspects that have been ‘forgotten’” (Burton, 2008, p. 334). Through Burton’s analysis of the archive as dynamic movements of memory processes, we can see firm potential parallels between using the anarchive as an approach to thinking the *archive* and using the anarchive as an approach to thinking *remembering*. Such a radical re-conceptualisation of the archive in relation to the anarchive might, then, help to redress misunderstandings of the physical archive (i.e. helping us to see artefacts as carriers of potential rather than potential themselves), and, again, helps us to conceptualise both bodily and more cultural processes of remembering under one attempted ‘whole picture’ approach.

Interrogating the Anarchive

What follows here is a straightforward dialogue between on the one hand the seven-point, concise, working definition of the anarchive as developed by SenseLab (SenseLab, no date a) and on the other the spirit of the approach to memory we have developed above. We may here think of ‘the anarchive’ in relation to our own wider conceptualisation of collective remembering as habit memory, reproduced through repetitive processes of artefact production and presentation, and can understand how technologically-facilitated collective remembering may be viewed sympathetically with more biological memory through the conception of ‘anarchiving’. Thus, through such a dialogue this section aims to demonstrate how, in seeking to challenge the supremacy of the archive and instead focus on process, the anarchive offers itself up as a radical and useful conceptual anti-metaphor with which we can think a more ‘joined-up’ approach to memory, in terms of the drives and functions of the biological, cultural and technological.

- 1. The anarchive is best defined ... as a repertory of traces of collaborative research-creation events. The traces are not inert, but are carriers of potential. They are reactivatable, and their reactivation helps trigger a new event which continues the creative process from which they came, but in a new iteration. (SenseLab, no date a)*

Our approach thinks of memory as *memory-potential*, a kind of latent potential out of previous experience, or events. Neither are these potentials considered inert. Rather, they can be realised in for the purposes of action in the present moment (through another event, we might say), triggering further action, furthering the

drive of *memory-potential*, and creating new experiences that add to it.

2. *Thus the anarchieve is not documentation of a past activity. Rather, it is a feed-forward mechanism for lines of creative process, under continuing variation. (SenseLab, no date a)*

Memory-potential is not a collection of ‘things’, of ‘memories of past events’. Rather it is a potential for interactive process, in the present, through its realisation, in turn informing new, creative interactions as we move from the past and into the future.

3. *The anarchieve needs documentation – the archive – from which to depart and through which to pass. It is an excess energy of the archive: a kind of supplement or surplus-value of the archive. (SenseLab, no date a)*

Remembering relies on the experience of past events – in *memory-potential* – from which to depart and through which to realise itself. It is a surplus of perception of the past, within the present – more than memory and more than perception.

4. *Its supplemental, excessive nature means that it is never contained in any particular archive or documentation element contained in an archive. It is never contained in an object. The anarchieve is made of the formative movements going into and coming out of the archive, for which the objects contained in the archive serve as springboards. The anarchieve as such is made of formative tendencies; compositional forces seeking a new taking-form; lures for further process. Archives are their waystations. (SenseLab, no date a)*

Remembering not a ‘thing’ but a movement. It is neither ‘contained’ in *memory-potential*, nor in its representations through perception. Rather it is a process of realisation through inter-relational interaction, drawing on the force of *memory-potential*, its surroundings and socialities, and its mode of

technological mediation. The movements of remembering, as the realisation of *memory-potential* are, incitements for further interaction.

5. *Since it exceeds the archive and is uncontainable in any single object or collection of objects, the anarchival is by nature a cross-platform phenomenon. It is activated in the relays: between media, between verbal and material expressions, between digital and off-line archivings, and most of all between all of the various archival forms it may take and the live, collaborative interactions that reactivate the anarchival traces, and in turn create new ones. (SenseLab, no date a)*

Remembering is always a process of inter-relational interaction. *Memory-potential* is realised through and with the interactions of the transindividual's environment, socialities and mediation. It is represented through interaction through and with the present, in turn creating new potential for action.

6. *The anarchival pertains to the event. It is a kind of event derivative, or surplus-value of the event. This makes it an essential element of the Immediations project, whose stated aim has been to develop an approach to research-creation as a practice of interdisciplinary event design, or to quote the original application, as the practice of creating innovative "platforms for organizing and orienting live, collaborative encounters." (SenseLab, no date a)*

Remembering pertains to action-in-the-moment. It is a kind of surplus of the past, in the present, a 'more-than' present. Through its realisation out of *memory-potential* and perception, it forges inter-relational interactions with its surroundings as a force of organising life in duration – itself a sense of the always-anticipated future.

7. *Approached anarchivally, the product of research-creation is process. The anarchival is a technique for making research-*

creation a process-making engine. Many products are produced, but they are not the product. They are the visible indexing of the process's repeated taking-effect: they embody its traces (thus bringing us full circle to point 1). (SenseLab, no date a)

Approached as a realisation of *memory-potential*, remembering is process. *Memory-potential* realised through movements of remembering at its most abstracted is a force for enduring progression and interaction of life. Many images exist out of *memory-potential* – be they psychic memory-images, bodily or conceptual artefacts or physical artefacts – but they are not memory nor remembering. They are the visible representation of the force of *memory-potential's* repeated and constant drive toward action in the present, through its latent potential out of past experience (thus bringing us full circle to point 1).

Memory as Anarchival: Remembering as Anarchiving

Perhaps the most crucial problem with the archival model of memory might be that it imposes *form* or solidity onto memory. “[T]he root metaphor of solids encourages us to initially think of memory as a ‘thing’ that needs to be preserved against the forces of erosion”, Brown and Reavey observe, “and then subsequently to commodify that thing as something that requires auditing and safeguarding” (2015, p. 70). Through such a conception, an interpretive misconception arises in the realm of the human in thinking memory as stored knowledge rather than the potential for action, and in thinking remembering a recall of this knowledge rather than a realisation of this potential. Furthermore, in the realm of the digital man-machine collective remembering a misconception arises in thinking memory as media or data, as artefact in itself, to be recalled, rather than transindividual, relational potential for action through movements and interactions, of the signification of this media.

If the knowledge or artefact is not present, then its ‘memory’ has been forgotten. Yet, as we shall explore in the case-study chapters, it is in their anarchival *engagement* – through reproduction, re-presentation – that artefacts and ‘knowledge’ find their continuing life – and thus, as deceptively straightforward as it sounds, anarchivally forgetting might be considered, for Bergson, quite simply as anarchivally ‘not remembering’.

Thinking with the anarchival can help to conceptualise this formlessness at the heart of our understanding of memory. Just as it encourages one to think the archive not as a collection but as a series of actions, so can the conceptual anti-metaphor of the anarchival encourage us to stop thinking about personal and collective memory as *form in space*, but rather *actions in time*. *Memory-potential* is formless in that it is not physical, and its realisation into memory-images is formless in that it is a movement. The anarchival allows us to stop thinking remembering in terms of already-actualised memory-images, as ‘things’ – be they primarily psychically, physically or digitally actualised. Rather, we can begin to think remembering, more closely to direct experience, as movement in duration, allowing us to think of remembering and forgetting not as the storage or loss of knowledge, but as the comings, goings and absences of potentials. Here, then, is attempted a succinct synthesis on ‘memory as anarchival’.

Remembering is anarchival because it is formless. It is not made of ‘things’ but of potentials. It does not inform ‘knowledge’ but *movements*, toward action. ***Remembering is anarchival because it is the realisation of potentials.*** Remembering is not the individual recall of an experience in space but an actualisation of potentials, through collaborative movements of interactions, in duration. ***Remembering is anarchival because it is recognised in movements.*** It cannot be recognised in the forms and representations that it produces, but in the inter-related and inter-subjective movements and (inter)actions that produce them. ***Remembering is anarchival because it is relational.*** Remembering is concerned with relations in the present, realising potentials of past experience in anticipation of the future. It is the force that drives lived inter-relationality. ***Remembering is anarchival because it (re)produces action.*** *Memory-potential*, realised, informs itself and its inter-relations, producing actions in the present and informing actions of the future. Likewise, the use of artefacts to inform collective individuation should not be seen as ‘objects’ but as the reproduction of signifiers or carriers of potential.

This chapter began with three aims. Firstly, to develop a comprehensive, philosophical approach to how we can understand memory non-archivally, and its relationship with technology. Secondly, to develop a useful conceptual tool in opposition to the creative metaphor of the archive, so that such a theoretical approach could be usefully applied in

real-world contexts. And, thirdly, to begin to consider the research question through this approach, laying the groundwork for more nuanced examination through the case-study chapters.

Grounding our theoretical position in the philosophy of Henri Bergson, and situating it within his wider theorising on consciousness in duration, the first section of chapter began by looking at perception. It explored the idea of perception as an affective relation with one's present environment, in duration, with the purpose of informing useful action, involuntarily or otherwise. It then considered memory's relationship with this understanding of perception. It examined how memory is always present in perception, allowing an organism to use past experience to inform useful action in the present, for the future. Consciousness, in terms of *self-awareness*, it suggested, can in simple terms be understood as the inter-related ability to stitch together a relational sense of self, through perceiving life in duration – always in the present – in relation to imagined ideas about the past and future. At the same time, it is constituted by the related ability to 'delay' impulse actions, giving higher organisms such as humans the fundamental ability of *choice* of action. The function of memory established, it then moved to consider its nature. It explored Bergson's thinking on *pure memory*, and its realisation through remembering into *memory-images*, which may in turn lead to movements and actions, to argue for a reconceptualisation of memory as *memory-potential*, informed through past experience, and of remembering as a realisation of this potential. It then moved to consider the inter-relational *social* and *technological* character of remembering, through situating it within a reading of Gilbert Simondon's theorising on psychic and collective individuation. Emphasising the always-interactive nature of memory, it suggested that we think of remembering as a transindividual act, a process of becoming that is always coming out of and re-informing 'more than itself', a surplus. It made the radical suggestion that we might in these terms consider the force of *memory-potential*, in its always-impending push to be realised, as a key driving force of all living interaction. A working understanding of memory and its inter-relational character established, it finished by exploring through Bergson and Simondon how we might understand its relations to technology and technological action. In examining how technology can be understood as an extension of, and then enhanced coupling with, human intelligence, it argued that conscious remembering is an always-technologically-mediated process, allowing a temporal synthesis of consciousness, both through conceptual technologies and through physical technologies. Thus, such technologies may inform a different *kind* of

consciousness through the extended and or expanded ways in which they enable us to perceive, remember and act in the world.

A comprehensive, working, non-archival, theoretical understanding of memory now established, the second part of the chapter sought to develop a conceptualisation of memory that could usefully act as a challenge to the archive metaphor, as a conceptual tool with which this understanding of memory could be understood more readily in the lived world. It first examined the tendency of language as a technology to both broaden and constrain our ability to express and understand inner states of being, such as remembering. It emphasised that, while it might be impossible to use language to perfectly express inner states, the task of philosophy might be understood as a way to express those states as close to the nature of *direct experience* as possible. A key aspect of this, it saw, is to force oneself to be critically aware of the assumptions that can be brought to one's understanding of something through the language used to express it. As an alternative to the archive as a conceptual tool for memory, then, it proposed that we might use the *anarchive* as a conceptual *anti-metaphor*, thus escaping archival tendencies, and encouraging a sense of critical, self-reflective distance and hesitation through forcing us to think about what memory *is not*. To this end, it explored how the notion of the anarchive has been conceptualised by the *SenseLab* project in relation to traditional archives, and, through a conceptual comparison, argued that such an approach would be both compatible and useful for thinking our new, more 'joined-up' approach to memory.

We now have a working, non-archival, theoretical approach to memory and a useful conceptual tool with which to apply it within the real world. Thusly equipped, Part Three of this chapter returns our investigation to the central research question – *What role do new, online and pervasive technologies play in changing individual and collective memory processes?*

--o0o--

3. Struggling to Remember: Memory in the Online Era

Through the previous parts of this chapter, this thesis has attempted to develop a comprehensive, inter-relational, process- and affect-led understanding of memory and the memory-technology relationship, and to conceive of a useful way of applying such an understanding in real-world contexts through the adoption of the anarchive as a conceptual anti-metaphorical tool. In this final section, equipped with such an approach,

we return to the central research question – *What role do new, online and pervasive technologies play in changing individual and collective memory processes?* In preparation for subsequent case studies and discussion, Part Three of this chapter aims to sketch out the thrust of the subsequent case-study chapters by asking what might be at stake for memory in the online era if we examine how we are today remembering *differently* through such technologies. It suggests that, rather than being concerned with whether we are remembering too much or too little, the crucial areas for consideration may lie in the limitations, affordances and indeed agencies within the socio-political infrastructures through whose processes and interfaces consciousness-informing processes of memory, perception and action are now co-realised.

Acknowledging Massumi's important observation that affect cannot be easily separated from politics (2015), the section begins by making the radical argument that, as well as considering the intuitive experiences of remembering through new technologies, any investigation into how we are remembering differently in the online era must be equally situated within an arena of contemporary socio-political analysis. To this end, it advocates a two-pronged exploration within the case studies, including both empirical and situational analysis. Next, reflecting on the anarchival attitude to memory developed above, the section attempts to sketch out a speculative political economy for memory in the digital age, focusing on the key ideas of *memory-potential* and remembering as an actualisation of this potential into individuating action, through the lens of the anarchival. Through this process, it makes the crucial argument that, in part driven by its tendency to be seen as archival, processes of memory have been co-opted by practices and desires of neo-liberal, corporate economics – quantified, datafied, packaged, sold, repackaged and resold. Following Massumi's thinking on the politics of belonging (2002, pp. 68-88), it suggests that we might think of new corporatist technologies of memory as in one way or another attempting to usurp the very realisation of potential that remembering represents. In a tension with more cultural and biological drives of remembering, rather than facilitating an inter-relational, anarchival memory-experience – as a realising of potential useful for transindividual action – key, prevalent platforms of twenty-first-century memory experience, such as social media networks, photo-back-up services and search engines, have instead promoted an archival, datafied experience of memory, designed to encourage, guide or even explicitly processes of individuation, chiefly in the service of a top-down need for revenue generation.

From the outset, this section stakes the claim that to think about remembering necessitates a move to think politically. The previous sections of this chapter set out a comprehensive philosophical understanding of remembering as an affective and inter-subjective process of realisation of potential – based on the usefulness of past experience for informing useful action in the present. And while a naïve reading of Bergson on memory might lead one to think of remembering as geared toward useful action for the *individual*, through a deeper reading within this approach, we have argued for an understand of remembering as always-complex, *co-constructed* processes of psychic and collective individuation. These processes involve tension and negotiation between different sets of actors and agencies: between one's actualised past, perceived present and anticipated future; and between one's environment/s, sociality/ies and technological mediation/s (physical *and* conceptual), enabling action useful for the *more-than* individual. This section aims to introduce the basis for the argument of a contemporary kind of 'struggle' for memory, between these different drives and agencies, as a departure point for the subsequent case study chapters.

Remembering is Relational; Relational is Political

An individual-collective is not only made up of human individuals. It is made up of many *actors*, human and technological, working together in specific ways to maintain the boundaries and solidity of the individual-collective. An actor can be defined as any element in a system that produces action, and thus includes, along with single human beings, the technological and cultural artifacts that enable specific movements. (Bollmer, 2011, pp. 458-459)

What role do new, online and pervasive technologies play in changing individual and collective memory processes? Our approach to answering the question through subsequent sections of this chapter is, as already made clear, to consider how we are remembering *differently* in the online era. And, in employing our developed understanding of memory, this incites a method of empirical analysis of the *experience* of remembering through new technologies. Key areas of exploration within this would be the ways in which we *perceive* the past through new technologies. How do experiences through new technologies affect our perception of duration, of memory within duration? What kind of a *remembered self* do we experience through remembering as interaction with particular interfaces? What kind of 'social' is produced through inter-affective acts

of collective remembering online? And can we think about these experiences in relation to the archive and the anarchive? Indeed, with a focus on action in duration, how can we begin to think not only in terms of experiences of cyber-space but also in terms of experiences of *cyber-time*?

However, we cannot ignore that remembering, as an affective, and multi-informed process, involves, as Bollmer puts it, “many *actors*, human and technological, working together in specific ways” (2011, p. 458), each with their own kinds of agencies – and, as such, is also an essentially *political* process. As Massumi observes, “The [Spinozan, as we shall see below] formula: ‘to affect and be affected’ is ... proto-political in the sense that it includes relation in the definition ... is to be open to the world, to be active in it and to be patient for return activity” (Massumi, 2015, p. ix). For this straightforward reason, then, our approach must also take care to account for a wider situational analysis of memory experiences, not looking solely at the experience of remembering through particular kinds of technologies or interfaces, but the decisions or reasons behind *why* they may be used in particular ways, why remembering is experienced in particular ways, indeed why interfaces are designed particular ways.

While our study is chiefly centred around the consciousness- and subjectivity-informing, inter-affective processes of perception, remembrance and (choice of) action, we should not lose sight of the importance of the *body* in relation to the emergent sense of ‘the subject’. Indeed, since we may see the body as a centre for action, out of whose relational processes consciousness emerges, we might think all subjectivity, strictly speaking, to be embodied, and thus a sense of the subject intrinsically entangled with a sense of the body. However, as body and media theorist Lisa Blackman notes, “Affect theory presents a number of challenges to body studies ... [taking discussion] beyond the body-as-organism” (2012, p. 5). The relational consideration of the body and bodily experience in contemporary affect theory owes a significant debt to seventeenth-century Dutch philosopher Benedict de Spinoza, who conceptualises affect as “affections of the body by which the body's power of acting is increased or diminished, aided or restrained, and at the same time, the ideas of these affections” (1994, p. 154). “With affect”, argue cultural theorist Melissa Gregg and communication theorist Gregory J. Seigworth, “a body is as much outside itself as in itself – webbed in its relations – until ultimately such firm distinctions cease to matter” (2010, p. 3). From a perspective of body-as-relation, a key consideration for affect theory as method may thus be found, as sociologist and philosopher Patricia Ticineto Clough suggests, in the *political economy* of what she calls

the “biomediated body” (2008). That is to say, following Ali Lara and others’ paraphrasing of Clough, that “the political power of affect studies lies not just in what the body can do, but also and more importantly in the analysis of what the body can be made to do” (Lara et al, 2017, p. 40). Moreover, and returning us to the notion of *the subject*, Lara et al argue that this principle may be expanded “towards an analysis of the tendencies or propensities in the emergence of human *subjectivity*, or what subjectivity can be made to do” (Lara et al, 2017, p. 40; italics my own). Yet, as Lara et al note, employing affective methods to examine the “distributed agency” (Lara et al, 2017, p. 40) of the subject is not to disregard the (sense of the) body. Rather, it is to consider the processes through which a sense of the body may emerge:

[I]t means to further explore the ways in which new forms of control and manipulation of populations are setting conditions for the emergence of racialized, gendered, disable bodies, as well as the perpetuation of general homogeneous states of the body. (2017, p. 40)

To remember in a world of digital and pervasive media is, *generally*, to inhabit a world of data, seemingly of ‘things’, each action, indeed interaction, dutifully logged and stored away, ready for later retrieval. Yet if, as we understand it, memory is not about *knowledge* but about *action* – not about *truthfulness* but *usefulness* – then how, for example, does this change the way in which we approach the idea of personal data, of so-called ‘digital traces’ or ‘digital footprints’? Of what use are such potentials when realised – and, perhaps more pertinently, *who might they be useful for*? In a world of ‘sharing’ and ‘pay-per-click’, how might we now consider popular issues such as ‘fake news’, ‘misinformation’ or ‘virality’? For whom and in what ways are the movements and actions of online extension and ‘spread’ of apparent personal and more collective media-as-memory useful? In a world of socially-networked media and media-driven identity politics, how might we consider the nature of ‘official’ and ‘unofficial’ history, and of cultural identity? If, through our approach to memory, we see senses of cultural identity and remembrance as “evolving, self-transforming and milieu-informing elaborations” (Grosz, 2013, p. 55) in the present, how can might we consider examining those platforms through which such processes of collectivisation take place?

Memory-potential is not some sort of vital, teleological spirit, driving the individual forward toward its ordained future; it is a wild force for interaction toward individuation, borne out of past experience yet driven by affective inter-relations in the present that can be organised intelligently or otherwise. How might we, then, think about the ways in

which such potentials might be captured, and realised, through new memory experiences and through new technologies? Where, in remembering through online and pervasive technologies, might we say the relation of power currently lies in who remembers what, where, when, and for what purpose? How might we relate practices of remembering through platforms such as Facebook, Google or Twitter, each with their own agenda, to the psychological idea of collectivised “managed accessibility” of memories (Brown and Reavey, 2015, p. 14)?

Thus, each of the case-study chapters takes same essential approach, exploring both the empirical aspects of how we may think about the *experience* of remembering through new technologies, and considering more political, situational aspects of these infrastructures of remembering. To this end, each asks broadly similar questions: examining processes of remembering by asking in what ways acts of personal or collective remembrances are taking place; considering the apparent purpose of these actions by asking what kinds of action are being informed, and why; and, finally, broadening the conversation by discussing the wider potential socio-political and philosophical implications. In doing so, the chapters aim to excavate what we may think of as the key ‘problem’ for remembering in the online era.

The Technological and Economic

“Technical life”, Simondon says, “does not consist in overseeing machines, but in existing at the same level as a being that takes charge of the relation between them” (2017, p. 140), and the nuance of our own investigation emerges, in many ways, out this idea of ‘taking charge of relation’ between the human and machine, or indeed the lack thereof.

If we return to Simondon’s example of the man-machine coupling of memory in producing a record of telephone calls, we can, in simple terms, understand such a coupling as human and machine working together to achieve an aim more productively than they could if apart (if indeed possible apart). The human, here, as ‘technician’, understands the function of the machine, and operates with it to achieve a common, greater function.

There is something alive in a technical ensemble, and the integrative function of life can be ensured only by human beings; the human being has the capacity to understand the functioning of the machine, on the one hand, and the capacity to live, on the other. (Simondon, 2017, p. 140)

Yet, with new technologies of remembering, it is not necessarily always clear what ‘function’ the human or the technology is performing when interactions occur. Think, for example, of interacting with a post on a free social-networking platform such as Facebook. While it might seem like a simple ‘liking’ of someone’s post is a function of connecting with another via a social networking platform, acts such as this, as people are becomingly increasingly aware, feed into a complex system of behavioural data-gathering that informs all manner of interactions, ultimately in pursuit of efficient advertising revenue. In that sense, the act is no longer a mutual function – rather, on the one hand there is a seemingly co-produced function of communicating with others through technology, yet all the while this is being harnessed for an altogether different function by the machine, not readily disclosed.

As we have seen seminally through Plato’s *Phaedrus*, as well as Bergson’s reasoning on technologies on at once broadening and constraining perception, we may think that technologies and media technologies have always involved some form of ‘pharmacological’ relationship. However, as Hansen observes:

As a consequence of this operational split [no longer a mutual understanding of the function being performed] and the resulting possibilities for data-gathering and manipulation, the long-standing pharmacological ‘pact’ that has characterized the history of media from writing to cinema would seem to have been broken or, at the very least, rendered obsolete: simply put, what we get back has no possibility to compensate for what we give up. (2015, p. 71)

Within such a characterisation, might we perhaps say that the users have become the used? Through the subsequent case-study chapters, the thesis will argue that, in part enabled by the popular tendency to conceptually spatialise memory into a ‘thing’, corporate and more political drives behind prominent, contemporary technologies of remembering have exploited this ‘operational shift’ to great advantage. The conceptual ‘datafication’ of seeing memory quantitatively and archivally oriented ‘as media’, rather than anarchivally and qualitatively oriented as action, has allowed for the quantification and commodification of apparent ‘media-as-memory’, harnessing the drives out of *memory-potential*, and subversively employed to inform more artificially-constructed perceptions of users’ sense of personal and collectivised subjective identity.

On the one hand, we might think of platforms such as Google or social media sites as infrastructures that *control* media content. For example, the user-created personal data of

what we may think of as kinds of ‘surveillance capitalist’ technologies (Zuboff, 2019) – through personal social-media timelines and photo-backups, wearables’ logs, location history website cookies, search histories – may then be used for the likes of data-analysis profit, such as through advertising, or as a currency and investment within the attention economy, packaged up, sold on (indeed sold back to us), repackaged and resold... In a very real sense, our recorded artefacts of the personal past are, as Hansen notes, “fed-forward” (2015) automatically, and perhaps without much conscious consent, into our identity-informing perceptions of the present, and our remembrances within that present.

On the other hand, the online-facilitated virality of hate speech and fake news in so-called collective memory, and platforms’ seeming inability to stem the flow, may indicate a kind of ‘loss’ of control for platforms when it comes to managing content. This seeming paradox, the case-study chapters will argue, vanishes once we begin to think what is at stake for memory in the online era not in terms of ‘memory as content’ but in terms of remembering as *processes* of psychic and collective individuation. What is different in the online era is not only the connectivity and instantaneity of man-machine-enabled remembering, but also the *agency* balance between the machine and the man – or, as we shall see through the case-study chapters, we may think of ourselves in the online era within a peculiarly new expression of the tensions between the more biological, cultural and technological drives of individuality and society, and between their own complex systems of agencies. The experience of perceiving and remembering through contemporary technologies involve many apparently clandestine agencies – and a covert shift toward more technologically-guided processes of perception and remembering-informed identity, risks informing useful action not necessarily for the benefit of the transindividual user, but rather those agencies guiding our perceptions. Thus, action risks being actualised to further not just the economic or political benefit of the platforms themselves, but also any of the multifaceted multiplicities of commercial, socio-political or indeed more legislative actors, agents and special interests interdependent with the surveillance capitalist model, in what media theorist Andrew Chadwick has called the “hybrid media system” (2017).

The Usurpation of *Memory-Potential*

In Simondonian terms, it is tempting to argue that, rather than technicians coupled with technologies, the user, or consumer in this case, risks being relegated to the role of

‘worker’ or labourers, who – alienated from their own transindividual agency in experience – are not, according to Simondon, really transindividuals.

[Workers] are not mobilized as ‘subjects’ ... that is to say, as carriers of a pre-individual charge of nature that allows them to transindividuate. The relation of labour merely puts individuals in relation with each other – it merely relates being as already individuated. (De Boever et al, 2013, p. 228)

Workers, in Simondonian terms are not *transindividual* but *interindividual*. They do not become ‘more-than-individual’ in the sense that transindividuals within a collectively individuated society do, or as emerges in true man-machine coupling. Rather, they simply relate to each other, providing functions for each other but never in any way that will allow them to collectively individuate, to become more than. In this sense, this section does not aim to make an overblown argument that people are ‘enslaved’, or similar, by technologies. Rather, it is to say that, if our social and cultural memories are inter-relatedly realised through an aspect of choice, which relies on perception, and, in the case of the man-machine, an understanding of the mutual function; if the transindividual agencies of consciousness-informing processes of perception and remembering are lessened enough, actions guided by technologies and interfaces, indeed in being unaware of the wider function of the individuating action; then this *choice* of how to act – the very foundation of Bergson’s thinking on consciousness – is rendered somewhat impotent. We are, perhaps, in Bergsonian thinking, relegated to the order of lower animals, processes of consciousness and action reduced to reaction and impulse; docile, and primed to offer up our labour to those who would tame and harness these processes. Alienated from the pre-individual charge, we become more akin to “communities” of interindividuals, active bodies externally placed in relation to each other, than to “true societies” of transindividuals (De Boever et al, 2013, pp. 224-225). This argument is made, then, to highlight the importance of being able (indeed permitted) to understand one’s own relation to multiplicities of less transparent agencies that inform the perceptions and actions guided through new, online technologies.

In his 2002 essay on *The Political Economy of Belonging*, Massumi argues that the notion of *belonging* had been ‘usurped’ by models of global capitalism, whose “ultimate capture, [is] not of the elements of expression, not even of expression, but of the movement of the event itself” (2002, p. 88). Yet might we not liken the attempt to capture ‘the movement of the event’ as the problem we find ourselves facing when considering the corporatisation of memory? Massumi goes on:

It is in no way underestimating capitalist control to call its worldwide trafficking in modulation the stylization of power. It was argued earlier that the model of power was usurpation. What is being usurped here? The very expression of potential. The movement of relationality. Becoming-together. Belonging. *Capitalism is the global usurpation of belonging.* (2002, p. 88)

Indeed, we might in many ways through the following case studies think of new, surveillance capitalist technologies of personal and collective remembering as the attempted *usurpation of memory-potential*. The re-appropriation of processes of realising *memory-potential*, and indeed its resultant actualised action. The commodified digital artefact being mistaken for ‘memory’, while the true processes of remembering, in inter-relational *interaction* in duration – the ‘expressions of potential’ – are more and more guided by interfaces and algorithms whose primary, or at least duplicitous, purpose is not of usefulness to the transindividual and its socialities, but to the profit margins of those corporations through whose infrastructures we now remember.

Through the case-study chapters, three sequential themes are drawn out into each other. In the first, we examine how ‘personal pasts’ may be remembered through new surveillance technologies. In doing so, the chapter argues that we may think ‘memory as media’ as being used to excite and harness processes of realising memory-potential, and thus the drives toward psychic and more collective individuation – to excite *engagement* in the app as well as, or perhaps in supremacy over, exciting useful action for the transindividual. In the second, we examine how socialities may emerge and/or reconstitute themselves through collectively-individuating acts of ‘coalescing’ around creatively-reproduced media artefacts representing the past. In doing so, it argues that we may think artefact-facilitated remembrances as driving collective individuation not only through *the past* but through *ideas of the past* – useful for stabilising a culturally-driven sense of sociality in the present. Furthermore, it argues that the likes of social media act to encourage the facilitation of such connections not principally for usefulness for always-emergent socialities, but in order to secure continued monetisable interaction with the platform. In the third, we examine so-called ‘fake news’, and consider how these *ideas of the past* need not be at all true – arguing that transindividual socialities may reconstitute a stable sense of their group identity through the formation of and belief in *false* pasts, more recent and more historical. In doing so, it emphasises that surveillance technologies may guide culturally-driven beliefs and resulting actions through a connection-encouraging model that is designed not, as is sometimes thought, to ‘manage content’,

but to promote *engagement and interaction* for the purposes of revenue-generation. Ultimately, through the thrust of the case study chapters, the thesis argues that we must think ourselves within social fields of ‘struggles’ for memory, in which we find the various, competing-yet-complementary, consciousness-informing drives of the individual, the wider cultural and the technological to be in unprecedentedly complex and critical socio-political-economic negotiation, risking upsetting the balance of agency in control over what constitutes memory, the individual and social – indeed *consciousness* itself – and how it is constituted.

---o0o---

Me, Myself and iPhones:

Mediated Memory and Pervasive Personal Pasts

Memory is the seamstress, and a capricious one at that. Memory runs her needle in and out, up and down, hither and thither. We know not what comes next, or what follows after. Thus, the most ordinary movement in the world, such as sitting down at a table and pulling the inkstand towards one, may agitate a thousand odd, disconnected fragments, now bright, now dim, hanging and bobbing and dipping and flaunting, like the underlinen of a family of fourteen on a line in a gale of wind.

Orlando (Virginia Woolf, 2003, p. 37)

In fact, there is no perception which is not full of memories. With the immediate and present data of our senses, we mingle a thousand details out of our past experience ... Perception, impregnated with our past.

(Henri Bergson, 2004, p. 24)

Intended as a basis for theoretical expansion in subsequent Case-Study Chapters, this chapter explores from our anarchival perspective how processes of remembering personal pasts may be experienced in their extension through new, pervasive and online technologies. Examining the experience and functions of three key kinds of prominent contemporary ‘technology of memory’ – Google Maps, Facebook’s and others’ ‘On This Day’ feature, and the ‘Memorialization’ of Facebook or other social-media accounts – it has two aims. On the one hand, it aims to consider in what ways and for what reasons the ways in which we remember personal – or more *autobiographical* – pasts may be changing through the engagement of data-artefacts in such interfaces. On the other hand, acknowledging perception and remembering as part of wider affective, social movements of action and individuation, it aims to provide a succinct critical, anarchival base from

which to more substantially explore broader *collective* – that is to say, techno-cultural transindividual – processes of remembering in subsequent chapters.

--o0o--

1. The Dropped Pin: Google Maps and Personal Past

In this section we examine how processes of remembering personal pasts may be *extended* through the ubiquitous and pervasive technology of smartphone app Google Maps. After first briefly introducing the app and its features – with a focus on how ones ‘personal past’ or indeed ‘private past’ may be re-presented in the perceived present through historical user-data – the section explores how we might think the concept of transindividual, extended remembering through the platform from our anarchival perspective. Reflecting on popular ideas of ‘cognitive extension’ as outlined in the Literature Review Chapter, it argues that, more than seeing the Google Maps’s data-collection as a ‘store-and-retrieve’ database repository, we may see it anarchivally as movements of human and machine-calculated re-presenting of data-artefacts in duration, for the perceived needs of the present. From our theoretical view of the technologically-extended body as affective *processes in duration*, then, we may see remembering through Google Maps as man-machine-coupled movements of expanded perception, memory, action, and thus consciousness, in the present. This established, the section moves to introduce a consideration of the role that more material and economic factors in the feed-forward (Hansen, 2015), surveillance-capitalist (Zuboff, 2019) platform-model may play in affectively constituting processes of remembering through the app. It observes that, while the consciousness-informing re-presenting of data-artefacts through Google Maps may serve useful action in the present, we may question the ways in which the action is useful for whom, and thus questions the agency-balance within the man-machine coupling.

Where’d You Park the Car? Remembering with Google Maps

On your Android phone or tablet, open the Google Maps app.

Tap the blue dot that shows your location.

Tap **Save your parking**. (Google Maps Help, no date)

Google Maps is the world's most popular navigation app, with more than a billion monthly active users as of the end of 2017 (Alphabet Inc., 2018). In April 2017, Google introduced a new feature for the app, allowing users to save their current location as a parking spot (see Figure 1): once the user requests to 'save' their spot, the app's display holds a 'dropped pin' at that location so they may later easily find their way back to the vehicle through the app. "Always forget where you parked the car?", asks a major U.S. news outlet at the time of the feature's launch (Yurief, 2017) – Google now remembers *for you*.

'Save your parking' is just one of several features offered in Google Maps that we might from a perhaps more traditional perspective think of as so-called 'memory aids'. More substantial than one dropped pin, Google's servers by default retain a record of the user's entire location history, collected through location-tracking on the user's smartphone (and, on Android devices, even in the background when not using the app – Schmidt, 2018), which users may remind themselves of in various ways. For example, a user's location history can be viewed via menu item, 'Your Timeline', grouped by date and path-taken, or geographical location (see Figures 2, 3 & 4) – or the app may 'remind' the user of dates of previous visits to a place when searching for or tapping on the place through the app (see Figure 5). Google Maps also 'syncs' with other inter-synchronised Google services to provide a greater breadth of reminders in the present – such as displaying geo-tagged photos from a user's private Google Photos account in their Maps Timeline (see Figure 2) or overlaying a location with the details of an event or meeting scheduled there through Google Calendar. Indeed, Google Calendar's sync with Gmail as well as other imported, third-party calendars allows Google Maps to display yet more app-external information within its own platform – for example, automatically scraping details for a hotel stay or concert performance from a booking-confirmation email and laying the details over the respective locations in everyday Google Maps use (see Figure 6).

As suggested in the previous chapter, following media theorist Mark Hansen, we may think of these apparent 'reminders' as part of a kind of "feed-forward" mechanism (Hansen, 2015). In such a technological mechanism, data-artefacts from a user's past – the "[m]achine memory ... of the document, the result of measurement" (Simondon, 2017, p. 138) – are brought forward, re-presented, into the transindividual's phone-screen-interface-facilitated perceived present. Furthermore, personal user-data reminders may not even come in the form of re-presentations one's recorded

(intentionally or otherwise) past. Google Maps's 'For You' feature, for example, draws on undisclosed machine-processed data of a user's past activity, in combination machine-perceived data of the user's present environment, to make suggestions for new action. For example, through algorithmically processing a kind of 'machine-knowledge' of the user's present location and establishment-specific location history, the app may offer automated, personalised recommendations for places to visit, or restaurants to eat at, or link to news articles about places in the user's local area.¹⁴

The difference, then, between the likes of Google Maps and mere 'digitised memory aids' (for example, contacts lists in a smartphone rather than an address book, photos on a hard-drive rather than a physical album, or automated reminders on a smartphone or computer rather than, say, on Post-It notes) is that Google Maps operates as a machine with its own functions and drives, rather than a tool that is simply *used*. Thus, while digital humanities scholar Paul Longley Arthur suggests, for example, that we "are increasingly dependent on memory banks that are external and separate to do the memory work for us" (2009, p. 56), this 'memory work' extends to more than the simple storage or processing of data-artefacts on hard drives or servers. As we will discuss below, we might think that Google Maps does so much operate as *memory extension*, as operate as *technologically-expanded perception*, in *dialogue* with the user, seemingly with its own set of agencies.

We will come to the subject of *agency* later in the section. For now, however, let us think about how we might approach the role Google Maps may play in changing memory processes in terms of supposed technological *extension* of remembering, indeed of mind.

¹⁴ Yet, as we shall see below, such transparent, on-screen, 'user-accessible' features do not represent the full body of more clandestine user-data collection and analysis, with much more collated and analysed to satisfy more platform-commercial interests.

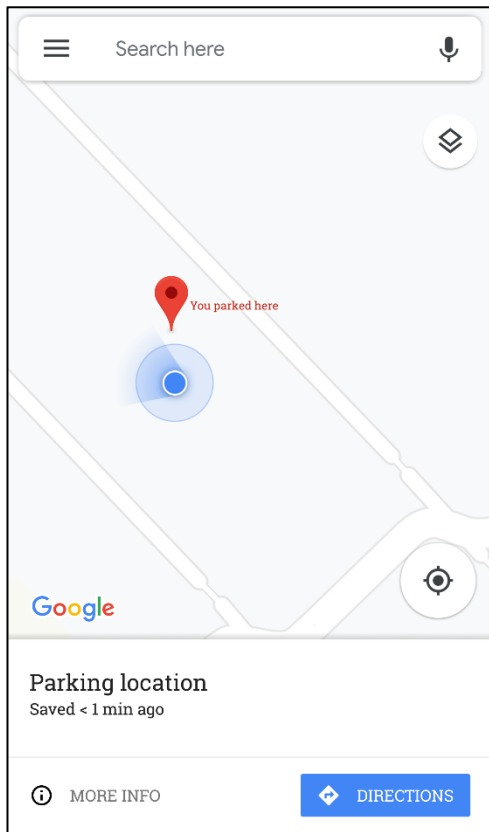


Figure 1 – ‘Save your parking’ Google Maps feature

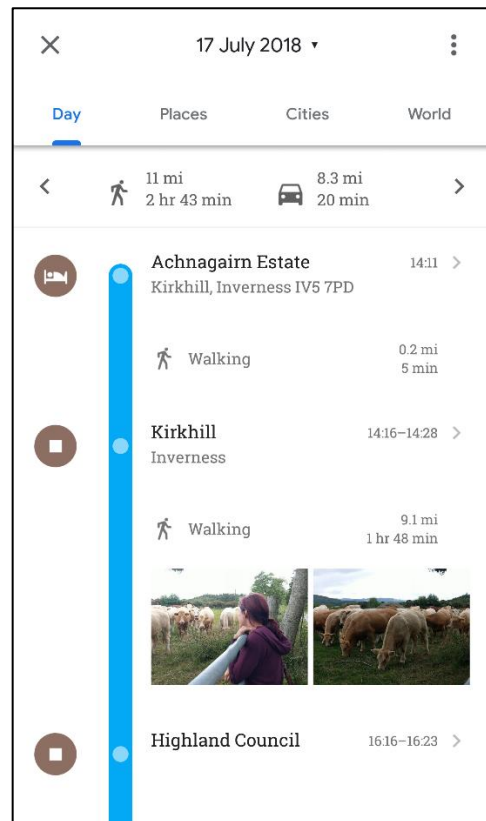


Figure 2 – Google Maps Timeline feature

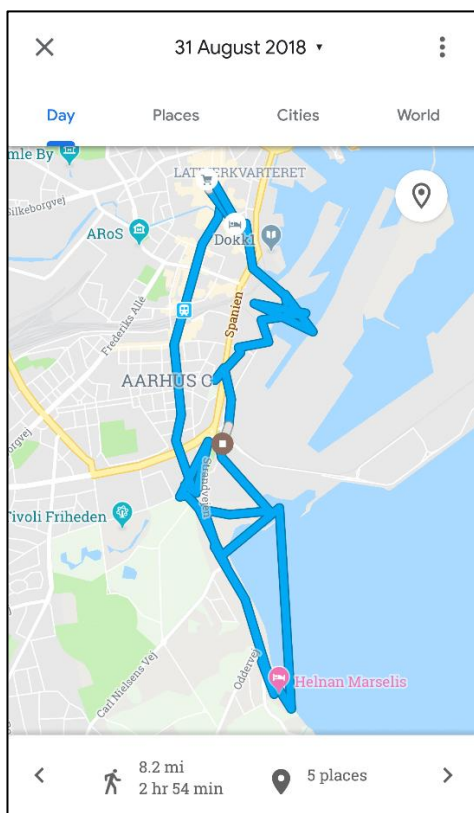


Figure 3 – Google Maps Point-to-point route-tracker

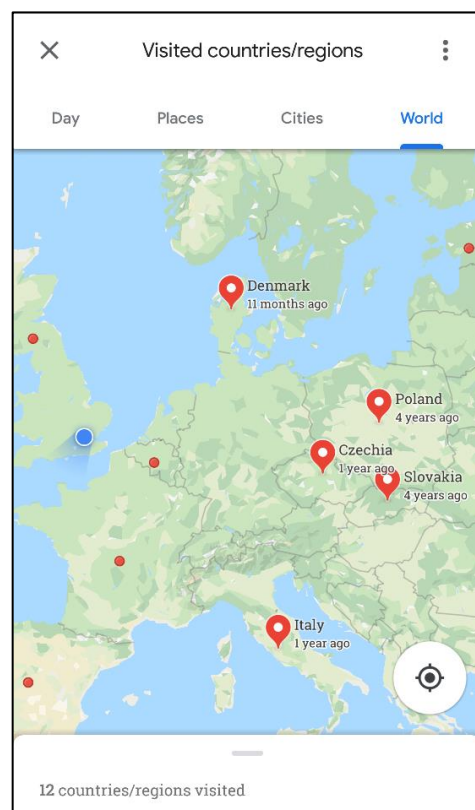


Figure 4 – Google Maps countries/regions visited feature

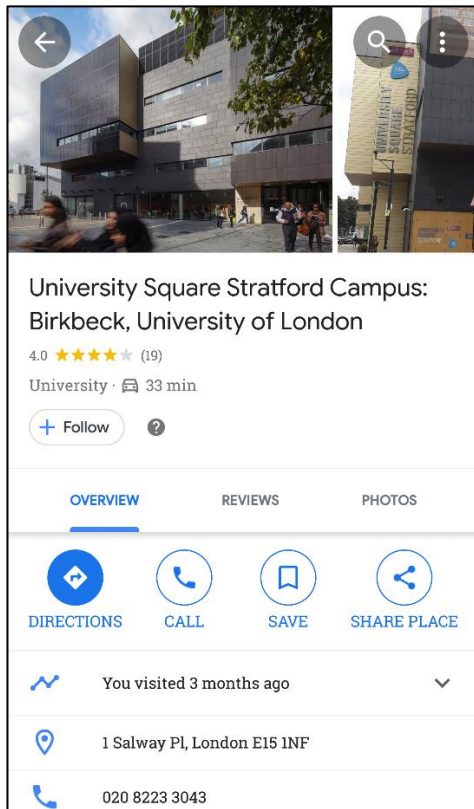


Figure 5 – Google Maps ‘you visited this place’ feature

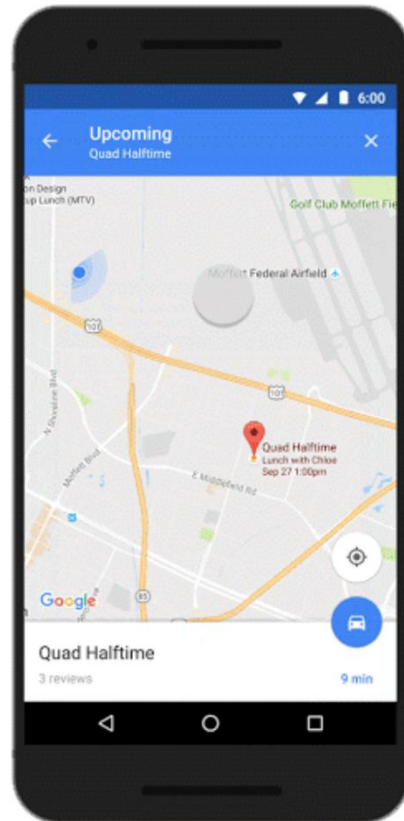


Figure 6 – Google Maps Gmail-scraped schedule overlay

Extended Remembering: Google as Hybrid Consciousness

In what ways might we think that processes of perception and remembering are changing through their seeming extension in the use of apps like Google Maps?

As discussed in the Theory Chapter, beyond the “body-as-organism that, by the late 19th century, had become the model of what a body is” (Clough, 2008, p. 2), we may see the body from an affective perspective as ‘more than human’, as processes of biological *and* technological relations – what sociologist and philosopher Patricia Ticineto Clough has called the “biomediated body” (Clough, 2008). However, more an extension of the body or intelligence into functioning tool or machine of mediation, Google Maps, initially at least, *seems* to act with its own agency, algorithmically organising what it deems useful to display the user. Indeed, we might be tempted to for the moment (somewhat dissonantly) think of the app as *making choices* that affect the transindividual, human-as-user processes of perceiving the present and remembering the past. We might think of this co-perception as what Hansen has called a kind of “functional processing of information in hybrid human-machine assemblages” (Hansen, 2006, p. 101). Or, as postmodern theorist N. Katherine Hayles has suggested from an overt cognitive

perspective, with machines the human may be “seen as part of a distributed system” (1999, p. 290).

We saw in the Literature Review chapter how other cognitive or positivist approaches to the idea of remembering have proposed the idea of human-machine-hybrid action as a kind of “extended cognition” (Clark & Chalmers, 1998), resonating with various popular public discourses. In their seminal work on *Extended Mind Theory* (1998), philosophers Andy Clark and David Chalmers use the very example of tool-informed directions to navigate – instructions in a notebook – as way in which cognition might be thought as extended beyond the body. And this navigation example provides a perhaps serendipitous opportunity to consider how using Google Maps may look different from our more affective, anarchival approach to the case-study, against a more positivist, archival approach.

Let us remind ourselves of Clark and Chalmers’s example around “belief embedded in memory” (1998, p. 12). In this example, two people each wish to find their way to a destination: the Museum of Modern Art. For, ‘Inga’, the first, “[s]he thinks for a moment and recalls that the museum is on 53rd Street, so she walks to 53rd Street and goes into the museum” (1998, p. 12). ‘Otto’, the second, however, suffers from Alzheimer’s disease, and relies on a notebook in which he continuously records information about his life, and thus from which he can look up “old information” as and when required (1998, p. 12). For Otto, then, “[h]e consults the notebook, which says that the museum is on 53rd Street, so he walks to 53rd Street and goes into the museum” (1998, p. 13). Clark and Chalmers conclude that “in relevant respects the cases are entirely analogous” (1998, p. 13), arguing that “information in the notebook functions just like the information constituting an ordinary non-occurrent belief; it just happens that this information lies beyond the skin” (1998, p. 13).

In principle, Clark and Chalmers’s notion of ‘extended cognition’ is not a million miles away from our own approach to consciousness, perception and remembering as processes co-constituted beyond the supposed borders of the human body. Though theirs takes a cognitive approach, we might think that from both perspectives the inter-relational, technologically coupled movements of interaction with Google Maps may be seen as co-informing a sense of self-aware or conscious relation to, and action in, the world. Indeed, similar to our understanding of the affective man-machine coupling, Clark and Chalmers think of the use of tools or machines in as “a *coupled system* that can be seen as a cognitive system in its own right” (1998, p. 8). Yet, from our anarchival perspective, we can see

the tendency in this approach to think archivally, in terms of *things in space*, rather than intuitively, in terms of *processes in time* and space. It is to think memory as informing knowledge and belief rather than enabling *action* – indeed to risk mistaking media *for* stored memory. Thus, Clark and Chalmers find themselves discussing memory in terms of ‘information’ that might be ‘stored’ or ‘processed’ somewhere – indeed physically *extended* elsewhere. And, as we saw in the Literature Review Chapter, this spatial, cognitive conception of memory as knowledge-information, brain as processor of ‘bits’ of information, has become equally manifest in academic and more popular commentary on the relationship between human memory and new, online technologies.

From an extended-mind-theory perspective on perceiving and remembering, then, processes of remembering through the ubiquity, speed and availability Google Maps might be seen – just as with Otto’s notebook – as an *extension* of the cognitive system, and an *externalisation* of supposed memory ‘storage’. As Clark and Chalmers suggest, we might think of the relationship as “an extended system, a coupling of biological organism and external resources” (Clark & Chalmers, 1998, p. 18). Indeed, we might think of the automatic (re)presentation of user-data, signifying one’s past, as a kind of interface-facilitated *expansion* of availability of media-as-memory into a conveniently-presented present. And, in thinking memory as *information*, it would be perhaps straightforward to now appreciate the emergence of the supposed problems around supposed loss or gain in human memory *retention*, explored in the Literature Review (a number of which we will return to later in the chapter). For example, those various academic and more popular concerns around the role of new technologies in changing brain plasticity around perception, attention and memory retention - and its supposed implications for human processing and recall of information.¹⁵

Yet how might the notion of Google Maps as extension look from our *anarchival* perspective – considering remembering not as serving knowledge but as working with perception to inform *useful action* in duration? And what kind of resultant problems might we find through such an investigation? Grounding ourselves in an attempt to think of *pure*

¹⁵ For example, let us remind ourselves about Hayles’s notions of “hyper” and “deep” attention, pointing to changing cognitive processing “styles” for perceiving information in the online era (Hayles, 2007). More quantifiably, pop-writer Nicholas Carr worries about how the internet is changing our cognitive “capacity concentration, contemplation, and reflection”, affecting how well long-term memories may be ‘consolidated’ (Carr, 2011). Perhaps more apocalyptically, neuroscientist Susan Greenfield warns of supposed “source amnesia”, where information being stored online leads to a human inability to ‘source’ it within a narrative – where “all your memories will blur instead of being compartmentalised into specific incidents” (2015, p. 256).

experience in *duration*, the next section tackles this question through a two-pronged approach. It considers what kind of sense of temporality, of space and time – of *the present* – may be informed through using the app. And, at the same time, it reflects on the ways in which memory-potential may be excited into realisation, and thus engagement encouraged between a user and a sense of their personal past, through the app’s feed-forward, data-artefact significations of those pasts.

Archival Time? Platform Perceptions and Automated Artefacts

Let us remind ourselves, since all perceiving involves remembering, that in remembering and perceiving we occupy a conscious realm that is at once within the physical plane of *action* and the virtual plane of *dream* (Bergson, 2004, pp. 217-215). “We shift between virtual and actual states all of the time”, philosopher Keith Ansell-Pearson notes, following Bergson, “never completely virtual or completely actual” (2010, p. 68). And it is useful to here re-emphasise Bergson’s insistence on perceiving not in terms of physical “thing” or mental “representation” but in terms of *images* – “an existence placed half-way between [things and representations]” (Bergson, 2004, pp. vii-viii). Through the conceptual lens of perception in terms of experiencing *images*, as literary scholar Susan Guerlac argues, our “usual habits of thought” are disrupted (2006, p. 112), allowing us the possibility of more closely, intuitively appreciating affective experience in duration for what it purely is – to some extent escaping the trappings of more discretely bifurcated mind-versus-matter, subject-versus-object framings.

It is from this perspective that we will throughout this and the following chapters attempt to understand the experience of remembering through new, online technologies.

We developed through the Theory Chapter an understanding of artefacts, and indeed *knowledge*, as a form of *habit memory*, where the past may be repeated or re-performed into the present – be it through conceptual, bodily or more *external* technological repetition. For Bergson, habit memory is not ‘true’ memory, since, rather than involving the realisation of memory-potential about past experience to inform useful action in the present, the repetitions of habit memory “merely act” the past in the present (Bergson, 2004, p. 91). In this sense, then, the chapter conceptualised artefacts (or what we might above have thought of as personal or collective ‘memory aids’) as – through their repetition or re-engagement – technologically-facilitated means of bringing pasts forward into the present. They act as *technologies of relation* (Bergson, 1911, pp. 155-157), allowing the being to relate itself to wider personal and social pasts, in duration, beyond

those that would have been otherwise perceived relationally in the present. In this way, they act as *carriers of potential*, which through signification may excite the realisation of memory-potential into memory-images and individuating action – and excite more social drives toward collective individuation. They act to expand our perception of the extending bodily and social being from its past and into its future, engendering a sense of *more-than*, across the double-planes of virtuality and actuality.

If we now return to the notion of technological *extension* in Clark and Chalmers's thought experiment, we may recognise that what Otto and Inga are both dealing with is not truly 'memory' in a strict sense at all. Rather, they each engage with a kind of habit memory or artefact – Inga's being a repeated, (learnt) *virtual* conceptual artefact of the city's streets, and Otto's being a physically-noted artefact of the same directions. Each example, of course, *involves* memory – always present with perception and lived action. Yet, in mistaking *knowledge* for *memory* Clark and Chalmers do not recognise that neither Otto nor Inga *remembers* the directions *as memory* per se – rather they *perceive* technological, artefactual re-presentations or repetitions of the past, which we may now think of as *knowledge*. Thus, the difference between their supposed memory experiences are not so much a difference *of degree*, of supposed capacity for cognition, tentacle-like, creeping out of the body and into numerous tools. Rather, and in the emphatic spirit of *leaky bodies*, they represent a difference *in kind* – between a conceptually-repeated, learnt artefact and a physically-re-engageable artefact.¹⁶

How, then, might we approach the experience of remembering through the case-study object of Google Maps through such an understanding?

Temporality and Virtual Space

Sociologist and cultural theorist Rob Shields presents a compelling Bergsonian critique of the how “temporality and memory” may (or may not) be presented through contemporary Geographical Information Systems (GIS), which “intended as digital forms of mapping struggle to represent time, change and temporality” (Shields, 2018 p. 316). With their focus on *space*, “defined according to coordinates” (2018, 317), Shields

¹⁶ Neither is the *belief* aspect of Clark and Chalmers's conjecturing to be ignored. For them, belief may equally spatially be 'held' and influenced through internal and extended external operations (1998). In the final Case-Study Chapter, we will return to the concept of belief not as 'thing' but *as process* out of drives toward individuation – yet, for now, this chapter maintains its focus on the ways in which new, digital artefacts may be used to remember personal and more social pasts.

observes, technologies like Google Maps (and, its family members, Google Earth and Google Street View) experience practical difficulties in presenting notions of *temporality*:

[T]he past can only be added as a narrative about a point, or implicitly represented through the changing location of a user or device. It can be understood by users' comparing two maps showing a changing situation over time or animating a digital map on screen to display this change. Alternately, an implicit trail of the coordinates of someone changing location traces a line on a map. (Shields, 2018, p. 317)

While options like these may illustrate a “geographical ‘before and after’”, Shields argues, they cannot account for *change* to the user or the device – “just a trail of points” (2018, p. 317). Thus, while for GIS “location is innate, experience is a foreign concept” (Shields, 2018, p. 317).

While Shields rightly notes the inadequacy GIS in properly presenting a sense of temporality of the *historicity* place, and of *duration* in space, this section – not disagreeably – intends to argue something quite different. We here argue that, while the app fails to visually display a sense of *duration*, it does offer a particular sense of individuated temporality of the personal and social *present*, in the user's own, lived duration, through its permeation of fed-forward data of personal and social *pasts* into that depicted present. In examining the experience of using Google Maps through its suite of synchronised personal and more socially-informed, interactive features, the section argues that the app *does* somewhat adequately facilitate an anarchival, inter-relational, transindividual temporality of the past, *through* its (admittedly overly spatial) rendering of the present.

Hayles stresses what she observes as the unattended importance of thinking contemporary memory studies in terms of *databases* – describing them as “exteriorization of human memory”, while accentuating their “prominence and importance in twenty-first century culture” (Hayles, 2016, p. x). Indeed, when we perceive and remember through Google Maps, we may think of the app, in terms of resources on which it draws to *present* the present, to be working with the machine-memory of databases – both in terms of mapping co-ordinates, and – as we'll examine further below – in terms of the *personal* databases of Google-collected behavioural data (the user's own, and the analysed data of immeasurable numbers of other users). Correspondingly, we might think in three inter-related ways about the screen-app-interface *experience* of remembering as the

technological, structured expansion of perception, through machine-facilitated database analysis. Firstly, in perceiving geographical space in the apparent *present*, through mapping databases – exploring places familiar or otherwise through the technology of a digital map. Secondly, in perceiving potential options for action in the anticipated *future*, through databases of mass-collated user action of *the past*, and through similarly collected data *in the present*. For example, the app may present the user with the most direct route based on measuring the historic average, automatic, smartphone-reported time taken by others, or may use the same reporting-mechanisms in real time to warn the user of heavy traffic, or indicate the current level of footfall at a convenience store – each presented through the app in visible relation to their *usual* intensity. And, thirdly, in having one’s own personal data fed-forward into the already-doubly perceived present through, for example, the overlaying of location-specific schedules, and other features discussed above.

In the essay *Archive as Metaphor*, media theorist Wolfgang Ernst argues that “the archive is not dedicated to memory but to the purely technical practice of data storage” (2004, p. 6). Thus, and resonating with our anarchival view of remembering through artefacts as *carriers* of transindividual potential in duration, he claims that “[t]he archive has no narrative memory” and “any story we add to the archive comes from outside” (2004, p. 6). Yet, in comparison with traditional notions of the archive, he suggests, remembering through new technologies such as digital media is less about space, and more about dynamics – “The essential feature of networked computing is its dynamic operativeness” (Ernst, 2004, p. 50). In such a (perceived) move from static archives to dynamic operations of communication through data-processing and data-transfer, Ernst argues that we are in a shift from the sense of “an archival space into an archival *time*, in which the key is the dynamics of the permanent transmission of data” (2004, p. 46; italics my own). Thus, through new, networked, digital technologies, Ernst surmises, “Space becomes temporalized, with the archival paradigm being replaced by permanent transfer, recycling memory” (Ernst, 2004, p. 50).

Ernst’s essay relates largely to data storage and its human-directed retrieval and transfer, rather than algorithm-machine-managed databases, and it is worth noting that the essay was published in 2004 – a year before web-based Google Maps was even launched, and four years before it would be released as a smartphone app. Yet Ernst’s emphasis on the experience of digital media as *permanent transmission of data* within *archival time* is helpful as we move forward in this investigation – reflecting on our thinking of the

individuating *ongoing processes* of engaging with artefacts (and data-artefacts) and the Theory-Chapter-conceived notion of thinking in *cyber-time*.

Google Maps as Calculated Anarchive

The processing of machine-memory in relation to archives (indeed artefacts), and we might infer, databases, Ernst reminds us, is not to do with *narrative* – rather, he claims, “[A] digital culture deals with *calculating* memory” (2004, p. 49; italics my own). Unlike traditional physical maps, we might imagine that, under the veneer of a spatialised, somewhat static, cartographic presentation, Google Maps exists as a whole machinic world of data-interaction and calculation, in the present, as ‘the programme runs’. We have seen that Hayles notes the cultural ‘prominence and importance’ of databases in contemporary society. Similarly, geographer Nigel Thrift observes that the widespread ubiquity of computing power into everyday interaction – what Adam Greenfield calls “everyware” (2006)– means that:

many quite mundane human activities are now shadowed by numerous, often quite complex, calculations. Calculation, in other words, is becoming a ubiquitous element of human life. (Thrift, 2008, p. 94)

Let us remind ourselves of the at least three kinds of database calculations informing the experience of Google Maps: *cartographically*, in plotting representations of space against coordinates; *socially*, in feeding mass user-data of the past and the present into the more ‘open’ or *social* experience of the map; and *privately*, in feeding-forward personal user-data into user-specific map overlays and recommendations within this social domain. Here, we argue that these calculations, turned representations on screen, inform an ongoing sense of expanded perception of the conscious present, through personal and more social senses of inter-relationality – to space, and a sense of personal and social extension, from the past and into the future. Dynamic, ongoing database-calculations into presented digital artefacts in the present give rise an ever-emergent sense of the present – a man-machine facilitated sense of archival time *as duration*.

The first kind of database-informed experience we may take somewhat as a given. Google Maps, as a tool, allows a technologically-expanded form of perceptual representation of *space*. Users can view somewhat accurate cartographical representations of seemingly almost anywhere on earth, and, more than that, through Street View, users can in many countries across the world zoom in to a ‘human’s-eye view’ of any public location (see Figure 7). Beyond spatial, geographic representation, information about location is

agilely accessed, in-app: on zooming in, cartographic labels switch from country to region; further in, to town, to street names, to business names. From our Bergsonian position, thinking perception in terms of *images*, we can perhaps think of the likes of Google Maps, like all interactive ‘virtual reality’, as bringing the virtual into the actual. Spatially-represented artefacts may, through the app’s interactivity be explored, navigated as they might be conceptually in the conscious plane of *dream*. Yet, rather than psychic concept-images through conceptual movements, through Google Maps we perceive screen-presented images through movements of the thumb and finger – and, beyond them, of those of ubiquitous database-calculation. One need not *dream* in the conceptual virtual, so much as *act* in the digital virtual.

Yet, as Shields notes, this sense of the virtual, while spatially versatile, is temporally fixed:

For GIS, this is a fixed and static snapshot. As if assuaging anxiety over change and dynamism of the world, GIS accommodates no temporality as such (i.e. as temporal change). (Shields, 2018, p. 322)

What role, then, might those further movements of database-calculation pertaining to the *social* and the *personal* play in expanding this sense of virtual space into a sense of temporal, past-informed *present*?

As a useful vehicle to answer this question, let us return to our business names, zoomed in within the app. The user taps the business’s name and a card appears on screen, presenting relevant information, fed into the app through various social data – collected, processed and displayed through Google, partnered or world-wide-web-scraped calculations. For example, Google Maps may tell the user the opening times of the business, or what public events are coming up. The app may display photographs, tapping through to an album of images posted by the business and any Google Maps users. Indeed, it offers the tap-through option to view what the business looks like on the street, or even inside, through Street View. The app’s display shows the likely length of time it would take to get there *right now*, navigable through the app in terms of driving, walking or taking transport. It may draw on presently-reported and collated *previously-presently-reported* user-location-data to show the current footfall at the business, compared to the average for that time and day, and display anticipated levels for other days and times. It may show a business rating, through Google Maps’s review feature; on tapping through, the user can see the (actively encouraged) ratings, review-posts and photos uploaded by

named users, whose other reviews the user may then search through; and see how reviews may have changed or remained consistent through their time stamps. Google Maps also allows opportunity for *action* beyond the confines of the screen – more than hyperlink to a phone-call to the business it may, for example, offer in-app options to make a booking, or message the business.

A veritable sense of social-ness *in the present*, extended out of the past, may be imbued into the virtual *space* depicted by Google Maps, through feeding-forward user-data into interactive media-artefacts displaying the past (e.g. reviews), the present (e.g. current footfall) and the future (e.g. upcoming events) – emergent *through interaction* out of the seemingly-static, cartographical interface representations. Human engagement is of course important to recognise here: “The archive does not tell stories; only secondary narratives give meaningful coherence to its discontinuous elements”, Ernst notes, “In its very discreteness the archive mirrors the operative level of the present, calculating rather than telling” (2004, p. 48).

More than a static map, struggling to show the temporality of *the past* because of its focus on fixed space, the app engenders a sense of temporality and social inter-relationality through dynamic, *interactive and interacted* representation of the past-informed *present*. Calculated *archival time* informs hybridised sense of *cyber-time* through processes of user-machine artefact presentation and engagement – an expanded sense of the present through mediated techno-virtual-social interaction. Moreover, this sense of the social allows *action* – the artefact-driven perceptions of the present and the past informing useful action in the here-and-now. In a sense, the app-as-interface enables an engagement in *the actual, through the virtual*, offering new kinds of ways to perceive, remember and act in the social present *beyond the app*.

Yet, we ought to finally consider the remaining form of data fed-forward into visual artefacts through the app-interface: personal data of the individual user’s past behaviour. We saw above that these calculated mediations may take various forms, some more overtly signifying one’s past, and other’s more clandestinely structured into one’s present. On the one hand, for example, overlays of scheduled events, drawn out of email databases, may signify *remembered* pasts. Other examples might include: reminders of previous times the user has visited places, drawn out of location-history databases; and reminders of photographs they have taken there, drawn out of Google Photos databases. On the other hand, data *about a user’s past* may be used to inform anticipated action in the *future* – for example, through algorithmically-informed recommendations and

percentage-based ‘Your match’ anticipated affinity for local places to visit, based on the user’s location history. Through the experience of such calculated, tailored, artefact-(re)presentation features, interwoven into the already presented *social* present, the transindividual may experience not only a relation *to* the on-screen *social*-signified images, but a *personal* inter-relation *with* them. In doing so, an inter-affective sense of consciousness – of inter-related self *within* the social – may emerge, the social extending itself from the past and into the future, and the equally extended self as related *to* that social.

Moreover, we might think of these kinds of fed-forward, expanded, supposed ‘remembrances’ as positively anarchival. Data-artefacts that inform perception, memory-potential realisation and action, are actualised not arbitrarily but through relational negotiation with the digital-virtual-spatial and temporal environment. As a straightforward example, artefactual reminders of when you last visited a place are emergent only when a user taps on the place – perceptions of artefacts presented *relevantly* in relation to virtually-presented place spurring the realisation of memory potential. Equally, working *searchably*, relationally, rather than linearly through Your Timeline to find out where you were at what point, we might liken to Bergson’s description of working through processes of “intellectual effort” in trying to recall events of particular pasts (1920, pp. 186-230). Furthermore, it does not necessarily recall *what happened in the past* so much as use what has happened in the past to inform perceptions useful for action in the present (and anticipated future) – for example, in the automated ‘Your match’ system, which displays not *the past* but signifies potentiality in the present. More widely, those data-artefacts of the social we can see likewise: information displayed on screen not so much arbitrarily but in relation to *what the user is looking at*. Yet what is important to note – as we shall draw out below – is that, in this man-machine coupling, it is not only the *user* who makes action-informing decisions about what pasts are re-presented, and how they may be re-presented, but the machine.

--

In attempting to see Google Maps in terms of user-experience of processes of perception and memory in duration, we begin to see a bigger picture of memory’s supposed extension through new platform-technologies. Through Google Maps, users may experience an augmented, expanded perception of a social and spatial-temporal present, through which a sense of inter-related individuated – perhaps expanded – selfhood may emerge. The app works in various database-calculation ways to feed-forward a combination of mass user-

data and more personal user-data about the present and the past into media-artefacts represented through its interface, informing action in the present. And, through highly-structured user engagement and interaction, it may engender in the user an inter-relational sense of a body within a *social present* – of a sense of contemporary inter-relationality within a group or community.

Guerlac notes that bodily consciousness offers a kind of virtual “temporal synthesis” (Guerlac, 2006, p. 117) – affording a sense of being with past and future, in the present. Yet, all syntheses of time “interfere with our ability to grasp the temporal nature of reality. *They crush our sense of duration*” (Guerlac, 2006, p. 19; italics my own). Likewise, we might think the man-machine coupling of Google Maps as offering a digitally-extended, virtual, temporal synthesis, allowing for an expanded sense of that being. Thus, the app cannot bring us closer to a sense of temporality *as duration*. Indeed, it takes us further away, expanding our sense of *conscious* temporality, and fulfilling – as we shall see through further chapters – the techno-culturally-facilitated role of (spatio-temporally) *stabilising* a virtual sense of the individual and society as extending out of the past and into the future.

Throughout this chapter and subsequent ones, we will consider the notion of *consciousness* as emergent through technological, artefact-driven social relation – how artefacts may be thought of as “markers of relationship” (Middleton and Brown, 2005, p. 149-152), out of which a collectively-individuated sense of the *individual* may emerge out of the social. And we will develop this foundation into a more forceful theoretical position in the following chapter. Yet, for now, this chapter turns its focus on the more socio-economic factors in thinking the role of new, consciousness-expanding technologies in changing processes of remembering. If technologies like Google Maps may inform our processes of consciousness, through their artefact-presentation of a sense of the personal and social, past-informed present – and if, as we have seen above, we can think of the choice of construction and presentation of these perceptual artefacts as shared between both human *and machine* – then how might we think about the agencies informing such choices? What choices are being made around selection and limitation of perception – both perception of the present, and memory-potential-stirring perceptions of presented pasts? What kind of present- and future-oriented *actions* are being informed through these changing processes of remembering? For what reasons? And to what degree and for whom might we think these actions *useful*?

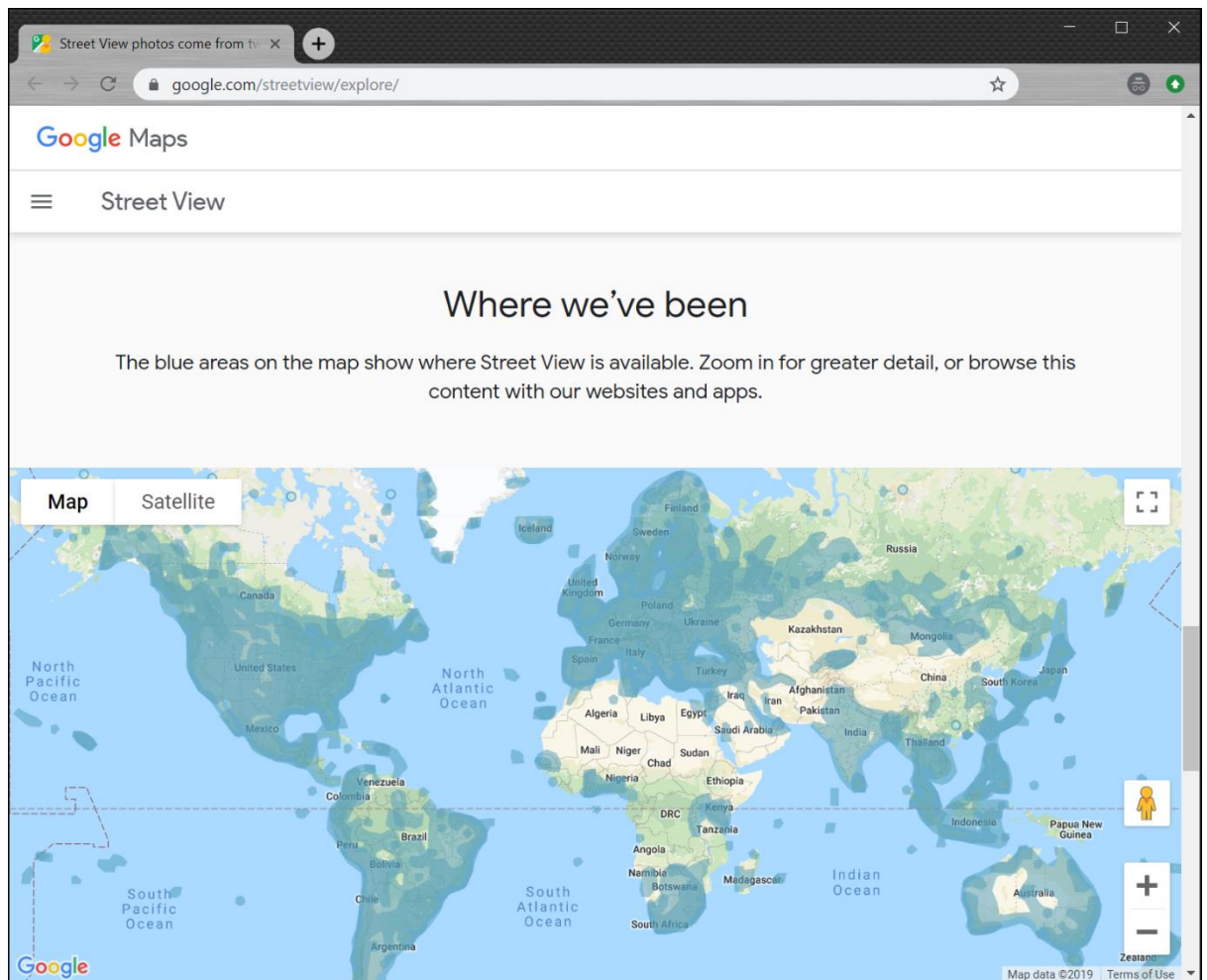


Figure 7 – Google Maps Street View coverage

Surveillance Technologies: Agency and the *Feed-Forward*

We have seen that we may, from our anarchival perspective, think of Google Maps as a kind of man-machine-coupled enlargement of scope for processes of perception and consciousness in the present. Through the virtual experience of the app, one may perceive a wider sense of the physical present, as represented in map-form. Yet a sense of artefact-facilitated *remembering* is also enlarged. And, while there may be “no perception which is not full of memories” (Bergson, 2004, p. 24), movements of memory-potential realisation may here be encouraged not just through reflexive perception and recognition, but through the active (re)presentation of data artefacts of the user’s past by the app itself. In this final section of Part One, and as a launchpad for further consideration, we briefly introduce and examine the reasons *why* such processes may be extended through Google Maps. What kinds of actions may be informed through such feed-forward mechanisms? For what reasons, and for whose benefit?

“[T]he chief office of consciousness is to preside over action and to enlighten choice” (2004, p. 182), Bergson argues, “Therefore it throws light on the immediate antecedents of the decision, and on those past recollections which it can usefully combine with it ; all else remains in shadow” (2004, p. 182). How, though, may we think the nature of *choice* in the engagement of perception-remembrance, man-machine couplings like that of the Google Maps? Hayles notes that, from a posthuman perspective of the human as *more than a body*, constituted through relations of organism and environment, “conscious agency has never been in control” (1999, p. 288). And, through our Bergsonian-Simondonian-developed perspective, we may similarly see consciousness as emergent out of multiplicities of inter-affective processes and relations – blurring boundaries of agency between subject and object, human and technological. Nevertheless, what is *different* here is both the nature of these relations (as we have examined above) and the nature of the conscious agencies that *organise* these relations. Thus, we must consider here the potential agencies of the technological partner in the user-Google-Maps coupling – examining the more socio-economic factors informing its operations, and gesturing toward potential implications from our anarchival perspective.

Google Maps may appear to be a mapping or navigational app, but, like all of Google’s apparently ‘free’ products, it serves a parallel – perhaps primary – purpose: to generate income. Indeed, business and sociology scholar Shoshana Zuboff describes Google as “the pioneer” of what she calls “surveillance capitalism” (Zuboff, 2019, p. 9) – a business model that through the use of technologies “unilaterally claims human experience as free raw material for translation into behavioral data” (Zuboff, 2019, p. 8). In her historicising of Google’s shift into a surveillance-capitalist corporation, technology and communications scholar Meg Leta Jones explains Google’s move into surveillance indicates the breadth of user-data the organisation may collect, through “its many [synchronised] social services, including email, chat, telephony, photo collection, maps, and a social networking site” (2016, p. 7):

The [Google] privacy policy now explains that the company collects information you give it and information from the use of its services, including device information (such as your hardware model, operating system version, unique device identifiers, and mobile-network information including phone number), log information (including search queries; telephony log information; IP address; and device event information such as crashes, system activity, hardware settings, browser type, browser language, the date and time

of your request and referral URL, and cookies), location information (including GPS, sensor data, and WiFi access point), local storage, and cookies and anonymous identifiers when interacting with partner services. (Leta Jones, 2016, p. 7)

While some of this collated data, Zuboff observes, is used to improve the corporation's service or product:

[T]he rest are declared as a proprietary *behavioral surplus*, fed into advanced manufacturing processes known as “machine intelligence” and fabricated into *prediction products* that anticipate what you will do now, soon, and later on. (Zuboff, 2019, p. 8)

First, the surveillance technology must secure *user-engagement* through harnessing the drives toward useful action. Google Maps does this through making freely-available an admittedly very useful, popular and convenient tool. It then *retains* engagement through, as we have seen, a multi-faceted and sophisticated host of features that enable the user to inter-relationally individuate themselves in a sense of the social present – extending their perceptions of the world into a kind of expanded or augmented present. Yet, in using Google Maps, users feed into an ever-accumulating, vast system of collecting and analysing users' behavioural data. This data can then be used, on the one hand, to improve Google's products – for example, confirming location histories to test and improve accuracy – or, on the other, fed into mass-analysed ‘prediction products’. At its most basic, we may recognise prediction products as *targeted adverts* – linking the product of advertiser with its most receptive audience, through complex analysis and data-correlation of mass user-data and individual user's personal data-profiles.¹⁷ Indeed, it is significant to note that income from advertising revenue is reported make up around 85% of Google's overall earnings (Schomer, 2019). Such data-profiles are constructed and shared more widely across Google's whole portfolio of products and services, and each interaction may increase the size of these data-archives and scope for their analysis, raising interesting implications for the nature of remembering. As Hayles notes:

Correlation ... implies that many single data entries, innocuous in themselves, can become potent invasions of privacy when concatenated together ... As databases rocket upward ... it becomes possible for someone with the right

¹⁷ Yet, as we shall see in further chapters, they may relate to operations of wider, more socio-politically-oriented agencies.

access to form data derivatives to look for almost anything under the sun ...
In the face of this overwhelming tsunami of data mining, human memory begins to occupy different ecological niches within social, economic, cultural and capitalist context than it had previously. (Hayles, 2016, p. xi)

A significant further characteristic of surveillance-capitalist technologies is their tendency toward clandestine nature: appearing to offer one service to users, while using this engagement and interaction to perform parallel, more covert operations in the service of themselves and others. As social-political commentator Evgeny Morozov notes, “All too often the design of technologies simply conceals the ideologies and political agendas of their creators” (2011, p. 298). Zuboff suggests that the model of surveillance capitalism is enabled by the profound *complexity* of such data-calculation operations – indeed, we might think, the perceptual *distance* between the contemplation of such complex operations and the actual user-experience in duration – arguing that “The scientific and material complexity that supported the capture and analysis of [Google-collected] behavioral surplus also enabled the hiding strategy, an invisibility cloak over the whole operation.” (2019, p. 89). In fact, Greenfield predicted such a shift to covert surveillance in the mid-2000s, arguing that, given that “[i]nformation processing can be embedded in mundane objects, secreted away in architectural surfaces, even diffused into behaviour” (2006, p. 237), this may lead to “scenarios in which personal information, including that of the most intimate sort, can be collected without your awareness, let alone your consent” (2006, p. 237). Indeed, outside of the *active* kinds of data-collection we might associate with monitoring app-use, Google utilises a suite of methods to collect data more *passively*, “whereby an application is instrumented to gather information while it’s running, possibly without the user’s knowledge” (Schmidt, 2018, p. 2). Beyond background-running apps, publisher tools like Google Analytics and AdSense, and advertiser tools like AdMob and AdWords, Google’s surveillance technologies may be embedded into devices themselves (Schmidt, 2018, p. 2). For example, research by computer scientist Douglas C. Schmidt found that a phone running on Google’s Android operating system over twenty-four hours “communicated ~900 data samples to a variety of Google server endpoints” (2018, p. 14) – around fifty times more than communicated with an iPhone (See Figure 8).

Hansen has argued that the nature of this transaction has significant implications for users in terms of manipulation and fairness, arguing that such platforms aim to “manipulate us subliminally, and outside of our control” (2015, p. 71):

[T]oday's digital networks possess the capacity to gather and to exploit all kinds of data without us having any knowledge, and, to a great extent, any possibility for knowledge, of such activity ... the longstanding pharmacological "pact" that has characterized the history of media from writing to cinema would seem to be broken, or, at the very least, rendered obsolete: simply put, what we get back has no possibility to compensate for what we give up. (Hansen, 2015, p.71)

Indeed, it is in many ways a mistake to consider Google Maps a user 'product' or 'service' at all, since the techniques of surveillance capitalism represent such a dramatic shift from older, more overt service-user/service-provider exchanges or transactions. As Zuboff argues:

Surveillance capitalism's products and services are not the objects of a value exchange ... Instead, they are the "hooks" that lure users into their extractive operations ... We are not surveillance capitalism's "customers" ... We are the sources of surveillance capitalism's crucial surplus ... Surveillance capitalism's actual customers are the enterprises that trade in its markets for future behavior. (Zuboff, 2019, p. 10).

And, beyond Google's more clandestine data-collection, we may overtly see adverts as 'prediction products' in Google Maps through the use of targeted 'promoted pins' to in-map advertise, say, events or businesses – or through the targeted paid-for promotion of particular businesses when using the search function.

Here, then, we have found what we will see is a crucial issue for remembering in the online era: that of *awareness* in perception and remembering. If users are *en masse* engaging in man-machine-coupled operations, designed to predict and facilitate actions useful not just for the user but also – indeed perhaps principally – useful for others, it raises numerous potential implications over how such actions might be considered consciously "*free*, or at least partly indeterminate" (Bergson, 2004, p. 279).

We have seen that what we can consider higher degrees of consciousness, in terms of a sense of *selfhood*, can be understood as the degree of *choice* over selection and limitation over what to perceive – and, through the parallel processes of relational realisation of memory-potential, how to voluntarily act. Through technologies such as Google Maps, the ways in which we perceive and remember in the world are highly structured, designed to encourage an engagement with the world through the app – our *engagement* is the

resource for revenue production. Indeed, we might think of the likes of Google Maps as usurping the user's psychic, *conceptual* virtual plane of consciousness with a co-constructed *digital* virtual plane, accessed visually through the app-interface. The dream is presented for us by the platform. Through an expanded sense of virtual perception, we see, think and act through the platform.

Yet agencies toward the user's action exist beyond the relationship between human and interactive map. What is displayed on the map-as-interface may represent an encouragement toward action not only (or indeed principally) useful for the transindividual-as-user, but for the platform and its wider invested interests. Choice over the selection and limitation of what to perceive is extended to agents unknown.

Furthermore, while older 'read-only' technologies – such as books, theatre, cinema and into Web 1.0 – offer a perhaps similar usurpation or extension of the virtual, the distinction in technologies like Google Maps is found in both the *pervasiveness* of its reach – even beyond active engagement and into passive engagement, such as location tracking – and in the active (more secretive) agencies driving the kind of transaction taking place. Google Maps offers an undoubtedly useful service in its man-machine-facilitated presentation of cartographical, personal and more social data into its various data-artefact-constructed sense of the expanded perceived present. Yet the problem we have found with this user-machine relationship is in the largely undisclosed *nature* of the wider surveillance-capitalist transaction, and indeed the widespread (perhaps necessary, or at least helpful, for the platform) lack of *awareness* of the nature of the transaction. Such observations raise questions around implications for *agency* in how we perceive, remember and act. With such control over processes of what is perceived, how, and for what reasons, the agencies of the *machine* in the man-machine coupling, we might suggest, exercise an undue level of control over the *actions* ultimately informed through these processes of consciousness – presenting a new kind of *struggle* for remembering in the twenty-first century. In such a scenario, as we will explore in the following chapters, action may be encouraged to serve not only useful action for the transindividual-as-user, but also (even, perhaps, more so) for the wider interests of others. And, while Hansen rightly points out, we might consider these to be primarily “the ‘special interests’ controlling the network” (2015, p. 74), these tensions and struggles may extend further, into more- and less-organised movements of cultural drives.

Equipped now with a working understanding of the nature of the extended relationship between man and machine in new, online, technologically-facilitated couplings, the final

two sections of this chapter broaden our analytic gaze into the wider realm of *social interaction*. Through case-study explorations, in anticipation of a further theoretical development in subsequent chapters, they aim introduce an understanding of the ways in which digital artefacts (and their host archives or databases) may be used to remember through new technologies such as social media, and gesture toward potential implications.

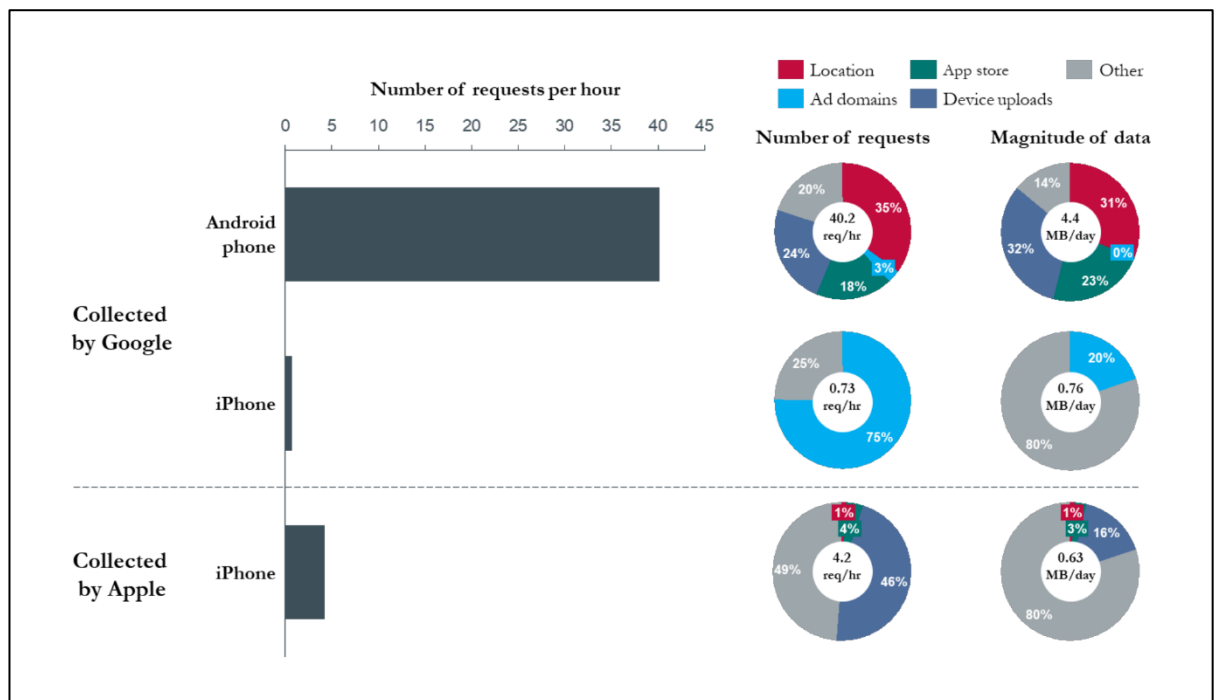


Figure 8 – Figure from Douglas C. Schmidt’s research into ‘Traffic data sent from idle Android and iPhone mobiles’

--o0o--

2. Mediated Madeleine Moments: Past Presents as Present Pasts

In the previous section, we considered engagements with apparent digital-artefact archives, produced out of Google Maps users’ (seemingly *personal*) past activity, and re-presented ostensibly *for* the user and *by* the platform. Here, records of the user’s past, signified through data-artefacts, may be fed-forward into present user-perception, involuntarily and voluntarily, through and with the app, to inform variously useful action in the man-machine-perceived present. Through these mechanisms a relational sense of the *self* may be reproduced – though one that is at once oriented toward useful action for the transindividual *and* (not necessarily consciously or consciously consensually) toward

useful action for the platform, through data-collection and through targeted, paid-adverts through which the platform's revenue is generated.

In this section, we turn our focus onto kinds of personal, digital archives that might be considered created consciously *by* the user *through* the platform, and seemingly for their own *and others'* remembrances – using the likes of Facebook's user profiles or Google Photos photo-backup service. Through an analysis of ways in which media-artefact-*reminded* remembrances of personal pasts may take place through such apps, the section aims to demonstrate that, as with Google Maps, consciousness-informing agencies of remembering, perceiving and acting through these platform-archive, man-machine couplings might be balanced more in favour of the platform than they first appear.

Proust, Potential and Me: Social Media and Involuntary Personal Memory

I raised to my lips a spoonful of the tea in which I had soaked a morsel of the cake. No sooner had the warm liquid mixed with the crumbs touched my palate than a shudder ran through me and I stopped, intent upon the extraordinary thing that was happening to me. An exquisite pleasure had invaded my senses, something isolated, detached, with no suggestion of its origin ... I sensed that it was connected with the taste of the tea and the cake, but that it infinitely transcended those savours, could not, indeed, be of the same nature. [...] It is plain that the truth I am seeking lies not in the cup but in myself ... I put down the cup and examine my own mind. It alone can discover the truth. But how? ... Seek? More than that: create. It is face to face with something which does not yet exist, to which it alone can give reality and substance, which it alone can bring into the light of day. (Proust, 1981, pp. 48-49)

In this infamous 1913 passage from what would form the first instalment of his renowned work, *In Search of Lost Time*, essayist Marcel Proust describes the experience of trying to call to mind the seemingly elusive memory of a past excited in mind by the taste of a cake dipped in tea. It is hardly difficult to draw a parallel between Proust's description and Bergson's theorising on the "intellectual effort" of "laborious recall" in consciously actualising memory-potential (1920, pp. 186-230) – what we might think of as something being 'on the tip of the tongue'. Thus, while psychologists David Middleton and Steven D. Brown note that the historically-held categorisation of Proust as a 'Bergsonist' may be "a broad brush distinction", informed at least in part by family connections between the

contemporaries (Middleton & Brown, 2005, p. 138), they nevertheless recognise that “there is something in this characterisation” (2005, p. 138).

Despite often contemporarily mischaracterised as describing a “flood” of memory (Middleton & Brown, 2005, p. 139), we might think Proust’s passage a fitting literary description of a process of *voluntarily* and imaginatively realising memory-images out of memory-potential, itself *involuntarily* stirred through perception in the present. Indeed, Proust expressly acknowledges that, while the tea and cake might have sparked this feeling, it is through processes of *mind* that the past he seeks will be drawn out. Furthermore, as Middleton and Brown demonstrate, what Proust ‘remembers’ are not *recollections* of events – since they are imbued with aspects “that were not readily apparent to him at the time” (Middleton & Brown, 2005, p. 139). Rather, in a profoundly Bergsonian sense, we might think that “[w]hat Marcel recollects is a set of qualities that are extracted from his unlimited ‘virtual’ prior experience” (Middleton & Brown, 2005, p. 141), actualised into a seemingly-representational memory-image.

Middleton and Brown offer a helpful interrogation the apparent power of the object in Proust’s so-called ‘madeleine moment’ in their 2005 study, *The Social Psychology of Experience* – and we will reflectively draw on some of this thinking throughout this and subsequent chapters, in relation to our own anarchival thinking on *artefacts*. However, this section first aims to draw a novel comparison between Proust’s apparent description of the experience of consciously actualising memory-images out of the *feeling* of involuntarily-excited memory-potential, and the experience of engaging with ‘push-notification’ style features of contemporary, online, media technologies.

Their smartphone buzzes and, on checking the screen, the user sees a push notification from the Facebook app: ‘You have memories to look back on today’. Tapping through, they are presented a page displaying their account activity from the same date in previous years – posts they made or in which they were ‘tagged’, for example, or friends they ‘made’ that day (see Figures 9, 10, & 11). The top of the page reads, ‘We hope you enjoy looking back on your memories on Facebook, from the most recent memories to those long ago’. Scrolling through, perhaps the user recognises an image of a holiday photo shared to their network in years gone by, along with the post’s accompanying text, location, and ensuing ‘likes’ and comments. At first through a feeling, and then through a sense of *remembering*, the user imagines themselves into the virtual past signified by the post:

[W]e detach ourselves from the present in order to replace ourselves, first in the past in general, then in a certain region of the past – a work of adjustment, something like the focusing of a camera (Bergson, 2004, p. 171)

Virtually in the past, yet actually in the present, perhaps the user finds themselves reading through the post’s accrued comments – like the post, seemingly frozen in time, re-presented in the present – and finds themselves wanting to re-engage in the conversation, in the present. Underneath the post, a button with the image of an arrow reads: ‘Share’.

Facebook launched ‘Memories’ in mid-2018 as a developed rebrand of popular 2015-introduced feature, ‘On This Day’ (Hod, 2018; Gheller, 2015), declaring:

Every day more than 90 million people use On This Day to reminisce about these moments they’ve shared on Facebook, and [Facebook’s own] research suggests this kind of reflection can have a positive impact on people’s mood and overall well-being. This is why we’re updating the experience to ensure all of your memories are easy to find. (Hod, 2018; Research: Konrad, 2017)

‘Memories’ involves re-presenting Facebook users with previously-shared media – mainly annotated photographs or videos, or textual updates – or with datafied and collected activity, feeding-forward their past user-profile behaviour into the user’s in-app perceived present. The feature brings together the On This Day function of re-presenting “past posts and major life events from this date” (Hod, 2018) with other ‘reminders’. These include: “Friends Made On This Day ... a list of friends you made on this date in the past, including special videos or collages that celebrate your friendversaries” (Hod, 2018); “Recaps of Memories ... seasonal or monthly recaps of memories that have been bundled into a message or short video” (Hod, 2018), including a yearly ‘Year in Review’; and “Memories You May Have Missed: If you haven’t checked your memories lately, this section will show you the posts that you might have missed from the past week” (Hod, 2018).

It is worth noting that Facebook is not the only media company to offer such an experience. Users report that Facebook has been trialling the replication of ‘On This Day’ on its sister-platform, Instagram through its Archive feature (Verma, 2019). And, while a starkly different kind of platform, photo-backup services Google Photos and Amazon Photos each have similar features, presenting users with photos they have taken on that date in previous years – ‘Rediscover this day’ and ‘This Day’, respectively (see Figure 12). Equally, similar to Facebook’s ‘Recaps’ feature, Google Photos may through its

artificial-intelligence ‘Assistant’ create and push-notify users to, for example, a new, AI-stylised photo, or a newly-created album, grouped through metadata such as geo-tagging and time-stamps, or through its AI photo-recognition technology – creatively feeding-forward recent and more distant pasts into the user’s perceived present.

In the following section we move to consider how we might understand the *experience* of remembering through such interfaces and features from an *anarchival* over archival perspective.

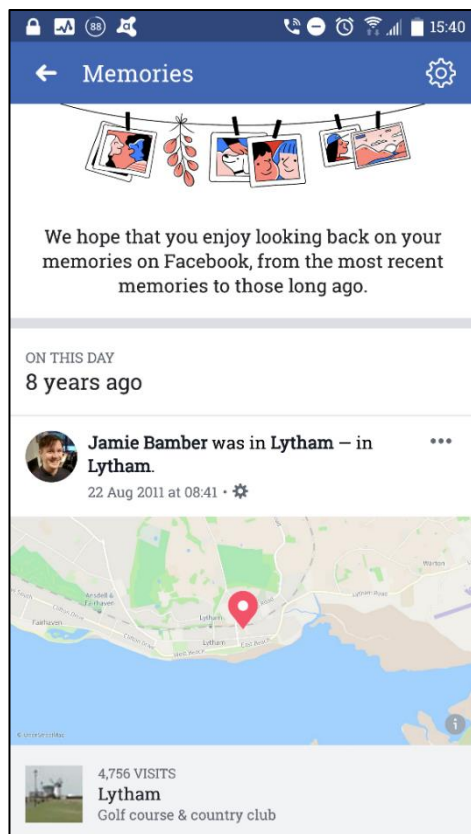


Figure 9 – Facebook ‘Memories’ feature



Figure 10 – Facebook ‘Memories’ feature

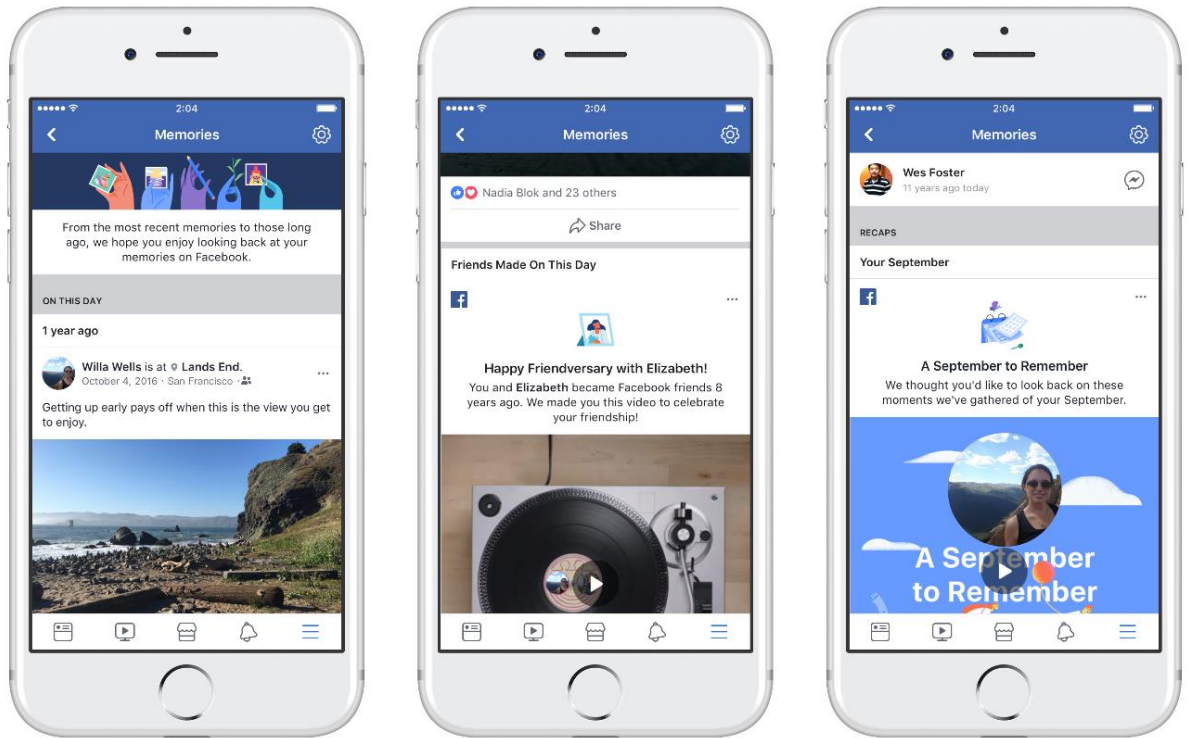


Figure 11 – Facebook 'Memories' feature

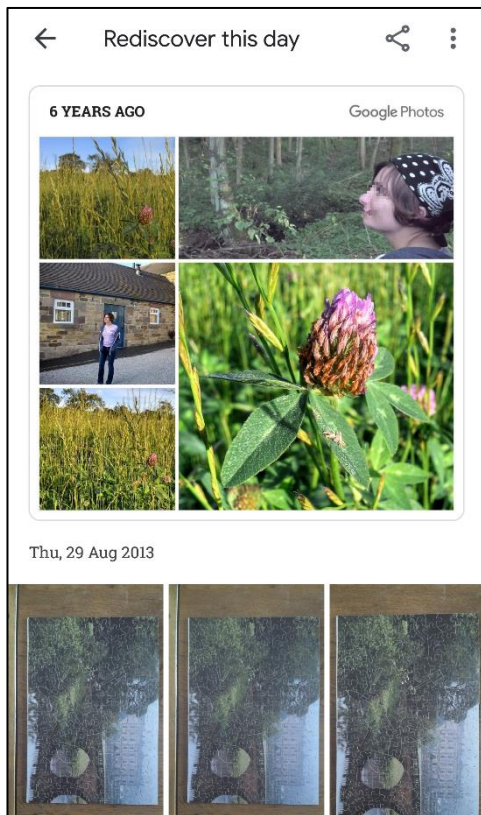


Figure 12 – Google Photos 'Rediscover this day' feature

What served in place of the photograph; before the camera's invention? The expected answer is the engraving, the drawing, the painting. The more revealing answer might be: memory. What photographs do out there in space was previously done within reflection. (Berger, 2009, p. 54)

In this text from the 1978 essay, 'Uses of Photography', art critic, novelist and essayist John Berger implies that we might think photographs a kind of physical extension, or even replacement, of memory. His remarks serve as response to writer and philosopher Susan Sontag's essay 'The Image-World', in which she chastises Proust for his 'disparaging' attitude toward photography:

Whenever Proust mentions photographs, he does so disparagingly: as a synonym for a shallow, too exclusively visual, merely voluntary relation to the past, whose yield is insignificant compared with the deep discoveries to be made by responding to cues given by all the senses—the technique he called “involuntary memory.” ... by considering photographs only so far as he could use them, as an instrument of memory, Proust somewhat misconstrues what photographs are: not so much an instrument of memory as an invention of it or a replacement. (Sontag, 2005, p. 128)

However, we might here propose from our anarchival perspective that, Proust's views on photography aside, Sontag herself appears to misconstrue memory. For, in Sontag's conceptualising photographs as at once “pieces of evidence in an ongoing biography or history” (Sontag, 2005, p. 130) *and* an 'invention' or 'replacement' of memory, we may see that, for her, as for Berger, what is being referred to in such commentary is not *memory* per se, but *artefacts*, used to create a sense of individuating, conscious *narrative* of the human as *self*. Once more, we find ourselves wrestling with the conflation of memory *as* knowledge, and thus media *as* memory. Indeed, out of such conflation, we may recognise in Berger the now-familiar, *Phaedrus*-like, specious anxieties of supposed amnesia versus extension of memory: “The camera relieves us of the burden of memory. It surveys us like God, and it surveys for us. Yet no other god has been so cynical, for the camera records in order to forget” (2009, p. 60).

Rather, in thinking remembering in terms of *process* more than objects in space – memories as affective, action-oriented *movements* more than 'things' – we may understand that, while perception and recognition of artefacts might excite processes of

realising memory-potential, they may not *stand-in* for memory-potential itself. Thus, we may see photographs as what we have conceptualised as technological *artefacts of remembrance*. While photography may be understood as an extension of modes of *remembering*, it is not a technological extension of *memory*, but rather of *habit memory*, physically repeated across duration, and out of whose engagement memory-potential may be realised. Thus, with photography, as with re-presented social-media posts, “if it deserves the name of memory, it is not because it conserves bygone images, but because it prolongs their useful effect into the present moment” (Bergson, 2004, p. 93).

Indeed, we might more properly say that, if photography approaches the supposed partial *replacement* of anything, it is not *memory*, but *perception* in duration. Through artefactually re-presenting the transindividual with of significations of the past *within the present*, the present is, in a sense, usurped by the past – encouraging a relational shift, through memory-potential realisation, from the plane of *action* into the plane of *dreaming*. Again, we “detach ourselves from the present in order to replace ourselves ... in the past” (Bergson, 2004, p. 171). In short, artefacts of remembrance, we might suggest, usurp the perceived present (the actual) with the imagined past (the virtual) – or at least encourage a move from the actual into the virtual – through their technological imposition of memory-potential-exciting re-presentations of the past onto perception in duration.

Conceptual disaccord over *what* photographs may be notwithstanding, Berger’s and Sontag’s focus on the *uses* of photography offer an interesting avenue for discussion – in a return to an exploration of *experience of processes* of remembering through new, online technologies, in duration. Echoing social psychologist Ian Tucker’s “Spinozist take on bodies, which asks not ‘what are bodies’, but ‘what can bodies do?’ (2013, p. 8), we might here ask not ‘what are photographs’, but ‘what can photographs do?’ – what is *happening* when we remember through photographs and new technologies?

Berger identifies that for Sontag we may recognise the ‘god’ of photography as “the god of monopoly capitalism” (Berger, 2009, p. 29). Sontag argues that the camera has largely been appropriated for capitalist purposes:

Cameras define reality in the two ways essential to the workings of an advanced industrial society: as a spectacle (for masses) and as an object of surveillance (for rulers) ... The freedom to consume a plurality of images and goods is equated with freedom itself. The narrowing of free political choice to

free economic consumption requires the unlimited production and consumption of images. (2005, p. 140)

In addition (perhaps in opposition), Berger highlights what he calls “an alternative photographic practice” through the *private* rather than public use of photographs (2009, p. 60):

In the private use of photography, the context of the instant recorded is preserved so that the photograph lives on in an ongoing continuity. (If you have a photograph of Peter on your wall, you are not likely to forget what Peter means to you.) The public photograph, by contrast, is torn from its context, and becomes a dead object which, exactly because it is dead, lends itself to any arbitrary use. (Berger, 2009, p. 60)

In resonance with our own theorising on artefacts as *carriers* for the realisation of transindividual potential toward *individuation*, rather than having potential themselves – Berger argues that “photographs do not in themselves preserve meaning ... do not narrate” (2009, p. 55). Rather, as we saw Ernst similarly notes of archives of artefacts, “any story we add to the archive comes from outside” (Ernst, 2004, p. 6). Indeed, in terms of *personal archives*, Berger describes the curation of personal artefacts in a way we might now think as facilitating a sense of bodily and wider social identity through relationality, through individuation:

Adults and children sometimes have boards in their bedrooms or living-rooms on which they pin pieces of paper : letters, snapshots, reproductions of paintings, newspaper cuttings, original drawings, postcards. On each board all the images belong to the same language and are all more or less equal within it, because they have been chosen in a highly conscious way to match and express the experience of the room’s inhabitant. Logically, these boards should replace museums. (Berger, 1972, p. 30)

In an intriguing, perhaps quasi-reflection of the twenty-first-century social technologies we examine here, Berger points us toward a future in which “[t]he distinction between the private and public uses of photography would be transcended” (2009, p. 61), through the development of *personal* uses photography over more capitalist uses. In such a future:

[T]he living take that past [signified in, and actualised through, photographs] upon themselves ... the past becomes an integral part of the process of people

making their own history ... all photographs ... reacquire a living context ... continue to exist in time, instead of being arrested moments. (Berger, 2009, p. 61)

Media theorist José van Dijck picks up on this theme of personal-cum-social, artefactual remembering in relation to newer, digital technologies in her 2007 study, *Mediated Memories* – arguing, as we shall, that the network-mediated transmission of personal memory holds significant stake in how we more widely culturally remember. Drawing partially on Bergson’s thinking on perception, van Dijck argues, "Mediated memory objects ... can be located neither strictly in the brain nor wholly outside in (material) culture but exist in both concurrently" – rather, “they are manifestations of a complex interaction between brain, material objects, and the cultural matrix from which they arise" (2007, p. 28).

In fact, social psychologists Lewis Goodings and Tucker argue that Bergson’s non-dualistic conception of the experienced world – made up not of subjects and objects but of inter-affective *images* – offers precisely a solution to apparent difficulties when considering the apparent distinctions between online and offline bodies, and their representation online. If we intuitively think “*bodies as images* ... disposed for action” in duration, and, in doing so, “blur the subject–object and representation–being dualisms” (Goodings & Tucker, 2014, p. 37), we may move away from “a dualistic rendering of body–representation or real–virtual ... [and] explore the ways people experience the socially mediated production of their bodies [as images]” (Goodings & Tucker, 2014, p. 40).

In thinking the use of artefact-sharing technologies from a Bergsonian perspective, in terms of *actions* and *process* of signifying and signified *images*, we might, then, understand the production of, engagement with, and indeed fed-forward *re-engagement* with personal social-media posts as kinds of man-machine-facilitated acts of (re)constituting a sense of *self* in the present – through the interface presenting and interacting with socially-mediated images of oneself to oneself and the wider world. In their fed-forward re-engagement through the likes of Facebook’s Memories feature, such posts may “live on in an ongoing continuity” (Berger, 2009, p. 60). As such, in consciously re-recognising in the present their bodily extension from past, and into anticipated future, the user-as-transindividual, reconstituting their sense of self, of *more-than* the body in the present.

Furthermore, Simondon's theorising on individuation allows us to extend this consciousness-informing relationality beyond the bodily individuation, and into the notion of the *social*, out of which a grouped sense of the *individual* may emerge. Van Dijck observes that "[t]echnologies of self are--even more so than before--technologies of sharing" (2007, p. 48), noting that "[b]y nature of their creation, many digital memory items are becoming networked objects ... in constant interaction with other people, even anonymous audiences. (2007, p. 48). From a Simondonian perspective, we might think of the production and sharing of personal posts, through the social-mediation of the body, within a social network – or sense of in-group – as acts of collectively-individuation, cementing group bonds in a perceived, and always-emergent, sense of sociality. As we will examine in depth in the next chapter, we may think these the sharing of artefacts as *signifiers of cultural value*, "markers of relationship" (Middleton and Brown, 2005, p. 149-152), and think their social interaction as re-constituting a sense of *belonging* within a group. Thus, a sense of grouped *individuality*, of *belonging*, emerges – through collectively-individuating reciprocal affections between the personality of the group and the personalities of its members. Moreover, in interactively, socially *re-engaging* with posts in the future, through platform-encouraged, fed-forward acts of remembrance such as Facebook Memories, artefacts may be 'live on' in Bergerian 'ongoing continuity'. In doing so – like the stabilisation of a sense of *self* through recognising the body's extension out of the past, through the present and into the future – socialities out of man-machine-facilitated interaction may technologically, artefactually, indeed *culturally*, re-constitute themselves *in the present* as seemingly temporally-stable *societies*, with social pasts extending into the social future.

We will progressively develop this theoretical synthesis through the second Case-Study Chapter. For now, however, let us retain our focus on the experience of *personal* acts of remembrance through the likes of Facebook Memories. We have seen above that we may think these remembrances as man-machine-co-constituted, artefact-facilitated movements of individuation. Through the push-notification-encouraged engagement with socially-mediated artefacts of bodily representation, the transindividual may excite memory-potential into a realised memory image, engendering a sense of individuated *self*, with past and future. In turn, with its bodily impetus always toward *action*, the user may interactively re-engage with these artefacts, driving more collectively-individuating action within their perceived, and networked, sociality. In the final section of Part Two, we will move to once more interrogate the more platform-specific, socio-economic

elements that equally inform the reasons behind such man-machine experiences. Yet, having considered *how* such remembrances may be taking place through new, online technologies, it is important to first consider the nature of *what* may be being remembered.

Public Posts/Public Pasts: Surveillance and the Spatialisation of Memory

We have discussed above how we may see remembrances through the likes of Facebook Memories as feeding into biological and collective drives toward individuation. Through the excitement and realisation of memory-potential in perceiving such reminders, the user-as-transindividual may consciously, virtually situate themselves as an individuating being, with its own past and future, within various environmental and social milieus. In this section we briefly examine the *kinds* of remembrances that may take place in man-machine couplings of remembering like Facebook – considering what kind of experience of *time* and *memory* may be facilitated through Facebook’s platform architecture, before examining the likely *nature* of what is remembered through re-engaged Facebook posts as artefacts of remembrance.

Let us begin by reminding ourselves of the fundamental nature of remembering as relationally serving *action*. From an archival perspective on remembering, bodies as centres of action, we may see the realisation of memory-potential as always relational to the transindividual’s bodily and social environment, as the body-as-centre-of-action endures beyond the past and into the future, through useful action in duration. We will discuss in further chapters the more *cultural* drives toward useful action in the social sharing of artefacts of remembrance. Yet, how, for the moment, might we consider the *experience* of remembering personal pasts through the likes of Facebook Memories?

Media theorist Joanne Garde-Hansen suggests that social media “could be seen as a significant move toward understanding personal digital archiving as the expression of memory rather than history” (2009, p. 136). Yet, it is useful to note from the outset that Facebook Memories, like Google Photos’s Rediscover this Day, re-presents signifiers of a past not based on *relationality* to present environment, but simply, functionally, on historical date. Setting aside the small number of Gregorian-calendar-fixed cultural events, in which such a process of remembering might be somewhat relational – such as being reminded of previous posts made on, say, Christmas Day, Hallowe’en, birthdays, U.S. Independence Day, or New Year’s Eve – such spatialised systems of remembrance hardly fit with informing useful, relevant action in the moment. Indeed, coupled with its

instigation through app push-notifications, we might – as we will discuss in more detail below – consider such acts not as useful to the transindividual, but seemingly almost as *remembering for remembering's sake*.

Moreover, it is important to situate these kinds of acts of remembrance within the *wider* experience of perceiving and remembering through such apps. While Facebook's News Feed, as we will see in the next chapter, might to some degree be considered a form of expanded temporal perception of *the social*, its personal Timeline, in its archival presentation and engagement, we can understand as *spatialising* the past (indeed the present). In the Timeline – from which 'Memories' are ostensibly drawn (or at least where the fed-forward data-actualised-as-artefact is more fully, chronologically presented) – all of a user's posts are displayed, in an almost endless scrolling mechanism, from most recent to most distant uploaded past. Such a spatialising of memory at once encourages a linear, archival conceptualisation of memory and *the past* – of the sort we have forcefully in this thesis rejected – and implies the related conflation of media *as* memory. Thus, reflecting on Bergson's observation of "the pure present being the invisible progress of the past gnawing into the future" (2004, p. 194), Goodings and Tucker argue:

[T]he Facebook Timeline acts as a kind of force that spatialises past social media activity and goes against the virtual aspect of memory for Bergson, in which the past is not contained but endures, taking a temporal not spatial form. (2014, p. 47)

Following Bergson, Goodings and Tucker note that "thinking the past as stored somewhere is problematic" (2014, p. 47) – rather, we might think it an affective process of *relationality* in duration. Yet, as they observe, "[F]or Facebook users, this is exactly what they are now facing, their past social media activity stored and recorded chronologically, with connections to friends and family" (2014, p. 47). Rather than acting as a platform for *living in duration*, they argue, remembering through such interfaces make it *more difficult* to live: "[H]aving one's past laid out and made visible to others is felt as artificial, an impediment to everyday living" (Goodings and Tucker, 2014, p. 48).

We might likewise think of Google Photos's interface as encouraging a spatialised view of time and autobiographical memory: its interface similarly linearly sets out a user's 'past', scrolling down from the present into the their seemingly never-ending personal memories; its automatic album-creation neatly compartmentalises supposed 'memories' based on AI-recognised subject category, or date- and location-groupings. However, here

we might consider that Google Photos does offer features, through its AI-technology for *searching* (e.g. through photo-recognition of subject; metadata of date, location), that *are* somewhat encouraging toward a more anarchival mode of extended artefactual remembering - as well as more Bergerian notions of *private* remembering that we might relate to drives toward Simondonian individuation. As just one example, after initially ‘tagging’ the human subject in user in an image, the user may search for the name of that person, bringing up, through facial-recognition, every photo of that individual in one’s personal archive. More than that, the user may include specific or loose dates (month, season, year) or accurate or broad location – as well as additional subjects and background subjects (e.g. cake, garden, landscape) – to help them ‘remember’ that for which they are searching in mind. Such a process of selective reminding we might again think an extension of Bergson’s processes of psychic-virtual ‘intellectual effort’ of ‘laborious recall’ into the on-screen, digital-virtual of new, ubiquitous technologies. Furthermore, through the production of ‘shared albums’ of such content, Google Photos users may create private-social, personal archives, acting as a means for collaborative and relational interaction *between* users – engendering a co- or collectively-individuated sense of *more-than, of belonging*.

Nevertheless, we might argue that both Facebook and Google encourage of view of the personal archive *as memory* – the promoted default being that moments shared should be moments *stored*. Indeed, more widely, the propagation of anxieties around “digital amnesia”, should digital photos be lost (Kaspersky Lab, 2015) – or, for example, Dropbox’s promotion of its own camera-auto-backup service as a way to “[k]eep your memories safe” (Campbell, 2015) – speak to the popularity of such perceptions. Garde-Hansen has suggested we might consider the popularity of social media indicative of a *need* to archive – “a need: for identity, for memory, for stories and for connectedness ... a personal digital archive fever” (2009, p. 148). Certainly, we must recognise that through their push-notified ‘On This Day’ and ‘Recap’ style features, both Google Photos and Facebook do encourage more of an archival, non-relational experience of remembering mediated personal pasts than an anarchival one that would be relationally geared toward *useful action in duration*. But here we arrive at the second theme of this section: setting aside their anarchival degree of relationality, just what *kinds* of mediated pasts are being re-engaged with through these man-machine-facilitated forms of artefactual remembrance?

When a user is reminded of Facebook Memories, about what kind of event do they reminisce? We will see in the next chapter how what is shared through Facebook's News Feed can be considered a kind of socially-affective, temporal present – such as cultural theorist Rebecca Coleman describes as “fun, quirky, and involves friends sharing experiences ... it is a temporality that is ‘(a)live’ (2018, p. 68). And this man-machine-perceived sense of present, Coleman observes, “[D]oes not preclude the past or the future ... present events can be archived into the future” (2018, p. 68). Yet, as Goodings and Tucker argue, out of case-study group-interview research, in presenting spatialised, selected ‘snapshots’ of previously-shared ‘present events’ as *the past*, the platform does not truly offer “new possibilities for experience ... [rather, it] restricts experience and activity through its artificial and reductive form of digital memory” (2014, p. 48). Events are not so much relationally remembered, as media-artefacts are perhaps interactively *recycled* – the socially shared artefacts of *past presents* non-relationally repackaged and resold as *present pasts*.

To be sure, it is perhaps this *live-ness* of to-be-archived social media that informs emergent *surveillance anxieties* around supposed remembering through previous posts' re-engagement – representing not so much *artefacts* created to be recorded for posterity in the *future*, but *significations* to be shared in the *present*. As Garde-Hansen notes, “[I]t would be naïve to think that users were not acutely aware of their self-projections and the awkwardness of knowing so-called friends could see your profile” (2009, p. 142). An awareness that such posts may be visible in future *as well as present* to “other people, even anonymous audiences” (van Dijck, 2007, p. 48) may lead to anxieties about what to post in the first place, affecting transindividual social interaction. For example, as one of Goodings's and Tucker's participants claimed:

[Y]ou have to be aware of everything that you posted on someone else's wall or on your own wall everybody can see it now even if its like 5 years ago ... you have to be really really careful about what you're writing and even if it's a private message that person you're writing it to might just say “hey come look what this person said about you” (2014, p. 46)

Indeed, such anxieties around “peer-to-peer surveillance” (Tucker, 2013, p. 2) perhaps go some way toward understanding the cultural shift of active users in recent years toward more ‘temporary’ media formats – such as ‘self-destruct’-style messaging services like Snapchat, where messages are deleted once they have been viewed, as well Snapchat's ‘Stories’ feature, now replicated across Facebook and Facebook-owned Instagram, where

collated posts are visible to one's network for only twenty-four hours. Here, mediated representations of present moments may perhaps be shared for their signifying experience *in the present*, rather than the present *and* an anticipated future. We might think that, more than a digital *archive* fever, we may be witnessing a digital-augmented *connection* fever, *individuation* fever, indeed *belonging* fever.

Nor need surveillance technologies produce anxieties solely in terms of posts intended for (semi-)public audiences – as perhaps more dramatic events around more private media-artefacts have in recent years evidenced. For example, the 2014 scandal around hundreds of leaked celebrity nude photographs, reportedly hacked from Apple's iCloud, set a public spotlight on the kinds of photographs user's allow to be saved, perhaps vulnerably, 'to the cloud' (Peterson, Yahr & Warwick, 2014). Online-stored artefacts always risk, however unlikely, being seen by unwelcome and anonymous audiences. And, with an awareness that all camera-roll images will, for example, on enabled Android devices, be automatically backed-up to the cloud, it does not seem unreasonable to suggest that a certain degree of anxiety may emerge about not just what to 'save' as social signification of mediated body-as-image, but what to photograph *for oneself* in the first place. Similarly, beyond photographs believed saved online, the so-called 'Snappening' – also 2014 – saw more than 90,000 explicit Snapchat users' images posted to 4chan and other forum sites, fuelling speculation about what kind of body-images should or should not be mediated online (Landi, 2014). While Snapchat media are by design displayed only temporarily, third-party, work-around apps enabled users to save such images, and it is from *these* apps' online databases that the leak is reported to have emerged.

Moreover, in returning to the apparently recycled media-artefact remembrances of 'On This Day' and 'Recap' style, platform-pushed reminders of Google Photos, Facebook and others, we may consider a surveillance anxiety around what one's *future self* may think of posts made in the present, when coming to see them in the future. As one Instagram user reportedly posted, when app-notification-reminded of year-old (or years-old) posts in their privately 'Archive'. re-presented into their perception of the apparent present, "Your future self is watching you right now through your memories" (jasonkioke, 2019). And, as Garde-Hansen rightly notes, online platforms *as archives*, like Facebook or Google, "may well forever store memories they would prefer to forget" (2009, p. 149).

Indeed, such an observation was confirmed when Facebook initially brought in its On This Day feature in 2015, with users reporting anger or frustration not simply at unwelcome artefacts of remembrance being *potentially* re-engageable, but being *pushed*

onto them – thus being involuntarily reminded of upsetting or traumatic posts in previous years. A *The Verge* article from a week following its launch evidences, for example, users being reminded of a friend’s suicide, or of an apartment fire that happened on that date previously (Dzieza, 2015). Tellingly situating the feature in opposition to anarchival processes of remembering in informing memory-images *useful to the present situation*, another example talks of being reminded of a friend’s long-term coma-inducing accident: ““It was the absolute last thing I needed to see the day before midterms” (in Dzieza, 2015). The platform’s implemented solution to such a problem was to continue with more artificially-presented artefacts of remembrance of posts made on that day in previous years, but to put in place controls that would prevent such re-presentations from exciting “memories that may spark negative feelings that you would rather avoid” (Hod, 2017). These included both user-initiated controls to filter posts related to either *people* or *dates* about which they would like to be reminded (Facebook Help Centre, no date), as well as the platform’s own algorithmically-led filters to censor negative posts all together, showing only *positive* posts from a user’s past – “to filter content that will select photos we believe may be the most relevant and enjoyable to you” (Hod, 2017). Likewise, Google Photos does not remind users *every day* of photographs they have taken on that date in previous years, but relies on sophisticated algorithms that allow the *platform* to decide what media to re-present to the user.

One further anxiety we might identify surrounds user activity not in terms of the posts they make, but their wider *activity* on the platform – indeed, not to do with potential *human* audience but *machine* audience. As we shall discuss below, what a user interacts with feeds into a wider data-collection and -analysis, feed-forward model for the platform – around, for example, what kinds of adverts may be targeted at the user, and what kind of media content may in the future be presented by the app as the present, or re-presented as the past. And an awareness of these processes may feed into wider behavioural attitudes about not only what to post, but what to *look at* or *interact with*. This kind of surveillance, of course, extends beyond the confines of social-media and media-sharing platforms – into the economic realm of cookies, and ad-trackers, as well as governmental-cultural arenas such as service-provider records or the user’s government.

Let us here, then, move toward the end of Part Two by examining wider consideration around the agencies underscoring the *platform’s* role in the kinds of remembering we have explored above. We have seen that interactive, artefactual processes of remembrances made through the likes of Facebook Memories or Google Photos

Rediscover this day might facilitate movements toward psychic and collective individuation, through relational, cultural signification, engendering an emergent sense of *self* and *individual* in duration. Yet such remembrances might equally be felt as somewhat contrived or artificial *through the platform architecture* in two ways: firstly, in offering a spatialised, systematic sense of memory *as* linear, indeed perhaps *as* linear media-archive; and, secondly, in re-presenting not what is *useful* for the transindividual in the moment, to relationally realise memory-potential into advantageous action in the present, but rather re-presenting what (positive) media-artefact *happens* to have been posted to the network in the past, irrespective of its relevance to their present situation. Perception is seemingly encouraged into the realm of the dream – of reminiscence – rather than (conscious) action. Yet for what purpose? For whom, and to what degree, might we think such a refocusing of perception (and resultant action) as useful?

In the final section of Part Two, we once more turn to more socio-economic considerations around the platform through which such remembrances take place, examining the reasons why the experience of remembering might be structured in such ways, and speculating on potential implications – to think not ‘what is being remembered’, but ‘what do such remembrances *do*?’

Pushing the Past: Involuntary Memory and the Man-Machine

Through Part Two of this chapter, we have seen how involuntary remembrances may take place through contemporary ‘On This Day’ technologies like Facebook Memories or Google Rediscover This Day. Through incidental re-engagement with previously-mediated, artefactual records of historical *presents* in the actual-perceived present, the transindividual may through such technologies stir memory-potential, realising it into memory-images of the conceptual-virtual *past*, lived through a *digital-virtual* present. Such reminiscences may serve to re-constitute a sense of *selfhood* through processes of individuation. Yet the increased connectivity and thus *surveillance* of the digitally-networked body has peculiar implications for how these images of selfhood may be experienced and understood. As Tucker observes:

[T]he boundaries of individuality are subject to change. Activities traditionally viewed as private, located *internally*, such as personal desires, preferences, thoughts have become *externalized* through information technologies and consequently subject to surveillance. (2013, p. 14)

Moreover, the past-significations of media-artefacts are not remembered through an anarchival *relation* of the body to its wider environment as lived in duration. Rather they are ‘pushed’ onto users through notifications on their smartphones – encouraging events to be remembered for seemingly arbitrary reasons, remembering for remembering’s sake. Here, we consider what kind of action is being informed through such platform-encouraged remembrances, and for what reasons.

Coleman notes that, with socially-interactive posts on platforms like Facebook, “[w]hile humans may be partly involved in these processes of creation, collection and analysis, they are only one aspect of it; technologies ... are involved in their creation” (Coleman, 2018, p. 71). Yet, here, the platform in the man-machine coupling does more than structurally co-create media-artefacts in the present – it pushes, through seemingly its own agency, their fed-forward *re-engagement* in *future presents*.

Like Google, Facebook’s financial model is that of surveillance capitalism, selling services out of harvested data-representations of *behavioural surplus*. Thus, the *user* is not Facebook’s *customer*, but rather the *resources* to make sales to its actual customers – those paying for targeted posts and adverts. As media archaeologist Jussi Parikka notes:

[T]he so-called free platforms we are using to connect to friends and to share ideas, links, and preferences for films and music are all material for data mining, which is the new form of subsumption of our lives into capitalist production and accumulation of value. This algorithmic unconscious of social media cultures knows a lot about us and is often keen not only to keep but to sell those data to third parties. (2013, p. 2)

In order to maintain such a practice, the platform must *secure* and *retain* users’ *engagement*. “User engagement is at the heart of Facebook’s business model” (2018, p. 28), claims media theorist Tero Karppi, exemplified through descriptions in Facebook’s financial literature:

If we fail to retain existing users or add new users, or if our user decrease their level of engagement with our products, our revenue, financial results, and business may be significantly harmed. (Facebook Inc., 2015, p. 8)

When Facebook began advertising, Zuboff recounts, the platform recognised that their “social graph represented an awe-inspiring source of behavioral surplus” (2019, p. 92). Rather than simply *collate* and *sell* data-profile information, she argues, the platform

developed a model whereby targeted advertising through the likes of ‘sponsored content’ could be used not only to *reach* users, but to excite *further* data-collecting platform-interactions, which themselves could in turn be monetised:

[T]hrough the artful manipulation of Facebook’s culture of intimacy and sharing, it would be possible to use behavioral surplus not only to satisfy demand but also to *create* demand.” (Zuboff, 2019, p. 92)

In Facebook Memories we may see a similar approach to *repurposing* or *multi-purposing* media artefacts. Previously-posted media, languishing forgotten in perhaps *accidental* archives, may be fed-forward once more into the present, recycled to offer new opportunities to secure user *engagement* and *participation*, and thus enable an ongoing collation and analysis of *more* user data. At the time of publication of Ernst’s *The Archive as Metaphor* essay, Facebook was only months into development – still named ‘TheFacebook’ and available only for students and alumni of thirty-four Ivy League and Boston-area college campuses (Rosen, 2005; Wired Staff, 2004). Yet Ernst’s theorising on a shift of the archive into the temporality of data transfer offers an almost clairvoyant insight into what would inform the later, more-corporate development of such media processes:

[I]n the case of the Internet, this archival infrastructure itself becomes temporally dynamic with the need for access data at a given moment in a virtual text. Memorial space is being replaced by a limited series of temporal entities. Space becomes temporalized, with the archival paradigm being replaced by permanent transfer, *recycling memory*. (Ernst, 2004, p. 50; italics my own)

In one sense – such as through Google Photos’s image search function – a *recycling* of, or *re-engagement with*, historical personal-media posts may be thought of anarchivally as an augmentation of artefact-facilitated processes of remembering. Yet, a crucial difference between a theoretical, anarchival, cultural recycling of media-artefacts *as remembrance* and what is experienced through the likes of Memories or Rediscover This Day we may think of as a matter of *agency*. We saw above that such modes of remembering might not so much engender useful action for the transindividual in duration, as offer artificial-feeling opportunities for remembering for remembering’s sake – albeit leading to possibilities for individuation. Here, we may recognise that in fact useful action *is* engendered through these artefactual-reminder processes of remembering.

Yet such action – of engagement and participation in the platform – we may think of as both *instigated by* and *useful primarily for* the platform, perhaps only secondarily for the user-as-transindividual. Thus, such acts of remembrance, while of course involving human agency, may be understood as part of standard machine-facilitated, feed-forward mechanisms to secure engagement and further data collection – “the parasitic activity of social media ... the extraction of information from people’s online activity, which can then feed back into future action” (Goodings & Tucker, 2014, p. 50). *What* event is remembered through these features is unimportant. *Why* it is remembered *is* important: to retain user engagement. Indeed, even in more *anarchival* uses of Google Photos’s search feature we may see the perhaps parasitic nature of user-as-resource – in providing raw material for the application, training and testing of AI systems (Murphy, 2019). We may recognise, then, a potential contemporary *imbalance of agency* in how we may perceive, remember, and thus act, through surveillance technologies.

Such observations bring our discussion once more to the matter of *choice*. We have emphasised throughout this thesis that from a Bergsonian position we may think “the chief office of consciousness ... to preside over action and to enlighten choice” (Bergson, 2004, p. 182), and that it is *through* choosing what to perceive and how to act that a relational, individuated sense of consciousness emerges – both of bodily *self* and of social *individual*. “We only see what we look at”, says Berger, “To look is an act of choice. As a result of this act, what we see is brought within our reach” (Berger, 1992, p. 8). Yet, here – push-notifications embedded into the ubiquitous hardware of contemporary technological life, in duration, drawing us into the platform’s own online portal – might we think such a choice truly a highly-conscious one?

In apparent unwitting parallel with Bergson’s stressing that an augmented sense of perception necessitates an augmented ability to *limit* (2004, p. 34), media theorist Ben Light observes that, with social-media technologies, “we have to disconnect in some way in order to make the connections we want to emphasize at a particular point in time feasible” (2014, p. 4). Through push-notified invitations of On This Day features, we may think that users *disconnect* from other lived activity – on-screen and off-screen – to now find themselves within a digitally-facilitated, virtual realm of reminiscence. Evolutionarily speaking, taking the joint Bergsonian-Simondonian line developed in the Theory Chapter (Bergson, 2004, p. 279; Scott, 2014, pp. 118-119), conscious remembering acts as a *hesitational force*, in its excitement distancing us from the immediate data of perception, yet excited *relationally* to afford us experience-informed

choice in that perceived moment. Machine-excited artefactual remembering through On This Day features may equally give us distance from the *now* - yet, anchored not to the *actual* but to *the potential for platform-engagement*, they tear us from the consciously perceived and lived world, usurping it with the encouraged perceived and lived platform. Reflecting those concerns discussed around Google Maps above, we may think that the platform acts to impress itself onto users, extending perception and action out of the conceptual-virtual into perception and action *within* the digital-virtual. And, while opportunities for individuation may arise from such interaction, it is tempting to think such possibilities a sugared sweetness to mask the latent pharmacological imbalance within such man-machine couplings of remembrance.

We may talk about a *usurpation* here, since – as reminded above – Facebook seeks not to simply *engage* the user, but to *keep the user engaged*. Thus, we may think the likes of On This Day features as what Zuboff calls “the ‘hooks’ that lure users into their extractive operations” (Zuboff, 2019, p. 10). As such, these features act primarily not as useful *reminders* for the user, but simply as calculated, connective data impressions with the potential to initiate user platform-interaction. And, once ‘hooked’ into the platform, it uses numerous mechanisms to keep the user interacting. For example, the infinite, spatial scrolling of the News Feed means the user is never ‘caught up’ with the social *now*; targeted posts appeal to what the platform algorithmically predicts the user most likely to engage with; and the ‘logged’ and notified evidence of social interaction, through likes, reactions or comments speak to those drives toward collective individuation. Indeed, in line with the need to maintain engagement, ex-Google Design Ethicist Tristran Harris observes that surveillance technologies are *designed to be addictive* – “hijacking your mind” (2016). As writer Richard Seymour argues, these mechanisms are designed “to ensure that they monopolize as much of the user’s time as possible ... exploiting a vulnerability in human psychology” (2019, p. 27). The ‘social’ arm of surveillance capitalism, he suggests, have “created addiction machines, not as an accident, but as a logical means to return value to its venture capitalist investors” (Seymour, 2019, p. 27).

The result of such mechanisms, when successful, is the extended attention of the user toward the platform – perceiving, remembering and acting through an actualised, digital-virtual experience. And this, in turn, suggests further implications for agency-balance in these kinds of man-machine couplings. We have seen how Facebook’s Timeline or Google’s photo archive displays only variously *selected* material, organised chronologically. Yet, from our anarchival perspective, all memory exists *at once* in

duration, psychically realised into memory-images only when relationally useful for the transindividual. Selected chronologies only tell part of the story (and linearly, rather than relationally) – thus, Goodings and Tucker argue, a Timeline-style feature “consequently places potential restrictions on the present and future movements of online bodies” (Goodings & Tucker, 2014, p. 50). Moreover, it is through the Facebook’s landing page of the *News Feed* that wider perceptions, social remembrances and user-interaction takes place. As we will see in the following chapters, the highly-structured interactivity of these platform-environments – designed to algorithmically ensure connections through targeted curation rather than to *inform* – may play a role in how transindividual perceptions of society, social consensus and even belief are formed, indeed perhaps exploited. And, if consciousness-informing processes of *selecting* and *limiting* what is perceived, remembered and acted are engendered to a high degree by the machine, itself in service of increasing paid-for connections, this raises serious implications for agency and *useful action* in the nature of the man-machine coupling.

Key to understanding what is at stake for remembering in such scenarios we once more argue is the consideration of *awareness* and thus the ethical consideration of consent. As we saw with Google Maps in Part One, a perhaps crucial aspect of the surveillance capitalist model is one of enshrouding the processes of revenue-generation with a seemingly ‘free’ experience. And, while a negative On This Day reminder, for example, might encourage a disconnect – a questioning of why the user ought to have remember such an event – the calculated restriction to more positive ‘memories’ preserves the user in the propitiating flow of the scrolling, virtual platform-present, in duration. Furthermore, while a limited awareness of the economical operations surveillance technologies might seem to offer potential for conscious disconnection, its conceptual distance from what the app-experience *appears* to be may nullify what we might think ought to be consciously-permeating concerns. Apparent convenience in the present, we might argue, serves to dampen conscious perspective. Indeed, we might, if perhaps allegorically, liken such a dualistic experience to the famous mid-late-twentieth-century ‘Stamford Marshmallow Experiment’ – in which infants were tested on their willpower by being presented one reward (such as a marshmallow) in *the perceivable present*, yet told they would be presented with two rewards if they were able to ignore the first for around fifteen minutes, left alone.

Moreover, it is worth noting, as we have seen above, that platforms like Facebook and Google do not collect user-data only actively, but also *passively*, beyond the confines of

app-engagement. For example, Facebook collects data, perhaps unknowably or invisibly, through various website plug-ins, related to liking, sharing or commenting on articles, or advertising services. Indeed, one need not even *use* Facebook for the platform to collect data through these services. The platform may create a so-called ‘shadow profiles’ for people who do not have a Facebook account for various reasons – for example, to advertise for them to join Facebook, or, through contact-data-correlation to advertise to people they *may* know, to *invite them* to join.

Through Berger and Sontag, we might be tempted to consider an internet-age update of tensions between capitalist and consumer, between *private* and *corporate* modes and practices of mediation. And there exists a certain irony that, in one sense, those private archives Berger saw in opposition to capitalist media-production have since been appropriated for mass corporate gain, through the likes of social media. Indeed, in a 2015 interview Berger argues:

[The internet] possesses the same duality of possibilities, one opposed to the other, as both an instrument of control by the forces that govern the world – that’s to say, financial capitalism and what I call ‘economic fascism’ – but also for democracy, associating directly with one another, responding in a spontaneous but collective way. (Berger, 2015)

Through the remainder of this thesis, however, an argument is put forward that we might find a problem for remembering in the twenty-first century more complex than a reiteration of the traditional worker/capitalist dichotomy. Rather, precisely *because* of the connective nature of surveillance technologies, beyond the tensions between the bodily-self and the techno-economic, we must consider wider tensions between various drives of the *social* or *cultural*, toward action in duration. Indeed, we must recognise and interrogate the tensions and negotiations between, and arising from, those very ‘spontaneous but collective’, supposed-democratic drives and agencies to which Berger ascribes acclaim.

Yet, before we move into the next Case-Study Chapter, it is useful to situate the discussion more firmly within the wider social sphere – shifting from notions of how one may remember *oneself* in the online through personal media-artefacts, toward an exploration of how artefacts of remembrance may be used more socially. As a useful vehicle for such a transition, the chapter now aims to succinctly consider the ways in which media-

artefacts of the user's own past may (or may not) be used by others once they have passed away.

--o0o--

3. Social Media and the Memorial: Facebook as (Web)Site of Commemoration

In the sections above, we examined ways in which the transindividual may remember aspects of their more private and then more social personal past when engaging with digital artefacts through various forms of platform-accumulated, personal data-archives. We saw that, although platforms like Google Maps, Facebook and Google Photos have, in their different ways, in one sense technologically *enlarged* our capacity for processes of perceiving and remembering, they equally play a significant role in determining the corresponding *limiting* of these consciousness-informing processes. While undeniably offering new ways to remember personal and more social pasts, such platforms, the sections argued, act in accordance with a principal, and often clandestine, economic-strategic agency – to secure *user-engagement*. As such, an uncritical, unaware, or not-fully-consensual reliance on these technologies risks upsetting the balance of agency within their consciousness-informing, interface-facilitated, man-machine couplings, through which such perceiving and remembering takes place.

In this final case-study section of the chapter, we consider from our anarchival perspective ways in which these digital artefacts may be used to inform remembering *after* the producer, or supposed owner, is no longer active in its engagement – perhaps through death, though also through ‘disconnecting’ from the platform. In examining the ways in which such artefacts may be used for posthumous engagement and interaction, the section has two aims. On the one hand, it emphasises the developing argument around the risks of man-machine agency-imbalance in prominent forms of online remembering through economic models of surveillance media. And, on the other, ahead of further exploration in the subsequent chapters, it broadens the focus of our analysis into the wider *social* sphere of affective online processes of interaction and *collective* individuation, with their own inherent biological, cultural and technological tensions and struggles. In such a synthesis, we may think of reproduction of personal and social artefacts not necessarily as *belonging* to any supposed individual, nor signifying their virtual-body-*image*, but rather as signifiers of *cultural value* toward a collectively-individuated sense of *sociality*, out of which a sense of the *individual* as belonging may emerge.

At some point in 2014, YouTube user 00WARTHHERAPY00 posted a comment under a video from a now-defunct PBS YouTube channel that asked, “Can Video Games Be A Spiritual Experience?” (PBS Game/Show, 2014). The comment tells a story, describing how 00WARTHHERAPY00 had been purchased an Xbox by their father in the early 2000s, at the age of four, which they would often play together (see Figure 13). When they turned six, 00WARTHHERAPY00 says, their father died, and from this point they “couldnt [sic] touch that console for 10 years” (00WARTHHERAPY00, 2014). On returning to the machine a decade later, and loading a car-racing game, the story claims, “i found a GHOST. literally [sic]” (00WARTHHERAPY00, 2014). The user explains:

you know, when a time race happens, that the fastest lap so far gets recorded as a ghost driver? yep, you guessed it - his ghost still rolls around the track today. and so i played and played, and played, until [sic] i was almost able to beat the ghost. until one day i got ahead of it, i surpassed it, and...~ i stopped right in front of the finish line, just to ensure i wouldnt [sic] delete it. Bliss. (00WARTHHERAPY00, 2014)

The father in this story, simply through playing the video game, had created an accidental artefact of his and his child’s shared personal past, which long after his death would, through its *engagement*, become an accidental memorial – or site of commemoration. In playing the game in the present, the now-teenager, perhaps -adult, was able to reminisce about their late father, remembering their relationship through interacting with an animated artefact – itself indeed a technological repetition, or re-enactment, of an animate process.¹⁸

¹⁸ What is interesting to note from our thinking on *collective* individuation is the subsequent interaction with, and inventive re-versioning of, 00WARTHHERAPY00’s story. The comment gained some notoriety, and, out the original interactive YouTube comment, another user creatively re-signified the story into a *new* interactive artefact, in the form of an original, dramatised video post. This post in turn, generated interest, ‘going viral’ and stimulating conversations in the comments section between those with similar experiences of commemoration or simply loss. The video, furthermore, was able to be embedded into other social-media or forum sites, such as Reddit, generating similar responses beyond its host-site of YouTube. We will place a greater focus in subsequent chapters on this apparent process of *collective coalescing* around ideas of the past, and the supposed ‘editing’ of these ideas in their mediations, for the potential needs of the present. We will develop our thinking around how a kind of inventive, re-versioning ‘coalescing’ around media-artefacts may be understood in terms of collective individuation. Yet, for now, this chapter wishes to focus on the ways in which *existing*, more personal artefacts may be used to actualise remembrances in the present.

The example of the ghost rider *artefact* is itself far from the only kind online, potential memorial – indeed site of commemoration – to emerge by accident of design. In a 2009 Facebook note, former chief security officer for Facebook Max Kelly described the death of his Facebook-co-worker and best friend of nearly twenty years in a cycling accident. Following his friend’s death, Kelly writes:

The question soon came up: What do we do about his Facebook profile? We had never really thought about this before in such a personal way. Obviously, we wanted to be able to model people's relationships on Facebook, but how do you deal with an interaction with someone who is no longer able to log on? When someone leaves us, they don't leave our memories or our social network. To reflect that reality, we created the idea of "memorialized" profiles as a place where people can save and share their memories of those who've passed. (Kelly, 2009)

As Facebook continued to grow through the late 2000s, it was inevitable – though apparently unanticipated – that users, with profiles on the network, would begin to die. When they did, as online death researcher Anna Haverinen notes, their profile pages might often become sites of commemoration and mourning – becoming *unintended* memorials, pre-constructed out of the shared media-artefacts of the now-deceased user (Haverinen, 2014).

Since Facebook’s business model is, as we have seen, built around facilitating engagements between (living) bodies online, a need emerged for the platform to differentiate between profiles signifying living people, in the present – whom it wished to ‘remind’ to interact with each other – and those constructed by the now deceased – whose network it risked *disengaging* through such reminders. In response, the ‘Memorialized Account’ was conceived, as “a way for people on Facebook to remember and celebrate those who've passed away” (Facebook Help Centre, no date a) (see Figures 14 & 15). While all the deceased user’s content remains on-platform, and already-connected users may continue to make posts to the ‘memorialized timeline’ in acts of remembrance and commemoration, there exist two defining features of Memorialized accounts. Firstly, the profile does not appear in any public (i.e. *living*) spaces “such as in suggestions for People You May Know, ads or birthday reminders”, and, secondly, “the word **Remembering** will be shown next to the person's name on their profile” (Facebook Help Centre, no date a).

Facebook reports that over 30 million users engage with Memorialized Facebook accounts each month, “to post stories, commemorate milestones and remember those who have passed away” (Sandberg, 2019). The feature is in continuing development, through dialogue with and feedback from users, and in 2019 the platform introduced a new ‘Tributes’ section to Memorialized profiles, preserving their timeline at the point of death, and creating a separate section in which users may make new posts (see Figure 15). This, the platform suggests, “lets people see the types of posts that are most helpful to them as they grieve and remember their loved ones” (Sandberg, 2019).

The Facebook Memorialized account, then, offers a prominent and popular example of changing processes of artefact-facilitated remembrance and commemoration in the online era. How, though, might we approach analysing the experience of Memorialized accounts from our anarchival, duration-based perspective on remembering through media-artefacts?

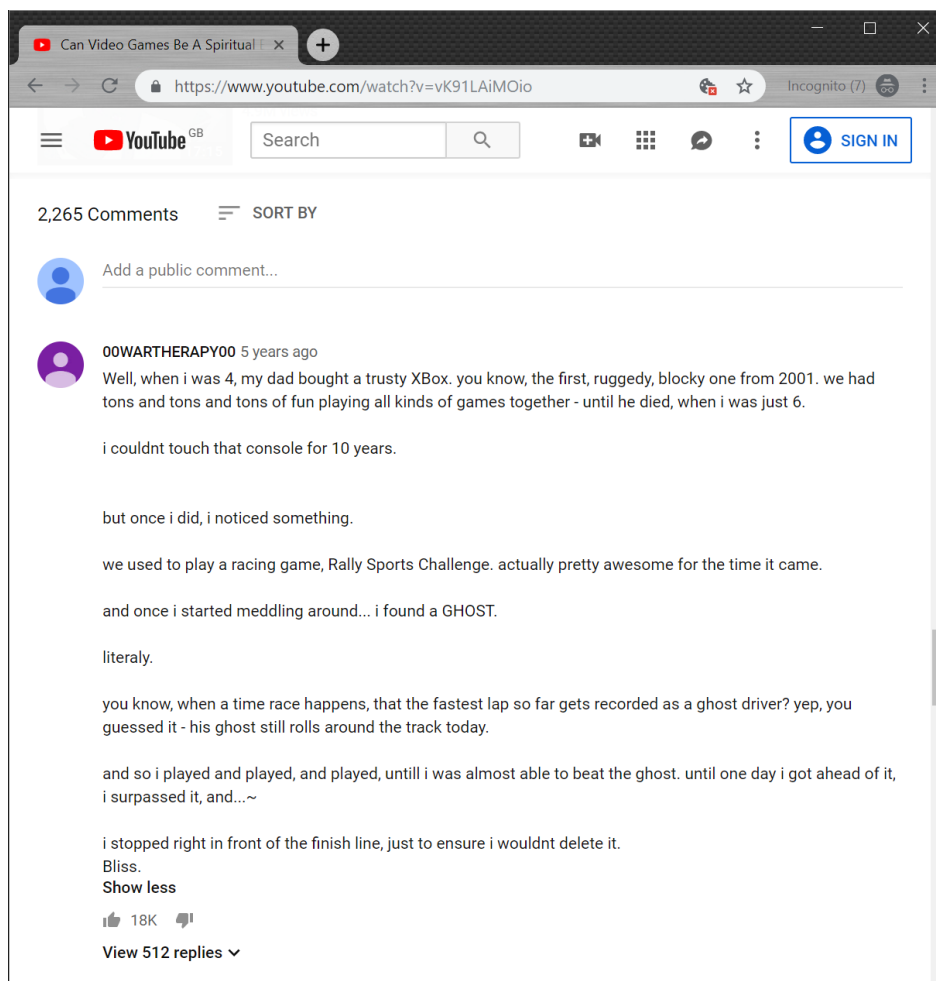


Figure 13 – Screenshot of 00WARTHETHERAPY00’s ‘Ghost Rider’ YouTube comment

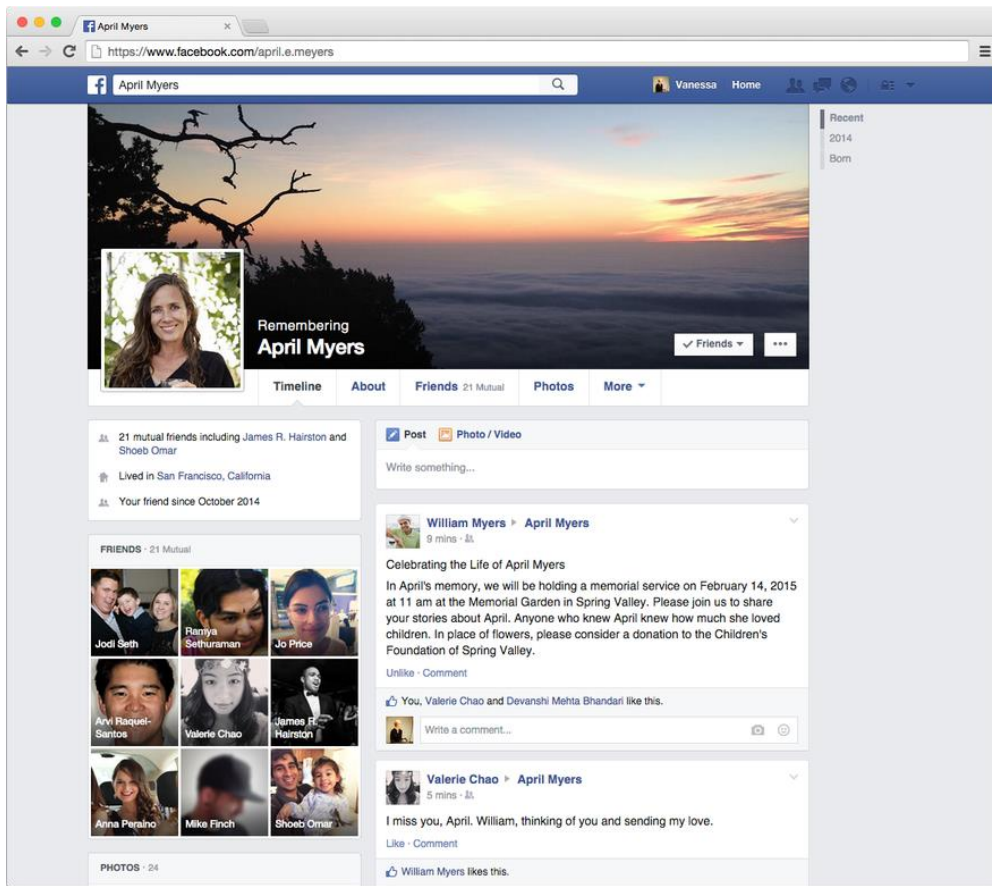


Figure 14 – Memorialized Facebook Account

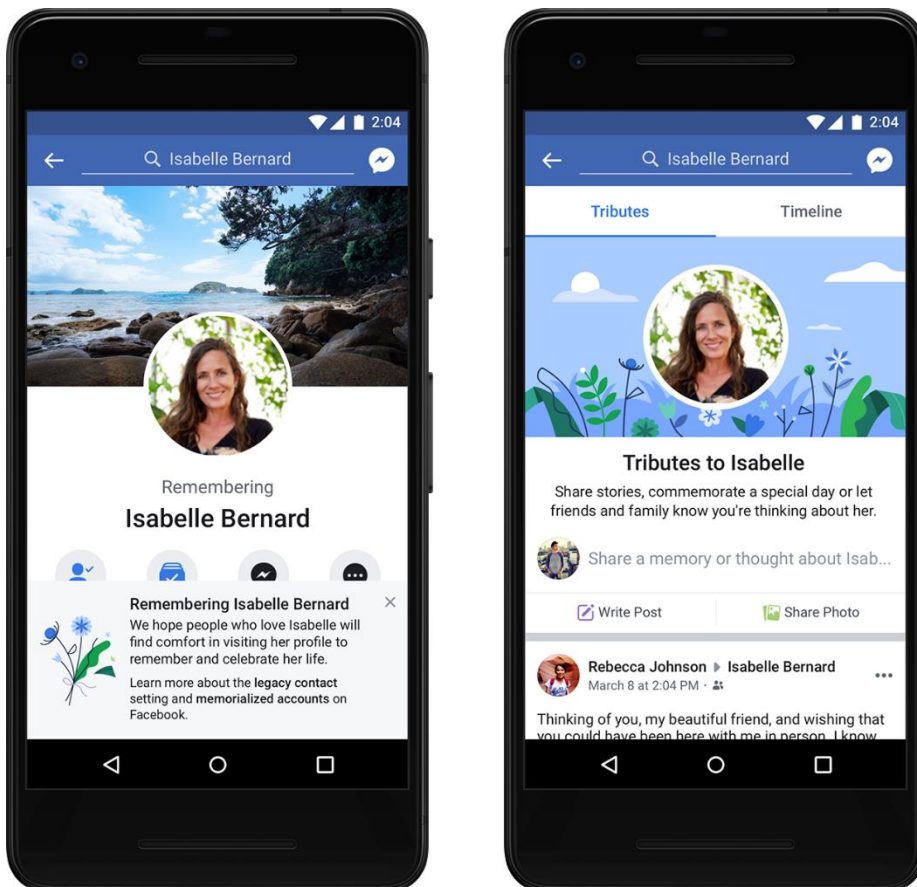


Figure 15 – Memorialized Facebook Account with Tributes section

In what new ways, then, are media-artefacts used through Memorialized Facebook accounts for acts of personal and collective remembering? And how might we understand these database-facilitated experiences from an anarchival view of remembering?

It is important to note that online memorials are not a particularly new phenomenon – as the Death Online Research Network notes, “When an increasingly large part of life, from the most intimate to the most officious is manifest online, it should be of no surprise that death is there as well” (no date). During the Web 1.0 era of the 1990s, ‘virtual graveyards’ began to appear on the world wide web – reportedly the oldest of which (Marshall, 2000), The Virtual Memorial Garden (henceforth TVMG), continues to receive visits today. These kinds of website would typically involve a form – on TVMG via a section entitled “Remember” (The Virtual Memorial Garden, no date) – though which visitors may complete a simple memorial-entry for the deceased: name; dates of birth and death; and a short epitaph. In TVMG, each entry has its own individual URL, and guest-visitors can click a link to sign a ‘Visitors Book’ through which remembrances may be personally made and publicly displayed.

There are numerous and clear differences between both the technologies and cultural-commemorative practices in the likes of TVMG and a Memorialized Facebook account. Yet perhaps key to exploring these is the nature of the memorial-artefact. Whereas TVMG’s unique-URL ‘virtual gravestones’ are created by the bereaved as purpose-made memorials, what becomes a memorial on Facebook is created by the deceased themselves – the data they leave behind. Garde-Hansen notes that “Facebook is a database of users and for users; each user’s page is a database of their life, making this social network site a collection of collections and collectives.” (2009, p. 141). Indeed, we saw above how we might think these collections of media-artefacts as new kinds of accidental (and not necessarily *useful-to-the-user*) archive – and the Memorialized account may be understood as the platform’s response to accidental archives likewise becoming accidental memorials.

While the users were alive, their ‘life databases’ might be seen (albeit problematically linearly) as a kind of “living archive” (Hoskins, 2016), geared toward the *present*, yet “archived into the future” (Coleman, 2018, p. 68) – a kind of “[s]ocial network memory” ... [that is] a new hybrid form of public and private memory” (Garde-Hansen, Hoskins & Reading, 2009, p. 6). Artefacts, re-presenting one’s present, as we have seen, may be

engaged with through the News Feed and on users' Timelines as kinds of *markers of relationship* – operating as image-signifiers of the living body. Yet, when this live-ness is stripped from the image, through awareness of death, the more archival, artefact-facilitated basis of the platform is starkly revealed – as Garde-Hansen notes, with media-memory theorists Andrew Hoskins and Anna Reading, “The instantaneity and temporality of social network environments disguise their potential as mediatised ghosts to haunt participants far beyond the life-stage of their online social networking” (2009, p. 6). Indeed, as Karppi notes, “Memorial pages and memorialised accounts conserve the dead in the living in a very literal sense” (2018, p. 100) – their Timelines static in a moving virtual-realm of the living.

While death is a part of life, its engagement is often highly culturally-structured – shifting historically and contemporarily between the more private and the more public across social contexts (Walter, 2014). Pre-Tribute-feature Memorialized Facebook accounts (indeed pre-Memorialized-accounts), the platform allowed similar kinds of interaction with deceased users' posts as with living users'. Yet, as well as finding difficulty in *presenting* death, the hyper-social, live-interaction-oriented platform-model fostered peculiar issues in relation to negotiating the *personal and the private* when users came to engage with deceased users' past posts – as “hybrid public-personal digitised memory traces” (Garde-Hansen, Hoskins & Reading, 2009, p. 5). The infrastructural blurring of boundaries between personal and private led to personally-felt acts of remembrance – as private mourning – on an inherently public social platform. As death theorists Tony Walter and others note, in interacting with deceased users' profiles, “It may be that writing online feels private, almost like a confessional, yet there is in fact a wider audience”. (Walter et al, 2012) Thus, as a contemporary study by computer- and social-scientists Jed Brubaker, Gillian R. Hayes and Paul Dourish observes:

[T]he system presents challenges to others who are not grieving or who are grieving differently. Some find comfort, while others express distress at seeing what they consider private expressions of grief and may even question the authenticity of users' messages, given the medium by which they are expressed. (Brubaker, Hayes & Dourish, 2013, p. 162)

With a blurring of boundaries, then, between the mediated-artefact (e.g. deceased users' posts) and the body-image-signification of the artefact's *mediator*, in parallel with the blurring of boundaries between public and private, practices of *personal* remembrance

became somewhat problematised. Let us think back on Berger's thinking on private uses of photography:

[T]he context of the instant recorded is preserved so that the photograph lives on in an ongoing continuity. (If you have a photograph of Peter on your wall, you are not likely to forget what Peter means to you.) (2009, p. 60)

Yet, on Facebook, the user's photograph of (here-deceased) Peter is *not* theirs. Rather, it is a shared image, distributed centrally by Peter or a 'friend' of his across their own social networks. And interaction with such a body-image-artefact, once clearly seen as within an archive of the deceased – through, for example, commenting on posts or on their lived Timeline – may be no longer seen as *living interaction*, but perhaps closer to *deseccration*.

In the intervention of the Tributes-era Memorialized account, we might think of Facebook as implementing a move *away* from personal-private acts of remembrance, and toward more personal-*public* acts. In 'fixing' the Timeline, users are no longer able to make new posts on the Timeline, nor comment on existing posts (Shu, 2019). The interface display is emphatically split into two virtual places: Timeline and Tributes. Personal remembrances through interacting with existing Timeline posts become read-only, private. And more public remembrances are overtly structured through the Tributes section – indeed, guided by the *instructions* of the platform: 'Share stories, commemorate a special day or let friends or family know you are thinking about them' (see Figure 15). The deceased's body-image-as-social-media-post is archived into the past, into the Timeline. Tributes becomes not so much about the past, but about commemorations in the present. The site becomes once more about *the social*.

From our anarchival perspective on remembering, the now-private *personal* acts of remembering through the Memorialized Timeline we may say still suffer the same drawbacks as the live Timeline – spatialised, chronological, "a kind of force that spatialises past social media activity and goes against the virtual aspect of memory" (Goodings & Tucker, 2014, p. 47) – albeit with the different conscious experience of non-*live-ness* of the signified, yet now-deceased body-image. However, the Tributes section offers an interesting opportunity to think in terms of *collective* remembering and *individuation*.

Just as Garde-Hansen notes that Facebook may be considered "a collection of collections" (2009, p. 141), we may now see the Timeline, through its memorialisation, as the *archive* that it always was. And, through the split Timeline/Tributes format – in an almost-return

to the ‘virtual graveyard’ – Facebook has created a platform through which a remembered *idea* of the deceased – an *image* of the deceased – may be engaged not through the altering of *existing* artefacts, but through the creation of *newly*-mediated posts-as-artefacts; memorials within memorials. Once more, a sense of the psychically-virtualised past may be extended through and into the digital-virtual. As Karppi observes of Facebook mourning practices, “A posted picture of the deceased, a comment ... and other acts of mourning create new connections, new ideas; in other words, they actualise the virtual” (2018, p. 100).

Moreover, in the new context of a social *present* in the Tributes feature, no longer tied to a perhaps revered respect for the *past* contained within the fixed Timeline, users may now reference the deceased’s past not through re-engaging with the deceased’s *original* posts but through linking to, re-presenting or – as we shall discuss in the subsequent chapter – *re-versioning* these artefacts of their past. The Tributes section, we may begin to think of as a site for collective individuation: a social virtual-space *in the present* in which the sharing of significations of the deceased – indeed a remembered and mediated “set of qualities” (Middleton & Brown, 2005, p. 141) around the deceased – may be used to cement the social-relational-bonds of those who knew them. “Commemoration is as much about establishing who we are now, as social beings, as it is about settling what happened in the past”, argue Middleton and Brown (2005, p. 21). And the connectivity of Facebook’s Memorialized accounts allow for the expansion of such commemorations into a wider sense of the social. As much as maintaining “ongoing bonds with the dead” (Brubaker & Vertesi, 2010, p. 2), we may see Facebook-facilitated commemorative practices as maintaining ongoing bonds with the living *through* the dead. Through movements and interactions of commemoration through a Memorialized Facebook account, then, we might think of users as transindividually, artefactually facilitating processes of collective individuation – reconstituting, through their shared experiences of the *past*, a sense of the deceased’s in-group sociality *in the present*, out of which a sense of the reconstituted, relational, grouped *individual* may emerge.

Ahead of subsequent chapters, what is crucial to note, in examining the ways in which we may remember through Memorialized accounts, is not only the technological affordances for extended collective individuation through cultural commemorative practices. In exploring the ways in which changing cultural processes of remembrance have been driven by the platform, we have found ourselves also exploring the ways in which the changing infrastructure of the platform may be driven by *cultural processes*,

and the input of how users *want* to commemorate. Indeed, Facebook claims that “[w]e’ll continue to build on these changes as we hear more feedback” (Sandberg, 2019). Moving forward in the following chapters, then, it is not enough to consider only the agencies of the biological and cultural as affected by new technologies – we must equally consider the wider role of the biological and the cultural in affecting the processes of *technologies* themselves.

Yet, these processes, as we have seen, extend beyond providing an apparent *service* for the user, through creating a platform for collective commemoration. As a surveillance technology, other, more economic drives are always at work through user-engagement with Facebook. Thus, before we come to the close of this chapter, in order to properly situate the role played by new technologies in post-mortem remembrances, let us now turn once more to the prospective agencies informing the *platform* in facilitating such practices.

Managing Memory: Personal Data and the Monetised Memorial

We have seen that, through a relation to archived artefacts signifying a deceased user’s past, the Memorialized account may provide a platform for expanded practices of commemoration. New artefacts-as-posts may be produced and shared, offering opportunities for the reconstitution, through commemoration, of collectively-individuating socialities around the online network of the deceased. Yet, in shifting from the *experience* of such remembrances toward a consideration of the more socio-economic agencies at play for the *platform*, how might we broaden our understanding of what may be at stake for remembering through using such technologies?

It is important to preface this consideration with the emphasis, once more, that the media-posts we are here discussing – both of the deceased and those commemorative posts – should not be considered ‘memories’. Rather, they are *artefacts* that carry, through cultural signification, opportunities for processes of transindividual memory-potential-realisation. They are artefactual *markers of relationship*, that offer opportunities for inter-relation and collective individuation among always-emergent, networked socialities, *in the present*. Yet, artefacts they remain – as usefully illustrated in a 2018 German court case over parents’ rights to their deceased daughter’s Facebook data. In their decision, the judge concluded that “it was common to hand over private diaries and correspondence to legal heirs after death, and there was no reason to treat digital data any differently” (BBC News, 2018). It is therefore perhaps helpful to think for the moment about these

kinds of artefacts of remembrance as *assets*, as a form of *digital inheritance* – and as assets that may (or may not) be managed by others, in one way or another, once the user is deceased.¹⁹

While Facebook does offer users the 2015-introduced choice to have their account deleted upon death, the default remains for accounts to be memorialised. 2015 also saw the introduction of the option to appoint a ‘Legacy Contact’ (Callison-Burch, Probst & Govea, 2015), who, following an account’s memorialisation, may in a sense tend the digital grave – granted permission to accept new friend requests, pin a post to the Tributes section, change the profile picture and cover photo, and even request the account’s removal.²⁰

Once more, this raises interesting implications in terms of the *experience* of remembering through platform artefacts, and the tensions between seeming articulations of public and private, versus their more formal realities. Take as an example that when a deceased user’s account is deleted, all their posts are of course deleted with it. Ordinarily a user may, through *their own profile*, explore previous artefacts of *personal* remembrance, in engaging with the ‘Photos of You’ section – informing, as we have discussed above, a relational sense of individuation. Yet, unless these photos are selfies of one sort or another, they are more likely to have been uploaded by *another* user than by the here-individuating being. Thus, these artefacts of remembrance, while seemingly shared with the user, in fact belong to another’s profile and may, while anticipated to remain, vanish if the other user’s account is deleted following death – or indeed *in life*, through the post’s deletion, through the user being ‘unfriended’, or through the poster’s voluntary disconnection from the platform.

From an anarchival perspective, we will further explore in the next chapter how the value of artefacts of remembrance may lie not so much in their own *preservation*, but in the cultural value that is signified through their relational, anarchival re-engagement or reproduction – indeed, through creative repurposing of artefacts, or re-versioning of

¹⁹ Indeed, the issue of digital inheritance – or, perhaps, post-mortem, digital-asset management – and our online experience of death is becoming one of increasing popularity and concern. Counselling psychologist Elaine Kasket’s book *All the Ghosts in the Machine* (2019) provides an excellent introduction to the subject-area.

²⁰ Indeed, left unmanaged by *anyone*, profiles of deceased users may become vulnerable – as illustrated when, in 2016, a year after the former New York Times media columnist had died, David Carr’s Twitter account was seemingly hijacked by a spam-bot, changing the name to ‘Miranda Davis’, switching the profile image to an image of an underwear-clad young woman, and tweeting out to his hundreds of thousands of followers, “I love role-playing games and sex” (Ohlheiser, 2016).

signified pasts through *new* artefacts, for the needs of the present. Rather than thinking in terms of ownership of *things*, we must think in terms of *affective processes* of artefact-mediated interaction. Indeed, in the instance of a deleted account, we may understand the problem not as the potential *loss* of the artefact, but rather the working lack of awareness around expectations and authority over who *decides* what artefacts of remembrance should be preserved for potential re-engagement and why.

Yet, importantly, for the platform too we may think *ownership* of these media-artefacts a secondary concern. Let us remind ourselves that the platform's principal goal is to secure and retain engagement, for interaction. We might think that for the platform, it is once more not what data *is*, but what data *does*. As such, as Hansen observes, *ownership* of media is less important than how it – and its data derivatives – can be used:

“[T]he question of who owns the information it gathers is, in a sense, subordinate to the more general issue of the sheer capacity it and similar platforms have to collect personal information on such a massive scale and without the awareness of their users.” (Hansen, 2015, p. 72)

In the case of the Memorialized account, we might think in economic terms of the platform making use of existing assets (a deceased user's Timeline-as-archive) to harness existing or excite new drives toward engagement and interaction (individuating drives of commemoration), as modes of revenue-generation. Indeed, in terms of what we shall in later chapters consider as *choice architecture* (Thaler & Sunstein, 2009) or *controlling menus* (Harris, 2016), it is interesting to note that, by the time the Legacy Contact or the user's legal heirs come to make a decision on what to do with the deceased's now-seemingly-defunct social-media profile, the options have changed. In automatically memorialising accounts following a reported death, the platform now presents them with a choice of whether or not to keep a pre-packaged, likely already-*active* memorial to the deceased. Yet, we should be careful not to fall into unnecessary cynicism. As Hayles notes, while through the use of new, online and networked technologies “the interests of individuals are in dynamic interplay with the vested interests of large corporations” (2013, p. 18), such relationships can sometimes be seen as “working together to create win-win situations” (2013, p. 18). And, in this instance of Memorialized accounts, it is significant to acknowledge the ways in which the needs of, behaviour of, and feedback from Facebook users around commemorative practice has influenced platform architecture. To be sure, we have seen above how the decision to automatically memorialise accounts of reportedly deceased users may also be understood as an attempt,

through database categorisation, to prevent upsetting pushed interactions with the dead in the virtual space of the living. Thus, just as we may examine the ways in which processes of remembrance may be changing through the use of new technologies, it is equally important to recognise that personal and cultural processes of remembrance may be changing those same technologies, in an ongoing process of co-development.

We might liken these movements of inter-development in remembrance practices to, for example, Facebook's introduction of a platform-automated, French-flag, profile-picture overlay in the aftermath of a 2015 terrorist attack in Paris (Facebook, 2015). Adopting an emergent user-activist practice of changing profile pictures, the platform here introduced its own system, while exciting large-scale user-interaction, posting an update reading, "We stand together. #JeSuisParis [...] Change your profile picture to support France and the people of Paris" (Facebook, 2015). While popularly taken-up, the introduction produced a subsequent cultural backlash over the platform's absence of support for concurrent tragedies and attacks in non-European nations, and by 2017 the platform-automated feature of 'solidarity' or 'remembrance' overlays had been gently abandoned (Bondarenko, 2017).

Here, then, we must emphasise that there exist roles for wider cultural agencies in shaping the ways in which we remember through new technologies, beyond notions of a tension between only human and machine. We have seen how the ways in which we remember through the likes of Facebook may be shaped not only by the platform, but by issues around, for example, legal rights to artefacts, cultural practices and indeed cultural-political pressures.

Nevertheless, while it might be tempting to think only in terms of the Facebook providing an apparent service to the user through these processes of co-development, Hansen's observation reminds us that those doing the commemoration through Facebook are not in fact the platform's customers. Rather, the facilitation of commemorative practices on the platform serve its twofold goal through securing and retaining user-engagement – on the one of hand generating revenue through targeted paid-adverts, and on the other of harvesting even more user-activity data to feed-forward back into the model. Indeed, we may here re-enforce our own, developing, two-fold *problem* for remembering through surveillance technologies. On the one hand, this relates to the imbalance of the pharmacological 'pact' (Hansen, 2015, p.71) in terms of the apparent service in exchange for mass data collection. On the other hand, indeed moreover, it relates to the clandestine nature of these data-collection mechanisms, and the resulting the *lack of awareness*

around the nature of this pact, limiting opportunities for voluntary choice in how we perceive, remember and act in the online era.

--o0o--

Archival Individuation: Agency, Identity and Platform-Networked Self

Through this chapter, we have developed a working application of our anarchival approach to the artefactual expansion of processes of perceiving, remembering and acting through new, online and pervasive surveillance technologies – as well as introducing wider socio-political considerations around roles of inherent forces of the biological, technological and cultural in driving such processes.

We examined how perceptions of the spatial and social present may be expanded through the likes of Google products and Facebook. Such a platform-facilitated social present, we saw, involves not only on-screen, artefactual renderings of the (near-)present, but uses database-calculated feed-forward mechanisms to re-present data from public and user's private pasts in the perceived present – expanding the psychically-perceived and -remembered *conceptual*-virtual into the *digital*-virtual. These kind of remembrances of the past may take explicit and user-intended forms, such as publicly-authored reviews, or a dropped pin to privately signify where the user's car is parked. They may equally take forms of more accidentally-archived or involuntary-remembered media, such as social-media posts intended to be shared in the moment, or photos being automatically uploaded to Google Photos – and their pushed-remembrances through smart-phone apps. Importantly, data of user's previous public and private pasts may also be fed-forward into *new* artefacts by the platform themselves, not re-presenting events of the past itself, but using data to predict and encourage action in the present – for example, through the curation of a user's Facebook Timeline to be one of interest, in targeted promoted adverts, or through 'Your match' ratings with locations on Google Maps. Moreover, the ability to *act* in the world through these interfaces, the chapter argued, extends the digital-virtual into the digital-*actual* – enabling a man-machine-coupling-facilitated enlargement of consciousness through processes of digital-artefactual perception, remembering and interaction. Within such psychically- and collectively-individuating interaction, users may develop an expanded conscious sense of *self* in relation to their own past, present and future, and of *grouped individual* in relation to the wider social present.

Yet, technologies such as Google and Facebook, the chapter demonstrated, do not involve only the extension of the agencies of the *transindividual-as-user* in these couplings. Rather, through personal data-collection and -analysis, these platforms seek to encourage connections to secure and retain user interaction – in order to micro-target advertisements that form the majority of their financial revenue, and to secure more opportunities for data-collection to feed back into this *prediction product* model. As such, we conceptualised surveillance technologies as a model that harnesses drives toward individuation – psychic and more collective – as resources for monetised interaction. A pharmacological tension was thus identified between the service users *appear* to be receiving and the actual transaction taking place. Moreover, in a lack of user-*awareness* of such a transaction, those consciousness-informing processes of perceiving, remembering and acting risk being skewed toward action (and ultimately, perhaps, towards a sense of identity) useful not for the transindividual-as-user, but for the platform and its related financial and special interests.

Beyond a simple dichotomous struggle between user and platform in shaping human memory practices, however, the chapter used the example of the Facebook Memorialized account to demonstrate that platforms – in relying on user engagement – are equally shaped by *human* considerations. Personal and collective remembering, the chapter showed, may be shaped by movements of, for example, personal user-behaviours, legal obligations, cultural trends, and cultural-socio-political pressures.

In the next chapter, then, we move to examine more thoroughly how we may be *collectively* remembering in the online era – exploring how processes of cultural remembrance may be changing through new, networked technologies, and considering their relation to wider techno-cultural agencies of the twenty-first century.

---o0o---

Error 404 – Memory File Not Found:

Historicising in an Age of Networked Pasts

‘Who controls the past,’ ran the Party slogan, ‘controls the future: who controls the present controls the past.’

1984 (George Orwell, 1961, p. 32)

The true mediation between technics and power cannot be individual. It can be realized only through the mediation of culture. For there is something that allows man to govern: the culture he has received; it is this culture that gives him significations and values; it is culture that governs man, even if this man in turn governs other men and machines.

(Gilbert Simondon, 2017, p. 161)

The previous chapter examined how the transindividual may remember personal pasts through new, online-networked technologies. Through this, it explored how supposed individual as well as human-to-human processes of memory-realisation and co-individuation may be changing through affective couplings with contemporary technological interfaces and online data storage, and it identified potential socio-political implications. Reflecting on existing affect theory and relating it to our own approach, this substantial chapter now comprehensively attempts to develop our anarchival perspective on remembering into a sketch for an anarchival synthesis of online social theory. In doing so, it aims to examine the ways in which wider affective fields of collective individuation may be changing through engaging with new, pervasive technologies in more *collective* acts of online remembering.

--o0o--

Here we briefly introduce three case-study examples of how the potentials out of records of the past have been used to collectively ‘remember’ in the present, as vehicles to drive forward the theoretical thrust of this chapter. These introductions focus plainly on the events around each example – examining how records of the past may be engaged with in acts of remembrance in the present – and aim to provide a foundation for more nuanced analysis in the chapter proper.

The ‘Memeification’ of Unflattering Beyoncé Super Bowl Photos (2013-present)

On 3 February 2013, US pop-star Beyoncé headlined the half-time show at the NFL Super Bowl in a critically-acclaimed performance that would be noted by Twitter as the most-real-time-tweeted-about event in then-Twitter-history (Rogers, 2013). The following day, capitalising on the event’s popularity, news-media entertainment company BuzzFeed published a somewhat tongue-in-cheek blog of Beyoncé’s “fiercest moments” from the performance (Yapalater, 2013), featuring a range of notable, dramatic and more humorous Getty Images news photographs, and GIFs taken from the event recording. Among the more comical of the thirty-three posts were seven about which Beyoncé’s publicist contacted BuzzFeed on 5 February with a request to remove, due to their perceived ‘unflattering’ nature (BuzzFeedCeleb, 2013). Rather than remove the offending posts, however, BuzzFeed took the editorial decision to exploit the situation and on the same day publicise the email request *itself*, along with reproducing the offending images, under the headline ‘The "Unflattering" Photos Beyoncé's Publicist Doesn't Want You To See’ (BuzzFeedCeleb, 2013). In turn, further interest was generated in the images, and the story picked up by other Western news outlets (for example: Potter, 2013; Shapiro & Mirkinson, 2013; The Week, 2013; Vancouver Sun, 2013; Vincent, 2013).

Over the course of several days, as well as the Super Bowl photographs being increasingly shared online, ‘memeified’ and photoshopped images adapted from the originals started to appear in forums and imageboard social media sites, such as Imgur, Reddit and 4chan – perhaps in an attempt to poke fun at Beyoncé or her request for the photographs’ removal. These took on numerous creative forms, with notably-shared examples of the most popularly-adapted photograph – in which Beyoncé pulls a striking facial expression and physical stance – ranging from simple image macros (see Figure 1), to the addition of a barbell in Beyoncé’s hands (see Figure 2), to turning the pop-star’s skin green in a comparison to Marvel superhero The Incredible Hulk (see Figure 3). Although by 7

February it was reported that most of the original ‘problem images’ had been removed for purchase from the Getty Images catalogue (Juzwiak, 2013), they remained on numerous news websites, including the original BuzzFeed articles, and continued to be reproduced, adapted and reposted through social media sites, helped along by inter-active media campaigns such as contests for the best Photoshopped memes (Ley, 2013).

While as time moved on from the 2013 Super Bowl interest in such images waned (see Figure 4), they nevertheless have continued to be actively engaged with (albeit at a lesser intensity than their initial reception) through social media sites. Google Trends, for example, shows a mild tendency across several years for Google searches related to ‘unflattering Beyoncé’, mainly from Western countries, at around the time of that year’s Super Bowl (see Figure 5).²¹ Equally, as of the time of writing, nearly a quarter (twenty-four) of the one hundred most-recent album posts given the tag of ‘Beyoncé’ on Imgur overtly reference or simply repost the unflattering Beyoncé meme, each encouraging further sharing of meme variations through the interactive comments section below. These posts were made regularly across the span of around a year, all by unique users, with many including text or titles varying on ‘never forget’, ‘just a reminder’, ‘keep it alive’ or ‘never let this picture die’ (see Figure 6). And while some posts may have only several hundred views, others have amassed well over 100,000 views and hundreds of comment submissions, suggesting a somewhat ‘hit-and-miss’ limited but nonetheless ongoing community engagement with the meme.

²¹ The figure also shows an uptick in searches in April 2018, coinciding with the artist’s request to news outlets and fans not to post any non-approved photographs from her upcoming performance at California music festival Coachella (Butler, 2018)



Figures 1 & 3 – Unflattering Beyoncé memes



Figure 2 – Unflattering Beyoncé meme

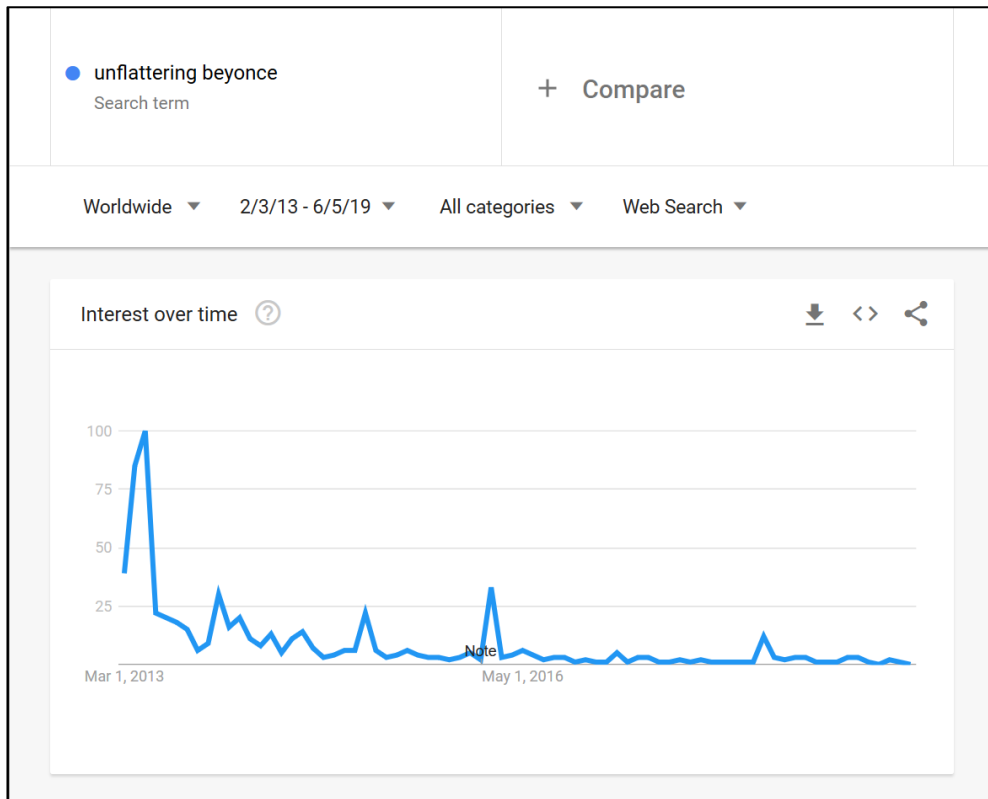


Figure 4 – Worldwide searches for ‘unflattering Beyoncé’, from the meme’s emergence through to today.
 Source: <https://trends.google.com/trends/explore?date=2013-02-03%202019-06-05&q=unflattering%20beyonce>

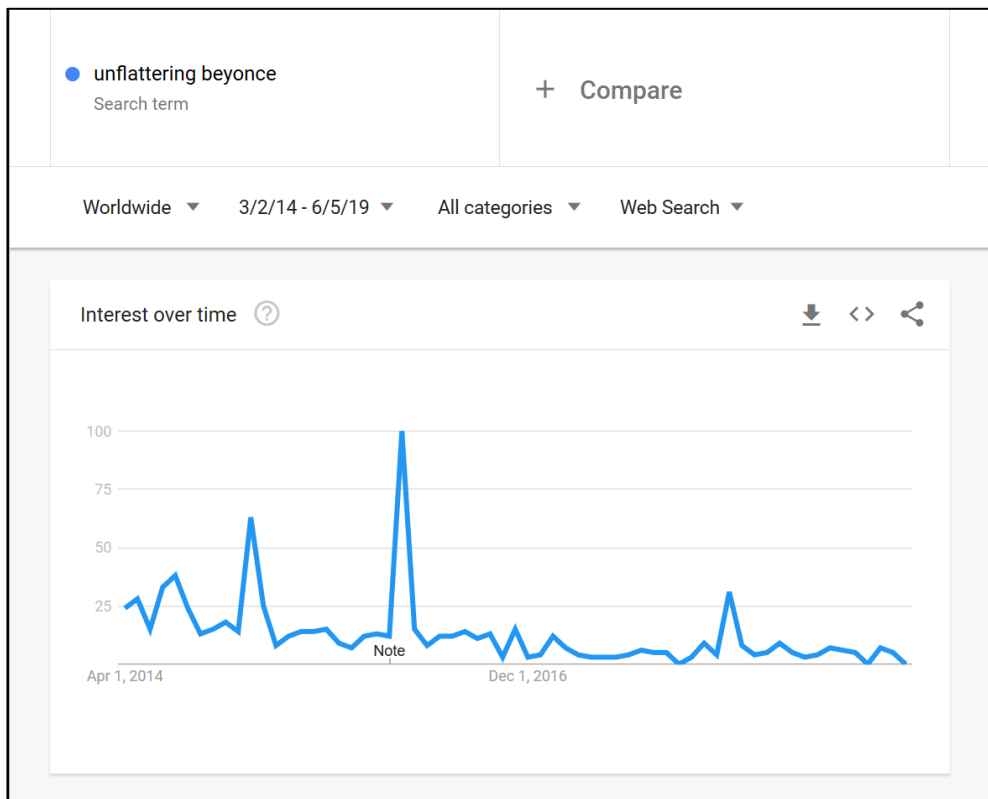


Figure 5 – Worldwide searches for ‘unflattering Beyoncé’, over subsequent years.
 Source: <https://trends.google.com/trends/explore?date=2014-03-02%202019-06-05&q=unflattering%20beyonce>

Over three decades later, in the summer of 2016, Norwegian author Tom Egeland included the image in a seven-picture post on his Facebook account, drawing attention to “photographs that changed the history of warfare” (Egil Hansen, 2016). While other images remained, *The Terror of War* was deleted by the platform for violating its ‘Community Standards’ – and when the author responded to its deletion, that post too was reportedly deleted, and his Facebook account suspended (Egil Hansen, 2016). When the event was subsequently highlighted by Norwegian newspaper *Aftenposten*, and the article and image shared to its own Facebook page, the news outlet received a message from Facebook, requesting that they “either remove or pixelize” the image (Carrie Wong, 2016). Within twenty-four hours, and before the newspaper had responded to the request, their post and image too had been deleted by Facebook, prompting the editor-in-chief Espen Egil Hansen to produce a front-page (and online) open letter to Mark Zuckerberg, calling on the CEO of Facebook as “world’s most powerful editor” to take a more liberal approach to freedom of publication (Egil Hansen, 2016).

Coverage of the article quickly expanded through other online news outlets and social media, provoking outrage across Norway and globally. Indeed, the now-adult and relocated subject of the photograph herself, Kim Phúc, made a public statement on the debate from Canada, claiming, “I’m saddened by those who would focus on the nudity in the historic picture rather than the powerful message it conveys” (quoted in Levin, Carrie Wong & Harding, 2016). Social media users began to share the image on Facebook to protest its perceived censorship. By the following day high-profile Norwegian politicians among them – including prime minister Erna Solberg. Perhaps unsurprisingly, these images too were deleted by the platform, with Solberg lambasting the act as “edit[ing] our common history” (quoted in Ross & Carrie Wong, 2016). The same day, under mounting pressure and backlash from international users, as well as the Norwegian government, Facebook reneged on its editorial decision. In a public statement, the corporation declared that, “after hearing from our community”, they had decided that “[b]ecause of its status as an iconic image of historical importance, the value of permitting sharing outweighs the value of protecting the community by removal”, and the image would thenceforth be permitted to be shared on the platform (Levin, Carrie Wong & Harding, 2016).



Figure 7 – ‘The Terror of War’, or ‘Napalm Girl’, by Nick Ut

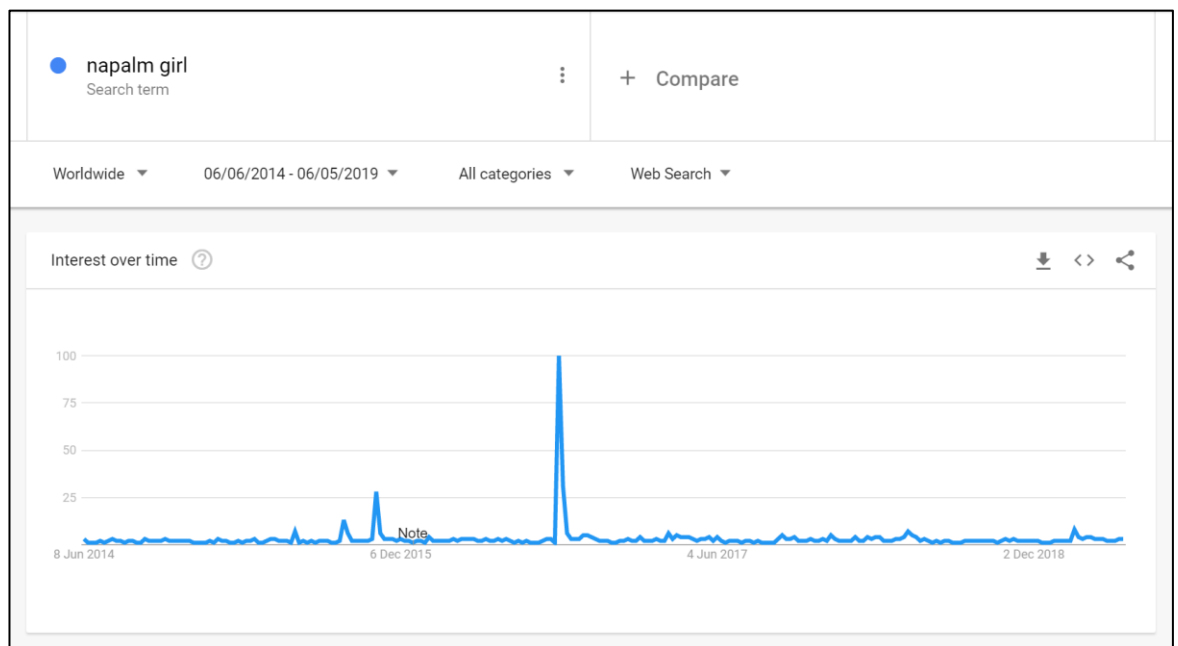


Figure 8 – Worldwide searches for ‘napalm girl’ over five years – a significant spike at the time of its censorship on Facebook

Source: <https://trends.google.com/trends/explore?date=2014-06-06%202019-05-06&q=napalm%20girl>

On the morning of 9 January 2019, a photograph was posted to Twitter, featuring a north-London billboard displaying a scaled-up tweet posted during the 2015 UK general election by then-prime-minister David Cameron. The post’s caption read, “Last night we started a little project to record for posterity the prophetic words of our leaders. Here’s the first one ... Eyes peeled for more ... #TweetsYouCantDelete” (Led by Donkeys 2019). The billboard itself displayed Cameron’s words: “Britain faces a simple and inescapable choice - stability and strong Government with me, or chaos with Ed Miliband” (see Figure 10). The original tweet had been popularly recirculating online at the time, in apparent mocking protest of the present difficulties posed by Brexit – Britain’s tightly-won, referendum-mandated exit from the EU – itself a product of Cameron’s largely-unexpected general election win. The four-strong group of friends who erected the poster would later explain that putting the tweet onto a billboard represented an attempt not to let the perceived past lies or present hypocrisy of politicians and government leaders be forgotten or go unnoticed simply through the deletion of the record – “highlighting what brought us to this point” and holding those implicated to account (Led by Donkeys, in Wollaston, 2019).²²

By the afternoon of 9 January, the billboard had been papered over – its installation had been an act of guerrilla activism on “borrowed” space (Led by Donkeys, 2019a) – yet its influence on social media was only commencing, with the tweet quickly amassing thousands of likes and retweets, hundreds of comments, and media attention. In the coming days, the group would discreetly erect a handful more billboard posters, placing them now in the more Leave-voting areas of Romford and Dover, and featuring historical tweets of further Brexit-implicated politicians, again photographing them and posting them to Twitter. The campaign continued to rapidly increase its social-media engagement online. Within a week of the first billboard poster, the group had received national media coverage (Evans, 2019; Geraghty, 2019; Quinn, 2019; Sky News, 2019; York, 2019) and had launched a crowdfunding drive to ‘legitimately’ enlarge the campaign – securing £30,000 in its first nine hours.

At the time of writing, half a year after the project launched, Led by Donkeys had crowdfunded around £500,000, with which it had installed hundreds of billboards across

²² Hence the group’s name, chosen to reflect the popular description of British infantry led by incompetent generals during the First World War: ‘lions led by donkeys’ (Led by Donkeys, 2019a).

the UK, as well as documenting them and sharing them online – each featuring apparently hypocritical statements made by politicians involved in the UK’s withdrawal from the EU. The content and location of these billboards have been often sourced collaboratively with the campaign’s social media users, having grown their Twitter following to nearly 250,000 users (Led by Donkeys, 2019b). And while not every billboard may specifically reference a tweet – perhaps a snippet of a recorded historical conversation, a comment made in an interview, or a statement made in a news piece – each has been rendered into the aesthetic format of a tweet, its source referenced, and accompanied by the text, “What changed?” (Led by Donkeys, 2019c). With increased funding the group expanded the scope of their work. An 800m² lightweight, overhead banner was commissioned for a March 2019 anti-Brexit protest march, along with hiring a helicopter to document its employment (Led by Donkeys, 2019a). Works utilise video – projected, for example, on the cliffs of Dover (Led by Donkeys, 2019d) or Houses of Parliament (Led by Donkeys, 2019e), reaching millions of viewers online. In May 2019 the group launched a fresh billboard campaign against the newly-launched, populist Brexit Party, ahead of the EU parliamentary elections. The ethos of the project, however, appears to remain the same – to dynamically use records of politicians’ past statements to relevantly (re)inform the public in the present, for the alleged sake of the future. The group’s Twitter posts of these revitalised records continue to be widely engaged with online, regularly receiving tens of thousands of likes or retweets.

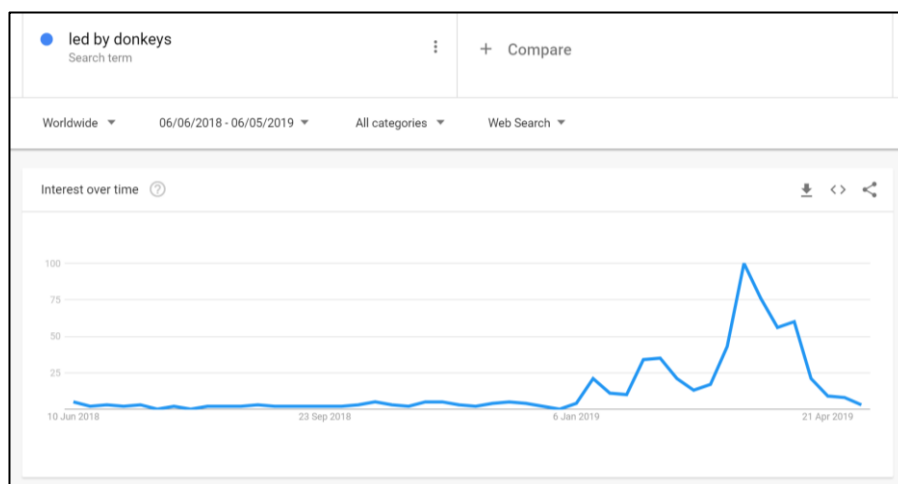


Figure 9 – Worldwide searches for ‘led by donkeys’ over the year prior to writing
 Source: <https://trends.google.com/trends/explore?date=2018-06-06%202019-05-06&q=led%20by%20donkeys>



Led By Donkeys

@ByDonkeys

Follow



Last night we started a little project to record for posterity the prophetic words of our leaders. Here's the first one (Manor Rd / A10 in London). Eyes peeled for more [#LedByDonkeys](#) [#TweetsYouCantDelete](#) [@David_Cameron](#) [@Ed_Miliband](#)



1:53 AM - 9 Jan 2019

2,805 Retweets 5,415 Likes



261 2.8K 5.4K



Led By Donkeys @ByDonkeys · Jan 9



Please reply with your suggestions for next deployment (and desired locations). Is it Fox and 'easiest deal in human history'? Maybe Davis and 'no downside to Brexit, only considerable upsides'. Get involved. [#LedByDonkeys](#) [#TweetsYouCantDelete](#)

163 144 411

Figure 10 – Screenshot of the tweet of the original billboard installed by Led by Donkeys
Source: Led by Donkeys - <https://twitter.com/bydonkeys/status/1082938368491700224>
David Cameron's tweet available at: https://twitter.com/david_cameron/status/595112367358406656

--o0o--

1. Connected Remembering and Collective Present Pasts

In this section we explore the ways in which shared, more cultural-historical collective remembrances may take place through the greater connectedness of contemporary media technologies. Using the case study examples set out above, the section considers how technologically-enabled changes to the connectivity of how we culturally remember through and with records of past events might be seen differently from an anarchival perspective on memory than from traditional archival perspectives. How can we conceptualise technologically-enabled, ‘connective’, collective remembering within an anarchival approach? In what ways are apparent potentials out of past records being engaged with through more-connected technologies? What kind of action is informed through these connective engagements, and for what reasons?

Moreover, the section considers how an anarchival conceptualisation of ‘culture’ may be helpful for understanding cultural remembering in opposition to the popular notion of memory, indeed the internet, *as* archive – acts of collective remembrance being seen not as recalling ‘knowledge’ of the past, but as using potential, through significations of the past, to (re)inform collectively-individuating socialities in the present.

From Archive to Anarchive: From Annals to Action, to Identity

In her 1985 essay, ‘A Cyborg Manifesto’, feminist-political theorist and technology scholar Donna Haraway envisions a ‘myth’ of cyborg imagery, through which we may conceptualise collectives as emerging not out of collective “identity” but collective “affinity” (2016, p. 17). Through technologically-enabled connections, Haraway suggests, we may overcome essentialist ideas of the human subject-as-individual, of identity-constructs, and embrace a notion of technologically-facilitated ‘coalitions’, built around shared affinity – “on the basis of conscious coalition, of affinity, of [for example] political kinship” (Haraway, 2016, p. 18). In Haraway’s view, using the technologically-augmented cyborg as a metaphor we might understand ideas of collective ‘identity’ as not built through hierarchical (perhaps, we might think, spatially-conceived) social taxonomies of class, race, gender or sexuality, but through “explicitly embracing the possibilities inherent in the breakdown of clean distinctions between organism and machine and similar distinctions structuring the Western self” (Haraway, 2016, p. 53).²³

²³ Indeed, there is a mild irony to Haraway’s use of the metaphor of the cyborg, since from our anarchival, technics-oriented approach the very use of a conceptual metaphor/myth as sociological

It is interesting to relate Haraway's thinking on a sense of the social as more about connection than identity – and the “leaky distinction ... between animal-human (organism) and machine” (Haraway, 2016, p. 11) – to parallels in Bergson's theory of consciousness and technological extension, Simondon's theorising around collective individuation, technics and the emergence of the individual *out of* the collective, and, thus, to relate it to our own anarchival approach to remembering. As social psychologist Ian Tucker observes, following Simondon and philosopher Brian Massumi, “We are ‘leaky bodies’ in relation to data with our porous bodies in continual transformation through moving in and through lines of affective individuation” (2018, p. 40). And, similarly to the conceptualisation of the cyborg and affinity-based coalition, philosopher and feminist theorist Elizabeth Grosz argues that Simondon's theory of individuation allows us to think in new ways about what we call subjective ‘identity’ (2013). Through thinking of socialities and individuals as the ongoing, emergent products of collective individuation, Grosz argues, we may challenge the assumption “that individuals ... biological, social or collective, are given and that their characteristics are static rather than evolving, transforming and milieu-transforming elaborations” (2013, p. 55).

Let us remind ourselves that, for Simondon we do not begin with the *individual*, which then acts on the world. On the one hand, as we saw in previous chapters, we may think of psychic individuation as the affective experience of *consciously being*, out of the bodily ability to choose (out of perception and memory-potential) how to act on one's environment. Yet, on the other hand, the true sense of an *individual*, as subject, emerges through acts of *collective* individuation. The individual emerges out of a relation to other bodies – in a sense the individual comes *after* the collective, as a ‘grouped’ or ‘group’ individual, driven by the potential of the pre-individual charge into the social (Scott, pp. 136-137). Thus, as Grosz observes, “Subjectivity can never be identified with a particular identity” (2013, p. 53). Rather:

Subjectivity is ... the internal enfolding of a multiplicity of bodily and conceptual operations, never finished or finalized, never reducible to a thing, never identifiable with any of its stages, never complete, never determinate, always in the process of becoming-more and other. (Grosz, 2013, p. 53)

method can be considered an affective coupling of human and (conceptual) technology – indeed perhaps a ‘cyborg’. As N. Katherine notes:

Whether or not interventions have been made on the body ... even a biologically unaltered Homo sapiens counts as posthuman. The defining characteristics involve the construction of subjectivity, not the presence of nonbiological components. (Hayles, 1999, p. 4)

From our anarchival position, we may understand one's sense of identity as a process of realising potentials from the past – memory-potential – to inform interactions in the present, themselves informing individuation, out of which a sense of individual and social identity may emerge. Indeed, what emerges is “more than identity” (Scott, 2014, p. 151). As we saw in the Theory Chapter, we can think of Simondon's ‘transductive thought’ – or, from a perhaps more Bergsonian perspective, ‘choice’ – highly conscious or otherwise, as affective movements or *interaction*, being realised out of memory-potential through an ongoing negotiation with both one's perceived surroundings and one's perceived personal or cultural past:

Like all real being, like any fragment of the real that is individuated, thought is rooted in a milieu, which constitutes its historical dimension; thoughts are not ahistorical, not stars in the heaven of ideas. They emerge from a theoretical environment, drawing the seeds of their development from it (Combes, 2013, p. 12).

Like Haraway's cyborg-influenced notion of societies overcoming social-constructivist taxonomies of identity, in this sense we might understand collectively-individuated in-group identities – and the acts of collective remembrance that inform them – as less about groupings of individuals, and more about multiplicities of affective interactions and connections. These active connections are informed, across varying degrees of conscious thought, through technologically-communicated shared affinity and cultural outlook – themselves informed by the realisation of memory-potential – reconstituting always-emergent, collectively-individuating socialities. Let us further remind ourselves that, for Simondon:

one cannot, even speak of an individual, but only of individuation; one must go back to the activity, the genesis, instead of trying to apprehend the being as entirely made in order to discover the criteria by which one will know whether it is an individual or not. The individual is not a being but an act. (Simondon, 2005, p. 191)

If we are to think of individuals as acts, out of memory-potential, then we may think of societies not to be made up of people, but of *movements* out of realised or realising memory-potential, forming processes of collective individuation. Social identity within this conceptualisation is not, then, formed out of shared traits within social taxonomies, but out of affective, transindividual interactions, out of individuations, *between* or

through leaky beings. Conscious societies are not groups of ‘pure’ individuals, but technologically-mediated, relational movements of individuation – affective processes out of which the sense of individual is in a constant state of (re)emergence.

Connected Collectives: Cyborg Socialities

How, then, might we reflect on our case-study examples within this framework? Media theorist Joanne Garde-Hansen suggests that we might see new technologies like social media as archiving tools – Facebook as a “creative archive”, and the wider internet, through archiving platforms like search engines or YouTube, as a kind of “self-archiving phenomenon” (2011, p. 80) – and thus consider the connective possibilities of the internet perhaps as “democratisation” of archives (Garde-Hansen, 2011, pp. 70-87). As we saw in the Literature Review chapter, while there has long been held a distinction between the top-down ‘official history’ of, for example, colonial archives, and the supposed ‘unofficial history’ or ‘public memory’ of bottom-up collective or social remembering, the internet does offer opportunities for new, more ‘open’ claims to using historical records to remember. And there is no doubting that the internet, as ‘cyber space’, continues to collate and store increasing masses of data, much like an archive. As media archaeologist Jussi Parikka observes:

As every museum and archive knows (or should), the labor of how culture remembers and retrieves from memory is shifting from the official institutions to everyday media environments—social media or, more generally, the way in which data are transmitted and stored, even if fleetingly. (2013 p. 16)

From an archival perspective, then, we might be tempted to see each of our collective memory case-study examples as a kind of hierarchical, political power struggle for knowledge: ‘the people’ or the perhaps oppressed coming together through remembering against the perceived dominant and tyrannical forces of compulsory obliteration, forging a new, democratised custodianship of the memory archive. The unflattering Beyoncé meme might here represent a struggle against the attempts of the powerful to curate their own idealised versions of ‘the past’ on the internet, as archive of the present and future; defiance against Facebook’s censorship of *The Terror of War* could be understood as the democratic forcing of a stubborn and powerful ‘gatekeeper’ of history to *allow* us to remember knowledge of the past through the archive, accessing and sharing the image; the Led by Donkeys campaign we might see as an attempt to ‘liberate’ archival Twitter-memory, at risk of being accidentally or purposely forgotten (deleted), back into the public domain.

Yet, while a focus on the internet as a kind of archive of knowledge may offer an interesting political view of how the increased connectivity of media may be changing tendencies of democratised collective remembering in the online era, its overly-spatialised approach – seeing the capture and escape of potentials in terms of quantified *loss* or *gain* of memory – risks leading once again to perhaps falsely-perceived problems of differences in *degree* – of less versus more.²⁴ Rather, in taking an anarchival approach to understanding these case studies – remembering as informing *action* rather than knowledge – and in thinking the problem in terms of differences in *kind*, we must consider on the one hand what kind of more nuanced interactions and resultant identities might be (re)informed through these new acts of artefact-facilitated social remembering, and on the other the new ways in which these are affected – indeed effected – through the increased connectivity of new technologies.

We might from our anarchival perspective, then, understand the creation and circulation of memes of Beyoncé’s unflattering photographs as more than an attempt to remember something seemingly important that ‘someone more powerful’ wanted forgotten. Rather, we might see transindividual connections through sharing the media-artefacts within processes of collective individuation – of the realisation of transindividual memory-potential into shared acts of remembrance, reconstituting affective bonds out of whatever affinity-based sense of connection within an emergent sociality in duration.

Indeed, it is crucial to note that questions of power dynamics in relation to non-white bodies and female bodies (or, indeed, the inter-affective images of bodies) in the contemporary West (as elsewhere) are entangled within a broad range of complex sociological and historical considerations around notions of, differentiations between, and often prejudiced attitudes toward race, gender, sexuality, class and more. And, while the focus of this thesis may not allow us to adequately unpack such multifaceted debates herein, it is important to recognise and bear in mind that an engagement with case studies of these kinds cannot be divorced from these wider social-historical contexts.

What is important here seems to be more than the event being remembered. It is also the networked, affective, social bonds forged *through* its present-day remembrance. Thus, the continued re-engagement with the meme in subsequent years serves not primarily as a continuing, perhaps humorous reminder that Beyoncé once wanted some unflattering

²⁴ Moreover, as we will explore further below and in the next chapter, and as technology and political commenter Evgeny Morozov reminds us, increased connectivity is not necessarily a good indicator of ‘increased’ democracy (Morozov, 2011)

photographs deleted, but rather a continuing reconstituting of those affective bonds forged in the past, maintained in the present. Similarly, the widespread connections forged through sharing the photograph *The Terror of War* might not be seen only as a protest act of staunch remembrance of the horrors of the Vietnam War in the face of perceived historical censorship: we might think of it also as an act of shared political kinship, of movements of identity-re-informing collective individuation. Out of a shared political affinity for freedom of publication, through the sharing of the image connections are enlivened that serve to affectively reconstitute group bonds, instilling a sense of shared identity – of ‘more than’, of *belonging* to an in-group. Equally, online engagement with records of politicians’ past statements as put out by Led by Donkeys we might understand as a creative, inter-connected process of reconstituting a sense of collective identity. More than attempts to preserve pasts that perceived powerful others might want forgotten, these may also be understood as collectively-individuating interactions out of shared affinity, the visible connections afforded by social media informing a sense of collective identity in opposition to the perceived actions of these politicians *in the present*.²⁵ Indeed, the collaborative, and collectively-individuating nature of the process is somewhat exemplified in both the crowd-funding of their costs and crowd-sourcing of their media content through campaign engagement:

Once it was a bunch of friends ... searching for what they could find on Iain Duncan Smith or whoever, on Twitter or Google or the They Work For You function of Hansard. Now the crowd is sourcing quotes. (Led by Donkeys, in Wollaston, 2019)

This notion of remembering as informing identity within an ‘in-group’ specifically *in opposition* to a perceived ‘other’ is an interesting one, and one to which we shall return to in the next chapter. However, having conceptually explored how these acts of cultural remembrance may be seen as (re)informing identity, let us now turn our attention to the role new technologies may play in shaping these remembrances, through increased technological *connectivity* – indeed, let us first consider what we might mean by the notion of ‘cultural’ remembrances at all.

²⁵ It is worth noting in this example that the collective bond does *not* appear to be about cementing existing historical bonds of voting Leave or Remain in the EU referendum – since at least one member of the group identifies as a Leave supporter (Wollaston, 2019). Rather, one may understand the remembrance in terms of affirming bonds *in the present*.

It is perhaps to observe the excessively obvious to note that man-machine couplings effective in social-media interfaces represent a huge increase in the possibility for connections – far beyond more historical constraints of geographical space and time. Yet it is important to note that with such an increase in potential transindividual connections has come the possibility, as envisioned by Haraway, for more easily-afforded, collectively-individuating networks to emerge and reconstitute themselves, based not solely on more traditional social taxonomies (of, for example, class, gender, race, sexuality etc.), but equally – perhaps even more so – on the likes of shared, affective cultural or political kindship.

‘Access’ to so-called ‘cultural memory’ has been hugely augmented through the advent of the world-wide web. Following seminal collective-memory theorist Maurice Halbwachs’s claim to collective remembering that “I need only carry in mind whatever enables me to gain the group viewpoint, plunge into its milieu and time, and feel in its midst” (1980, p. 118), media and memory scholar Andrew Hoskins observes:

Well, the actuality of the group today is cast and bonded more than ever before by the virtuality and the simultaneity or near-simultaneity of the group (from proximate to the global). There is no need to ‘carry in one’s mind’ much beyond that which facilitates access to the group; today, memory in this way is less a question of remembering and more a matter of where to look. (Hoskins, 2009a, p. 29)

Remembering through technological man-machine couplings like hyper-connected social media platforms greatly expands the perceptual affective fields or atmospheres through which individuating connections may be made through mediated interaction. To be sure, collective remembering, as online creative repetitions and representations of artefacts – what we have previously called ‘social habit memory’ – does not take place in an online vacuum. Social-networking sites do not operate in isolation. Rather these processes form part of wider techno-social systems of cultural media-content sharing, on- and off-line – what media theorist Andrew Chadwick has called the “hybrid media system” (2017). This contemporary system is, as Chadwick describes it, “built upon interactions among older and newer ... technologies, genres, norms, behaviors, and organizational forms ... in the reflexively connected fields of media and politics” (2017, p. 4). Thus, what in the Literature Review chapter we saw might be called ‘transactive memory’ (Sparrow et al,

2011) we may now reconsider in terms of multiplicities of man-machine-coupled relations between different actors, media and their respective agencies.

Through the popular interest in our case-study examples we can begin to see some of the complex transindividual and inter-individual inter-relations through which these acts of remembrance take place – for example, between online and offline forms of communication, between official news outlets and more social-media-led platforms, between the degrees of corporate and more ‘personal’ concerns, and so on. The more political agencies in these relationships, and the resultant implications, we will explore in the final section of this chapter, but for now it is important to recognise that these ‘connections’ through which acts of collective, cultural remembrance take place involve sophisticated techno-socio-political tensions and inter-relations between different actors, agents, and their respective agencies.

It is significant, however, to here pause and consider what we *mean* when we talk about ‘cultural remembrance’.

Culture as Social Drive

Let us emphasise at this point that what we might loosely call ‘culture’ or ‘cultural memory’ – the mediation of social artefact – both emerges out of the transindividual into the group *and* re-informs the transindividual through their exposure to its mediation. We in turn act on the group and the group acts on us. Thus, we are not defined individuals within the group, but constantly emerging subjects reflexively “coextensive with the ‘personality of the group’” (Scott, 2014, p. 136), and with the group itself affectively reflexive to the emergent personalities of its members, with cultural memory re-informing such a social identity. How might we then conceptualise ‘culture’ within our anarchival approach?

It is useful here to remind ourselves of memory’s essential function, as proposed by Bergson: to inform useful action in the present (Bergson, 2004). And, as we saw in the Theory Chapter, we can envision the notion of ‘useful’ from both a level of *instinct* and *intelligence* – instinct informing a kind of sense of biological (pre- or lesser-conscious) imperative and intelligence a (more conscious) technologically-achievable one.

This chapter suggests that we might in this respect draw a tangent between Bergson’s bodily (or instinctive) and intellectual (or intelligent) ‘usefulness’ and Simondon’s more nuanced expression of ‘value’ as a “transductive tendency” for the transindividual, toward individuation (Bardin, 2015 p. 135). Simondon identifies in the human condition not two

but three types of transductive or relational value, as helpfully outlined by sociologist Andrea Bardin:

Two of them are related to what institutes a kind of relationship functional to the individuation of the living: ‘value as organic or technical condition’ as food or medicine. The third kind of value, called ‘absolute’ by Simondon, is the ‘beginning or trigger’ of the collective relation. This ‘absolute’ value is culture. (Bardin, 2015, p. 136)

Culture, for Simondon, is what enables the transindividual to operate at beyond the perceived biological and technological level we see in *Matter and Memory* (Bergson, 2004), and at the *collective* level, or *within the social*. From our anarchival perspective, we can say that there exists a tension between the values of *instinctive* and *intelligent* processes in what ‘counts’ as useful action. As Bardin argues, *culture* can from this perspective be conceptualised as a reflexive, creative manipulation or stabilisation of these processes to “in order to be functional to the maintenance of group cohesion” (2015, p. 137):

The collective integrates the normativities exceeding the functioning of the social system by ‘enveloping them’ ... with significations. Culture is therefore to be conceived as the transindividual milieu in which social systems emerge thanks to a tendential homeostatic stabilisation of their *constituting* biological and technical processes. In fact biological and technical processes are the condition of the possibility of culture, i.e. of the collective process which makes them compatible through the production of a system of symbols. (Bardin, 2015, p. 137)

We might surmise, then, that what we call ‘culture’ is a ‘system of symbols’ (i.e. technologically-mediated artefacts) that, through and indeed *as* processes of collective individuation, informs a sense of collective-identity or togetherness in the present, toward the social future – and in fact enables social systems to function in the first place. Culture is concerned with ‘the past’ in so far as it makes use of significations of, and out of, the past – and thus use of records of the past – to inform action in the present and the future. Yet culture itself is a mediating process *in duration*, *of* the present, driven by the transindividual processes of biologically-perceived and technologically-perceived usefulness *in the present* – themselves out of the lesser or greater conscious realisation of memory-potential – and driving *those* processes in turn. Culture is an always-emergent

and evolving transindividual process, co-operatively in tandem with the processes of biological and technological value, and is at the same time the value that allows the two to operate together, and so allows for social systems to constitute themselves at all. Thus, Simondon strikingly observes that “it is culture that governs man, even if this man in turn governs other men and machines” (2017, p. 161).

Cultural or collective remembering, then, we may now conceptualise as a making use of significations of the past – or ideas of the past – through artefacts (physical or acted) to inform useful, coherent action for the collectively-individuating transindividual in the present. While it is through technologically-mediated individuation that a sense of identity emerges, it is through the perceived *value* of mediated culture that the personality of that individual-as-group-member is re-informed (that individual in turn re-informing its perceived in-group). The value of media-content – rather than the supposed content itself – being the reconstituting, perceived-to-be-shared culture. We might once more liken this conceptualisation of the cultural artefact as a carrier of potential for the transindividual (re)establishing of social relations to psychologists David Middleton’s and Steven D. Brown’s notion of objects as “markers of relationships” (2005, p. 149-152). For them – again following Halbwachs’s thinking on collective memory, along with French philosopher Michel Serres – more than simply representing social relations, the ‘projection’ (or apparent projection) of memory onto objects or artefacts represents a way to perceptually establish and stabilise *longer-term* social relations and systems into a “more prolonged process” (2005, p. 151).

This synthesis of course provides an interesting point from which we might anarchivally approach the notion of cultural or historical remembering through new, online-connected technologies. We should from an anarchival perspective be careful not to think about ‘ownership’ of culture or history as a kind of ‘shared past’ – the historical past as a ‘thing’. Rather we might think of exposure to, use of, and especially *reproduction* of cultural media by a perceived sociality as *relational*. Cultural remembering provides a way in which the sociality may continually reconstitute itself in the present, cementing bonds, in anticipation of useful action for the transindividual, in turn reconstituting an always emergent sense of group-identity within members a sociality. Collective memory is not remembering ‘the past’, but a process of mediating social identity- and action-informing value in the present. Remembering through historical records from this perspective becomes less about knowing what the past truthfully ‘was’ and more about how ideas of the past may be dynamically used in the present sociality’s environment, reconstituting

always-emergent (shared) identities – in effect, to remind our (perceived) selves of who we (feel we) are, and how we should act.²⁶

Thus, for those whose identity is (re)informed through connecting with Led by Donkeys' media, it is unnecessary to have seen at the time or have since become familiar with the initial posts now being reproduced – only to participate in their being reproduced and shared, in duration. Indeed, while the group's seminal tweet reads that the project intends to “record for posterity the prophetic words of our leaders” (Led by Donkeys, 2019) – an intention reported at the time of writing to still drive the initiative (Gelblum, 2019) – we may better understand the project as using records of the past, through the connectivity of social media, to culturally cement affective bonds of the emergent sociality *in the present*, and in anticipation of that sociality's future. ‘Posterity’ is thus achieved not through passive acts of archiving in the past, but the ongoing, present acts of anarchiving into the future. Equally, for those sharing unflattering Beyoncé memes, it is unimportant to personally remember Beyoncé's Super Bowl performance, nor necessarily have taken part in the initial cultural phenomenon of its memeification – only to recognise in its cultural signification the reconstituting, through its interactive mediation, of affective group bonds. Likewise, the signification of the *The Terror of War* photograph as a record of war – or even of its historically-induced anti-war meaning – becomes secondary to its in-the-moment cultural value to those who find in-group commonality in opposing perceived bullish Facebook censorship.²⁷

What is particularly noteworthy about the affordances of new, connective technologies for collective remembering, then, is the possibility of enabling wide-spread individuating and thus identity-informing interaction through engaging with cultural media. A collective act of remembering informs individuation; informs transindividual identity; informs society; informs remembering. The expansion of potential affective fields through social media technologies allows for multiplicities of socialities to (re)emerge and co-exist through multi-agency, techno-social connections beyond the limits of only-recently more restrictive, conventional geographical boundaries. With social media, it is tempting to think that top-down narratives of the past such as those of the colonial archive or hierarchical social taxonomies no longer hold the dominant power over how societies

²⁶ We will pick up in depth on this notion of truthfulness versus memory, and ‘the past’ versus ‘ideas of the past’, in the next chapter.

²⁷ Indeed, Kim Phúc's despair at those “who would focus on the nudity in the historic picture rather than the powerful message it conveys” (quoted in Levin, Carrie Wong & Harding, 2016) does not account for the fact that the ‘message’ being conveyed through the image's being shared, in its opposition to Facebook's perceived censorship, is here *more than* solely its traditional anti-war meaning.

may emerge and organise themselves culturally through remembering, as groups find the apparent ability to form true societies based on seemingly less-hindered man-machine interactions around shared cultural affinities.

Perceived Potentials: Affective Artefacts as Culture-Carriers

We saw in the Theory Chapter that for Simondon “all thought, precisely to the extent that it is real, ... involves a historical aspect in its genesis” (2005, p. 84). Within our anarchival conceptualisation of remembering, we can understand this in terms of memory-potential being realised into memory-images, and in turn into identity-affirming actions within emergent socialities. Yet here we can appreciate in a real-world context how these digital records of past events may be used to realise potential into individuation and identity. Rather than looking at apparent machinic capture and escape of digital records being used to remember in quantified and/or oppositional terms – as ‘loss’ or ‘gain’ of memory, or in terms of ‘ownership’ of memory – we might do better to conceive of them anarchivally in terms of wider affective *processes* of social-identity-informing individuation. That is to say, we might conceive of the use and sharing of digital records as processes of realising memory-potentials into collective-individuation, through technologically-mediating value within a perceived sociality, for useful action for that perceived sociality.

Thus, media records of ‘the past’ – data itself – such as the Beyoncé images, *The Terror of War* photograph, or reproduced politicians’ statements, should not be seen archivally as potentials in themselves, nor even necessarily as reminders of the events they depict. Rather, a more nuanced view, as philosopher Erin Manning has proposed in relation to artefacts in the traditional archive, would be to see online data as “carriers of potential” (2018), in duration. It is in these cultural records’ anarchival *engagement*, through connected interaction, that potential is realised out of the transindividual into collectively-individuating actions in the present. And this potential is realised for the usefulness to the perceived collectively-individuating individual-as-collective – to become, and act for the benefit of, ‘more than’ the individual. In short, to collectively remember is to engage in a process of realising transindividual memory-potential into action-informing collective identity (and equally into collective-identity-informing action), through individuation in duration. Likewise, engagement with records of past events acts as a technological mode, or technologically-enabled mode, of realising these potentials into connective interaction.

What is different in *kind* in remembering through and with new, online and pervasive media, such as social media, is the increased potential *for* these connections.²⁸

We may understand, then, that, just as we may view societies as made up of multiplicities of transindividual movements more than of groupings of subject-individuals, we may view the networked data-communication of ‘the internet’ not merely as a static platform for conceptually-spatialised connections of identity in cyber-space, but more temporally as a dynamic site of ongoing, spatiotemporal, transindividual-affective, shifting and *creative* movements *between* data. The description of online-expanded, multi-agency, affective fields or atmospheres, afforded through increased connectivity, may well evoke strong notions of spatiality, yet we must remember that it is *in duration* that these affective interactions take place. Cyber ‘space’ is after all experienced action in cyber-time. As we will explore below, what hyper-connective media brings to remembering is not so much the apparent sense of reduction of physical space, bringing things closer together, but an expansion of the perceived ‘present’ into *wider space*. Or perhaps conversely an expansion of wider space into the perceived present, replacing traditional notions of geographical space with an expanded *virtual* space – or at least a different kind of *experience* of space and time.

Thus, in the next section of this chapter we develop our individuation- and interaction-centric approach to collective remembering into a more spatiotemporal social experience – analysing the experience of online collective remembering *in duration*. Then, equipped with a comprehensive synthesis of anarchival social remembering, the final section

²⁸ A supplementary example here could be found in reconsidering the *Rally Sports Challenge* X-Box racing-game ‘ghost in the machine’ introduced in the previous chapter. The cultural data-artefact in question here – the ‘ghost rider’ of the author’s father’s fastest lap – was initially mediated to a wider-than-personal audience through a story in a YouTube comment, on a partly-relevant video. From here, the story was third-party (re)produced into a dramatised video of its own, and ultimately sparked a forum-like comments-section discussion in which people expressed their sympathy, appreciation and indeed shared similar stories of fathers’ deaths, either of their own or that they had heard. And the video itself could then be embedded into other social-media sites, like Reddit, where further comments-based discussions would establish themselves. We can see in this example the how the supposed cultural artefact is mediated through various data-forms across techno-affective atmospheres: the personal experience of playing the video game offline, into online-shared comment-text, into online video-stream, into wider relational comment-based interactions. The technological platform and/or medium – indeed even its content – does not so much represent potential itself, to be realised by the transindividual. Rather, the media act as *carriers* of value-as-potential, allowing for memory-potential to be realised into individuating action for the transindividual whom infers value from the mediation, and thus to the always-emergent socialities within and through which it forms a sense of belonging. Thus, both the *medium* and the *meaning* attributed to the cultural artefact may shift and change through the anarchival movements of its collective engagement, to mean *something more* – from ‘moving story’ to ‘site of collective remembrances’, and so on. – through its perceived value.

conducts a closer inspection of the agential materiality of new technological platforms, and the more socio-political resulting implications.

--o0o--

2. Interaction in Cyber-Time: Remembering in the Social 'Now'

In the previous section, we considered how we might understand changes to anarchivally-conceptualised collective remembering through the greater inter-relational connectivity of the online era. Increased opportunities for connectivity provided by new, networked and pervasive media technologies have led to possibilities for the constitution and reconstitution of identity-informing socialities beyond historical constraints of space, through the technological augmentation of inter-relational affective atmospheres. Yet they also allow interaction beyond historical constraints of the experience of *time* – of the present – offering possibilities for ubiquitous, near-instantaneous interaction, in the moment, irrespective of physical distance. This section, then, examines how we can understand how the spatiotemporality of 'expanded', online, real-time, mass-connected remembering from our anarchival approach to remembering in duration. How has the instantaneity of online telecommunication changed the ways in which we collectively engage in acts of cultural remembrance in the present? Indeed, in how might we consider the sense of 'the present' at all, and how is its experience different through the likes of new, socially-connected technologies? What kind of action usefully achieved in engaging with ideas of the past through supposedly open-network technologies like social media, for whom, and why?

Structures of Feeling: Online Remembering and the Expansion of the Present

We have seen that we may understand collective remembering as an affective, relational and identity-informing act: we act constantly on the group, and the group on us, in movements of individuation in the present, into the future. Now – using an initial reading of Raymond Williams's 'structures of feeling' to critically relate to our anarchival understanding of cultural remembering – we turn our focus *onto* that sense of the present, and the role new technologies play in shaping anarchival processes of perceiving and remembering within it.

In his 1970s essay of the same name, political theorist Raymond Williams sets out a cultural concept of 'Structures of Feeling' (1977), in which the experience of culture is seen as a to-some-extent conscious, social negotiation with history or the past *in the*

present, through which we might understand everyday “characteristic elements of impulse, restraint, and tone; specifically affective elements of consciousness and relationships” (1977, p. 132). The experience of these social ‘structures’, Williams argues, constitutes in the human a conscious sense of “temporal present”, concerned with “meanings and values as they are actually lived” (1977, p. 132), where social interactive relations inform feelings, which themselves inform thought and action: “not feeling against thought, but thought as felt and feeling as thought: practical consciousness of a present kind, in a living and interrelating continuity” (1977, p. 132).

It is perhaps difficult not to see parallels between Williams’s theorising culture as affectively and relationally informing conscious thought and experience in the present, and our own anarchival approach to remembering as concerned with interaction in duration, out of Bergson and Simondon. We may anarchivally think of individual consciousness as feeling, relationally individuating out of affective interaction with one’s environment and perceived collective – itself informed through the bodily realisation of memory-potential into (choice of) action in the perceived present. What we call ‘culture’ can be recognised as the value that facilitates this transindividual drive toward the social, and through which a sense of consciousness within the ‘social present’ emerges. Thus, all thought, as we know for Simondon, and might now infer for Williams, involves “a historical aspect in its genesis” (Simondon, 2005, p. 84).

As we have seen in previous chapters, Bergson argues that life should be seen as a kind of creative *extension*, facilitated through action in duration. And let us remind ourselves that, through gaining a conscious sense of this *progression* (through having choice of action), we experience a sense of ‘personality’, of psychic individuation – of being a *relationally aware being* (or what we might call ‘knowing being’) in the present, and of ‘freedom’ to act. “The more we succeed in making ourselves conscious of our extension or temporal progress in pure duration” (Bergson, 1911, p. 212), Bergson claims:

[T]he more we feel the different parts of our being enter into each other, and our whole personality concentrate itself in a point, or rather a sharp edge, pressed against the future and cutting into it unceasingly. (Bergson, 1911, p. 212)

Simondon’s thinking on culture develops this sense of experiencing *the self in the present* as a sense of ‘more than’ – of psychic individuation in the moment – through broadening the relational notion of ‘consciousness’ of the always-extending body, through collective

individuation, into the always-extending *society*. Thus, through collective individuation our ‘personality’ – our consciousness as the Bergsonian “note of the present” (2004, p. 181) – is broadened into the social sphere, a feeling of *social consciousness*, or collective identity in duration: the note of the *social* present.

Certainly, we might read Williams’s description of the *function* of structures of feeling as generating a ‘temporal present’ in inadvertent parallel with the ‘bringing together’ of the transindividual Bergsonian memory theory and Simondonian social theory that underpins our anarchival approach:

Yet this specific solution [a structure of feeling] is never mere flux. It is a structured formation which, because it is at the very edge of semantic availability, has many of the characteristics of a pre-formation. until specific articulations – new semantic figures – are discovered in material practice: often, as it happens, in relatively isolated ways, which are only later seen to compose a significant (often in fact minority) generation; this often, in turn, the generation that substantially connects to its successors. (Williams, 1977, p. 134)

In such a reading, we can perhaps think of the ‘edge of semantic availability’ relative to the processes of realising non-representational memory-potential – as emergent *feeling* – into action-informing thought (i.e. a mental ‘image’), to whatever degree of consciousness, all in relation to the perceived present environment. Similarly, we can think of ‘articulations’ discovered in ‘material practice’ as those formal symbols of cultural value that enable the actions out of instinct- and intelligence-led processes of memory-potential-realisation to emerge into collectively-individuating socialities of transindividual – to emerge into a sense of ‘the social’.

Conditions of Culture

In order to develop a nuanced relation of our anarchival approach to Williams’s thinking, it is worth considering his theorising of three core ‘elements’ or ‘conditions’ of culture (1977, pp. 121-127). Firstly, the *dominant* condition, which is to say hegemonic culture. Secondly, *residual*, which relates to culture(s) of ‘the past’, which, though an active part of present cultural processes, “the dominant culture neglects, undervalues, opposes, represses, or even cannot recognize” (Williams, 1977, p. 124). And, thirdly, *emergent*, a “radically different” condition, which represents “new meanings and values, new

practices, new relationships and kinds of relationship ... continually being created” (1977, p. 123).

From our anarchival perspective on memory, we might think of these cultural conditions as co-extant, ongoing and individuating *technological modes* of remembering – it follows, as modes of social consciousness. Through processes of collective remembering in cultural signification – once occurred and as experienced, be it consciously determined as dominant, residual or emergent – memory-potential is transindividually realised into individuating, identity-informing action. This, in turn, gives us a grasp of the consciously-perceived *social present*. Thus, we experience a *technologically-expanded* present, beyond the instant of the individual body, in duration, as centre for action – to whatever degree of consciousness. More than the immediate bodily sense of ‘the present’ as “a perception of the immediate past and a determination of the immediate future” (Bergson, 2004, p. 177), cultural modes of perceiving and remembering, by no means limited to physical or digital ‘artefacts of the past’, allow us to situate ourselves in a wider *social*, past-informed present, oriented toward a transindividual – that is to say sociality-directed – future. As such, while not *objects*, we might liken culturally-mediated actions, as signifiers of the past, to Middleton and Brown’s notion of ‘markers of relationships’ – as carriers of potential for the transindividual to realise the sense of social-relational self. To exist in the social *now* is to escape – or perhaps to lose – the lesser-conscious, purely reflexive sense of being-in-duration, since the social *now* is at all times a relation to the anarchivally-imagined and -rehearsed social *then*.

In this sense, then, we might think of a ‘structure of feeling’ as a parallel with what we consider the ongoing processes of conscious reconstitution of the bodily- and socially-relational *individual*, through cultural (that is, artefact-facilitated) acts of collective individuation, across affective fields or atmospheres – with the ‘more than individual’ emerging out of an always-developing sense of shared temporal sociality. A structure of feeling, we might say, is the very experience of processes of biologically-, technologically- and culturally-organising collective individuation, into a sense of prolonged social present, out of which, and within which, a transindividual sense of ‘the social’ may constitute itself.

The Online Expansion of the Now

Yet let us now relate this theoretical understanding to the role new, pervasive and connected online technologies play in collective remembering *today*.

Cultural theorist Rebecca Coleman provides a useful critical relation of Williams's thinking to new, social-media technologies, in which she observes that the "connectivity, instantaneity and constant availability of social media creates a present temporality ... that is concerned with 'the now', and is stretched and condensed in various ways" (2018, p. 68). Furthermore, Coleman argues that "the liveliness of social media is a situation that is experienced (i.e. felt) before it becomes something coherent" (Coleman, 2018, p. 70). Whereas, as we saw in the previous chapter, social media might in the past have been used to share and (perhaps) 'store' records of events that had already happened, the connective mobility and 'live-stream' text-, photo- and video-functionality of more contemporary hardware and software mean that they today operate more as ubiquitous sites of *witnessing* than of *remembering*, in the strictest, more-traditional sense of the words. Indeed, this is the purported *aim* of many social-networking platforms - media theorist Tero Karppi points to Twitter's *Annual Report 2016* by way of example, in which they claim:

Twitter has always been considered a "second screen" for what is happening in the world and we believe we can become the first screen for everything that is happening now. And by doing so, we believe we can build the planet's largest daily connected audience. (Twitter Inc., 2016, p. 5)

Yet from our anarchival perspective we can see that collective 'remembering' is *always* concerned primarily with perception and interaction in the present over accurate recollections of the past.

The important distinction that must be drawn here from our anarchival position is that, while social media feeds may present the world through a spatialised lens, to remember with and through social media is not necessarily to consciously *reflect* on or through ideas of the spatialised or quantified past (or indeed present), so much as *perceive* and *act in* the social present through and with them. Indeed, Coleman observes that "both users and analysts of social media experience rather than observe" (2018, p. 71). To perceive an 'expanded' or 'social' present through culture presented across social media 'feeds' is a kind of lesser-conscious experience, out of which an 'aware' temporal synthesis of 'me, in the now' – or, moreover, 'me, in relation to them, in the now, in relation to the then' – may relationally arise. With social media, then, lesser-conscious perception is extended into a virtual, and spatiotemporally enlarged, social atmosphere, through and with which memory-potential is relationally realised into greater conscious (to whatever degree) individuating action across multiplicities of potential connections.

Social media, we can say, inform a technologically-mediated, expanded and relational perception of the social present. And such an understanding helps to develop our working conception of *cyber-time* to be one concerned not only with a seeming shortening of geographical space, but also with an expansion of one's perception of the relational 'social' in the present. For those creating, sharing and inter-acting with the Beyoncé memes, for example, its engagement is in this sense more than a cementing of bonds within a perceived 'fixed' or even fluid community. It is an experience *in the now* of group participation and interaction *in the world* – an expansion of the social present across geo-spatial constraints, to inform a sense of group-belonging *in the moment*, as the sociality continuously, affectively cements those bonds *within* and *in relation to* wider society. Similarly, for those posting the *The Terror of War* images as protest, the sharing of the image might not only be seen as an affective coming-together of a sociality through this act of shared value. More than this, Facebook's sense of almost open-ended connectivity in seeing others' posts through its News Feed allows for a sense of self-aware acting *in the moment* within an enlarged sense of collectively-individuating socialities – existing and perceiving in the *anticipated* perception of users *beyond* those who would even themselves share the image. In doing so, it reflexively impresses the cultural value across wider perceptions in the social *now*. Equally, interaction with Led by Donkeys media posts does not simply cement bonds of belonging within a specific (if always-evolving and always-emergent) collectively-individuating sociality in that moment. Rather, the open connectedness and publicness of Twitter means that such interactions form part of a wider social sense of society *as it is in the present*, and one's relational positioning in it – the sociality reconstituting itself in relation to a broader sense of a social present.

We have seen, then, that collective remembering can be understood as a transduction of commonly-perceived cultural value across affective fields, transindividually realised out of memory-potential and into interactions of collective individuation, in turn modulating a sense of cohesive 'society' through instilling a conscious sense of the relational social *now*. And the instantaneity of new, widely-socially-networked technologies has expanded the geographical scope of sense of the social *now* these cultural values may inform.

Yet value may be mediated through to-some-extent *imagined* ideas of the past – the importance being more on the value being mediated, beyond *how* it is mediated or even the information *content* of that mediation. Thus, cultural mediation need not necessarily represent 'the past as fact' but a creative signification of the value *informed by* or *felt*

through the idea of that past. Indeed, its signification or mediation is ipso facto technologically achieved, and technics are, as we have seen in the Theory Chapter, inherently a process of *invention*, themselves undergoing constant processes of creative change in relation to the present. In the next section, then, we move to consider the inherent function of *creativity* in processes of collective remembering, how these may be manifesting and changing through online technologies, and how the implications might be understood differently from an anarchival rather than archival approach to memory.

Creative Culture to Code Drift: Social Media and the Newness of the Past

Williams's concept of structures of feelings represents the development of his synthesis of the 'emergent' cultural condition into beyond what we might think of as the 'already emerging'. Rather, he suggests that that we should think in terms of 'pre-emergence'. This pre-emergence of culture is, for Williams, "active and pressing but not yet fully articulated" (1977, p. 126) – it is an ongoing and active social process that "depends crucially on finding new forms or adaptations of form" (1977, p. 126).

Here, the chapter proposes that Williams's notion of pre-emergent structures of feeling, out of which culture creatively and socially emerges, we might liken to the conceptualisation in the Theory Chapter of *memory-potential* in its essential form (in relation to the Bergsonian *élan vital* and Simondonian *pre-individual charge*) as a fundamental and above-all creative potential that drives forward all transindividual, individuating *action* and conscious experience in duration – thus, our whole conscious sense of existence *in the now*. As Coleman notes of Williams, "[T]he state of pre-emergence ... is increasingly not only the preserve of emergent culture, but what the dominant social and cultural 'is'" (2018, p. 71). Pre-emergence is in a sense the condition *for* other cultural conditions (i.e. dominant, residual, emergent) – the potential that drives it forward in time, through action. That culture which perceptually 'is', then, we might think from our anarchival perspective as the experience of the always-about-to-emerge, *creative* realisation of memory-potential into transindividual inter-action, in the moment, and in relation *to* that moment – and the resultant conscious feelings of the social (and thus individual) temporal self. It is through the experience of these creative and reflexive processes of memory-potential realisation into individuating action – inter-relational with the emergent sociality's perceived past and imagined future – that the sense of the transindividual *now* may be consciously, to whatever degree, affectively constituted.

It is on this notion of creative charge seemingly at the heart of collective remembering that this section now places its focus. How can we reconcile creative acts of anarchival

remembering with traditional views of history as ‘accurate’? How can we think about our case studies in relation to the creativity of collective remembering? How are significations of the past creatively adapted and adopted in the present? And for whose benefit? And what role might be played by new technologies in guiding these creative acts of supposed ‘remembrance’?

‘Remixing History’

In his essay, ‘Remixing History in Digital Media’, artist and academic Shaun Wilson considers how past events, recounted or ‘remixed’, and re-versioned through processes of online, edit-facilitating and social-media technologies, “may rearticulate the past – consequently changing our perceptions of human history and the unwritten memories of our pending future” (Wilson, 2009 p. 195). Accepting that collective remembrances of the past need not represent themselves as ‘factual event’ but rather a ‘version’ of the past (2009, p. 185), for Wilson, variously edited or remixed digital artefacts are today used across three ‘conditions’ of memory:

[F]irst, as an event supported by artefact (first past); second, an account (remix) of the event shared through a combined artefact (second past); and third, a versioned remix of the artefact (third past). (Wilson, 2009, pp. 185-186)

For Wilson, we may infer that the first condition represents a perhaps *truer* version of the past (the ‘event’), with subsequent versions shifting further away from the ‘fact’ of the event. Yet new technologies have offered greatly more-expanded opportunity for remixing and re-versioning historical artefacts and, thus, for him, a potential threat for memory has emerged:

[O]ur over-indulgence of an ‘edit desire’ risks the possibility of ‘dumbing down’ a sense of memory because there is very little need to engage memory when histories of all manners can be accessed with a few clicks. With the need to remember diminished, a remixing culture might create a situation where much of our daily media content has ultimately been reshaped so many times that the history of a first and second past may completely vanish altogether leaving the over- versioned artefact weighted with incalculable layers of forgotten history.

Wilson points to colonial histories as a perhaps pre-online example of a ‘third-past’ condition of memory, altering or remixing the past – “after the occupier invades a nation,

the history of such a place might be fictionalised, edited, forgotten or replaced with something” (2009, p. 195). Yet in archivally approaching the topic, from the perspective of memory ‘as’ artefact ‘as’ knowledge, Wilson seems to limit himself to strict, archivally-conceived ideas of apparent ‘ownership’ or ‘validity’ of remembering – of forgetting as ‘loss’ and remembering as ‘gain’ of quantified ‘memories’. Rather, from an anarchival perspective, we might see the third-past remembering as the ‘actual’ condition of cultural remembering, before it is technologically tamed by conceptual notions of ‘truth’ or ‘knowledge’ – the creative biological-technical-cultural *processes* of repurposing of a signification or *idea* of the past, out of pre-emergent feeling and into perceived useful transindividual action.

From this view, ‘the need to remember’ (informing collective individuation in the present) might be *better* served by the seemingly-dangerous ‘edit desire’ than Wilson assumes. In fact, there is a seeming paradox in Wilson’s position, since the reliance on and trust in the pure archive ‘as memory’ – as ‘official’ knowledge that must be preserved closely to the fact of its artefacts’ ‘events’ – we might speculate is made of similar or perhaps the same stuff as that social force *empowering* the ‘re-versioned’ colonial archive ‘as history’ in the first place. That is to say, thinking the *physical* artefact as ‘supporting’ an account of an event is already to privilege the archive over, say, differently-artefact-mediated cultures and traditions of oral history, storytelling or song. Indeed, as media theorist Wolfgang Ernst notes, archives are not about supposed memory-storage – rather, “real archives link authority to a data storage apparatus” (Ernst, 2004, p. 47), to which stories may be attached. From an anarchival perspective, however, we can approach *all* collective remembering as closer to a mediated, ‘versioned remix’ of the past, in which colonial history is an example of a more socio-politically ‘dominant’ sociality enforcing its organised remix, for its own perceived benefit. The preservation of physical artefacts is not so important as the *actions* of repeating artefacts, whatever their format. The power difference from this perspective would not be a question of perceived over-versioning of others’ ‘authentic’ pasts – rather, *all* collective remembrances would be seen as processes, actions, of re-versioning in that present, with the difference being in considering *whose over-versioning is socially dominant*, forced into hegemony, and why.²⁹

²⁹ The point here is that, more than a forced ‘forgetting’ of the past, colonial histories might be also studied in terms of sociological processes of forced, and technologically-mediated *remembering-as-action*, recounting re-versioned pasts useful for that dominant perceived sociality (i.e. the coloniser), in constituting a sense of cohesive society (or at least cohesive for the dominant sociality/ies) itself a series of social movements toward *useful action* for perceived grouped individuals. We must be careful, however, not to mistake this synthesis as somehow a philosophical prospect for ‘excusing’ or trivialising

Collective memory ‘as culture’ is from the anarchival perspective always – and *necessarily* – malleable, as its actualisation informs and draws on not knowledge but creatively individuating *action* as a realisation of progress. It is, we might think, not so much through ‘having’ one’s own story that a sense of the social emerges, but through the relational and reciprocal, collectively-individuating interaction of creatively *telling* it or relating it to the always-re-emergent group in the present.³⁰ For Bergson, “reality is a perpetual growth, a creation pursued without an end” (1911, p. 252), and it is the *consciousness* of this creativity of extension that human “life and action are free” (1911, p. 212). Creativity in itself, creative acts on their own, then, does not contain *value* per se, but rather serve the function of cementing this progress-driving sense of freedom, of ‘more than’.

Every human work in which there is invention, every voluntary act in which there is freedom, every movement of an organism that manifests spontaneity, brings something new into the world. True, these are only creations of form. How could they be anything else? We are not the vital current itself ; we are this current already loaded with matter, that is, with congealed parts of its own substance which carries along its course. (Bergson, 1911, p. 252)

And, following Simondon, we may see ‘culture’, and thus conscious cultural acts of remembrance of the supposed past, as ways in which we may *socially* reconstitute ourselves in duration. We might argue, then, that collective acts of cultural remembrance benefit from their own creativeness, in driving forward collective individuation and an emerging sense of ‘more than’, of (useful) progress into the future. The transduction of social value through collective individuation and into the social is accomplished not just through the sharing of *remembered* culture alone, but by way of its novelty – its abstraction signifying a stabilised sense of extension out of the past, relational to the present environment and the future. The cultural value of records of the past is not ‘lost’

political imposition of colonial histories, more recent and more historical. Rather, it represents an attempt to re-think power in the political colonisation of histories not in terms of ‘loss’ or ‘gain’ of ‘owned’ memory, but rather in terms of the politics of sociality-informing movements, processes and inter-relations *in the present* – out of the dynamic, pre-emergent charge of memory-potential and its creative realisation into conscious, collectively-individuating representations (and perceptions) of collective pasts. Thus, the focus is (perhaps remains) trained not necessarily on the ‘history’ itself, nor its authenticity or ownership, but on those processes around transindividual social remembrances, and the socio-politically-motivated *appropriation* of these processes to enable the ‘enveloping’ of one apparently stable sociality by another.

³⁰ The ethical (indeed moral) considerations around processes collective remembrances, and the sense of ‘ownership’ of cultural remembering, are an important topic, and one which we will explore more deeply in the next Case Study chapter.

in the past's apparent re-versioning. On the contrary, it is in its re-versioning that the value is found. Records may be used to reflect on past events, yet if their primary function is to technically act as 'markers of relationships' then their relationality *must* be amendable – as reflexively tethered to the need for creativity and invention in the present and toward the future as it is tethered to the notion of past as 'event of fact', if not more so.

Thus, the creativity of mutating and evolving unflattering Beyoncé memes we might begin to see as a process to creatively inform a sense of collective identity in the now geographically-expanded social present – stabilising a sense of a collective social present through reconstituting itself in inventive acts of *progression* or *extension* into the future. Participation involves a creative dialogue with records of the past, to inform a sense of a sociality and its members' *progression* into the future – of continuously emerging as 'more than'. In gradually 're-presenting' the evolving memes, themselves recognised from the past, with a sense of the 'new', those participating members of the sociality (itself being collectively reconstituted through the sharing) help to instil a greater sensation of stable extension of those group members from the past and into the future. Thus is produced a sense of social *belonging*, of group stability, and a resulting conscious sense of group-individual identity *in the present*. Similarly, might we think of cultural value for the transindividual in widespread sharing-as-action of *The Terror of War* to be found in its *creative* employment? In inventively using existing significations or cultural forms, out of the past, the protest-sharing of the image informs a novel cause in the present. The actions of using a known artefact of past events to creatively relate to perceived present events, in anticipation of a perceived shared future, instilling a sense of *extension* of that present group, out of the past and into the future. And the Led by Donkeys campaign perhaps most overtly champions creativity in re-presenting the past as a way to socially *extend* out the past, and the present, toward the future. The seminal David Cameron post had already been circulating online, and had done in the past, in novel relation to Brexit. Yet by re-packaging, and re-appropriating (indeed re-versioning) the mediated signification of the digital artefacts and content they present, such media might appealingly convey a sense of extension, or progression, of a presently stable, collectively-individuating social group, as it seeks to promote useful action into the future.

This theoretical position established, we must once again return to the role that *new technologies* play in changing memory processes. All the case-study examples of course

make use of new, pervasive, social media technologies as tools for reconstituting always-emergent socialities. And processes of collective individuation through acts of cultural signification are, as we have seen, *always* bound up in processes of the *technical*. Let us remind ourselves that for Bergson technologies may be thought of as extensions of instinct or intelligence (1911, p. 146) and that for Simondon processes of biological as well as technological transductive value are stabilised by those of *cultural* value (Bardin, 2015, p. 137). Thus, let us shift gear for the moment, and now consider the nature of the *technical* as creative process of individuation, and the role new technologies may be changing these processes. In doing so, and in anticipation of the final, more-politically-focused section of the chapter, we can thus establish a more ‘joined-up’ attitude toward the couplings of man-machine technologies of remembering, and their inherent agencies.

‘Code Drift’ and Technical Invention

In their 2010 essay ‘Code Drift’, digital cultural theorists Arthur and Marilouise Kroker describe the contemporary human as “code drift” or “data flesh” – “the genetic drift of all augmented data bodies” (2010). For them, the pervasiveness of technologies mean that “[n]either global nor local, today we are mobile – we are code drift” (2010). Above all, code drift is a creative process:

Just as genetic drift occurs by chance, producing in its wake unpredictable streams of genetic variation, so too code drift. Code drift cannot be programmed in advance, but occurs by chance variations through unexpected uses, creative applications, a fluctuation in our perception that produces complex technological transformations. Random fluctuations that build over time, resulting in complex yet subtle changes in the genetic makeup of a population: an indeterminate future of flux, chaos, intermediations, intersections, remix. (Kroker & Kroker, 2010)

This conceptualisation offers a useful critical reflecting board for considering the notion – and significance – of creativity within our anarchival approach to memory-potential and technics. There are of course obvious parallels to be drawn between the existing notion genetic drift and Bergson’s notion of creative evolution and *élan vital* (1911), and Kroker and Kroker’s contribution we might think of an attempt to extend into the technical realm this sense of vital, creative process:

Code drift is the spectral destiny of the story of technology. No necessary message, no final meaning, no firm future, no definite goal: only a digital

culture at drift in complex streams of social networking technologies filtered here and there with sudden changes in code frequencies, moving at the speed of random fluctuations, always seeking to make of the question of identity a sampling error, to connect with the broken energy flows of ruptures, conjurations, unintelligibility, bifurcations. (Kroker & Kroker, 2010)

Code drift, then, might be seen in relation to the affective sense of humans as ‘leaky bodies’ bleeding into the technological structures through which we live, and vice versa. We live through a mish-mash of biological-technological couplings of perception and action. And these technologies themselves undergo creative processes of their own, as their forms re-emerge from past to future through human technicity, that is to say, processes of technical invention, in, and in relation to, the present (Simondon, 2017).³¹ “Human reality lives through technology” (Scott, on Simondon, 2014, p. 1), and, in an age of data, pervasive media and ubiquitous computing, the digital-technological permeates into practically all life – “digital subjects today are fiercely tethered to mobility” (Kroker & Kroker, 2010).

Kroker and Kroker admirably and importantly draw attention to the affective nature of data-technological existence, as apparent extension of the body into data, or indeed the affective relation of the body as *lived* through and with data. Yet there is a critical observation to be made here from our anarchival perspective, exemplified through Kroker and Kroker’s identification as a “real challenge” of “*data trauma* – the fact that data cannot keep up, either metaphorically or materially to the speed of perception” (2010). While we may live through these technologies, for Kroker and Kroker a tension or disjuncture thus exists between the bodily and the technical, causing what Simondon would describe as a sense of *alienation* (Simondon, 2017, pp. 254-261). Yet this sense of alienation, this thesis argues, might be better thought of as the erroneous omission of *culture* into the synthesis – and, thus, to not account for the binding together of values of body and technics *through* culture, in the social *now*. For Kroker and Kroker, for example:

While technology has the illusion of control — consider how social networking technologies always strive to facialize themselves in the

³¹ It would be interesting in further, related, theoretical inquiry to consider Williams’s notions of emergent, dominant and residual *culture* in relation to Simondon’s technical *essence*, *continuousness* (i.e. progressive “optimizations”) and *discontinuousness* (the process of “concretization” of a technical object’s progress, through continuous minor optimisations) – for a brief outline, see: De Boever et al, 2013, pp. 215-216.

possessive language of the “I” and “You” — Facebook, iChat, iPhone, YouTube — the persistent data reality is code drift. Encoded by technology, everyone today is a code drifter, touched by technology and remixing the technology right back. (2010)

Yet to see the “language of ‘I’ and ‘You’” in social-media technologies as purely code drift – itself ‘at drift’ and ‘with no definite goal’ – is to deny the agency of society and culture and indeed *invention* into technics, into the progression of technical existence in the present and into the future. In fact, the engagement with and continuing development of new, pervasive technologies are *teeming* with the cultural-political agencies of those actors who deploy them, and who use them, who contribute to the ever-forward progression of technologically-biologically-culturally-constituted existence in duration. “Refusing stability, never stationary”, Kroker and Kroker suggest, “[D]ata is condemned to a cycle of endless circulation” (2010). Yet this is to ignore that life *itself* is process, ‘refusing stability, never stationary’, and that culture is precisely what enables a *sense* of stability to be given to both the embodied-social *and* the technological. Likewise, rather than seeing bodies as “encoded by technology ... touched by technology and remixing the technology right back”, for example, we can turn again to media theorist Mark Hansen’s synthesis of this back-and-forth ‘feeding forward’ of data from the past and into the present through socially-networked platforms as intrinsically informed by the corporate goals ‘data capitalism’. As Hansen reminds us:

Far from it being an instance of a digital network operating in some fantasied autonomy from human interests, then, what is at issue here is the calculated extraction of data, that, though generated through user activity, operates to serve the interests of the network itself or, more exactly, the “special interests” controlling the network. (Hansen, 2015, p. 64).

On the one hand, then, it is important to acknowledge the importance of the technological in determining human experience. The Beyoncé meme is as much about, for example, the format of the meme as artefact – as much, for example, about the materiality of the networked-platform as perceptual gateway to the social present – as it is about the sociality or emergent individual that its signification and sharing helps to reconstitute. Yet on the other hand we must accept that technological invention, and the materiality of technical existence, is *driven* by culture value – by the social and political agencies practically inherent in the make-up of the interface-experience, and the wider hybrid media system. The public and creative sharing – the *perceiving* – of *The Terror of War*

photograph, for example, or the Led by Donkeys media posts, is only made possible by the architected designs *of those platforms*, guided at least as much by the interests of the platform as its users. In today's world of socially-networked interaction, the social *now* becomes not only a mediated dialogue with and into the social, but a negotiation with wider corporate and socio-political concerns feeding into the materiality of the platforms.

In the final section of the chapter we will move to address some of these socio-political concerns. In anticipation of this – and having established a comprehensive working conceptualisation of collective remembering and its relation to the biological, technological and cultural – let us end this section by situating the study within an investigative approach that attempts to 'bring together' these affective biological, technological and cultural values inherent in processes of collective remembering.

'Infra-Structures of Feeling': Politics of the Man Machine (1,000 words)

Through the above sections, we have conceptualised collective remembering as creative acts of technologically-mediated cultural value, in the present, across multiplicities of technologically-facilitated affective fields, out of which a sense of 'the social' may emerge. Through a dynamic kind of social 'coalescing' around ideas of past, culturally mediated, a sense emerges of being able to situate oneself in a perceived 'social present' – oriented, in the social *now*, not toward the past but toward the group's immediate or more distant future. And, whereas in previous eras these interactions were more greatly constrained by the limits of geographical space and technological speed of communication over space, the 'real-time' nature of new, pervasive and social-media technologies have enlarged this sense of the perceived social *now*, perhaps globally. More than being constructed and experienced in the social *now*, creative acts of remembrance – and thus our always-emergent sense of identity – are *co*-constructed and *co*-experienced through and with each of those technological-media, man-machine couplings, and biological, technical and cultural relations out of which 'the social' is made possible. We are leaky bodies; we exist through the technological as through the social; we are 'more-than' human.

In applying Williams's inter-affective thinking to contemporary social-media technologies, Coleman draws our attention to sociologist and philosopher Patricia Ticineto Clough's notion of "infra-empiricism" (Coleman, 2018, p. 71; Clough, 2009). Emphasising the supposed subject's always-relational experience of the world, Clough suggests – after Massumi and Simondon – that we might conceive as a basis for sociological method "an infra-empirical or infra-temporal sociality, the subject of which

is ... the population, technologically or methodologically open to the modulation of its affective capacities” (Clough, 2009, p. 50).³² Affective relations exist not simply between people, and between people and ‘things’, but across all perception, action, experience, thought, concepts and supposed knowledge. Coleman, following Clough’s approach, thus suggests expanding Williams’s concept into a notion of ‘infra-structures of feeling’ as an attempt to “account for the often neglected technological and institutional linkages or systems that are central to the organisation and functioning of social and cultural life” (Coleman, 2018, p. 73). In fact, as we have seen, we can consider collective remembering to take place across a kind of hybrid media system (Chadwick, 2017) of multiple kinds of online and offline forms of communication; and “rather than being located in one genre, social media works across a potentially diverse range of supporting structures” (Coleman, 2018, p. 73). Thus, from our anarchival perspective, we might think of ‘infra-structures of feeling’ as the combined processes biological (bodily), technical (technological) and cultural (social) values that continuously reconstitute our relational senses of collective past, and social-individual identity in the present.

Yet, if we are properly to analyse the role that new technologies, and all their affective inter-relations, may be playing in changing collective memory processes, it is not enough to consider just the *how*. We must also consider the *why*. As post-modern theorist N. Katherine Hayles argues on experience being embodied *through* new technologies, “serious consideration needs to be given to how certain characteristics associated with the liberal subject, especially agency and choice, can be articulated within a posthuman context” (1999, p. 5). The perceptual technological materiality of interfaces through which bodily-realised actions of remembering take place manifestly contributes to the consciously, transindividually-experienced social *now*, and thus to one’s own sense of

³² A growing body of scholarly work has developed in recent decades around an approach to the ‘subject’ as relational. Postmodern and post-humanist theorist N. Katherine Hayles’s definition of *reflexivity*, for example, refers to “the movement whereby that which has been used to generate a system is made, through a changed perspective, to become part of the system it generates” (Hayles, 1999, p. 8). Accordingly, Hayles questions “how engagements with digital technologies are affecting the presuppositions and the assumptions of humanities scholars” (2013, p. 20). We might likewise think this shifting approach to sociology and the humanities in relation to theoretical physicist and feminist theorist Karen Barad’s conception of “intra-action” or “agential realism” (2007) as a shifting approach to *scientific* method. Through an intra-active approach, Barad argues, conscious empirical awareness must be understood as always relational – discursive phenomena not as intrinsically existent, but as emerging, from an empirical perspective, through human and nonhuman intra-action (2007). Yet we might strikingly, in turn, draw a line directly back to Bergson’s seminal ‘idealist-realist’ proposition in *Matter and Memory*, that beyond notions of ‘subject’ and ‘object’ we exist in a world of inter-affective images – “more than that which the idealist calls a representation, but less than that which the realist calls a thing; an existence placed half-way between the ‘thing’ and the ‘representation’” (Bergson, 2004, pp. vii-viii). The anarchival approach to the subject we can therefore think of as inherently ‘infra-empirical’.

identity and historical past (and anticipated future). Yet at the same time it is important to recognise that these interfaces and technologies – intrinsic in constituting our own sense of *self* – are themselves underpinned by the cultural-social, political and certainly commercial agencies of those who govern them. Thus, in the final section of this chapter, we turn our focus more politically to the tensions between the different actors and agencies inherent in the complex man-machine couplings of collective online remembering, and examine the resulting implications.

--o0o--

3. Architected Anarchives: Platforms as Perception Portals

We have seen in the above sections that we can think of collective remembering as creative acts of sociality- and identity-constituting collective individuation, in the moment. Through technologically-mediated significations of cultural value in whatever their always-adaptable form and content, the transindividual may emerge out of the biologically-conscious, psychically-individuating body and into a wider sense of individual in the *social* present. When collectively mediating, coalescing around and consuming ideas of the past online, we can think of records, accounts or artefacts of the past as not to do with the events of the past alone, but the process-based reconstitution of a perceived sociality *in the present*, toward its future. Records are not potentials themselves, but carriers of action-oriented potential emergent from the transindividual. Collective remembering, then, is not so much about drawing ‘the shared past’ into the present and future, as about the perceptual, interactive and inter-affective *experience in duration* of using *ideas of the past* to inform a stabilised sense of the multi-subject-relational social present, oriented toward group-action in anticipation of the future. Collective remembering is perhaps, then, more forward looking than backward looking.

New perceptual technologies such as social media augment this sense of the social present, allowing socialities to reconstitute themselves, in the *now*, across previously constrained spatiotemporal limits. Yet, perceiving through technologically-coupled systems today involves multiplicities of inter- or infra-relations across the affective fields of online, inter-connected, hybrid media systems. Thus, the experienced sense of the present is co-constructed – *co-lived* – through and with the materiality of perceptual technologies and interfaces. Such platforms, which we will below think of as kinds of ‘perception portals’, in turn involve their own entanglements of and tensions between multiplicities of affective inter-relations and agencies.

In this chapter's final section, then, we turn to consider the nuanced and more general socio-political implications of collectively remembering through new, networked and pervasive online technologies. Using our anarchival approach to memory as a more infra-affective attemptive examination of the material experience of remembering, the section takes three sequential and overlapping steps: firstly, looking at how the surveillance society may affect what people culturally *share* online and why; secondly, exploring how the social *now* may be *perceived* online (i.e. what we are *shown* online) and why; and, thirdly, examining issues around what we are *not shown* and why. It takes the prominent examples of the Twitter timeline or Facebook News Feed model, along with Google's search engine, as gateways into exploring the wider materially-affective ways in which social present may today be experienced and acted in, investigating several inter-related questions.³³ What sociality- and identity-informing perceptions of the social present are being engendered through these interfaces, how, and for what reasons? How do these interfaces affect the technologically-facilitated, transindividual "construction of subjectivity" (Hayles, 1999, p. 4) in the present? What kind of different actors and agencies act across these interfaced affectations? Indeed, what tensions of agency exist across the multifaceted man-machine couplings through which these perceptions are informed, guided, even perhaps controlled? And, of these, what might be the wider implications for memory?

Pervasive Media and the Man-Machine: Sharing in the Surveillance Society

We developed in the previous chapter an understanding of how the affective nature of online 'surveillance society' may impact on the kind of events users may record and share of their lives through mediations on the like of social media, in the present – and what may be later 'remembered' of their personal pasts through these datafied previous actions being 'fed forward' (Hansen, 2015) into the experience of the future present. The technological realisation of the body-as-subject in the online world now takes place in the "continual presence for surveillance of bodies *and* information through technologies" (Tucker, 2013, p. 13). Through our anarchival conceptualisation of collective remembering, we now develop our approach to surveillance technologies into the broader affective sphere of what is culturally remembered online, and why.

³³ Unlike the examples of *The Terror of War* and the Led by Donkeys campaign, the unflattering Beyoncé meme was largely lived through Imgur, rather than Facebook or Twitter. It is worth noting, however, that the material feature being analysed here is the News Feed or Timeline *feature*, and its economic underpinnings, and that the tailored results and advertising approach examined is the general model through which most social-media sites operate – Imgur included.

It is helpful here to return to and reflect upon the supposed problem of the ‘Digital Dark Age’, introduced in the Literature Review chapter. In such an impending scenario the quickly-obsolete media and hardware of contemporary society lead to a “Digital Gap” for future historians (Hillis, quoted in Maclean & Davis, 1998, p. 42), unable to access media-archaeological records of the twenty-first century. We noted in the chapter media archaeologist Wendy Hui Kyong Chun’s argument that the notion of a potential digital dark age can be traced to an erroneous, archivally-conceived, conflation of “digital media *as* memory” (Chun, 2011, p. 199; italics my own), and in support drew on sociologist Barbara Misztal’s observation that “[i]t is society that ensures what we remember, and how and when we remember it” (2007, p. 381). In shifting away from the archive metaphor through our developed, process-based, anarchival perspective, we have formed a nuanced synthesis of ‘society’, of the ways in which media-records are shared and socially circulated under the banner of ‘cultural remembering’, and of the underlying function of these social practices. Even when considering the formal notion of the ‘traditional’ archive, we may now see choices around the inclusion of, and re-engagement with, artefacts as not just to do with a desire to ‘document’ the past or present for the future, but also, perhaps more so, to do with the drive toward collective individuation in the present – in fact to *socially constitute the present*. Artefacts are humanly important not in terms of objects *needing* to be physically ‘saved’ for the future, but in terms of ongoing, sociality-informing processes of mediation of *cultural value*, engendering a sense of stable, relational, individual and collective *self* through ideas of the past, in the present and toward the future. Equally, as we have seen through our case-study examples, with the production of ‘accidental archives’ through surveillance technologies like social media, cultural (as well as personal) ‘pasts’ that are shared online may be considered less to do with ‘preserving’ that cultural artefact or idea, and more to do with relational processes of identity-reconstitution in the perceived social *now*. Thus, the notion of a future digital dark age we should see not primarily in terms of the physical preservation-for-posterity of ‘artefacts’, digital or otherwise, but once again in terms of what happens *between* the artefacts. The formal, social preservation of artefacts should be seen in relation to the anarchival *processes* through which representations (or relational markers) of ‘the past’ may be inventively mediated, re-engaged and re-versioned in duration, for the needs of the transindividual and its always-emergent sociality in *that* perceived present.

More than the *format* of media records, then – central to fears of a digital dark age – it is the techno-cultural processes of collective individuation that are key in shaping what is

remembered through artefacts in the present, and into future presents. To be sure, it is not precisely ‘*society* that ensures what is remembered’, but those techno-cultural processes that *produce* the very sense of the social, extended out of the biological. Thus, as well as the drives of the cultural into the social, to understand what is at stake for collective memory from our infra-affective approach, we must acknowledge the agencies vested within surveillance technologies *themselves* in materially guiding these processes of remembering.

We saw in the previous chapter how awareness of surveillance might affect user’s behaviours online. Here, we briefly sketch out how user-activity might be affected in at least three related ways.

Firstly, such media may change the ways in which the user chooses what type of personal ‘presents’ to record and share with their network, in relation to the *externalisation* of the private into the public (Tucker, 2013) – for example, through the apparently ‘open’ networked and large-scale audiences of Facebook or Twitter. And we might straightforwardly extend this affective change into the realm of what kind of ‘culture’ might be shared online from our perspective on the expanded social *now*, beyond the mediation of ‘personal presents’.

Secondly, the surveillant nature of such media may affect what information the user ‘looks up’ that others have shared – which websites, digital artefacts or other users they interact with. For example, a user’s knowledge that data of their online behaviour is being collected when using websites and apps – by the platform, the ISP or even one’s government, and through cookies that may collate saleable personal-profiling data – may encourage or inhibit the choice to seek out or engage with certain cultural material in the first place.

Yet personal data gathered by surveillance media (either with or without the user’s awareness) may also be used by the platform (and third parties) to influence *future* perceptions of the present. A user’s entire historical platform-activity, in a sense ‘saved’ or ‘archived’ into the future-oriented past, may be technologically (and without conscious user agency) ‘fed forward’ (Hansen, 2015) by platforms into the experience of the social *now*. These data-pasts do not have to be in any true sense re-witnessed or ‘remembered’ by the user – though they may be, for example, like in the platform’s re-presenting records of users’ previous social-media posts *as* memory. They may also be used clandestinely and externally from the user as re-versioned *carriers* of potential, to inform connections

between that user and what information is deemed most ‘appropriate’ for them - determining through records of past behaviours what the user *ought to perceive* of the wider social present. For example, user activity surreptitiously collated by platforms may be used to determine the likes of tailored Google search results, Twitter Home timelines, Facebook News Feeds or targeted adverts. This, then, adds a third level to the affective nature of collective remembering through surveillance technologies – since users, aware that the record of their present action may affect how *future* presents will be presented to them by the platform, may consciously modify their in-the-moment behaviours.³⁴

This third kind of affectation of surveillance technology reminds us that in this investigation we must consider not just the agencies of the user in perceiving collective remembering online, but the nuanced agencies inherent in the *machine* side of man-machine couplings. In assessing the balance of power in the complex, interdependent coupling, we must think in terms of the agency of the platform itself – or, more properly, of the economic and socio-political concerns of its human operators – and wider socio-economic stakeholders. As a perhaps seemingly innocuous example, as we shall examine below, Facebook and Twitter increasingly regulate their platforms in relation to ‘Facebook Community Standards’ or ‘The Twitter Rules’. However, beyond enforced etiquette, or overt surveillance of the ‘platform-as-archive’, affecting what is posted in the first place – indeed beyond more covert personal-data-collection effecting a sense of embarrassment or *unease* at ‘being watched’ – we must take into account that surveillance-platforms operate as businesses. That is, we must weigh up the tensions between, and implications of, how personal data may be used by the platform to inform a notion of the ‘collective’ that can facilitate profit-making, and how these relate to the interdependent agencies of further platforms and users’ own creative social drives.

Thus, the next section examines the material and affective infrastructure underpinning *what* is shown to us through the platform architecture of new social *perception portal* technologies like Google, Facebook and Twitter, and *why*.

Corporate Connections: Echo Chambers, and Ecologies of Online Remembering

The Facebook News Feed or Twitter Home timeline is the perception portal greeting a user on opening the respective app on their phone or tablet, or website on their computer. The concept of the News Feed revolutionised the experience of using social media

³⁴ At a very simple level, to appreciate this one need only think about the effect of seeing multiple cookie-informed adverts across the web for an item browsed on a shopping website in the recent past.

technologies when Facebook introduced it in 2006 – rather than platforms consisting merely of individual profiles that users could visit to interact with, one-to-one, if publicly, the News Feed brought all these interactions visibly into one place. Today, as one scrolls down through a seemingly endless series of posts – by friends, membership groups, ‘followed’ celebrities or public figures and organisations, as well as ‘promoted’ or ‘sponsored’ links, and more – one’s perceptions are guided in particular sets of ways.

“Our goal with News Feed is to show you the stories that matter most to you, every time you visit Facebook”, Facebook claims:

[O]ur News Feed is a personalised, ever-changing collection of photos, videos, links and updates from the friends, family, businesses and news sources that you've connected to on Facebook. (Facebook, no date)

Likewise, Twitter’s default Home timeline displays to users ‘top Tweets’, which are “ones you are likely to care about most” (Twitter, no date). Instagram’s feed is where “the photos and videos we think you care about most will appear” (Instagram, no date). While there are somewhat constrained settings that can be changed on each platform, the News Feed remains ostensibly the same beast: algorithmically-informed decisions are made as to what the platform claims to think you ‘want’ to see. Based on data around who posted the content, the kind of content, and interactions with the content – in combination with the data-profile the platform has compiled for the user her/himself – “each post is assigned a ranking to determine where it appears in your News Feed and which stories appear first” (Facebook, no date).

These feeds, uniquely produced for each user, have led in recent years to the infamous notion of the ‘echo chamber’, in which people, seemingly surrounded by self-constructed online networks of like-minded individuals, find themselves isolated from those with opposing opinions. However, this term is inadequate, since the feeds constructed by the likes of Facebook and Twitter do not rely solely on the user’s own network. Rather, agency is shared between the user’s own choice of who or what to ‘follow’, and the platform’s algorithmically dictated input, which draws on sources beyond this. Twitter, for example, says:

[Y]ou will sometimes see Tweets from accounts you don't follow. We select each Tweet using a variety of signals, including how popular it is and how people in your network are interacting with it. Our goal is to show you content on your Home timeline that you’re most interested in and contributes to the

conversation in a meaningful way, such as content that is relevant, credible, and safe. (Twitter, no date)

As Karppi notes, “Relations on social media sites are not only connections between people; they also serve as data aggregates and bait to draw users’ attention” (2018, p. 11). The social *now* produced through interacting with social media is, while expanded in its reach, always perceived, indeed limited, through algorithmic decision-making beyond the human. Filtered by the platform itself, what is experienced is not so much an echo chamber as perceiving through a so-called “filter bubble” (Pariser, 2011). Consider, for example, that seventy per cent of the media watched on YouTube is driven by its ‘recommendation’ system, driven by deep-neural networks negotiating likely potential connections between data characteristics of the video as data-object and the user as data-profile.

Thus, while Hoskins claimed in 2009 that the online era has shifted the notion of collective memory to be “more a matter of where to look” (2009a, p. 29), a decade later the hegemonic power of social-media platforms as perception portals for social consciousness might lead us to think it ‘more a matter of *what we’re shown*’.

Perception Portals as Limiting Social Consciousness

While an entirely different kind of platform to Facebook, Twitter or YouTube, Google search engine likewise feeds one’s own past activities back into the present in constructing a social ‘now’. As media theorist José van Dijck notes back in 2007:

Google’s power lies not in its ability to search fixed sets of databases, but in its ability to navigate a person through a vast repository of mutant items, yielding different content depending upon when and how they are retrieved, reshaping the order of its data upon each usage. (2007, p. 166)

Google’s ability to collate and analyse vast quantities of personal, user-activity data and ‘match’ the most appropriate records with the individual user is perhaps its ‘USP’ in being consistently the world’s most visited website.³⁵ Yet, here too are perceptions of the world filtered by the platform, feeding forward users’ past online interactions into a largely algorithmically-directed presentation of ‘the now’. So, while the user may input the search term, the results – our *perceptions of the world* – are presented based on what the platform ‘thinks’ the user wants to see. Furthermore, as we saw in the previous chapter –

³⁵ Google.com is the world’s most visited site according to alexa.com at the time of writing.

through ubiquitous computing, the likes of social-media push notifications, and the tendency to ‘look up’ rather than recall supposed ‘information’, we now can be accessed through a computer (Sparrow et al, 2011) – these engagements are pervasive being any distinction between online and offline experiences of the social *now* (if indeed such a distinction can or should be made).³⁶

From a Bergsonian view, consciousness emerges – at its base – from voluntarily being able to *choose* what to perceive. The subjective sense of being-in-the-world “results from the discarding of what has no interest for our needs, or more generally for our functions” (Bergson, 2004, p. 30), leading at its cultural extension within our synthesis to a stable sense of the social *now*. Yet, through new, pervasive, perceptual technologies the processes of cultural value that drive an emergent sense of the social *now* we might think give way to some degree to the automated, more involuntary (or at least, perhaps, not ‘in the moment’ consciously consensual) *technological* processes of the platform – and thus those agencies that underly them.

Returning to the man-machine, then, it seems clear that the everyday balance of agency is, when remembering through surveillance technologies, shifted dramatically toward the machine. Continuing uncritically on such a trajectory, rather than “becoming *with* digital media” (Tucker, 2018 p. 39), we risk finding ourselves – the perceptions of the social *now* out of which our sense of individual and social *self* emerges – being governed to an inequitable degree *by* the platform, with limited, if any, conscious action by the user. Individuals experience themselves in relation to each other and to a wider social, yet these relations, administered as they are largely automatically by the platform, do not necessarily allow for a “true society” (De Boever et al, 2013, p. 225) to emerge through collective individuation. Rather, the assemblages of the relational, social *now* as information organised and presented by Google, Facebook or Twitter might be better understood as more approaching a sense of ‘community’. Through automation and the construct of artificial collectives, users may risk like Simondon’s ‘workers’ losing the possibility for trans-individuation, alienated from the true social, as the platform-as-

³⁶ A recent study of search-users across seven countries (Dutton et al, 2017) argues that in relation to search engines “the filter bubble argument is overstated”, since users tend to consider multiple media outlets, and “[m]ultiple sources of information tend to counter any potential filter bubbles created by search algorithms”. These findings, however, negate neither the consciousness-implicating shift in agency toward search engine, rather than user, nor the key tenet of personalised, targeted advertisements as platforms’ revenue model. Moreover, as we shall see in the next chapter, even within multiple media outlets across the hybrid media machine can artificial socialities be constructed, through sophisticated networks of targeted sham websites, web pages, bots and false profiles, as well as ‘dark ads’.

managed-community “merely puts individuals in relation with each other” (De Boever et al, 2013, p. 228).

Economic Ecologies of Remembering

Of course, the essential idea that our perceptions of the world may be manipulated by powerful media outlets is not a new one. Yet there are two significant, economic differences in new, surveillance technologies. Firstly, in terms of who produces the content – as media theorist Natalie Fenton points out, “The difference between the audience commodity of traditional mass media and of the internet is that on the internet the users are also content producers” (Fenton, 2012, p. 129). And, secondly, in the personal tailoring of the experience, and why – “The imaginative labour of ordinary people”, observes Des Freedman, “is appropriated for the benefits that accrue to those companies, like Facebook ... who hope to sell the personalised content generated by users to advertisers and marketers.” (2012, p. 88).

Here we hit upon a key concern for collective remembering in the online era: the tensions between *economic*, transactional inter-relations and agencies across platform, clients and users. While Google, Facebook, Twitter and YouTube may on the one hand provide a service to the *user* – in terms of socially connecting them to information – they also, indeed primarily, operate as businesses, with income-revenue toward profit as a necessity. And, while search engines and social media platforms may represent seemingly very different services at the user-experience end, their business models remain essentially the same, as examined in the previous chapter: *ensure user engagement* and *sell advertising* (Karppi, 2018, pp. 28-32). This kind of engagement is facilitated not just through algorithmically-informed filter bubbles, but in the design of platform architecture – for example, the never-ending ‘scrolling’ on Facebook or Twitter feeds, or the ‘next up’ or auto-playing of recommended YouTube videos. Indeed, YouTube again offers an example of the complexity of economic-agential tensions at play in engaging with material online. Since platform-paid authors – worked out through its secretive and often-changing formula for ‘cost per mille’, or payments per one thousand views –inform its business model *as well as* advertisers, content both production and consumption of online media may be driven by potential for raising revenue.

In the previous chapter, we therefore drew attention to the lack of *awareness*, when using technologies like social media, of how one’s on-platform interactions and engagements are, perhaps exploitatively, monetised by the platform (Hansen, 2015, pp. 69-77). And

with collective remembering, too, it is crucial to consider the tensions between the agencies and awareness of the user and the platform. While the user may wish to *connect* with news, culture, other users, and so on, the platform's two-fold, interconnected goals are to not just satisfy that demand but to firstly *keep the user engaged with it*, in order that they can secondly connect them with paid-for services – be they overt adverts or more covert, 'sponsored posts'.

Moreover, beyond the confines of the platform exist the wider agencies of the various inter-connected actors within the hybrid media system – for example, the rise of online news outlets, or the attempted virality or 'clickbait factor' of articles intended to drive monetisable website traffic and/or socio-political agenda.³⁷

The implications of surveillance technologies for collective remembering, then, are, like the platform business model, equally two-fold. Firstly, we must appreciate that there exists a distinction and a tension between what cultural media is *useful* for the collectively-individuating transindividual to share and perceive, in co-constituting a sense of the stabilised social *now*, and what media is useful for the platform to present in keeping the user monetisably engaged. Secondly, we must recognise that this social *now* as experienced through the likes of Google, Facebook and Twitter, is at least partly, yet often discreetly, co-constructed by the drives of capitalist commercial interest – for example, paid-for, targeted, and attention-grabbing media, designed principally to drive traffic or otherwise benefit the platform or third party. Biological-cultural-technological processes underlying the reconstitution of socialities are, in a real sense, manipulated. Action facilitated within these more artificial senses of the social *now* is useful chiefly not for the user but for the advertisers or promoters, and thus the platforms they remunerate. The drive toward *belonging* is harnessed out of the transindividual to encourage engagement in the app over useful action for that transindividual, in effect creating artificial socialities acting primarily for their economic usefulness to the platform, and the wider inter-dependent actors and agents in the ecology of the hybrid media system.³⁸

³⁷ We can see plainly in our Beyoncé meme case study, for example, the interplays between the 'shareable' and encouraging sensationalism of news-media website articles, and the increased engagement in these stories and the increased participation in the acts of memeification. And while here we focus on the implications of the more economic aspects of these inter-relations, we will address below and in the next chapter more theoretical and socio-political points around the notion of 'shareability', 'spreadability' and 'virality'.

³⁸ Yet, as we will see in the next chapter, there is no real difference in degree between harnessing this sense of belonging to 'produce' an artificial sense for platform-economic gain and taking advantage of the architecture to produce perceived socialities for other more political purposes. For example, the

It might seem at first intrinsically absurd to critique social media for not being social. Yet, in perceiving the world through automated filter-bubbles – designed to fuel interaction not for the sake of “pure sociality” (Massumi, 2015, p. 205), but to harness its potential toward connective engagement interaction for corporate profit – we cannot be said to truly collectively individuate. “The collective is not just an aggregate of individuals”, Massumi tells us, following Simondon (2015, p. 201) – rather, it is formed through collective individuation. This is not to say that meaningful interaction with the world and the social cannot place at an individual level of psychic individuation and co-individuation through such platforms and their relation to hybridised media systems. Rather, it is to scrutinise the agencies inherent in how whole socialities may collectively individuate themselves, exterior to the perceived individual. Affective, collectivising inter-relations are brought into being through these technologies, but, in their genesis, they are induced not for the usefulness to the sociality itself, but the revenue production of the social network platform and its extended, interdependent beneficiaries. Socialities are guided from their outset less through processes of inter-relational, individuating beings, and more through top-down algorithmic calculation – *what will make them engage?*

Censored Socialities? Forgetting in the Corporate Social Now

Platforms such as Google, Facebook and Twitter might appear free at the point of use, then, yet they may be far from liberating. We have seen above how surveillance technologies may shift the conscious balance of what is shown to the user, and thus how one’s sense of sociality and the social *now* may be perhaps inequitably re-informed to suit the needs of the platform over the needs of the user – prioritising continued *engagement*, and reducing the transindividual’s conscious agency in the man-machine coupling. And it is important here to return to our theoretical understanding of consciousness as explored in the Theory Chapter: the voluntary *choice* of what to perceive, and, out of realised memory-potential, how to act. Let us remind ourselves that Bergson’s may be understood as a “subtraction theory of consciousness” (Hansen, 2006, p. 79) – a consciously expanded perception is just as much about the choice of greater *limitation* as it is about greater inclusion.³⁹ Thus, in the final section of this chapter, we explore the affective

false sense of sociality as purportedly created through Cambridge Analytica dark ads around political votes (Cadwalladr, 2017; Cadwalladr & Graham-Harrison, 2018), or recent revelations around Lynton Crosby and a network of individually-seemingly innocuous propaganda websites and webpages (Waterson, 2019b).

³⁹ Indeed, when we considered the hypothetical notion of ‘pure memory’, Bergson declares that “[t]o perceive all the influences from all the points of all bodies would be to descend to the condition of a material object” (Bergson, 2004, p. 46) – it is in choosing how to *limit* an expanded sense of perception

materiality of *exclusion* in culturally remembering through new, pervasive media – of not just what *is* shown, but what *is not*. In what ways are perceptions of content restricted by corporate platforms of remembering, such as Google, Facebook and Twitter? For what reasons? In what ways do wider biological and cultural agencies (both governmental and social) exercise conscious control over perceptions produced through new, pervasive technologies? And how might we understand the implications of these for collective remembering and the reconstitution of the social *now*?

Perception portals algorithmically limit one's sense of the social *now* to what is anticipated as useful for monetisable continued engagement with the platform. And selective inclusion, it follows, necessitates selective exclusion. From an archival perspective on remembering, it might be tempting, therefore, to consider the likes of Google, Facebook and Twitter to be *archives*, or more properly the gatekeepers of archived information-as-knowledge. Indeed, Google's mission statement is to “[o]rganise the world's information and make it universally accessible and useful” (Google, no date). Yet it is important here to remind ourselves not to think of the commercial value for surveillance media being in *content*, or data, itself. Rather, value is realised through the *use* of data to excite connections, potentials, in duration, that engender prolonged engagement and interaction with the app – with these actions in turn re-informing data-profiles in a continuing process, feeding forward from the recorded past into the anticipated future. Thus, the data, the content-as-information – digital artefacts in themselves – have no true value until they are used to *realise* the potential of the transindividual into engagement, and into revenue. They are once more the *carriers* of potential, and not potential in themselves. From an archival perspective, then – focusing not on knowledge in space, but *connection*, *action* and *engagement* in spatiotemporal *duration* – we might think of surveillance technologies not as gatekeepers of knowledge, but channelers of (pre)emergent, transindividual potential-for-action in duration. They are not so much gatekeepers of the past as gatekeepers of the present.

Content is presented to the user in the present not because of its *informational* merit, but because the data with which it is associated ‘fits’ with the potential for user-engagement, derived algorithmically in relation to both the present and the data-profile of one's behaviour in *previous* presents. As we have ascertained, content deemed by the platform to be less ‘relevant’ to the user is unlikely to be selected to be shown to the user – be that

that a (psychically-individuated, in Simondonian terms) sense of consciousness, of subject-construction, emerges.

less relevant ‘matches’ in search results through Google, or less interacted-with, less compatible, indeed less *excitable*, posts on Facebook and Twitter. In a markedly Bergsonian way, then, what is ‘forgotten’ in such social, automated, man-machine couplings can be thought of as simply that not deemed by the algorithm as useful to be ‘remembered’ for action the present moment. The key difference, however, is *for whom* and *to what degree* these technologically-facilitated acts of remembrance can be considered useful.

Yet, while less unimportant for the economic needs of the platform, the content of media, agency removed from the user and held by the algorithm, may have profound and socially or personally unwanted impact – for example, the platform-determined auto-playing of extreme-violence or misinforming YouTube videos, “the algorithm taking me on a journey of its own volition” (Lewis, 2018). Here, then, we move to consider issues around how and why content may *not* be allowed on prevalent platforms.

Platform-Moderated Forgetting

In the wider context of the ‘information age’ the technological-relational model of remembering and forgetting through surveillance technologies may be problematic for the platform. Facebook, for example, while long insisting it should not be classified as a ‘publisher’ – rather, a platform to “connect the world ... [and] bring the world closer together” (Zuckerberg, 2017a) – nevertheless hosts *content*. Thus, web platforms have come under pressure in recent years to capitulate to wider publishing regulations and expected standards, forcing the moderation or disallowance of content. As such, a tension emerges between the platform’s agency in technologically showing what is *useful for engagement* and external, cultural agencies toward showing what is *socially/politically/legally, regulatorily acceptable* – or, more correctly, toward *not* showing what is *unacceptable*.

At a basic level, Facebook and Twitter each stipulate a behavioural code, to which they expect users to abide – the ‘rules of *engagement*’, so to speak – and these have historically been generally policed by users themselves, reporting violations to the platform to manually undertake action.⁴⁰ As we see in our *The Terror of War* case study, as well as in progressing campaigns such as ‘Free the Nipple’, these codes may in time shift in line

⁴⁰ See, respectively: Facebook’s ‘Community Standards’ (Facebook, no date a); and Twitter’s ‘The Twitter Rules’ (Twitter, no data a).

with expectations of the user ‘community’ at the discretion of the platform.⁴¹ It is after all “culture that governs man” (Simondon, 2017, p. 161). Yet, surveillance technologies have also come increasingly under the regulatory force of government legislation, shifting the affective agency-balance in terms of discretion toward what should *not* be permitted on platforms.

We might take as a significant example within EU policy, of the ‘struggles’ between platform, user and governmental agencies, the so-called ‘Google Right to Be Forgotten’. Introduced in its draft form in European Data Protection Regulation in 2012, and brought into law through a 2014 court case (Court of Justice of the European Union, 2014), the right to be forgotten allows individuals to request that Google remove search results (in the EU) that they feel are no longer relevant and/or are damaging to their ongoing personal right to privacy. The ‘right’ itself is a source of continuing debate – not least around arguments for the legal right to freedom of speech, or alleged ‘whitewashing’ of history. We lack the wordcount to here drill down into the myriad and messy legal sensitivities of the right, and the complex legal issues around the demand that *others* collectively forget.⁴² Rather, let us remain focused on the present role surveillance technologies in *facilitating* this ‘forgetting’ and its potential implications for ‘remembering’ in relation to wider cultural and technological agencies.

Key to the issue from our perspective is that, should a request to ‘be forgotten’ be granted, the consequence is only that the *links* to particular webpages may be removed from search results in the EU. It is, thus, perhaps not so much ‘whitewashing’ the past as ‘limiting’ apparently easy access to artefacts connected with it. Webpages themselves still exist; information may freely be shared on social media and/or by searching news websites; easily-accessible virtual private network software can display the unedited results from a choice of non-EU countries. Indeed, the affected user-awareness that results may have been limited (Google displays the text, ‘Some results may have been removed under data protection law in Europe’) means that we in a sense find ourselves back in Hoskins’s notion of online collective remembering being ‘a matter of where to look’. In some ways, then, while information is made more *inaccessible* through enacting the right, users may ironically find themselves in a more consciously aware state, more able to make *choices*

⁴¹ Facebook announced in June 2019 that it was considering relaxing its rules on generally prohibiting images portraying the female nipple (Titcomb & Boland, 2019).

⁴² For an in-depth study of the social and legal history and implications of the Right to Be Forgotten, see scholar Meg Leta Jones’s *Ctrl+Z: The Right to be Forgotten* (2016).

about what information to seek out rather than settle for what they are automatically and initially shown.

What is important to make clear, here, however – in a return to the themes of the supposed digital dark age – is that Google search engine is *not* a historical archive, and nor is the worldwide web from which it draws its results. Though Google searches indexed, public web pages, these are neither stable nor permanent – as scholar Meg Leta Jones argues, “[t]he web is a communication and information resource ... We cannot treat it as an ongoing permanent historical record” (2016, p. 191). Likewise, Google’s operations are not archival processes of choosing to include or exclude *content* in cyber-space. Rather the search engine’s function is in forging connections in cyber-time, in duration, channelling *engagements* in the moment, rather than organising information per se.

This function is illuminated in contrasting the platform’s approach to apparent inclusion with its enforced approach to ‘right to be forgotten’ exclusion. Rightly or wrongly, for now the decision as to whether links should be removed from search results rests, at least initially, with the platform itself. While the process is not transparent, reports emerging out of court cases suggest that, once a user submits a request, it is put to an all-human ‘Removals Team’ to assess. As a Google ‘legal specialist’ describes it:

The process of dealing with each delisting request is not automated – it involves individual consideration of each request and involves human judgement. Without such an individual assessment, the procedure put in place by Google would be open to substantial abuse, with the prospect of individuals, or indeed businesses, seeking to suppress search results for illegitimate reasons. (in Corfield, 2018)

While the process of ‘deciding’ what content *should* be shown to users is, then, a fully-automated, algorithmically-informed operation, the process of deciding what content *should not* be shown requires substantial human-technical intervention.

This human aspect of ‘editing’ equally does not come without its own set of potential agencies and implications. As 2018 film *The Cleaners* showed, content moderation *in general* is deeply problematic for social-media platforms. Substantial ambiguity may exist, for example, over choosing what should or should not be considered as ‘allowed’ or ‘breaking the rules’, compounded by potential prejudices, biases or slip-ups of reportedly often underpaid and overworked. (*The Cleaners*, 2018; Dwoskin, 2019)

This might seem paradoxical from a more archivally-oriented approach to remembering – if Google is a gatekeeper of archived ‘information’, and its operation based on successfully *controlling* what information users are shown, why should it pose such difficulty if an external actor requests that the platform do precisely that? However, this supposed paradox evaporates when considered from an anarchival perspective. Google search engine as a platform does not concern itself with controlling access to *content* or *information*, to *digital artefacts*. Rather it is concerned with the transindividual *movements* and *engagements* that may be excited through facilitating connections with digital artefacts: the content is not of concern, only its ability to appropriately engage the user.

In many ways, then, we may think of Google not in terms of controlling ‘content’ at all. Rather, its difficulty in removing content can be seen as a result of a business model designed not to inadvertently guide affective perceptions through *controlling* content, but to inadvertently *guide* content through controlling *affective perceptions*.

Losing Control

This same difficulty in controlling content, when required by outside agencies, may equally be ascribed more widely to other corporate social-media platforms.

The tightly-won and controversial June 2019 legislation on the EU’s ‘Directive on Copyright in the Digital Single Market’ (European Parliament, 2019), for example, has thrown up radical questions for how the likes of YouTube, Facebook and Twitter will be able to operate in Europe in future. Specifically, so-called ‘Article 13’⁴³ establishes liability for larger commercial platforms in illegitimately hosting copyrighted material, irrespective of who posts the material – leading to its unofficial branding as ‘the meme ban’. Under the legislation, largescale commercial media-sharing platforms would need to monitor users’ uploads to implement quick filtering or removal copyrighted material from their platforms, rather than traditional forms of ‘report and remove’ content moderation, or themselves be held liable. It is significant to note, from our anarchival understanding of collective remembering, that the final text approved provided exemption made provision for memes, stating that:

Users should be allowed to upload and make available content generated by users for the specific purposes of quotation, criticism, review, caricature,

⁴³ The article was numbered 13 in the *draft* directive, yet had been re-ordered as ‘Article 17’ by the time of its approval.

parody or pastiche. That is particularly important for the purposes of striking a balance between the fundamental rights ... in particular the freedom of expression and the freedom of the arts, and the right to property, including intellectual property. (European Parliament, 2019)

Thus, the freedom to inventively repurpose digital cultural artefacts in acts of collectively-individuating remembrance would be protected for the ordinary user. Nevertheless, to refocus on the material functions of the platform, such an apparently progressive exemption has been condemned by numerous organisations and corporations, since it would require far-from-perfect upload filters, already criticised (as we will see below) for their unreliability, and their propensity toward giving ‘false positives’, to make nuanced distinctions between legitimate copyright issues and creative reworkings of the material (Reynolds, 2019).

This difficulty in stemming the transfer of media of course further highlights the ongoing struggles between platforms in balancing social-cultural, individual and technological agencies of remembering in man-machine-coupled acts of remembrance. Indeed, “If there were no copyright”, Ernst notes “every online user might take advantage of the fact that in digital networks the separation between archival latency and present actualization of information has already collapsed” (2004, p. 52). Yet perhaps the most emotionally striking illustration of contemporary social-media platforms’ incapability to *control* content, however, is in the policing of hate speech or hate media.

YouTube’s existing (and culturally and legally contested – Sandler, 2019) technical processes around policing media deemed (algorithmically) inappropriate, violent or adult content involves demonetising videos (removing incentive for producers) and, similar to the Right to Be Forgotten, delisting them from the platform’s search results (YouTube Help, no date). However, in June 2019, YouTube announced that it would be implementing further rules to tackle hate speech by:

prohibiting videos alleging that a group is superior in order to justify discrimination, segregation or exclusion based on qualities like age, gender, race, caste, religion, sexual orientation or veteran status. (YouTube Official Blog, 2019)

However, within days it emerged that the hate speech “purge” (Murphy, 2019) had unintentionally affected hundreds of clips of educational material, identifying them as ‘content that promotes hatred or violence against members of a protected group’. While

some clips now carried warnings that the material may be found offensive (Waterson, 2019), at least one history teacher reportedly had their entire YouTube channel deleted, removing access to fifteen years' worth of historical educational uploads, covering world history of the past one hundred years (Murphy, 2019a).

We might view these events of apparently over-zealous censorship in contrast with the online sharing of video footage of a mass shooting in a mosque in Christchurch, New Zealand, which took place just weeks earlier. In the aftermath of the right-wing terrorist attack, the footage, live-streamed by the perpetrator to Facebook, quickly began circulating internationally online across numerous platforms – in the UK apparently including mainstream tabloid news outlets (Watts, 2019). The virality of the video left social media sites scrabbling to delete posts of the video, being uploaded to sites much faster than their teams of content moderators and filters could remove them, with, once again, significant human intervention becoming necessary when considering what *not* to show to users. Even making minor edits to the clip meant that users were able to avoid detection through existing technologies of automatic filters, highlighting the potential technological limitations of legislative expectations of, for example, Article 13. Indeed, events would cast a perhaps techno-deterministic spotlight on the calls of a UK-government white paper, published a few weeks later, for “all platforms to take reasonable steps to keep their users safe” (HM Government, 2019, p. 55), once more drawing attention to the struggles between the agencies of the individual, cultural and technological in online collective remembering. Indeed, so great was the struggle for YouTube staff in suppressing and removing posts of the Christchurch attack, that the company reportedly took the unprecedented step of “temporarily disabling several search functions and cutting off human review features to speed the removal of videos flagged by automated systems” (Dwoskin & Timberg, 2019).

This apparent ‘loss of control’ over content we can from our anarchival perspective consider not so much a ‘fault’ in the otherwise normal programming – “a profound flaw in its design that allows hate or conspiracies to flourish online” (Dwoskin & Timberg, 2019). Rather – in thinking social media sites not so much as merchants of content but as harnessing, exciting and monetising the realisation of techno-culturally-mediated value of collective individuation into *app-engagement*– we might consider that platforms embroiled in viral sharing of hate speech are operating precisely as intended. The difference, here, is simply that *technological* agency of the platform, prioritising monetisable platform-engagement over usefulness for the user, becomes exposed when

positioned in relation to calls from *social-cultural* agential authorities for censorship – for *actual* informational control.⁴⁴ Surveillance technologies do not operate at their core archivally as content-management systems, but anarchivally as organisers of flows of media-facilitated affective interaction, irrespective of content. Indeed, it is perhaps telling that the notion of ‘substantial abuse’ through parties seeking to manipulate search results for ‘illegitimate reasons’ should be a concern to Google when dealing with what *not to display* to users, and apparently not with what *to display* to them.

Yet individual-cultural-technological struggles in collective remembering run deeper than platform-level. As the Christchurch footage shows, mediated acts of collective remembrance take place beyond the constraints of discrete platforms, through multiplicities of affective atmospheres across myriad parts of hybrid media’s online and offline infrastructure.⁴⁵ So, while individual sites may take measures to remove material, the drives of collective individuation toward sociality-informing interaction may quickly move beyond the platform’s powers of visibility and control. Indeed, as we will see in the next chapter, while platforms may play a part in organising and guiding ‘filter bubble’ perceptions of ideas of the past, these ideas may be strongly driven (and perhaps the platforms themselves manipulated) by those affective, ‘cyborg coalitions’ of perceived shared affinity-as-identity, irrespective of the platform (and indeed of the degree of ‘truthfulness’ of these ideas of the past).

As a discerning final example, here, we might look at the migration of users of 4chan message-boards associated with hate speech, indeed the migration of their hate speech. In 2014, 4chan – an anonymised image-board forum site, credited with, among others, first popularising the viral YouTube video ‘Chocolate Rain’ (Anonymous, 2007) – found

⁴⁴ Moreover, the matter is further complicated when one factors in that individual posts might appear subjectively innocuous, yet when part of a wider pattern of postings or viewings, often algorithmically-facilitated, may be seen as more malign. In June 2019, for example, it was reported that YouTube’s algorithmically-led recommendation system – which guides the majority of the site’s traffic – had been instrumental in connecting paedophiles with videos of partially-clothed minors, compounded by such users employing the comments sections to link users to other videos (Fisher & Taub, 2018). One woman who posted a video of her infant daughter and her friend playing in a pool in their garden was shocked to discover that within a few days the video had been viewed more than 400,000 times. Yet YouTube, despite its public ripostes and subsequent re-commitment to “protect minors and families” (YouTube Official Blog, 2019a) finds itself nevertheless hindered in limiting such recommendations, at the mercy of its economic reliance on “family vloggers, some of whom have many millions of followers” (MIT Technology Review, 2019).

⁴⁵ The Christchurch shooting offers a particularly morbid example of intersecting cultural agencies across hybridised media systems. During the video of the massacre, the shooter reportedly utters the words, “Subscribe to PewDiePie” (Wakefield, 2019) – referencing the so-called ‘Great Subscriber War’, in which YouTuber PewDiePie vied to remain the number-one subscribed channel on the platform (KnowYourMeme, 2019).

itself entangled in the emerging #GamerGate controversy.⁴⁶ When 4chan banned discussion of GamerGate, discussion was not silenced. Rather, many users reportedly migrated to then-little-known, ‘free-speech-friendly’ alternative 8chan (O’Neill, 2014), which has since been repeatedly associated with far-right hate speech and mass shootings, Christchurch included. At the time of writing, 8chan users had been linked with another mass shooting, in El Paso, Texas, and the website’s host had refused the site service. The site quickly secured a new host, yet that host’s *own service* was reportedly that very day shut down, following a consequential severing of ties by the company from whom it leased its server hardware-infrastructure (Robertson, 2019). Nevertheless, as claims the founder of Gab.ai, a social-media site principally for those banned from Twitter:

If 8chan is shutdown here is what will happen: someone else will spin up a new imageboard, say 20chan or whatever. People will flock to that ... Or someone will create an 8chan telegram channel. Or an 8chan Gab group. Or an 8chan Gab Social server hosted by someone else. Or they will go back to 4chan. (Torba, quoted in Broderick, 2019)

As technology journalist, Ryan Broderick observes, “Shutting down the site is unlikely to eradicate this new extremist culture, because 8chan is *anywhere*” (2019; italics my own). Cultural agency is after all what drives the technological into the social, in the present – and, with an *awareness* of the technological and external agencies in play, voluntary choice serves its role and the matter becomes to a larger degree once more one of *culture governing man*. Thus, if users in large 4chan threads anticipate the conversation may soon be deleted, leading only to an error page, it is perfectly common for them to migrate the thread onto alternate servers of other platforms “before the 404” (Broderick, 2019).

Social Struggles: Cultures and Capital

In this chapter, we have sketched an initial, though thorough, synthesis of how we may understand collective remembering within an anarchival perspective on memory, consciousness, technology and the social in duration. Such a synthesis conceives of collective remembering as acts of collective individuation, using *ideas* of the past to constitute a sense of extended, stable sociality out of the past, in the present and into the future. New, online-networked technologies such as Google, Facebook, Twitter and

⁴⁶ The GamerGate controversy, beginning in late 2014 and actively continuing until well into 2016, was a complex and public social media campaign, largely of harassment, under the hashtag #GamerGate, associated with issues of misogyny in the US video-games industry.

YouTube have allowed for a greater scope for socialities to emerge beyond historical constraints of space and time. However, the economic agencies of social-media platforms-as-businesses, prioritising platform-engagement over useful action for the transindividual, risk producing more filter-bubble-informed artificial socialities, through machine- over user-controlled perceptions of the social *now* – in which participants may inter-relate but not truly collectively individuate. Nevertheless, cultural agencies as well as wider economic agencies operate in expressed tension against these platforms, compounding the contemporary ‘struggle for memory’. These may take the form of more stabilised cultural forces of governmental legislation or more ‘loose’ charges of viral contagion online, in which the platform must decide not just what to show but what *not* to show. An inability of platforms to act against these tensions, the chapter argued, emerges not out of ‘design fault’, but as a direct consequence of platform architecture geared toward exciting monetisable *engagements* over purported ‘organised content’.

Yet this inability has in recent years led to increasing concern around the supposed rise of ‘fake news’ and ‘misinformation’ through new technologies in informing almost ‘fake socialities’. Media theorist Andrew Murphie observed in 2000 that ‘the digital’ seems to give us:

the means to negotiate a world consisting of so very many dissimilar and divergent series of elements which nevertheless rub up against the world and recreate the world differently at each moment. (2000)

Nearly twenty years on, we may observe how perception portals of since-dominant surveillance technologies – and all the inter-related agencies feeding into and out of them through the hybrid media system – may ‘recreate’ the perceived world at each moment with perhaps little agency afforded to conscious negotiation on the part of the transindividual.

In the final case-study chapter, then, we move to consider the implications on the one hand of the observation that collective remembrances need not necessarily be at all ‘true to the event’ of the past, and on the other of the potential manipulation of socialities emergent out of hybrid-media, perception-portal technologies, and resulting potential action.

---o0o---

Facts, Fakes and Filter Bubbles:

False Memory in the Twenty-First Century

A storyteller does not concern themselves with the truth.
Stories are truer than the truth.

American Gods (Neil Gaiman & Bryan Fuller, 2019)

[T]he past is only an idea, the present is ideo-motor.

(Henri Bergson, 2004, p. 74)

The first case-study chapter briefly situated how we can think remembering personal pasts as extended through and with new, online technologies, examining the apparent changing balance of agencies in man-machine couplings. The second chapter substantially developed this theorising into the wider social sphere, expanding our thinking on memory, technology and individuation into a nuanced sketch for a social theory of remembering. Through this synthesis, we may see collective remembering as acts of coalescing around *ideas* of the past to inform a sense of relationally belonging to a perceived-stabilised society in the social *now*, and its extension through online technologies as enabling a kind of ‘expansion’ of that social *now*. As well as observing that processes collective remembering need not necessarily relate to ‘the facts’ of the past, we observed that these materially-facilitated, sociality-informing online perceptions – and thus the resultant emerging socialities themselves – may be limited, indeed guided, by much more than the users’ transindividual drives. Indeed, perceptions may be co-informed by those platforms’ own economic drives toward user-engagement, as well as wider techno-cultural agencies within the hybrid media system.

Through an exploration of the broad phenomenon of so-called ‘fake news’ – and returning to our central notion of memory and perception informing *action* over knowledge – this chapter now succinctly examines the implications of these observations in terms of *useful action* for the transindividual. Drawing on recent and relevant case-study examples as

vehicles to explore the nature of online ‘collective false remembering’, it aims on the one hand to further develop our understanding of how individual, cultural, technological processes of collective remembering, identity and action, may be changing in the online era, and on the other, in anticipation of the subsequent Conclusion Chapter, to speculate on the wider implications of such changes.

--o0o--

1. From False Memory to Fake News

Subsequent sections of this chapter will focus through numerous examples on the ways in which false memory may be experienced differently through new, online technologies, and consider the resulting implications. This section first attempts to conceptualise the phenomenon of false memory within the anarchival synthesis on personal and collective remembering as developed in previous chapters. In doing so, it lays the foundation for a more nuanced ensuing analysis of the relationship between false memory and new technologies.

The employment of the term ‘false memory’ in this chapter should not be taken as a tacit endorsement of a conceptualisation of memory as a faculty for recalling accurate information about the past, with false memory as an apparent ‘failing’ – nor of the perhaps problematically interpreted research into the supposed phenomenon. As we have seen in the Theory Chapter, the very notion of false memory should be seen more as a failing of a philosophical *conceptualisation* of remembering than as a failing of memory itself. Here, then, the perhaps somewhat irreverent appropriation of the term should be taken strictly as a vehicle for critical engagement with the ways in which pasts that *did not occur* may today be narrativized, mediated and thus remembered in the present.

Trump and the Twin Towers

In November 2015, then U.S.-presidential hopeful Donald Trump told a crowd of supporters at an Alabama rally:

Hey, I watched when the World Trade Center came tumbling down. And I watched in Jersey City, New Jersey, where thousands and thousands of people were cheering as that building was coming down. Thousands of people were

cheering. So something's going on. We've got to find out what it is. (Quoted in Kessler, 2015)

The now well-known problem with Trump's infamous recollection of supposed 9/11 rooftop celebrations is that they never appear to have happened. Numerous journalists, fact checkers and academics would report in the following hours and days (indeed months and years) that there existed no record of any such celebrations beyond unsubstantiated rumours, long-circulated online (Carroll, 2015; Dwyer, R., 2015; Kessler, 2015; Kiely, 2015; Lacapria, 2015). Nor could prominent public officials from 2001 recollect any such incidents. Former New Jersey attorney general, John J. Farmer Jr., for example, told the New York Times that, although he had ordered an investigation on the very day of the attacks into rumours of a small number of radical Islamist celebrations, it found them to be false (Dwyer, R., 2015). Nevertheless, when Trump's claims were challenged on ABC News the day after he first aired them, he insisted they were true, and that the events had been reported widely on television:

It did happen. I saw it. It was on television, I saw ... It did happen. There were people that were cheering in the other side of New Jersey, where you have large Arab populations. They were cheering as the World Trade Center came down. It was well covered at the time. (Trump, in Phelps, 2015)

Others, according to Trump, had apparently witnessed the same events. He would soon post on Twitter that "[m]any people have tweeted that I am right" (Trump, 2015) and would tell a rally in Ohio that he had since received phone calls "by the hundreds", to tell him that "they were there, and they saw this take place" (in ABC News, 2015). Indeed, rival Republican presidential candidate Ben Carson, when subsequently questioned by reporters about the alleged rooftop celebrations, at least initially claimed to recall seeing footage of them (ABC News Politics, 2015). And today searches on social media sites such as Reddit and YouTube continue to draw up numerous posts by those who have since claimed – given the political connotations, and the overarching theme of this chapter, perhaps not always genuinely – to remember similarly.

It may be tempting to interpret Trump's behaviour as evidence of straightforward lying (Waldman, 2018), or of his propensity toward 'post truth'. Or perhaps to think it more akin to philosopher Harry G. Frankfurt's 2015 conception of 'bullshit' – the attempt to convey certain 'impressions', with little regard to as to the truth of what

is said for that purpose (Frankfurt, 2005). Widespread commentary, however, has suggested that Trump might be falsely remembering the events of 9/11 through a potential combination of rumour, misappropriation and confirmation bias (Lacapria, 2015). Indeed, a long-term, U.S.-wide study of people's recollections of 9/11 after one week, then 11, 25, and 119 months, showed that, while in the general U.S. public confidence in recollections remained strong in the years following the attack, long-term memories nationwide showed significant inconsistency in their accuracy (Hirst et al, 2015). Unverified reports of rooftop celebrations do seem to have been made on local radio (Trotta, 2007), and continued through online rumour in subsequent years; and while no footage exists of 'thousands' of Muslims in New Jersey celebrating the attack, a video clip of a small gathering of Palestinians doing so in East Jerusalem was certainly circulated at the time by large-scale American news media outlets including Fox News, CNN and NBC (Mackey, 2015).

This chapter does not seek to definitively come down on one side or another as regards Trump's potential motives. Rather, it seeks to use the events around his claims as a useful vehicle to drive forward the investigation. It is conceivable that, in holding this belief (if indeed he truly does) Trump is experiencing a so-called 'false memory' of these events, informed, at least in part, by experiencing media technologies. And it is from this juncture of false memory and its relation to new media technologies that we will begin the investigation of this chapter.

Memories 'Implanted': Memories Imagined

We examined in the Literature Review chapter psychological studies conducted since the 1970s into false memory. Such studies have demonstrated how one's memory of an event can be affectively manipulated through lingual (i.e. technological) suggestion when prompting the recollection (Loftus & Palmer, 1974) or through conceptual expectation (again, i.e. technological) within one's environment (Roediger & McDermott, 1995; Brewer & Treyens, 1981). Indeed, researchers have been able to establish recollections in participants of entirely fictional events, some potentially incriminating (Loftus, 2005; Shaw, 2016). Yet, as we saw, the idea that personal memory is not about *recall* of past events at all – rather a relation of what past experience might mean in relation to the experiencing being in the lived present – was already by then well established. Pioneering experimental psychologist Frederic Bartlett famously showed in the 1930s that supposed recollections were influenced by cultural expectations of the individual as much as by the particulars of the event being remembered (Bartlett, 1932). Indeed, Bartlett's research

demonstrates the significant role *meaning* and *imagination* play in the process of remembering.

So, how might we approach the idea of false personal memory within our anarchival understanding of remembering? Firstly, let us remind ourselves that what we consciously call a ‘personal memory’ we can conceptualise as a discernible memory-image, imaginatively and affectively realised, or pictured, in relation both to memory-potential and to perceptions of the present environment. It is, as philosopher Brian Massumi has put it, “a memory of the past, which is a rear view of the past from the perspective of the consciously experienced specious present of lived duration” (2015, p. 62). Secondly, it should be emphasised that the evolutionary purpose of remembering is not to recall specifics of past events, but to inform *useful action* for the bodily-being in the lived, perceived present, in duration – it is at its root “ideo-motor”, reflexive (Bergson, 2004, p. 74). And, thirdly, we must consider that for the consciously (to perhaps whatever degree) experiencing being, this useful action is in turn bound up in a constant, creative, transindividual drive toward individuation, out of the pre-individual, to be ‘more than’. It is through the collectively-individuating mediation of cultural value, such as sharing ideas of collective histories or shared pasts, that a sense of a stabilised social *now* may be experienced, out of which a relational sense of the ‘individual’ – as ‘grouped individual’ – may emerge.

Taken from our anarchival perspective, it seems perhaps straightforward to appreciate how one’s semi-imagined, personal recollections of a past event might differ (or be manipulated by present relations into differing) from the facts of the events, coloured as they are by the perceptions of the present environment and present interactions (including suggestible questioning), and the experiences of other pasts (the realisation of memory-potential as ‘expectations’). To be sure, such a differing would be expected. Indeed, we might say that the whole idea of ‘false memory’ as a ‘phenomenon’ could be better put down to a conceptual failure of the traditional archival model of memory as ‘knowledge of the past’ to accommodate the actual nature of remembering than to a supposed ‘quirk’ or failure of memory itself.

We may assume that Trump, like many others, would have experienced at the time of the 9/11 attack rolling television news coverage of the attack and its aftermath. Yet this coverage would air in combination with footage of anti-U.S. celebrations in other nations, perhaps alongside somewhat unrelated stories or contextualising archive footage, and speculation about what would happen next – a perceptual experience Andrew Hoskins

describes as a “collapse” of memory into “an overloaded and shifting present” (2004, p. 110). In addition, contemporary radio and online reports did at the time rumour rooftop parties and other celebrations by American Muslims. Attempting to remember the events of that day in a present-day environment of increasing hostility toward Muslims, we might, regrettably, begin to understand how someone with existing prejudices might find themselves believing that such non-existent events as Trump’s rooftop celebrations really did take place. Furthermore, from our anarchival perspective, it does not seem too much of a bold claim to make that, given the immediate and widespread reach of Trump’s claims, his own public ‘recollections’ then might affectively *spread*, inciting others, too, to believe they witnessed the same events.

Belief as Sense-Making

Aware that recollections are *not* necessarily accurate reflections of the past, when presented with reliable evidence in opposition to their own recollections, one might expect most people to accept the falsity of their belief. Indeed Carson, when later challenged over his recollection of witnessing footage of New Jersey Muslim rooftop celebrations, retracted the claim⁴⁷ (Faulders, 2015). However, perhaps like Trump, some with demonstrably – or highly-likely – false memories do still appear to hold their belief in them despite evidence to the contrary, and this deserves a more nuanced analysis.

In her 2005 study, *Abducted*, psychologist Susan A. Clancy researches the (presumed) false memories of individuals within groups of people who believe they have been abducted by aliens (Clancy, 2005). As such, the study finds itself concerned as much with *belief* as it is with memory. Clancy bases her argument within the idea that most abduction beliefs are rooted in the individual having experienced sleep paralysis – a condition during waking or falling asleep in which one cannot move, and which may be accompanied by auditory or visual hallucinations, often of some form of natural or supernatural intruder. Beliefs in false memories of alien abduction, Clancy suggests, may be an attempt (personal or manipulated through the likes of hypnotherapy) to draw on cultural material to ‘make sense’ of, or find meaning in, an experience that seems at odds with our usual experience or perception of the world. “It probably doesn’t much matter to the abductees

⁴⁷ It is interesting to note that, rather than admitting his mistake, Carson claimed that his original claims had been taken out of context – that he was referring to footage of Muslim people *in general* celebrating (Gass, 2015). Nevertheless, the record shows that Carson’s claims were made in response to specific questioning about Muslim celebrations on New Jersey rooftops.

whether they're right or wrong", she argues, "They simply feel better because of what they believe" (2005, p. 143).

Belief Serving Individuation

Yet how, then, might we speculatively conceptualise false belief from our anarchival perspective on remembering? It is important to note here that this is not an attempt to fully define the phenomenon of 'belief'. Rather, it serves as an attempt, for the purposes of this investigation, to develop a working conceptualisation of belief in false memory in relation to our existing philosophical position on remembering. Indeed, as Bergson is reported to have more than once argued, "You may attribute what meaning you like to a word, provided you start by clearly defining that meaning" (Translators' Preface, in Bergson, 1935, p. v).

The kind of belief that we are here considering, then, is not so much to do with immediate recognition in perception, "as 'ultimate fact' of experience" (Massumi, 2002, p. 221), informing expectation – "*I believe that is a fallen tree*". Rather, it is more akin to an *explanation* based out of memory of concepts – "*I believe that tree fell because it was damaged in last night's storm*". Yet, more than this, these false beliefs seem more psychically grounded in what Bergson would call the *plane of dreams* or imagination than the *plane of action* (Bergson, 2004, pp. 217-219) – "*I believe that the tree was felled by an angry giant*". In such a plane, "we detach ourselves from our sensory and motor state to live in the life of dreams" (Bergson, 2004, p. 211).

Taking the example of belief in one's abduction by aliens, then, we might consider that, whatever experience may have first informed memory-potential, the processes of realising this memory-potential out of abstract feeling and into discernible memory-image are influenced by all manner of different expectations, experiences and present perceptions of the world. Remembering is after all a creative act, "mingling dream with reality" (Bergson, 2004, p. 96). It involves imagination. Alfred North Whitehead argues that "a feeling bears on itself the scars of its birth; it recollects as a subjective emotion its struggle for existence; it retains the impress of what might have been but is not" (1969, p. 265). Following him, political theorist William E. Connolly has thus suggested we might think of remembering not in terms of recollecting an event itself, but in terms of "pluripotentiality" (2018) – of imagining all the events it could have been. We might then think of personal remembering as a creative process of realising memory-potentials not just in terms of the experiences that *have been* but also those that *might have been*. Indeed, well-established psychological research has shown that imagining details of fictional

events can increase the likelihood of participants believing them (Schacter, 1996, p. 196; Shaw, 2016). The memory-image of alien abduction we can say with some probability does not serve to accurately represent past events – rather it may serve creatively as a kind of ‘best fit’ to make sense of what might have been, to promote *useful action* in the perceived present. While verging on the crass, we might topically borrow from Agent Mulder’s phrasebook to perhaps think false remembering not so much believing, as *wanting to believe*.

What useful action, though, might warrant some people finding it easier to dismiss perceptible evidence that contradicts their beliefs (or indeed dismiss a lack of evidence for their beliefs) and harder for them to *disbelieve* their own seemingly glaringly false memories? As Clancy seems to imply, might the act of explaining a complex experience in a way that absolves the individual of the *need* to act in fact *be* useful action for the individual? Might such creative remembrances, the chapter speculates, serve a drive toward *individuation*? Toward a meaningful sense of ‘belonging’? Certainly, Simondon, as paraphrased by philosopher David Scott, argues that “religious communities organizing themselves around belief, as a mode of membership in a group, represents the expansion of personality, that is, a scheme of incorporation” (Scott, 2014, p. 129):

[T]he individual gives itself an origin in this group of interiority, *real or mythic*: he or she is of this group and for this group; future and past are simplified, brought to a state of elementary purity (Simondon, in Scott, 2014, pp. 129-130 – italics my own.)

To believe oneself having shared an experience of something almost exceptional demonstrably provides opportunity to feel ‘more than one’ – to transindividually “share some kind of internal resonance” (Grosz, 2013, p. 54). Clancy, for example, notes that since the 1960s “countless abductees have said that they are ‘thankful’ they’ve been ‘chosen,’ they ‘feel less alone,’ they feel ‘blessed’ because of their experiences” (2005, p. 153). And when one considers possibilities for human-to-human connection in the networked era based on a shared sense of identity, as we have done in the previous chapter, the opportunities for collective individuation around shared remembered personal experiences become increasingly augmented. In this sense, such socialities might be viewed as little different to more conventional collectives formed through shared personal experience of verifiable events, such as medical problems, traumatic experiences, or a parent’s loss of a child.

A personal belief in a non-existent event, then, we might understand as at once a process of individuation within, as social psychologist Ian Tucker puts it, “the reality of subjective life” (2018, p. 39), and a point around which emergent, like-minded, collectively-individuating socialities may emerge.

In the following section, we will consider this notion of *shared personal belief* in experienced pasts might be considered in relation to new technologies, and in relation to its distinction from *shared collective belief* in the past. For the moment, though, let us simply posit that, irrespective of their veracity, personal beliefs in a false or seemingly ludicrous memory may serve useful (inter)action for the transindividual being.

--o0o--

2. Collective Identity and Pretence of the Past

In the previous chapter, we considered how people may (or may not) dynamically reconstitute collectively-individuated socialities, coalescing around shared notions of past events – for example, through social media posts, forums and search engine results. The chapter argued that multiplicities of socialities – or collective identities – are in ongoing states of becoming through such technologies, fuelled through creative actualisation of memory-potential, interior and exterior to the individual. Through collectively-individuating interactions around *ideas* of the past extending out of the past, and into the future, a stabilised perception of the relational ‘social *now*’ may be experienced, out of which a sense of both ‘the social’ and thus the relational ‘individual’ emerges. Here, this chapter seeks to consider the above conceptualised notion of belief in false memories to argue that socialities need not, then, collectively individuate through shared, *verifiable* notions of past events. Rather, this may be achieved through shared ‘ideas’ of or beliefs in the past, irrespective of their veracity, with opportunities for like-minded connection or reconciliation only increased through widely-networked, high-speed, online technologies. The chapter attempts this through an examination of two seemingly markedly different examples of false remembering online – the supposed ‘Mandela effect’, and the persistent ‘Irish slaves’ online myth – exploring how these remembrances are taking place, and for what seeming purposes.

The ‘Mandela Effect’

As one might expect, Donald Trump is not alone if remembering past events differently to how they occurred – precisely because within our anarchival understanding to

remember *is not* to recall *knowledge* of past events, but to use *potential* from past events, realised into memory-images, to creatively encourage action in the perceived present. Yet it is once again this common archival misconception of memory as *knowledge* or *recall of the past* that informs the first of our examples – the so-called ‘Mandela effect’.

The Mandela effect is a term coined in recent years to describe a shared personal ‘misremembering’ or false memory. Its name derives from self-described ‘paranormal researcher’ Fiona Broome’s claim that she shared a memory in common with many others that South-African political leader Nelson Mandela had died in prison in the 1980s or 1990s, though he would not die until 2013, several years after this observation (Broome, 2010; Dagnall & Drinkwater, 2018). Through the connectivity of online technologies, in setting up a blog- and comments-based website, Broome has been able to draw together a community of hundreds of people or more who share this belief as well many others. Furthermore, an independent Reddit community, ‘r/MandelaEffect’ boasts more than 133,000 members at the time of writing, for “people realizing they remember things differently than generally know [*sic*] to be fact” (Reddit, no date). Though numerous apparent examples are discussed on these sites, a seemingly prominent instance is the collective misremembering of children’s book franchise *The Berenstain Bears* as having undergone a subtle name change, previously having allegedly been spelt *The Berenstein Bears* (Broome, 2014, emphasis my own). Another is a collective remembering of American stand-up comic Sinbad starring in a 1990s film named *Shazaam*, in which he plays a genie who helps one or two young children – this, despite no evidence of its existence, and Sinbad himself denying he ever played such a role (Broome, 2016; Sinbad 2016; Tait, 2016).

Broome claims that “[t]hese aren’t simple errors in memory; they seem to be fully-constructed incidents (or sequential events) from the past. They exceed the normal range of forgetfulness” (2010). Indeed, in an interview for the *New Statesman*, a man now in his 50s claims to be able to recall Sinbad’s film scene by scene, since, working in a video store, he was required to watch it each time a customer had a problem with the cassette – “It feels like a part of my childhood has now been stolen from me”, he tells the magazine, “How does a movie simply vanish from our history?” (Tait, 2016). Similarly, a recent Reddit post out of many on the topic has amassed hundreds of comments within only five months, as community-members discuss their memories of the film’s storyline (Reddit user Drive-or-doze84, 2018). Some social media users have constructed a mock-up of what the film’s cover art looked like – though perhaps to troll those who believe the film

existed (see Figure 1). To be sure, assuming others *do* share Trump's recollections of the aftermath of the 9/11 attacks, we might consider their incongruity with the known facts, too, a supposed example of the Mandela effect in action. And for Broome, then, as for others employing an uncritically archival view of memory, such misrememberings are taken unequivocally not to be false memory at all. Rather, for her, if something is not wrong with *her memory*, presumably taken as accurate recall of past events, then something seemingly must be wrong with *the world*. Thus, while apparently remaining open to other possibilities, Broome's preferred hypotheses that "make the most sense" are either that "we're 'sliding' between parallel (or similar) realities, or that we've visited holodecks [i.e. holographic virtual reality spaces, as conceived in *Star Trek* television series] (and may be in one, right now) that have some glitches" (Broome, no date).

Yet from an anarchival perspective on remembering the Mandela effect is not just understandable – it is unremarkable. If remembering is the *feeling* of realising memory-potential, and any resulting memory-image somewhat imagined to inform voluntary (i.e. conscious) action in relation to the perceived present, then, as we have already seen, there is no reason to assume a discerned memory-image should be true to the facts of previous events. Indeed, there is ample reason to assume the opposite, influenced as all remembering is by a combination of multiple potentialities out of past experience, imagination and the perceived present environment. And, assuming enough perceptual commonalities exist, one might expect people with somewhat alike culturally shared pasts and presents to 'misremember' similarly to each other.

Consider that "-stein", as countless commentators have noted, is simply a much more common suffix than "-stain" and it is not unreasonable to see why confusion should arise either when first encountering *The Berenstain Bear* books or when trying to remember them. Equally reasonable evidence exists surrounding *Shazaam*, as *New Statesman* journalist Amelia Tait observes:

In 1996, the basketball player Shaquille O'Neal played a genie who helped a young boy find his estranged father in a commercially unsuccessful film. The cover art of the film features Shaq with his arms folded, laughing, in front of a purple background. His name, "Shaq", dominates the top half of the cover. The movie's name is *Kazaam*. (Tait, 2016) (Also: see Figure 2)

It is important, then, to note that the phenomenon – if it can be called one at all – of the Mandela effect is not one peculiar to new, online technologies. A 2009-published study

of 180 people from Bologna and familiar with the Italian city's railway station, for example, found that more than 9 out of 10 participants shared a personal memory of the station's clock having not worked since a 1980 bomb explosion. Although all participants were adults at the time of the attack, in truth the clock, though damaged in the explosion, was quickly repaired and had continued working until 1996 (de Vito, Cubelli & Della Salla, 2010), after which it was left stopped. As with the examples above, the study's authors cite other experiences and events – including the widespread, iconic use of the stopped clock as symbolic of the attack – as influencing people's remembrances around the matter.

Yet what *does* set aside the Mandela effect in terms of a new kind of remembering is not so much that it should exist, but the new, technologically-facilitated ways in which these remembrances are able to take place – sharing *ideas about the past* beyond the bounds of geographical community – with new, online-enabled socialities (re)emerging through them. As with the sharing of the 'unflattering Beyoncé' meme explored in the previous chapter, opportunities for the emergence of the belonging individual are presented through these interactive, affective acts of remembering within the existing sociality – erroneous as they may in these cases be. Such socialities are dynamically reconstituted through a sense of mutually-existing belief, itself a manifestation of transindividually realised memory-potential, and inter-communicated through media. Thus, it is important to emphasise, the discerned memory-image, realised out of its potential, and irrespective of its accuracy in relation to events of the past, is in a sense secondary to the true resolve for memory: the (creative) action its creation informs, and its usefulness for the individuating individual. Whether these misrememberings are 'true' or not is unimportant – the sense of cultural value transduced through their collective sharing and engagement engender a sense of a sociality to emerge, from the past, apparently stabilised into the future.



Figure 1 – Mockup (perhaps tongue in cheek) of supposed Shazaam cover artwork (left)
 Figure 2 – Actual cover artwork for Kazaam (right)

Irish Slaves in America

Let us now contrast our thinking on the Mandela effect with a seemingly very different example of shared belief in the past. Rather than a collective belief in *lived* experience, a personal experience one has (supposedly) lived through, the ‘Irish slaves’ myth concerns a collective belief or trust in a false past not personally experienced – a false history.

In early 2016, a group of more than 80 academics and interested parties published an open letter to three news websites – American sites *Irish Central* and *Scientific American*, and Irish site *Irish Examiner* – asking them to “revise”, “correct” and “remove” false claims about allegedly “forgotten white Irish slaves” (Hogan, 2016) in articles they had published online. The websites, the letter’s authors showed, had relied on unqualified source material around the general claim that, as a Snopes article claims, “Early in America's history, white Irish slaves outnumbered black slaves and endured worse treatment at the hands of their masters” (Emery, 2016). Articles making the claim, which has circulated on websites since at least 2008 (Emery, 2016), are credited to numerous authors, though present this story through generally identical text. Facts about Irish slavery, promoters of the myth such as conservative blogger Ronald Dwyer argue, are

today “conveniently” left out of “biased history books” (Dwyer, R., 2015). Yet these ‘facts’, as set out in remaining source articles for the claim, may be shown reliant on demonstrably false historical recollections – they do not appear to be at all true (Emery, 2016; Hogan, 2015; Stack, 2017). As well as reportedly referencing non-existent events, misrepresenting historical dates and timelines and inflating numbers (Hogan, 2015), the articles base their claim largely on a disingenuous conflation of chattel slavery of the transatlantic slave trade and indentured servitude, in which free individuals agreed to a number of years’ labour in exchange for passage to the USA. Similar claims around ‘white slavery’ in the USA had been made in a 1993 book, self-published by Holocaust denier Michael Hoffman (Hogan, 2015a), before appearing in articles online, repeated through conspiracy platforms such as InfoWars.com (Hogan, 2015a; InfoWars.com, 2014), and eventually becoming various incarnations of image-text memes shared through social media.

The open letter argued that in promoting this myth, the outlets had “added a veneer of credibility to what is a well known [*sic*] white nationalist conspiracy theory more commonly found on Neo-Nazi and Neo-Confederate forums” (Hogan, 2016). Indeed, rather than its purported aim to ‘correct the historical record’, the sharing of the myth has been shown to be well established within white-supremacist circles for more present-day political purposes. The Southern Poverty Law Center, a non-profit organisation monitoring hate groups in the USA reports:

Predictably, this revisionism has attracted Neo-Nazis, White Nationalists, Neo-Confederates, and even Holocaust deniers, while racist trolls have deployed the myth to attack the Black Lives Matter movement. More worrisome, though, is its widespread adoption by principally American Internet users as if it were a point of "Irish pride."

Such political motives are illustrated starkly in a common version of the Irish slaves meme. Overlaying a reportedly misappropriated image (Hogan, 2015b), the text reads:

White Irish slaves were treated worse than any other race in the US
When was the last time you heard an Irishman bitching & moaning about how
the world owes them a living? (see Figure 3)

How, then, might we consider this kind of fictionalised historical memory in relation to our anarchival synthesis on *collective* remembering?

As with those practices of historical remembering exemplified in the previous chapter, it is important from the outset to think of the iteration of the Irish slave myth not simply as the material retrieval of a perceived record of the past. We must equally – indeed primarily – think of it as an anarchival process of engaging with the present, in duration, drawing on the *potential* of the past to inform individuation through (inter)action. Examples highlighted in the previous chapter explored how socialities may be reconstituted through reproduced engagements with historical records. In these cases, it was speculated that the potential, dynamic interactions around shared pasts through such remembrances give rise to opportunities for ongoing collective individuation for socialities. Meaning *in the present* for the group is found through choice of (inter)actions in sharing records of the past – for both the past and the individual to become ‘more than’ in the present. Thus, the records of the past – even their content – do not have potential in themselves. Rather, they operate as *carriers* of potential, itself realised out of the transindividual’s *engagement* with the cultural artefact. And the ‘truth’ of the event, is to a large extent less important than the cultural value that may be transmitted through the *re-versioning* of the past, to reconstitute a sense of the stable sociality in the present.

Yet, while the examples of the Beyoncé meme, *The Terror of War* photograph and Led by Donkeys reproduced political statements examined in the previous chapter involved the extending coalescence around ideas of the past that we can accept with some certainty, or evidencable trust, to have happened, the Irish slaves myth is demonstrably just that – a myth – and requires what we might think ‘a leap of faith’ to *believe* a demonstrably unprovable history in the fact of dominant narrative.

Here, it becomes clear that collective engagements with records of the past are not, so to speak, to imbue the past through its in-the-present re-engagement with a sense of ‘more’ substance or ‘more’ meaning than simply historically having *happened*. Rather, engagement with and belief in these records of the past serve primarily to give greater sense of meaning and identity to the collectively-individuating being in the present, *irrespective of whether the events actually happened*. As psychologists David Middleton and Steven D. Brown, argue:

[I]t does not matter whether the events recalled did or did not happen in the way in which they are retold. What does matter is that the commemoration takes a form that is sufficiently consonant with the group’s collective values that members may affirm it without finding it ‘strictly believable’. (2005, p. 21)

Collectively-individuating socialities reconstitute themselves not out of the potentials of an event having happened, but in coalescing around the pluripotentials of an event that *could* have happened – of an imagined or fictionalised ‘version’ or ‘interpretation’ of the past. The sense of collective identity (re)informed through coalescing around a fictional idea of the past helps to shore up ongoing support for the apparent stabilisation/preservation of the ever-emergent sociality – its history stabilised in the present through its perceived extension out of the past and into the future. Indeed, while acknowledging the wider, important, political and historical sensitivities and implications of propaganda, we might echo Clancy to suggest that belief in the Irish slaves myth to some extent simply makes people – here a collectively-individuating sociality or socialities – ‘feel better’.

We can through Simondon consider a more nuanced distinction between shared false personal memory of, say, Mandela’s early death and shared collective belief in the veracity of the Irish slaves myth. For Simondon, collective beliefs are not “the basis for their [a sociality’s] existence”, rather they are “a phenomenon of disassociation or alteration of groups” (quoted in Scott, 2014, p. 147). Shared *collective* beliefs such as the Irish slaves myth do not serve, like shared *personal* beliefs of those who believe in the Mandella effect or their own abductions by aliens, to (co)create an individuating sociality on the basis of a psychically-individuated belief in a shared past. Rather, a collective belief in a historical past is, as we saw in the previous chapter, developed as collectively-individuating action to *defend* or perhaps simply continue the precarious existence of an existing individuating perceived-sociality, always in a process of re-emergence:

[Collective belief] has a compensation value of consolidation, of provisional reparation rather than a relatively fundamental meaning for the genesis of the group and the mode of existence in the group (Simondon, quoted in Scott, 2014, p. 147)

Beliefs like the Irish slaves myth, then, we can understand as a belief that emerges out of the collective rather than out of the bodily-being, though constantly feeding back between the two in movements of reconstitution. As Scott, reading Simondon, suggests:

[Collective belief] exists when some force or obstacle obliges the individual to define and structure its membership in the group, in an intelligible and expressible form, to those who are not group members ... The instant the group’s identity is put into question, belief is there to provide the individual

associates with a way to cement their inter-individual relationships. (Scott, 2014, p. 143)

Indeed, it is through the re-assertion of group identity that the sense of the individual may relationally emerge. From this perspective, then, we might understand belief in the false history of the Irish slaves as less to do with explaining events of the past, less to do with forming a sense of collective or meaning through the realisation of genuine shared personal beliefs, and more a *creation of a belief* as an attempt by the already-existing collectively-individuating sociality to reaffirm itself, and in turn its members relationally reaffirm their sense of grouped individuality, in relation to a threat of otherness. In the case of the Irish slaves myth, we might understand it as an active attempt by those who perceive themselves to be alienated by the somewhat progressive politics of the early-twenty-first-century USA to cement a collectivised sense of racially-charged national identity. Indeed, in thinking around conspiracy theories more generally, might it be useful to consider them from a perspective of ‘counter cultures’ actively re-affirming their sense of desired hegemonic identity in opposition to a supposed (perhaps actually hegemonic) threat?

Sharing beliefs like the Irish slave myth, then, may be not so much about believing that a past happened, as cementing through the formation of a belief an existing sense of collective. Again, though, it is important to emphasise that the collective promotion of and belief in false remembrances that challenge more historically accurate narratives are not unique to new, online technologies. In his book *The Order Has Been Carried Out*, for example, pioneering Italian oral historian Alessandro Portelli demonstrates the stark differences between certain aspects of a Nazi-led massacre in the occupied city of Rome and the dominant ways in which they were subsequently remembered by its citizens (Portelli, 2003). The order to massacre 335 civilians was carried out *systematically* in retaliation against a resistance bomb attack that killed 22 German soldiers, as confirmed by the Germans’ own announcement of it: ‘the order has been carried out’. However, citizens of Rome by the late twentieth century (and indeed earlier) falsely remembered a counter-narrative that the German army had issued an ultimatum to the bombers, threatening the massacre *if they did not turn themselves in*. In effect, there exists a misremembering in Roman ‘historical consciousness’, casting prospective guilt to some degree away from the Nazi executors and onto the Italian resistance fighters. Portelli sensitively suggests, somewhat in accordance with our anarchival perspective, that this false historical memory of the massacre is complexly bound up in the biased ways it was

reported at the time, as well as the repeated fluctuations in affirming a sense of Italian national and political identity over the later twentieth century.

Yet what we do again see *is* different in the contemporary example of the Irish slaves myth is the technologically-augmented connectivity and reach of this ‘memory’ through new, online media – informing the everyday, collective individuation of socialities that span far beyond typical socio-geographic boundaries of previous communication technologies. Through new, online media, ‘memes’ such as this myth, or other fictionalised or more accurate beliefs in the past, may be used as a vehicle to unite hitherto unimaginable numbers of like-minded people together in collective individuation, cementing their ‘inter-individual relationships’.



Figure 3 – Popular meme version of the ‘Irish slaves’ myth

Connected Coalescence

We can see through these examples two distinct kinds of belief in false memory manifested in contemporary online life. Firstly, in a re-imagining of lived experience that is in contradiction to the evidenced or evidencable historical facts. Secondly, in a fabrication, misrepresentation or misinterpretation of historical events that is not borne out of lived experience. In both cases, we might tentatively say that these represent more of a *wanting to believe* than a strictly ‘lived belief’. And for each it is not the ‘truth’ of the past that is important, rather, a sense of making meaning for the individuating being

in the present. Put simply, its viability is not necessarily a factor in its *believability*. Yet these types of belief do not represent a simple difference in degree, moving from individual, to grouping, to wider socialities. Rather they represent a difference in kind. The former belief – in a false sense of lived experience – offers opportunities for the genesis of the individual, individuated psychically out of memory-potential, and perhaps co-individuated in the formation of groups, augmented through the connectivity of online media technologies. The latter – a shared belief in non-lived experience – does not offer opportunities for genesis of the individual. Instead, it acts to cement the relations in *existing* collectively-individuating senses of sociality – defining group-members in relation to each other, and against the idea of the ‘other’. Thus, collectively-shared false beliefs in turn (re)define the individual, and their impending actions, as a part of that sociality. The potential size, spread and relations of these individuating socialities are increased dramatically in the online era through the connectivity of socially-networked technologies such as forums and social media platforms.

In the next section, it is this second kind of false belief that we consider in terms of the *instantaneity* of new, social technologies. More than its reach through increased connectivity, the chapter considers how and why these beliefs may *spread* through particular socialities in the internet age.

--o0o--

3. The Spread of False Memory

The previous section explored the ways in which increased connectivity may be changing the ways we collectively remember false pasts through online-networked technologies. In this section, the chapter seeks to examine changes to the ways in which false memory may ‘spread’ through new, pervasive technologies. It considers three different kinds of example of fake content about recent pasts ‘going viral’, examining the ways in which they were spread online. Drawing on Bergson’s thinking in *The Two Sources of Morality and Religion* (1935), it then seeks to novelly conceptually position the viral sharing of online media content as an act of ‘moral obligation’ within individuating socialities. In doing so, it argues that we might understand the phenomenon of fake news as a kind of ‘moral lure’, through whose spread - de-coupled to some extent from hesitation by technologically-facilitated instantaneous communication – memory-image-informed conscious action risks being reduced to recognition-informed impulse-action.

Here, the chapter outlines three recent examples of false media content about recent pasts (indeed *ideas* of the past) that have gone viral: miscaptioned images of police officers allegedly ‘brutalised’ by a Central American migrant caravan; an online rumour or hoax known as the ‘Momo challenge’; and a faked video of a person surviving a close-call with a lightning strike. The section first aims to succinctly explore the examples in terms of their content, the ways in which the content was spread online, and the potential purposes for their creation. This established, the remainder of the section will focus more critically on the reasons *why* such content might spread so prevalently, from our anarchival perspective on remembering.

Migrant Caravan Brutalises Mexican Police Officers (2018)

In October 2018, a set of photographs began circulating on social media, including Facebook and Twitter, depicting Mexican police officers allegedly attacked by members of a Honduran migrant caravan that was making its way through Mexico, toward the US border, seeking refugee status. In the preceding weeks, much attention was drawn by US media outlets and the public to the migrants, who claimed to be fleeing violence and economic hardship in their home country. The images of injured police officers appear to have gone viral following being posted to a number of US right-wing Facebook groups (Roose, 2018). As well as posts being then shared or retweeted through social media, many users created new posts that used the same and additional images and near-identical, if sometimes embellished text (see Figure 4):

Mexican police are being brutalized by members of this caravan as they attempt to FORCE their way into Mexico – and WE are supposed to believe these are just poor helpless refugees seeking asylum??? (quoted in Evon, 2018)

In fact, there *had* been some genuine reports of altercations between members of the caravan and the Mexican police force at the border (BBC News, 2018). However, the photographs and descriptions of brutality that were circulating online appear ostensibly bogus. The images were shown to have been lifted from entirely different events – the main photograph reportedly coming from a 2012 altercation between Mexican police and *student protesters*, not migrants – and the allegations of brutal violence unproven (Evon, 2018; Roose, 2018).

While further below we will explore the potential reasons why this media content spread so vigorously online, it seems fair to speculate that it was in its creation intended to promote a negative view of the migrant caravan, as it more closely approached the USA. Indeed, it is important to contextualise the example within a wider alleged campaign, or at least collective attempts, to villainise the group. These have been reported to include: widely-spread, miscaptioned photographs, claiming to show members of the caravan burning U.S. flags (Evon, 2018); a claim, accompanied by a misappropriated video, by US congressman Matt Gaetz that migrants were being paid to join the caravan, perhaps by Jewish billionaire and philanthropist George Soros (Gaetz, 2018); and an unevidenced claim by Donald Trump that “[c]riminals and unknown Middle Easterners” were “mixed in” with the caravan (Trump, 2018).

Within our anarchival perspective on remembering, then, we might consider the sharing of this fake news as an attempt by some more nationalist-leaning members of the U.S. population to re-assert their identity to both ‘themselves’ and perceived ‘others’. Through creating a collectively shared belief in the migrants as violent and dangerous, and coalescing around it through interactively sharing it to others online, instantly, socialities are able to on a large-scale and in real-time cement relations between members, and relationally define themselves against (the threat of?) the other.

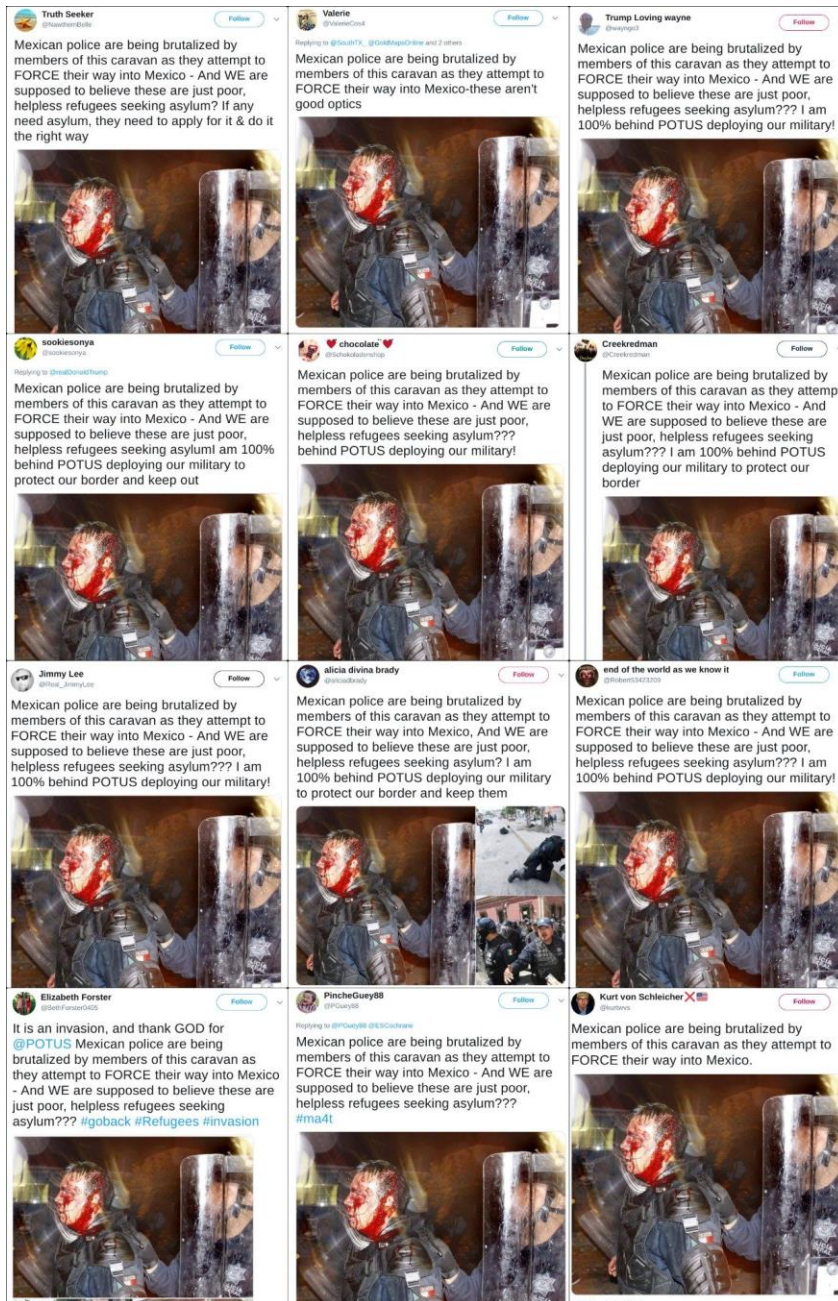


Figure 4 – Multiple tweets about the supposed migrant caravan brutality, using the same miscaptioned image and near-identical text

Lightning Strike Reaction (2016)

Since it was uploaded by YouTube user Frank DeMayo in February 2016, the 41-second video clip *Lightning almost strikes girl in Sydney!!! Boyfriend's reaction is priceless!!!!* has been watched more than 4.3 million times (at the time of writing) (DeMayo, 2016 – see Figure 5). The video, shot by the supposed boyfriend, follows a young woman in somewhat revealing swimwear, from behind, as she makes her way to the beach. In a landscape shot almost reminiscent of the Romantic painters, the woman narrowly avoids

being struck by a lightning bolt as she stands near the water's edge. In the aftermath of the strike, and out of echoes of thunder, both subject and filmmaker run back to the mainland – the focus of the video, the filming seemingly somewhat forgotten about, now on the boyfriend's almost-comical verbal and strongly regionally-accented Australian reaction to the high-impact near-miss. Of the nearly two-and-a-half-thousand comments under the video, a few suggest that the video is fake, others seemingly do not realise, and others claim they just don't care.

Fake, however, the video was, created by Australian media production advertising company The Woolshed Company – now Riot Content. The clip formed part of a two-year, eight-video-strong campaign, *The Viral Experiment* (The Woolshed Company, 2016; Riot Content, no date), to demonstrate the company's ability to create short, "snackable" online viral content (The Woolshed Company, 2016, p. 2), allowing companies to have advertise "without aid of any paid media, promotion, publicity, established channels or distribution networks" (The Woolshed Company, 2016, p. 1). Indeed, if their no-longer-available-online press release is to be believed, the lightning strike video had amassed far more than a few million views, even within the five months since being published. Once data from tracking the content across posts and reposts in media platforms beyond YouTube are factored in, the company claims, the clip had been watched more than 58.9 million times by early July 2016. In fact, the possibility these videos *were* fake was the apparent secret to their viral success, the company claims – bolstered by coverage in TV, print and online news outlets across Australia, North America, Europe, Russia and East Asia, before the truth was revealed in July 2016. "[T]he world watched, they shared and then they argued like hell over their authenticity. It was this debate over authenticity that propelled each videos' *[sic]* viral success" (The Woolshed Company, 2016).

There is something twofold about the affective 'instantaneousness' of this clip. On the one hand, like so many other media clips, it does not recount so much as 'replay' the event being (supposedly) remembered. Experientially, and similarly to those themes discussed in our first Case Study chapter, viewing the clip is less of a recall of the past, and more of a kind of re-witnessing, a being-in-the-instant (see Case Study Chapter 1). On the other hand, interactively, the pervasiveness, connectivity and speed of new, online technologies allows the clip to be shared, its authenticity debated, in an instant and within multiple networks. The *surprise* of the clip – or "surplus-value of being", as Massumi has put it (2002, p. 220) – indeed perhaps the potential *invention* of the clip carries its charge

through the affective, relational processes of viewing, interacting and sharing. The action of viewing the video extends into collectively-individuating actions of inter-relation through sharing and discussing the clip across multiple fields of relation, informing multiple socialities.

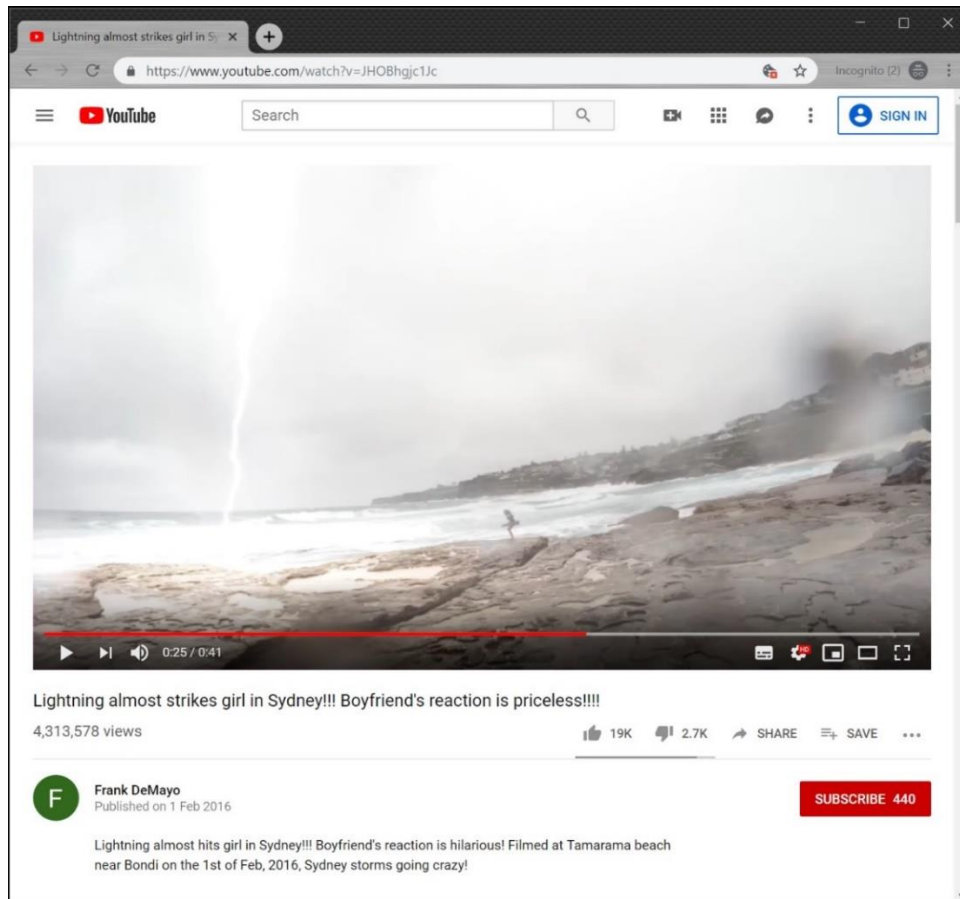


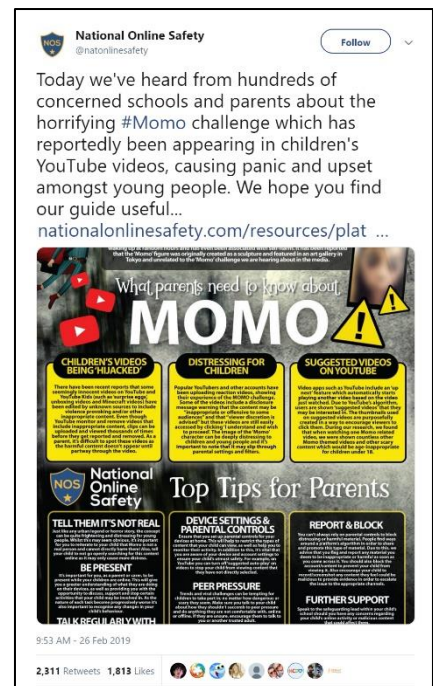
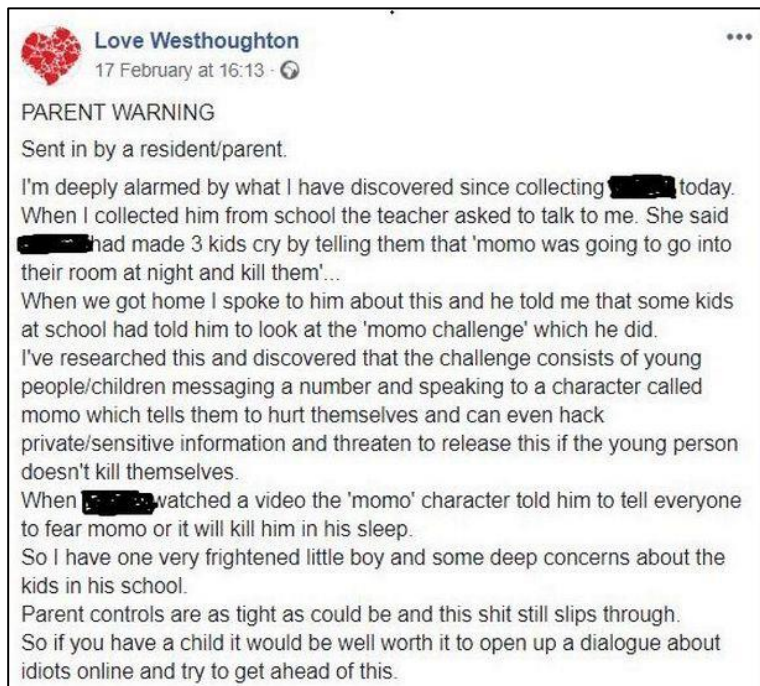
Figure 5 – Screenshot of the Lightning Strike Reaction YouTube clip

The Momo Challenge (2019)

The viral internet hoax of the potentially-lethal ‘Momo challenge’ had been circulating across countries around the globe since 2018 before it made its real debut into UK society. Previous versions of this urban legend had involved reports of an odd-looking character of ‘Momo’ playing a deadly kind of game with users of WhatsApp – commanding them to perform a series of tasks, including self-harm, against the threat of (supernatural or actual) violence if they do not obey. Reports by news outlets and social media posters would blame hacking groups for the phenomenon, and attribute the challenge to multiple suicides elsewhere (Chui, 2018; Tahir, 2018) – though with no definitive evidence with which to back up the supposed link (Mikkelson, 2019).

In February 2019, Momo took on a new tactic. The character, it seemed, was now targeting young children through ‘hacking into’ children’s videos on YouTube, such as Peppa Pig, to convince them to contact it on WhatsApp. While the phenomenon again saw activity across several countries, the beginning of this UK online ‘outbreak’ of fear appears to have been traced to a single social media post, made on Facebook group ‘Love Westhoughton’ on 17 February and warning about the supposed challenge (see Figure 6). The attention garnered in this group was subsequently picked up and reported on by a reporter for the *Manchester Evening News* (Gill, 2019). Spreading its tentacles across wide across various channels of the hybrid media system (Chadwick, 2017), over the next two days, the story would be picked up by national press online and in print, reporting the suicide game as fact. Stories would often incorporate the same dubious examples of its connection with previous outbreaks and suicides in other countries, or suggesting that it was a plot by hackers to steal users’ personal data (Evans, 2019; Hughes, 2019; O’Malley 2019; Williams, 2019). Soon, schools were sending home letters about the challenge (Waterson, 2019a), and advocacy groups (National Online Safety, 2019 – see Figure 7) and even police (Police Service of Northern Ireland, 2019) were issuing safety warnings about how to prevent children being snared by it. All the while these, reports, letters and warnings were being recirculated on social media through digitised letters, sharing posts, and linking to news reports – all fuelling each other in a kind of affective feedback loop. Meanwhile, YouTube had consistently claimed that neither did such videos exist nor could people ‘hack into’ videos already online, and no evidence of associated harm coming to a child could be found (Lorenz, 2019; Waterson, 2019a). The past was haunting whole societies, yet it was a past that never occurred.

In terms of connectivity and instantaneity, we can see in the Momo challenge how opportunities for the formation of so-called ‘rumour mills’ have been amplified by new, networked media, leading to increased possibilities for viral spread of rumour and fake news. The construction of a false belief in either Momo or the faceless hackers operating it thus acts as a way of both constituting and preserving the perceived group. Yet in socially constructing and sharing the belief in the Momo challenge something more seems to be going on than merely cementing the affective, relational bonds of inter-mingling, collectively-individuating socialities. Rather, it illuminates a more nuanced aspect of the virality of spreading fake news – a moral duty, or an instinctive *feeling* to be acted on, for the protection and preservation of one’s perceived sociality or socialities. Here, then, we move into our next section.



Figures 6 - Screenshots of the original post on the 'Love Westhoughton' Facebook group (left)
Figure 7 - Twitter warning post by school support organisation National Online Safety (right)

Above, we have considered how the instantaneity, along with connectivity, of new, online technologies may serve to augment the reach and spread collectively-individuating false remembering online. Yet why is it that *these* media go viral, whereas others (perhaps thinking back on examples of the Mandella effect or the Irish slaves myth) do not? What, if anything, drives the seeming sense of *urgency* with which viral content seems to spread itself online?

To seek to understand this, the chapter now returns theoretically to Bergsonian-Simondonian thinking on the nature of ‘society’ and moral obligation. We saw in the Theory Chapter how Simondon’s thinking on individuation, while discrete, can be seen as a kind of “negotiation” (Scott, 2014, p. 128) with Bergson’s theorising on *The Two Sources of Morality and Religion* (1935). Here, the chapter seeks to situate the examples above within a succinct reading of Bergson’s theorising on ‘open’ and ‘closed’ societies in this original text, in relation to the synthesis on collective remembering developed in the previous chapter. In doing so, it argues for a novel conceptualisation of the virality of fake news as a kind of ‘moral lure’, exploiting the processes of collectively-individuating interaction.

Bergson begins *The Two Sources of Morality and Religion* with a stark question on morality. Considering the idea of childhood and ‘forbidden fruit’, he writes:

What a childhood we should have had if only we had been left to do as we pleased! We should have flitted from pleasure to pleasure. But all of a sudden an obstacle arose, neither visible nor tangible: a prohibition. *Why did we obey?* (Bergson, 1935, p. 1 – emphasis my own)

The “habit” of obedience (Bergson, 1935, p. 1), we might think, is formed by our deferral to the authority of parents and teachers. Yet behind such figures, Bergson suggests, “we had an inkling of some enormous, or rather some shadowy, thing that exerted pressure on us through them. Later we would say it was society” (Bergson, 1935, p. 1). For Bergson, societies are informed by two distinct tendencies of morality, which differ in kind: ‘closed’, which is the tendency “to preserve and protect the group exclusively” (Lefebvre & White, 2012, p. 6); and ‘open’, which is the tendency “to love, respect, and care for all human beings as such” (Lefebvre & White, 2012, pp. 6-7). These co-existing tendencies lead to two kinds of sense of society – or what we might think of as two kinds of collectively-individuating *sociality*. A closed society is driven evolutionarily by a “social

instinct” toward social cohesion (Bergson, 1935, p. 21) – a closed ‘in-group’ in relation to the ‘other’. It is the natural instinct of humanity: “the basis of social obligation always has in view ... a closed society, however large” (Bergson, 1935, p. 21). Thus, the closed society is one “whose members hold together, caring nothing for the rest of humanity, on the alert for attack or defence, bound, in fact, to a perpetual readiness for battle” (Bergson, 1935, p. 229). In contrast, an open society, Bergson claims, is a perhaps aspirational one “represented by all mankind” (Bergson, 1935, p. 20) – in which, through “variability and intelligence”, the ‘in-group’ encompasses all humanity (Bergson, 1935, p. 18). By way of illustration, then, if we are to think back on the Irish slaves myth of the previous section, we might in simplistic terms understand the ‘spread’ of this belief through media as an example of a closed society exercising a *moral obligation* to re-assert itself in relation to the perceived other.

Tendencies toward being open or closed do not differ in degree, but in kind (Bergson, 1935, p. 22) – no matter how ‘open’ a closed society may be, it is still closed so long as it tends to define itself in opposition to a sense of ‘other’. Thus, for Bergson, we might view societies in terms of a mixture of tendencies toward *inclusion* against *exclusion*, or *shared affinity* against *opposition*. And, through the theoretical position set out through Simondon in the previous chapter, we might consider a more nuanced understanding of this distinction, thinking the tendencies in terms of multiplicities of always-individuating socialities through transduced *cultural value* – an always-emergent collective belonging to humanity as a whole, *as well as* belonging to myriad other socio-cultural groups.

How, then, might we conceptualise the spread of fake news within this moral context?

As with the Irish slaves myth, we might consider the construction and sharing of fake news about the Central-American migrant caravan as a morally-informed action, a communication of cultural value to recognise, unite and protect the collectively-individuating closed society. Multiplicities of collectively-individuating socialities ‘act out’ shared national identity through the online, networked sharing of anti-migrant sentiment, in an urgent, morally-felt act of preservation. In doing so, they reconstitute their own sense of ‘more than individual’ belonging to the collective in the face of an approaching ‘other’.

Equally, while sharing fake news about the Momo challenge might on the face of it appear morally a more ‘open’ tendency, it may be better understood as the protection of a large-scale, open-ended yet closed group in relation to an outside threat. It is not the

preservation of ‘all humanity’ that is a concern here – rather the preservation of ‘most’ in society against a threat from ‘some’. There is an unknown enemy that is out to attack ‘us’, and the moral action of techno-culturally networked sharing content around the Momo challenge – literally warning others – serves to both reconstitute the perceived sociality and urgently defend it from its perceived threat.

Conversely, and perhaps most interestingly, it is tempting to think of the virality of the lightning strike video more in terms of an open society, in that sharing the content may seem a collectivising appreciation for humanity in its (more than) totality. The charge, or cultural value that is being passed on here, we might think, is one of surprise, of ‘surplus value’ – the felt, moral imperative being one of pure participation with the other, toward open-ness. The virality of the content draws on the readiness of the transindividual being, as an affective centre of action, toward interaction. We might think of this in terms of Massumi’s thinking of affect as “pure sociality ... the openness of being affected ... an active pressure towards taking-form ... the ongoing force of the social taking evolving form” (2015, p. 205). The ‘surplus value’ being shared, and through which collective individuation takes place, is one of surprise – thus, the urgency of sharing arises from being able to convey that surprise to others in one’s collective while it remains novel. Furthermore, we can see the mediated sharing of the human ‘surviving’ the strike as one of progressing extension of *humanity*, against the odds, out of the past and into the future, as one of collectively individuation. Nevertheless, there is a certain moral duality or tension to this affective apparent openness, since the ‘surprise’ in the clip comes from the instinctive and closed opposition of ‘human’ to ‘nature’. Indeed, it is interesting to note that, of the eight clips created through *The Viral Experiment*, the three most successful each involved a ‘near-miss’ with a non-human (indeed non-technological) event. Indeed, while the lightning strike reaction clip had garnered most impressions at the time of going public about the ‘experiment’, the other two respective clips have since long surpassed it in terms of YouTube views. *Snowboarder Girl Chased By Bear - I Was Singing Rihanna Work And Didn't Know It Was Behind Me!* (Murphy, 2016) has been viewed more than 10.9 million times at the time of writing, and *GoPro: Man Fights Off Great White Shark In Sydney Harbour* (Tufferson, 2014) more than 38.2 million times.

Fake News as Moral Lure

With each example above, then, we might consider the sharing of fake content as acting on a moral obligation toward (re)constituting a sense of collective identity, of ‘more than’, through techno-cultural signification – in turn, reconstituting a sense of sociality, of

‘grouped individual’. As we have seen, this drive is not in itself new – on the contrary, it is evolutionarily informed. Yet what *is* new is the reach and speed of such media’s spread across affective fields, driven by moral obligation and enabled through the connectivity and instantaneity of new, online media communication. The possibilities for interaction afforded by high-speed, inter-networked media platforms greatly augment the ability for the reconstitution of socialities.

Yet what might the implications of such a shift be? Indeed, if remembering serves to inform useful action, just who benefits from this action? If we are to consider the individual as an always-relational being, coupled through technology and interacting across multiplicities of affective fields, how do we consider the agency within such relations?

In the case of the migrant caravan, the solidifying of anti-immigrant sentiment serves to reconstitute an existing sociality. Yet the harnessing of processes of individuation may also serve a higher political purpose in maintaining the perceived dominance of a particular political viewpoint – and perhaps the power of their proponents. The virality of the lightning strike reaction video demonstrated the propensity of the individuating being toward ‘the openness of being affected’, but at what cost? The video itself was part of a retrospectively-celebrated advertising exercise by a marketing company, attempting to manipulate users into sharing the content, shifting the burden of labour from producer to consumer. Perhaps the belief in, and spread of, the Momo challenge presents the starkest example of what is at stake for the agency of the individuating individual in the online era. The rumour hijacked those instincts of moral obligation to protect a perceived sociality, in a sense turning members of that group against each other to potentially, impulsively, and at a lesser degree of consciousness, harmfully spread fear and panic. Furthermore, the examples serve as an important reminder that the affectations of online technological interaction bleed into life beyond the mobile phone screen. Beyond affective “leaky” bodies (Tucker, 2018, p. 40; Massumi, 2002, p. 203), it is worth re-emphasising, we are leaky *societies*.

Why did we obey?, Bergson asks about moral obedience in childhood. Why, when instructed, did we act?

Why do people so readily and rapidly share fake news?, we might equally ask about moral obedience online. Why, when the instructed ‘opportunity’ to share is presented, did we click?

On one level, as we saw above, we might think of the sharing of false memory online as inter-acting on a kind of moral obligation of a closed society, to re-affirm or reconstitute a collectively-individuating sociality and one's belonging to it – and increased connectivity has enlarged the scope of a potential sociality far beyond geographical limits in what can constitute a sociality. Yet what is different about new social media technologies is not just their connectivity, but the *instantaneity* of communication – the removal of barriers for delay and thought – allowing such affective interactions to form across vast distances and networks in real time. On another level, then, this section now argues that we might see the sharing of fake news as a shift away from conscious choice, and toward more impulsive, lesser-conscious – and therefore often 'closed' – tendencies.

Impulse, Bergson argues, drives humans naturally toward closed-tendency societies, with intelligence and conscious choice of action driving them toward more open-tendency societies: "obligation as a whole would have been instinct if human societies were not, so to speak, ballasted with variability and intelligence", Bergson suggests (1935, p. 18). We speculated in the Theory Chapter that it is through the force of *hesitation*, informed through the realisation of memory-potential into a discernible memory-image, in relation to perception of the world, that we are able to make voluntary – i.e. conscious – choice. Indeed, for Simondon, memory informs *doubt*, allowing the being "an operation of distance and reattachment" (Scott, 2014, p. 118). It is, for Simondon, through this sense of distance that the sense of *individual* can emerge, aware of its (semi)separation from, or rather individualised belonging *to*, the collective:

Memory is the realization of distance, gaining of objectivity without alienation. It is an extension of the limits of the subjective system, which gains an internal duality without cutting or separation: it is alterity and identity progressing together, forming themselves, and distinguishing themselves in the same movement. The memory's content becomes symbol of the present "I"; it is the other part; the progress of memory is an asymmetrical splitting of the subject being, an individualization of the subject being. (Simondon, quoted in Scott, 2014, pp. 118-119)

Yet in the experience of remembering through new, social-media technologies, barriers that inform hesitation – the realisation of memory-potential into a memory-image – we might think are almost entirely removed. The subject exits the concept of 'time' and exists in the world of duration, 'in the moment', prompted to respond quickly, unthinkingly – impulsively – to the endlessly scrollable content with simple choices of action: 'like' (or

similar), ‘comment’ or ‘share’. Reduced to impulse, we may exist in a world of instinct, memory-potential seldom formed into consciously-discernible memory-images, instead operating at a level of recognition and impulse action. Such an existence Massumi calls the “non-conscious memory of the present, which is the past actively contracted into the cut of the present instant” (2015, p. 62). And with each action the chances are increased of the content in turn being seen, and interacted with, by others in their network through algorithmically-informed filter bubbles.

The subject is in a sense reduced to action – action informed not through conscious choice but through more instinctive impulse-responses to recognition, and action serving the usefulness not necessarily of the individuating being itself. The agency of the human in the man-machine coupling is at significantly compromised. In a very real way, we lose our ability to consciously individualise ourselves within a collective. We shift away from tendencies toward open societies, and instead toward a more docile submission to the needs of the perceived hegemonic yet closed collective.

The phenomenon of fake news thus lives through a kind of lesser-conscious ‘moral lure’ through the connectivity and instantaneity of social media technologies – thriving through the platforms’ reduction of the thinking, individual user to impulse-driven actor. Fake photographs of migrants are shared out of instinctive anxiety in the face of ‘the other’ and a felt need to defend ‘one’s own’. False rumours are spread out of instinctive fear and a felt need to protect the vulnerable in the group. Videos of fake events circulate out of an instinctive pride in the dominance of humanity over nature, or perhaps unthinking awe in the surprise at surviving its wrath.

Yet, more than this, these behaviours are caught up in a kind of semi-ordered, affective flux. Acts of remembrance flow across relational fields through digital, technological networks of various, organised, media and communications systems. We live with and through ‘leaky societies’, and the affective movements of false remembering move through multiple more social, more organised and more economically-motivated arenas. The surges of affective interaction that constitute the spread of fake news seemingly are morally-induced as much by the economic strategy of news outlets and advertisers – seeking revenue, visibility and increased search-engine optimisation (SEO) – as by those users and their on- and off-line networks caught up in the drive toward individuation. And, beyond this, as we have seen in the previous chapter, contemporary socially-networked platforms – architected to *channel engagements* rather than manage content –

lack the capacity to properly limit access to content containing misinformation, fake news or hate speech.

It is not enough, then, to consider fake news in relation the connectivity and instantaneity of new technologies. Remembering online, as we have seen through previous chapters, represents a complex socio-economic ecology of ‘flows’ of remembering, of ‘memory-as-action’ – a struggle for the constitution and the value of movements of content from one place, platform and time to another, and the agencies that underpin this. Thus, to truly understand what is at stake for remembering in the online era, we must once more examine the *materiality* of false remembering through these prominent ‘sites’ of memory. The next section aims to tackle this through looking at the experience of remembering fake news through prominent socially-networked technologies, the agencies inherent in such experiences, and the implications of these. How and why may inherently false perceptions be informed through perception portals such as Facebook and Twitter? What kinds of actions are informed? And for whose benefit?

--o0o--

4. Impulse, Agency and Affect Capitalism

This chapter has thus far placed a focus on the personal and social aspects and implications of collective (false) remembering in the online era, examining the ways in which affective, identity-informing interaction may spread across various changing fields of connective and temporal affectivity, reconstituting multiplicities of collectively-individuating socialities through various socio-technological networks – on- and off-line. Armed now with a working philosophical understanding of how changes to connectivity and instantaneity in new technologies are affecting the ways in which false memory may be spread online, this final section seeks to once more refocus on the *materiality* of online experience of remembering through prominent social-media models like Facebook or Twitter – examining their socio-economic underpinnings and the resulting implications. In what ways are the *experiences* of false remembering, and thus senses of sociality and identity, co-constructed, reconstituted or guided by prevalent platform architectures as perception portals in duration? What inter-related agencies are at play and in what ways? What kind of actions are informed by these guided perceptions, and who truly benefits from such actions?

In previous chapters we saw how relational senses of collective and individual identity may be artificially reconstituted through the perception portals of contemporary surveillance technologies, such as Facebook, Twitter, YouTube and Google. Perceptions experienced on these platforms may be algorithmically-facilitated through automated ‘recommendations’ of content with which the platform anticipates the user will likely engage, understood as so-called “filter bubbles” (Pariser, 2011). These content-feeds, architected through feeding forward analysed personal-user-data from the past to connect users with ‘relevant’ content in the present, are designed not primarily to ‘organise content’ per se but to stir up affective, collectively-individuating connections that ensure continued, monetisable user-engagement. In a sense, such platforms use data-records of users’ own pasts to ‘predict’ what connections will excite them in the present, to keep them monetisably engaged in the app. Cultural theorist Rebecca Coleman thus observes that “the aim of big data is not only to care about what ‘you’ have done, so much as what you are doing and may do ... In this sense, it is future-oriented” (Coleman, 2018, pp. 71-72).

Yet, more than this, for platforms such as Facebook the currency of *value* we can understand as not the message itself, but the *messaging*. *The subject is reduced to action*. While, as media theorist Tero Karppi observes, it is “infra-individual” *engagement*, or a sense of *connection*, that informs Facebook’s business model - that “attunes us together toward a state where leaving Facebook becomes impossible both physically and mentally, individually and collectively” (2018, p. 46) – it is nevertheless the *interactions* or *movements* of these connected engagements that fuel the platform. Our interactions become:

[M]onetized with mechanisms such as targeted Facebook ads and frictionless sharing, which entices us to share both voluntarily and involuntarily. We are taken into circulation; we become part of Facebook as streams and flows of content. (Karppi, 2018, p. 46)

Actions – limited to ‘datafiable’, analysable options of viewing, sharing, ‘reacting’, commenting – are collated, packaged, commodified and sold to advertisers, and promoters. Furthermore, they are sold back to us through being used to ‘rank’ further content with which the platform anticipates we will engage. Seemingly like bottom-feeders, external actors seek, too, to capitalise on the social-media model – with each share, and each click, of adverts, click-bait or fake news articles increasing their own

potential revenue. Thus, viral cycles, not necessarily useful to the transindividual, operate this way because – as discussed in the previous chapter – they are *designed* to operate this way. It is not *content* that is harnessed but the drives toward interaction out of memory-potential, to accrue value in the attention economy. Limited in both perception and choice of action, we exist through the perceptual lens of YouTube recommendations, the Facebook News Feed, Twitter timeline, Instagram feed, at a *lesser degree of consciousness* – docile, reflexive, primed to be shown, and to impulsively respond accordingly.

Let us emphasise once again that the body is “a centre of action; it receives and returns movements” (Bergson, 2004, p. 4). Remembering, the perception-informed, affective stirring of memory-potential into action, is at an instinctive level reflex-like – a feeling that commands an action. Conscious remembering involves *imagination*, in combination with perception and memory-potential, to *realise* or abstract this non-representational feeling into a memory-image that can be used to inform a *choice* of action. Perception informs remembering, informs drives toward individuating action, informs society and, thus, identity.

We have discussed across previous chapters that consciousness, for Bergson, has its core in the choice of what to perceive. Of course, social media technologies allow us far greater connectivity, apparently increasing opportunities for perception. Yet, it is important to remind ourselves that a greater perception does equate to increased sense of consciousness. Rather, the converse is true:

[T]he perception of any unconscious material point whatever ... is infinitely greater and more complete than ours, since this point gathers and transmits the influences of all the points of the material universe, whereas our consciousness only attains to certain parts and to certain aspects of those parts. Consciousness ... lies in just this choice. (Bergson, 2004, pp. 30-31)

The crucial importance of Bergson’s observation is in how the *choice of perception* leads to the *choice of how to voluntarily act*. Simply put, base consciousness lies in the ability to pick and choose how we perceive and, accordingly, how we act – to relationally choose to limit our own sense of perception, in tandem with the realisation of memory-potential, informing our own choice of useful action. These choices of action are expanded, through cultural action, into the social, out of which a sense of *the individual* emerges.

Within the likes of the Facebook News Feed, YouTube's auto-play recommendations and the 'Twittersphere', choice of both perception *and* action are in many ways decided *for* us, or at least limited by automated systems whose purpose is to keep us engaged – capitalising on the charges that propel individuation, and keeping the business moving. Thus, while it is true that the increased connectivity and instantaneity of new communications technologies play a role in fuelling the virality of fake news, this chapter argues that once more the more significant factor is in the surrender of *choice*. It is in encouraging such kinds of lesser-conscious, instinctive, recognition-impulse-(inter)action that social-media platforms draw in their revenue. As Karppi observes, in remembering through these platforms, we surrender ourselves to “mechanisms of control that modulate and condition the user for the needs of the platform and social media business models in particular ways” (2018, p. 23). With action, as with perception, we deprive ourselves of agency within the man-machine coupling. And, in doing so, we reduce our very sense of conscious being, both in terms of our sense of social identity out of what is presented as the social *now*, and in terms of conscious choice of action that allows for such always-emergent identities to be constantly reconstituted through acting on that social *now*.

What is significant from our anarchival perspective on remembering, then, is twofold. Firstly, that surveillance platforms do not only guide our perceptions, but also our *actions*, reduced often to impulse. And secondly, that these actions are (re)encouraged for usefulness not primarily to the user, and its perceived sociality, but to keep them (monetisably) participating in the platform. Thus, processes of transindividual *consciousness* are reduced, identity, society and action tamed for principally the needs of the platform.

Yet, as the examples of hate-speech and scaremongering exemplified in this and the previous chapter demonstrate, while profiting from phenomenon, platforms can operate often little control over what and how media-content may spread virally through their own sites. In interdependent techno-cultural couplings, parties distinct from the platform not only populate its personalised feeds but operate their own agencies in doing so. Through platforms' reduction of perception and action to limitedly-conscious, impulse-driven behaviour in duration, third parties – organised or more spontaneous – may take advantage of the platform-architected encouragement of what we may now think of as moral-imperative-drives toward collectively-individuated reconstitution of a sense of sociality, of belonging. Furthermore, organised – often political – interventions,

employing or taking advantage of surveillance technologies, may extend beyond individual platforms and into the wider sociality-informing, affective atmospheres of the hybrid media system.

Here we might consider a number of examples, to which we will return later in the chapter.

The operations of data analytics firm Cambridge Analytica, for instance, internationally provided targeted, political, social-media advertising, based on ‘personality models’, themselves drawn out of trawled and collated personal user-data (Cadwalladr, 2017a). The company folded in the wake of a 2018 controversy, when it was discovered that it had illegally (though straightforwardly through Facebook’s own systems) used the harvested personal data of at least 50 million Facebook profiles (Cadwalladr & Graham-Harrison, 2018) – but not before it had been implicated in both the Trump 2016 US-presidential-election campaign (Cadwalladr & Graham-Harrison, 2018) and the alleged illegal co-ordination of multiple UK EU-Referendum ‘Leave’ campaigns (Cadwalladr, 2017a).

Such influences need not come in the form of ‘paid-for’ adverts or sponsored content. Journalist and academic Peter Pomerantsev, in his 2019 book *This is Not Propaganda* equally draws our attention to organised so-called ‘farms’ of “trolls, bots and cyborgs [a combination of the human troll and technical bot]” who are able, through calculated postings across multiple sites, to “create the simulation of a climate of opinion, of support or hate, which was more insidious, more all-enveloping than the old broadcast media” (2019, p. 81).

In August 2019 (on the very day of publication of Pomerantsev’s book) an investigation by British newspaper *The Guardian* revealed that lobbying firm CTF – run by Lynton Crosby, long associated with UK Conservative Party election campaigns – had constructed secret disinformation networks of seemingly-independent, unbranded ‘news’ websites and Facebook pages to promote targeted political campaigning for corporate and governmental business clients (Waterson, 2019b). The pages, reaching tens of millions of people through targeted Facebook advertising, reportedly spread selective disinformation to users across the UK and internationally (see Figure 8), seemingly as independent organisations, while working at the behest of clients such as the Saudi government or anti-environmental lobbies (Waterson, 2019b). What is of particular interest in the CTF case is that the pages were created not only to manipulate targeted

interest in a political message, but that the artificially-induced user-participation in those pages could then be used more widely and compoundedly to indicate supposed ‘grassroots’ swelling of public opinion (Waterson, 2019b).

Given the extent to which we have through this thesis seen identities may be today informed through uncritical online perception and interaction, the potential implications of such clandestine controlling over what may be perceived to be ‘the social’ are, from our anarchival perspective, quite staggering. As Scott contends, from a point of view of the sense of *individuality* emerging out of collective individuation:

We are obliged to think of the group as anterior to the individual, instead of the individual as anterior to the group ... And because the group is nothing more than pure relationality ... we are left to grasp the individual’s fragility within the psycho-sociological domain (Scott, 2014, p. 136)

The sense of the individual, reliant as it is on the perceivable bodily and social *relation* to others in a perceived collective, is fragile, constantly re-informed by the its own sense of re-emergence out of the group.

Postmodern and posthuman theorist N. Katherine Hayles notes that “[c]orrelation, databases’ *modus operandi*, implies that many single data entries, innocuous in themselves, can become potent invasions of privacy when concatenated together” (2016, p. xi). Yet, such correlations may do more than simply identify the *kind* of person you are. Once these concatenations are fed-forward through perception portals, manipulating one’s sense of sociality, it is the very sense of *individual*, private or otherwise, that becomes what is crucially at stake – mouldable, modifiable through its potential surrogate sociality. Shortly before the large-scale emergence of Web-2.0, Massumi famously claims, “*Capitalism is the global usurpation of belonging*” (2002, p. 88). Indeed, with contemporary networked, surveillance technologies, it seems the very sense one’s sociality and thus individuality, one’s sense of belonging – or at least its manipulation – may be up for sale. Artificial senses of ‘the social’ and of identity, and thus artificial manipulation of resulting behaviour, may through the tools and affective user-experience of surveillance technologies be constructed for the right price, with varying degrees of intensity. As philosopher Tamsin Shaw argues, reflecting on the Cambridge-Analytics-style data analytics industry, “To have so much data in the hands of a bunch of international plutocrats to do with it what they will is absolutely chilling” (quoted in Cadwalladr, 2017a).

It is clear that online perceptions of the social *now* (more consciously or less consciously perceived) may be encouraged and guided by numerous agencies beyond the embodied user, and indeed beyond the economic drives of the platform – themselves not concerned with content but monetisable engagement. Yet, since consciousness lies in the ability to voluntarily choose what to perceive *and* how to act, we must here refocus the investigation not only on what kind of perceptions may be guided and why, but also on what kind of *actions* may be informed through those perceptions, and for whose benefit.

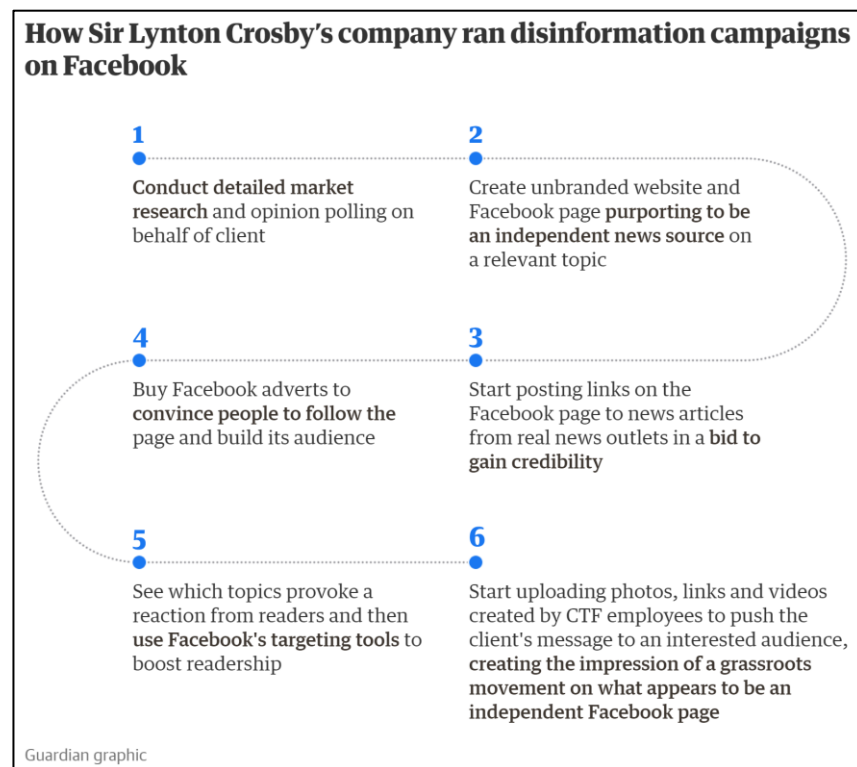


Figure 8 – Graphic from *The Guardian* newspaper, illustrating the CTF disinformation campaign

Remembering, The ‘Nudge’ and Manufactured Consensus

We have seen above that perceptions may be manipulated through online perception-portal technologies like social media, through the algorithmic feeding forward of users’ past data and personal information into connections with media-content – often for perhaps more ulterior purposes, “without our awareness, to manipulate us subliminally and outside of our control” (Hansen, 2015, p.71). N. Katherine Hayles rightly notes in her foreword to the book, *Memory in the Twenty-First Century*:

Like biological memory which has been shown to be essential in planning and anticipating the future ... data derivatives are also aimed at anticipating future events which have not been – and may never be – predictable using causal connections. (2016, p. xi)

Indeed, in attempting to predict the future, it might be tempting to loosely liken data-processes – when it comes to social media – to the imaginative notion of pluripotentiality. Yet, rather than *imagine*, data – at least presently – we might think works to *define*. Through recognising correlation, data seeks to *define* likelihood rather than *imagine* its possibility. It strives toward not pluripotentiality but in reducing pluralities toward the singular, toward certainty. Social-media platforms – swathes of personal data at their disposal – strive equally toward certainty of engagement, of interaction – not what *might* engage, but moving from what *should* engage to what *shall* engage.

This thesis asks, then, whether we might think of purposely-manipulated, engagement-encouraging, ‘artificial’ socialities like those experienced through the algorithmic data derivatives of social media platforms as not just trying to *predict* user behaviour but to *produce* user behaviour. Speculating on the future trajectory of surveillance technologies, digital theorist Shoshana Zuboff suggests:

Even when knowledge derived from your behaviour is fed back to you in the first text as a quid pro quo for participation, the parallel secret operations of the shadow text capture surplus for crafting into prediction products destined for other marketplaces that are about you rather than for you. (Zuboff, 2019, p. 328)

“This is the potential nightmare of the new media”, Pomerantsev similarly argues, “[T]he idea that our data might know more about us than we do, and that this is then being used to influence us without our knowledge” (2019, p. 234).

Indeed, a steady trickle of dissenting media voices have begun to highlight perceived problems with Facebook’s approach to connecting people. “Facebook will market you your future before you’ve even gotten there”, media critic Douglas Rushkoff argues:

[T]hey’ll use predictive algorithms to figure out what’s your likely future and then try to make that even more likely. They’ll get better at programming you – they’ll reduce your spontaneity. (Rushkoff, 2016)

Computer scientist and pioneer of virtual reality Jaron Lanier argues that the virtual manipulation of perceptions, behaviours and interactions through Facebook’s architecture, especially negatively, “tears society apart” (quoted in Whitworth, 2017). Looking to the future, he suggests:

We already know from laboratory experiments that putting people into virtual worlds can be incredibly effective at changing their behaviour, and those changes can happen without the person’s awareness. So a combination of something like what Facebook is today with where virtual reality might go in the future could be so destructive of a sense of truth, a sense of free will, the sense of the civil project. It could be really the destruction of us all. (Quoted in Whitworth, 2017)

Perhaps eerily similarly, Chamath Palihapitiya, a former vice-president for ‘user growth’ at Facebook, claims that its approach is “ripping apart the social fabric of how society works” (quoted in Wong, 2017). “The short-term, dopamine-driven feedback loops that we have created are destroying how society works”, he argues, “No civil discourse, no cooperation, misinformation, mistruth” (quoted in Wong, 2017).

These kinds of anxiety about the future we can read as positively Simondonian *alienation*, and our anarchival perspective toward remembering helps us to conceptually ground their sense of criticality. Transindividual potential is realised into action, but, reduced to guided and predicted impulse, for the purpose of generating profit, interaction loses the thrust of its creativity, its surplus-value. We are alienated from our own cultural processes. We become workers.

Yet, through the likes of the political sociality-interventions exemplified above, we might consider that such influencing of behaviour is already taking place. And while the platform, concerned not with *content* but *engagement*, seeks limited kinds of impulse-driven behaviour on-platform – engagement, interaction – wider actors, capitalising on the affect-oriented digital infrastructures of social-media surveillance technologies, may seek to coerce more diverse action.

Choice Architecture: Manufacturing Behaviour

We have seen above how suggestibility – or one’s affective relation to the perceived present environment – may lead to so-called false personal memories. Equally, we have seen how perceptions of the need to re-affirm one’s sense of collective identity may lead

to false collective beliefs. Here we must think one step further: about what action is *informed* by such perceptions.

It is helpful here to reflect on so-called ‘nudge theory’ – theorising in behavioural science around how suggestion and reinforcement may indirectly influence people’s behaviours (Thaler & Sunstein, 2009). Central to this thinking – popularised in 2008 by economist and legal academic respectively, Richard H. Thaler and Cass R. Sunstein – are the related notions that “there is no such thing as a ‘neutral’ design” (2009, p. 3) and, thus, that all designed environments or interfaces through which *choices* are made involve an element of “choice architecture” (2009, p. 3), influencing – purposely or otherwise – the decisions people make. The governing function of the ‘nudge’ is therefore to encourage compliance with one particular choice of action, or set of choices, over another – “*as judged by themselves*” (2009, p. 5) without undermining a conscious sense of ‘free will’. Through the purpose-led design of perceivable options, Thaler and Sunstein argue that:

choice architects are not merely trying to track or to implement people’s anticipated choices. Rather, they are self-consciously attempting to move people in directions that will make their lives better. They nudge. (2009, p. 6)

Ex-Google Design Ethicist Tristan Harris notes that we can recognise this kind of choice architecture in the design of surveillance technologies: “If You Control the Menu, You Control the Choices [...] By shaping the menus we pick from, technology hijacks the way we perceive our choices and replaces them with new ones” (2016). In controlling menu options, Harris argues, the platform may “give people the illusion of free choice while architecting the menu so that they win, no matter what you choose” (2016. ‘Winning’ here, it should be emphasised, is not to engage the user with a particular *kind* of content, but rather to engage the user and keep them engaged.

For Thaler and Sunstein, though, employment of the nudge should be thought of as allowing people to “make wiser choices without restricting any options” (Thaler, 2018, p. 431). Their thinking has undoubtedly influenced political governance in the USA and beyond – leading to the development of internationally-operating, part-UK-government-owned company, the Behavioural Insights Team, or ‘Nudge Unit’ (Halpern, 2015).

Yet if we are to think the likes of Cambridge Analytica, CTF or anonymous bot- and troll-farms as ‘choice architects’ in crafting manipulated perceptions of ‘the social’, we can hardly think these attempts to make others’ ‘lives better’. Rather, once more, we may see how the platform architecture of social media sites like Facebook – built publicly to

appear to content manage, yet clandestinely to connect users with targeted paid-content, and to *keep them engaged* – does not operate primarily for usefulness to the user, but usefulness to the platform and its economic inter-dependents. While Facebook’s infrastructure itself can be considered choice architecture – designed to encourage particular kinds of platform-interaction – the actions desired by these actors lie beyond the platform. Cambridge Analytica, for example, is reported to have claimed to have “won the White House for Donald Trump” by, through perfectly legal platform processes, micro-targeting potential voters on Google, Snapchat, Twitter, Facebook and YouTube, influencing them in their vote (Lewis & Hilder, 2018). Likewise, despite Facebook’s transparency laws – intended to make clear who is paying for political adverts on the platform (Allan, 2018) – CTF were able, with appropriate funding, to create and advertise a sociality-manipulating network of fake sites and Facebook pages with the aim of influencing political opinion on the likes of Middle-Eastern politics and environmental issues for usefulness to the client.

Reflecting in the supposed ‘post-truth’ era of 2018 on the possibility ‘nudging’ people into choices useful perhaps *not* for themselves, Thaler shifts from earlier notions of a ‘bad’ or ‘evil’ nudge (2009, p. 239) to coining the alternate term “sludge”, describing choice architecture that is designed to either “discourage behavior that is in a person’s best interest ... [or] encourage self-defeating behaviour” (2018, p. 431). Yet the original terms Thaler and Sunstein rightly bind up in the notion that “choice architects in all walks of life have incentives to nudge people in directions that benefit the architects (or their employers) rather than the users” (2009, p. 239). To be sure, particularly through the perception portals of the social media platform, must we not consider that ‘sludge’ might include choice architecture designed neither for the best interest *nor* self-defeating behaviour of the user, but rather for the best interests of the ‘nudger’? Indeed, this we might see is the true basis of the designed nudge: not to encourage people to make choices, good or bad, but to encourage them to make the choices *I want them to make*.

The behavioural foundation of nudge theory is supported by ample historical and more recent psychological studies (Thaler & Sunstein, 2009), yet a key distinction ought to be drawn between our own *conceptual* thinking on consciousness, choice and individuality and the cognitive psychological thinking Thaler and Sunstein use to interpret the work. For them, there are two ‘kinds’ of thinking: the “Automatic System” (or the so-called ‘lizard brain’) and the “Reflexive System” – the former being “Unconscious” and the latter being “Self-aware” (2009, pp. 19-22; see Figure 9). They see nudge theory as

influencing the automatic system, claiming as a governmental-adoption incentive, “If people can rely on their Automatic Systems without getting into terrible trouble, their lives should be easier, better, and longer” (2009, p. 22). For Thaler and Sunstein, then – yes – the nudge may influence the individual’s behaviour, perhaps non-consciously, but they still *make* the choice. A subject-individual holds the agency in making the choice – the nudge serves only to encourage the automatic system toward what that choice is.

However, let us re-evaluate this assessment within our anarchival conceptualisation of consciousness.

All lived action is, within our approach, affective and reflexive – perception’s function across all organisms being “to receive stimulation, to provide motor apparatus and to present the largest possible number of these apparatuses to a given stimulus” (Bergson, 2004, pp. 20-21). Consciousness emerges as a matter of *degree* across lower and higher organisms, out of the increasing abilities to make voluntary choice of *limitation* in what to perceive and how to act: “the nervous system thus constructed, from one end of the animal series to the other, in view of an action which is less and less necessary” (Bergson, 2004, p. 21). From our perspective, then, there is no binary distinction in kind between ‘automatic’ and ‘reflexive’ modes of thinking. Rather, the difference lies in a matter of degree – with higher conscious action involving a greater ability to limit one’s own perception and choice of action.⁴⁸ Moreover, in developing this sense of consciousness through Simondon’s theorising on individuation, we can recognise that neither is the subject-environment binary relationship quite as straightforward as conceptions of ‘individual’ cognitive systems allow for. Rather, “We are obliged to think of the group as anterior to the individual, instead of the individual as anterior to the group” (Scott, 2014, p. 136) – we are leaky bodies, and there is no true binary between the individual and its environment. Indeed, *the individual* can be understood as emergent out of a relation between the body, other bodies and the wider environment.

As established in previous chapters, we act on the group, and the group on us, in constant and always-emergent acts of recognition and reconstitution, themselves informed through higher- and lesser-consciously realisations of memory-potential into action. So, while ‘a nudge’ might for Thaler and Sunstein represent a way in which to guide the behaviour of an existing individual, thus changing society, from our anarchival, process-based

⁴⁸ Indeed, all of the binary terms that come under Automatic System versus the Reflexive system may equally be regarded from a Bergsonian perspective as erroneously mistaking a difference in degree for a difference in kind: Uncontrolled versus Controlled; Effortless versus Effortful; Associative versus Deductive; Fast versus Slow; Unconscious versus Self-aware; Skilled versus Rule-following (See Figure 9).

perspective this is flipped on its head – or at least radically differently conceptualised. Rather than better-informed *individuals* informing society, we can see multiplicities of nudges informing social actions, interactions and movements, *out of which* this very sense of individuality may emerge. The key distinction here, is that it is primarily one’s sense of *sociality* and *relationality* that informs one’s sense of *individuality*, not the other way around.

Table 1.1 Two cognitive systems	
<i>Automatic System</i>	<i>Reflective System</i>
Uncontrolled	Controlled
Effortless	Effortful
Associative	Deductive
Fast	Slow
Unconscious	Self-aware
Skilled	Rule-following

Figure 9 – Thaler and Sunstein’s ‘Two cognitive systems’

Reality, Morality and Brexit Dark Ads: Manufacturing Identity

What, then, does this mean when we think about social interaction and false remembering online?

Collectively-individuating acts or significations of cultural value, informing our sense of the social *now*, we have seen are necessarily technologically mediated, and, out of these – and in relation to these – a sense of the individual emerges. And, while the animal of ‘fake news’ may have existed long before the internet – for example, in rumour, hoax, propaganda – the connectivity and instantaneity of online communication has led to greater opportunities for its spread, both in terms of reach and speed.

Furthermore, the economic models of mainstream, surveillance-technology and social-media platforms have introduced at least three crucial, interconnected factors into how we approach the question, each with implications for the agency of the body-as-user in the man-machine coupling, in terms of perceiving and acting in the world. Firstly, surveillance technologies’ chief function lies in being able to *target* specific users, based on personal-data profiles, predicated on their likelihood to engage. Secondly, socially-

oriented, engagement-led media facilitate a reduction to impulse-driven action, encouraging lesser-conscious responses to stimuli, amplifying the reach of behavioural lures of moral imperative to act. And, thirdly, senses of sociality may be highly-structured or manipulated, not only in terms of platforms connecting the user with “you are likely to care about most” (Twitter, no date b), but in terms of that model’s gerrymandering (or perhaps simply ‘use’) by external actors to create perhaps misleading impressions of ‘the social’ to which the user belongs, both within the platform and spread across the affective atmospheres of the wider hybrid media system.

Through perceiving and acting uncritically (or unaware) through and with these affective technological mechanisms, this thesis argues, we risk surrendering agency of our actions (‘individually’ and as movements of whole societies) and thus our resultant social and individual sense of *identity* to more corporate or political agents.

A perhaps modest – non-targeted – example, here, of how our sense of ‘the social’ may be modified online *beyond the platform’s agency* is through user reviews on the likes of Amazon or Google Maps – or, more pertinently, through *fake* reviews on these platforms. While reviews are, according to Amazon “meant to provide genuine product feedback” that can “help other customers” (Amazon, no date) it is widely known and indeed experienced that such reviews may be fake. Through posting false reviews, businesses may create a sense of *social reality* for the user that encourages the action of, say, purchasing a product or visiting a restaurant, venue or attraction. Fake posts might also be used by competitors to attack a product or business, challenging or destabilising existing apparently overarching social views. These may be produced by the businesses themselves, by paid fake reviewers,⁴⁹ or even by bots (Vincent, 2017).

Yet sociality-amending interventions may also be more wide-reaching or sinister. As part of a wider covert media campaign of apparent disinformation, global agricultural firm Monsanto, for example, is alleged to have propagated negative Amazon reviews for a journalist’s book, covering themes of corporate power and the links between weed-killer and cancer (Levin, 2019). Furthermore, internal documents released through court cases against the corporation illustrated its engagement in forcing apparently false or misleading narratives more widely in the hybrid media system: paying Google to display search results critical of the journalist’s work when searching for her name and the words ‘Monsanto Glyphosate’ (Levin, 2019); allegedly ‘ghost writing’ academics’ scientific

⁴⁹ At the time of writing, Facebook and eBay had both been under fire for failing to act on numerous groups and ‘items’ on their respective sites, offering positive reviews for sale (Yusuf, 2019).

articles (Hakim, 2017); paying for favourable articles in news outlets (Gillam, 2019); and funding front-groups to present pro-Monsato attitudes on social media (Gillam, 2019).

While this perhaps aptly demonstrates how public images and appearances of social consensus may be manipulated online through hybrid media systems, of more crucial concern to us are the ways in which targeted, surveillance-technology models may, out of such senses of sociality, engender wider *action* and reconstitute social-individual identity.

Let us here take the example of political so-called ‘dark ads’ during the UK’s ‘Brexit’ campaign period.

In May 2016, Vote Leave – the official Leave campaign during the UK’s referendum on leaving the EU – launched a competition promising £50 million to anyone who could correctly guess the results of all fifty-one matches in the June-July Euro 2016 football championship (BBC News, 2016). During the referendum campaigning period, Vote Leave would promote the competition – with no branded affiliation to the political campaign funding it – through Facebook adverts (See Figure 10), in what would afterwards be revealed to be a mass exercise in data-harvesting of personal profiles, from “people who usually ignore politics” (Cummings, 2016). The data could now be used to micro-target users with adverts supporting the Vote Leave campaign – mostly, again, unbranded. “In the official 10 week campaign”, campaign director Dominic Cummings would later disclose, “we served about one billion targeted digital adverts, mostly via Facebook” (Cummings, 2016).

The campaign itself – described by Channel 4’s FactCheck, among countless others, to be “dominated by false statements and half-truths” (Worrall, 2018) – was waged through micro-targeted social media adverts, and was delivered with Canadian firm Aggregate IQ, who would later be suspended from Facebook for alleged association with Cambridge Analytica and its data scandal. Many adverts used by the campaign, showing no political branding for Vote Leave, seem (at first) to have little to do with the EU referendum. Rather, related to a range of socio-political issues, they were targeted to particular kinds of user – or ‘psychographically targeted’, as researchers into the phenomenon have labelled the practice (Online Privacy Foundation, no date) – to excite their sense of moral imperative, thus facilitating engagement. Several unbranded adverts, for example, capitalised on animal cruelty (see Figure 11). “HUNTING WHALES is unnecessary and barbaric! The shipment of whale meat through our ports MUST BE STOPPED!” one

claimed, over an image of a whale being gutted: “CLICK HERE IF YOU AGREE”. Another featured an image of a bull and bull fighter, with the text, “THESE ARE ANIMALS. NOT ENTERTAINMENT.” and a click-button image reading, “STOP ANIMAL ABUSE”. Other adverts, also unbranded, referred to a supposed potential collapse of the British steel industry, asking users to “CLICK TO HELP” (see Figure 12). And others, yet still unbranded, famously clamoured to users’ fears about immigration or fears or prejudices about migration from the Middle East (see Figure 13). In all cases, of course, once the user has clicked on the advert, they are taken to Vote Leave campaign material. And, as more data of various sorts was collected about users, Vote Leave were able to feed this back into targeted campaigning, both on- and off-line. And, even without being targeted or clicking on the advert, broader engagement may well have been met through sponsored posts or shares into one’s News Feed within one’s own network.

From our anarchival perspective, we may see our three-fold process at work in this Facebook advertising campaign: firstly, using surveillance technologies to *target* specific kinds of user; secondly, harnessing transindividual *moral imperative* within the platform’s climate of *impulse-action* to ‘nudge’ the user into clicking on the advert; and, thirdly, instilling a sense of *sociality-reconstitution*, in affirming that to hold these beliefs is to be in one’s social and individual identity a ‘leave voter’ – *you belong*. Of course, this was a political campaign, with the desired *action* as the end-result that targeted users would vote to for the United Kingdom to leave the European Union. Thus, the period in which such sense of sociality needed to be strongly encouraged through the targeting of adverts was when people needed to make the choice to vote, “weighted to the period around postal voting and the last 10 days of the campaign” (Cummings, 2016).

It is important to recognise that the adverts above are targeted at specific kinds of user *firstly* to stir up drives of moral imperative toward *open society* – relating to *caring* and wanting to *help others* – to ‘nudge’ the user to click. Then, the sense of sociality informed through campaign material contextualises the matter into one that stirs up moral imperative toward *closed society*: the EU, as threatening ‘other’, will allow these things to happen, and you must act to close our society to protect it – by voting to leave the EU. What is interesting is that, while the *facts* of the matter were that at the time the UK was *a part of* the EU (and at the time of writing remains so), a social reality was constructed (or existing narrative re-enforced) in which the UK is not *a part of* the EU, but *apart from* it. In creating a sense of ‘us versus them’, the campaign, we might think, was able to manipulate a moral imperative to protect one’s closed society into an action: to vote to

leave the EU. The social reality becomes one in which one must take the action to leave the EU if you are to protect your own perceived social group(s).

The (s) here is important. Further unbranded Vote Leave adverts straightforwardly excited moral-imperative drives toward closed society from the outset. Multiple adverts, setting out crude false moral dilemmas in which the UK is pitted against the EU, were micro-targeted at users, based on Facebook's personality profiling, in presumable combination with Vote Leave's own data collation. And, of course, the way to protect the UK – one's sociality, the in-group – in this regard would be by voting to leave the EU. Through such *perceptions* of society, the wider *action* of voting to leave becomes a moral imperative in itself.

Examples of these false moral dilemmas include: either be in the EU *or* save maternity clinics, indeed the wider NHS (see Figure 14); either be in the EU *or* pay for regional flood defences (see Figure 15); either be in the EU *or* save our schools (see Figure 16). Micro-targeted as they were, vote Leave created a large number of adverts from different angles to excite various kinds of moral attention – “We ran many different versions of ads”, Cummings claims, “tested them, dropped the less effective and reinforced the most effective in a constant iterative process” (2016). Indeed, the collected adverts Vote Leave released by Facebook to a parliamentary committee investigating fake news ran to over one hundred pages (UK Parliament, no date).⁵⁰

It is worth noting that this thesis is neither attempting nor willing to take a political stance on whether the UK ought or ought not to remain a member of the European Union. Rather, it seeks to recognise the value of Vote Leave's 'dark ads' campaign in exemplifying the ways in which economically-informed, affective and potential-exciting platform architectures of social media sites may be used by other parties to engender artificial sociality-construction and encourage significant action in the wider social and political world.

⁵⁰ This perhaps goes some way to explaining the political purgatory the UK has suffered socially and parliamentarily in the years after the UK voted to leave the EU, in terms of what 'Brexit' ought to look like. While the *action* to leave the EU was engendered through voting in the referendum, the *usefulness* of the action *and to whom* is seemingly far from clear. The choice architecture was geared toward morally-inducing the maximum number of users to vote *against* the EU, but such consensus did not exist in terms of voting *for* anything else. Did people vote to save schools? To increase flood-defence spending? To protect the NHS? To decrease immigration? To support animal rights? The framing of leaving the EU as a moral identity issue may equally go some way sociologically understanding toward the apparent groundswell at the time of writing in 'leaving at all costs', even with no Withdrawal Agreement, and the popularity in electing newly-founded The Brexit Party MEPs to the European Parliament despite their having no policy positions (other than leaving the EU).



Figure 10 – Vote Leave unbranded adverts for Euro 2016 competition



Figure 11 – Vote Leave unbranded adverts about animal cruelty, leading to campaign material



Figure 12 – Vote Leave unbranded adverts about a potential steel industry collapse

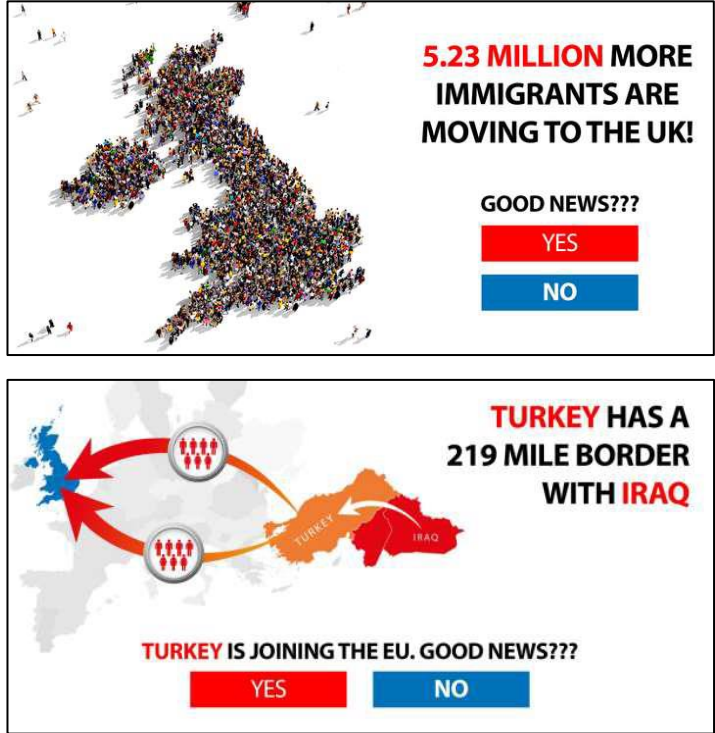


Figure 13 – Vote Leave unbranded adverts about immigration and the Middle East



Figure 14 – Vote Leave unbranded ‘us vs them’ adverts: the NHS

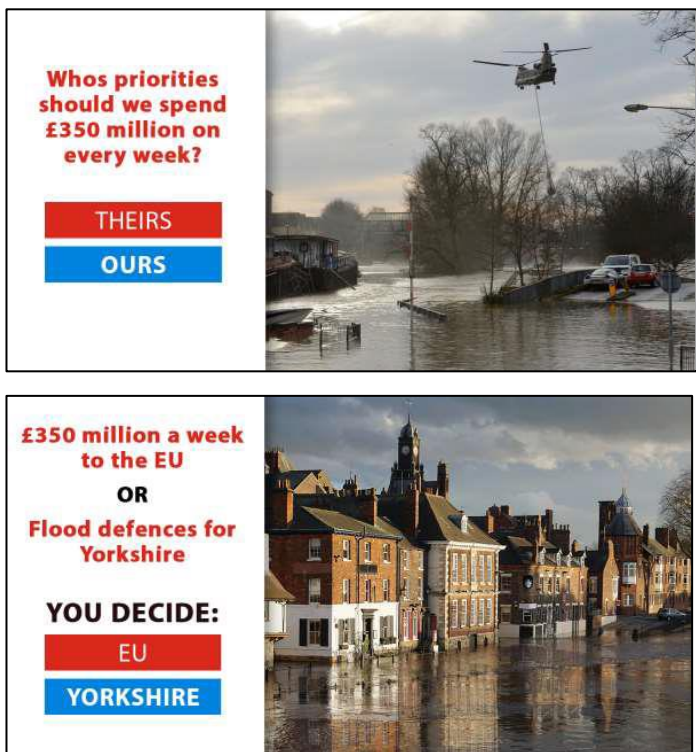


Figure 15 – Vote Leave unbranded ‘us vs them’ adverts: flood defences



Figure 16 – Vote Leave unbranded ‘us vs them’ adverts: schools

Cultivating Consensus: Manufacturing Societies

In the case of the Vote Leave, with a firm public image and message to promote, once the user had been nudged into clicking through to their campaign material via the advert, they would at least become aware that the material was related to the EU referendum. Yet it requires little exercising of imagination to consider how the same approach and techniques could be used for more subversive, furtive, political persuasion. Thus, under the political pressure of governments and of course the economic pressure to retain its now perhaps more-wary public usership, Facebook began in the wake of ‘dark ads’ controversies to introduce new transparency rules for political advertisers, internationally and in the UK (Allan, 2018; Goldman, 2017), saying that “people should be able to tell who the advertiser is and see the ads they’re running, especially for political ads” (Goldman, 2017).

The changes, broadly-speaking and varying in different countries, require that adverts relating to “social issues, elections or politics” include a disclaimer, displaying who paid for the advert (Facebook Business, no date). These rules may relate both to adverts directing to beyond the site and to adverts promoting pages on Facebook itself. Furthermore, these adverts, their registration details and limited information about their views or interactions will be stored in country-specific ‘Ad Libraries’ for up to seven years (Facebook Business, no date).

Yet, as has been demonstrated through the exposing of CTF’s network of websites and web pages, these rules have already been shown ineffective, or ‘work-around-able’. As the article that broke the story describes:

they created websites and Facebook pages which appeared to be independent online news sources with names such as Why Electricity Matters, Reporting Yemen and Londoners for Transport, but instead could be used to distribute

highly selective information which reached tens of millions of readers. Multiple supposedly independent pages on behalf of different clients could then be managed by Crosby employees through a single high-level “business manager” account, which sidesteps Facebook’s transparency tools. The connection between the pages is not visible to normal Facebook users. (Waterson, 2019b)

CTF’s conceptual approach remains at its core similar to that of Vote Leave: excite user-engagement through promotion of a page or topic to psychographically targeted users; once users are engaged, feed selective information from apparently independent sources into this sense of ‘the social’ to normalise, promote or enforce a desired message or attitude.⁵¹ For example, one former employee alleged:

It would all be anonymised and made to look as though they are a news aggregator with a specialist angle ... For instance, if we were working to promote the use of coal, it would be an anti-environmental page. You might make a page designed to attract pro-Trump types and get them revved up about green subsidies. (Quoted in Waterson, 2019b)

The apparent operations of CTF, then, we can see as a nuanced and sustained development of the kind identity- and action-informing sociality construction we saw in the Vote Leave dark ads. While Vote Leave’s approach to choice architecture draws on moral imperative to encourage targeted, individual users into associating with their ‘brand’, CTF take a more secretive approach. For them, the intention is not to encourage individuals to associate with a public political platform, for a one-off choice of user-action. Rather, through the artificial construction of perceived socialities, across multiple media platforms, and the sustained, strategic drip-feeding of selective (dis)information through these platforms, CTF aims to cultivate social interactions that stimulate an apparently ‘organic’ or ‘grassroots’ groundswell of opinion. Through this kind of sophisticated, hybrid-media, perception-manipulating choice architecture, CTF’s clients can hope to not only promote social-political attitudes in swaying public opinions, but

⁵¹ In a way, this might be considered a more sophisticated political development of the simple kind of tactic social-media researcher Lisbeth Klastrup has called “grief squatting” (Klastrup, 2014). When R.I.P. pages were a popular form of mourning, users might create a page following a sensational or celebrity death, which could amass significant numbers of ‘likes’. While some page authors might do this for the apparent connective thrill of ‘like hunting’, others were reported to have, once the attention was no longer on the death, completely rebranded the page and make use of the exiting free ‘likes’ by posting, say, a one-off advertisement or promotion (Klastrup, 2014).

effect their own specific, desired legislative change through propagating and highlighting an apparent public desire for their preferred policy positions.

The tactic of ‘astroturfing’ – “where political campaigners attempt to create the perception of an upswell of grassroots support for a cause” (Waterson 2019b) – is not new. Yet the difference with the manipulation of new, networked and targeted surveillance technologies is that, more than creating a *perception* of grassroots support to win political favour, political actors with appropriate financial and technological clout at their disposal may engage in these propaganda techniques to in a very real sense more efficiently, artificially *create* such a groundswell, much more quickly and more widespread. Earlier in the chapter we discussed the apparent difference between having ‘evidencable trust’ in records of the past, and in taking a leap of faith in believing in false pasts. Through twenty-first-century surveillance technologies, the waters become more muddied in terms of ‘evidencable trust’. This in turn grants an advantage to those who might manipulate the sense of ‘the social’, of grouped-individual, and morally influence users toward action useful not necessarily for the users themselves but rather the special interests of those who attempt to control the content experienced through perception-portals.

There is no reason that wider perception-manipulating such as bots or troll-farms, or falsified digital images or emerging technologies of ‘deep fakes’ may not be used in such sophisticated propaganda operations, nor why these should be limited to the private, commercial socio-political actors and agencies. Through the infrastructure of Twitter, for example – hashtags, retweets, tagging, the ‘trending’ filter – cultural-political ‘Twitter storms’ (orchestrated or more ‘genuine’) may harness drives toward moral imperative toward protecting one’s perceived collective, attempting to create the controlled perception of one view being dominant. The notorious Russian company, the ‘Internet Research Agency’, allegedly a Russian-state-operated outfit combining troll farms and more CTF-style practices, has been linked among other things to an “influence campaign” to promote Donald Trump as the preferred candidate for the 2016 U.S.-presidential elections (National Intelligence Council, 2017). Through thousands of Facebook adverts targeted at millions of US residents, across hundreds of Facebook pages, U.S. Representative Adam Schiff alleges:

[The Russian] social media campaign was designed to further a broader Kremlin objective: sowing discord in the U.S. by inflaming passions on a range of divisive issues. The Russians did so by weaving together fake

accounts, pages, and communities to push politicized content and videos, and to mobilize real Americans to sign online petitions and join rallies and protests. (Quoted in U.S. House of Representatives, no date)

In response to revelations about the Internet Research Agency, the USA engaged in “the first muscle-flexing” of its 2009-established ‘U.S. Cyber Command’ to prevent Russian-state interference in the 2018 midterm elections, disrupting the network capacities of the Internet Research Agency during the days around the election. In the UK, the British Army announced in July 2019 that it would be forming a new, ‘hybrid warfare unit’, focusing on “intelligence gathering, cyber, counter-propaganda and electronic warfare” (Sengupta, 2019) to, in part, tackle disinformation from Russia and elsewhere. The unit, tellingly, would undertake defensive *and* offensive operations, bringing hackers and (counter)propagandists into the same group (Sabbagh, 2019). Existing alleged reports of operations of British cyber propaganda units involved the countering of local, mediated rumours about misconduct of British soldiers in an exercise in Croatia, and deliberate campaigns of disinformation to destabilise the Islamic State in Iraq (Sabbagh, 2019).

Here, then, we may once more emphasise the tensions between the social-cultural, techno-economic and more political and governmental agencies in the man-(hybrid-media-)machine couplings, in terms of how perceptions and actions may be encouraged through new, online and pervasive technologies.

Affect Capitalism: Interaction as Work

In relation to online propaganda campaigns, Pomerantsev draws attention to a nine-month Oxford Internet Institute research project, analysing the design and uses of bots during 2016 U.S.-presidential election (Woolley & Guilbeault, 2017). In their working paper, doctoral researchers Samuel C. Woolley and Douglas R. Guilbeault describe a now-perhaps-familiar scenario, in which bots are understood to be:

artificially amplifying traffic around a political candidate or issue. Armies of bots built to follow, retweet, or like a candidate’s content make that candidate seem more legitimate, more widely supported, than they actually are. This theoretically has the effect of galvanizing political support where this might not previously have happened. (Woolley & Guilbeault, 2017, p. 8)

They conceptualise these kinds of processes of sociality-manipulation as “manufacturing consensus”, arguing that “the illusion of online support for a candidate can spur actual support through a bandwagon effect” (Woolley & Guilbeault, 2017, p. 8). Pomerantsev

describes the process as constructing a “simulation” of the what we might think of as the social *now*, which “would then be reinforced as people modified their behaviour to fall in line with what they thought was reality” (2017, p. 81).

In May 2017, a multi-university research project published its impressive report on research conducted across six European nations plus the USA into “whether those who use search engines and social media are being fed inaccurate, false, or politically targeted information that distorts public opinion” (Dutton et al, 2017, p. 5). Through analysing surveys into user attitudes, the researchers conclude that concerns over ‘filter bubbles’, ‘echo chambers’ and ‘fake news’ are “overstated” (2017, p. 5) – arguing that, while “search plays a major role in shaping opinion ... it is not deterministic” (2017, p. 8), since “users expose themselves to a variety of opinions and viewpoints online and through a diversity of media” (2017, p. 5). Indeed, they draw attention to the numerous sources of information that users may draw on, as well as emphasising Chadwick’s conception of the hybrid media system (Dutton et al, 2017, p. 12) – citing the prevalence of scepticism and propensity toward using fact checkers as factors that might mitigate the perceived problems posed by fake news.

Dutton et al rightly suggest that a tendency toward technological determinism may have led to “panic” (2017, p. 7) over the likes of misinformation and fake news, engendering a neglect of the agencies of the *user*. Yet, while they acknowledge that that the ways social technologies are used are “not determined by technical designs and affordances, but are shaped by an array of factors, including economic, psychological, cultural, law and policy, technical, and other social factors” (2017, p. 19), this thesis argues that their focus of analysis leads their conclusions to be equally neglectful of other agencies inherent in the wider ecologies of online remembering and the hybrid media system. In focusing solely on user-reported attitudes to using search engines and social media as objects, the study neglects completely the agencies of those platforms through which these behaviours take place, as well as paying only limited lip service to the agencies of those wider actors who might produce and promote misinformation for their own gain. Furthermore, while it is encouraging to consider the plurality of media-platforms and media-systems through which users may access their information, we cannot ignore that ever-increasingly sophisticated methods of perception manipulation have, as we have seen, been employed across *multiple* components of the hybrid media system, in attempts to popularise or normalise the political positions of financially or corporately powerful special interests. It is also important to note that, while Dutton et al’s findings showed

that less than ten percent of those surveyed self-reported “often” finding information online “that leads them to change their mind about a political issue” (2017, p. 81), the behaviours of just a small proportion of democratic-nation populations may deliver large-scale political and legislative impact. The decision for the United Kingdom to leave the European Union, for example, was won by the leave campaign with a majority of less than a four-per-cent of the vote, representing less than three-per-cent of the total electorate (The Electoral Commission, 2019). Similarly, although Donald Trump lost the popular vote for the U.S. presidency (National Archives and Records Administration, no date), close wins in weighted and swing states helped to secure his claim to the White House.

While it is important to avoid techno-determinism when considering the topic of fake news, then, it is equally important to recognise that there exist wider agencies that might make use of surveillance-technology infrastructures to engender social and political change. Moreover, we must recognise that it is precisely the affective, targeted, data-informed, connection-exciting techno-economic models of surveillance technologies that allow such use-making to take place. As Karppi notes, “The problem of fake news is not so much what is seen as how things become visible on the platform in the first place” (2018, p. 15). All pull their own ways in our transindividual ‘struggle’ to remember.

Returning to the initial theme of the chapter, then, how might we now understand the spread, indeed apparent virality, of fake news in relation to our wider anarchival perspective on remembering in the online era, expounded through the last three chapters?

Before addressing this question, it is perhaps worth briefly revisiting the term ‘viral’ – for to conceptualise the spread of fake news in such a way is to give the impression that the content itself is the ‘disease’. Rather, we might better see fake news as a *symptom*: a by-product of the wider problem that is the commercial and global commodification of the anarchival processes of remembering. And it is this that we find has become the object of our analysis.

We have seen that platform architectures such as the Facebook News Feed are designed to manipulate perceptions, content displayed to the user not to inform action useful to that trans-individuating being, but to generate further monetisable engagement and participation with the platform itself. One’s past in the form of data-profile is, as with all surveillance technologies, fed back into one’s present perceptions to not only predict but *produce* behaviour. Choice of perception and action limited and guided by the platform, memory-potential is encouraged to be realised only at a level of recognition and

instinctive impulse-action, of moral imperative, reducing the user to a datafiable and analysable assemblage of actions and behaviours. Docile and awash in a sea of duration, we risk no longer being *more than*, no longer *user-individuals*. Rather, placated or provoked, we are reduced to semi-automated impulse-actions, themselves reduced to ones and zeros, and algorithmically fed back to us. We are alienated from our transindividual potential. We become user-workers within affect capitalism. As Zuboff speculates on the future of what she calls surveillance capitalism:

These markets do not depend on you except first as a source of raw material from which surplus may be derived, and then as target for guaranteed outcomes. We have no formal control because we are not essential to the market action. In this future we are exiles from our own behaviour, denied access to or control over knowledge derived from our own experience. Knowledge, authority, and power rest with surveillance capital, for which we are merely “human natural resources”.” (Zuboff, 2019, p. 328)

Beyond the mere commodification of affective relations, these platform infrastructures may in turn be co-opted by wider cultural economic and political forces and interests. Through combinations of ‘astroturfing’ and personal-targeted, multi-platform content, agents may manufacture consensus and resulting actions. However small or widespread, such approaches may artificially simulate a sense of sociality, harnessing moral-imperative drives toward collective individuation to guide wider, perhaps legislatively significant, socio-political attitudes and behaviours.

Nevertheless, for the surveillance platform, informed through its affect-capitalist business model, the content of supposed fake news, false memory, and indeed any media that remains somewhat inconsequential – beliefs become obsolete. Whatever governmental and social pressures under which such platforms-as-corporations may come to ‘tackle’ fake news and misinformation, they may not escape their core economic functions and drives. What has value here are simply the monetisable interactions of user-workers, themselves directed by the platform. Affective movements of impulse become the capital, laboured uncreatively out of memory-potential from one user to the next across algorithmically-gated communities. The event is commodified in cyber-time. Like the stream tamed by the mill, the water is unimportant – only its flow.

---o0o---

Conclusion and Discussion

This research project set out to explore the role new, online and pervasive technologies play in changing individual and collective memory processes, and to attempt to *find* what problem may exist for memory in the online era. In exploring existing academic and popular debates, it argued that many, more prevailing, supposedly-identified problems or questions for memory in the online era rely uncritically on quantified notions of whether we risk remembering ‘too much’ or ‘too little’. This, it reasoned from a Bergsonian perspective, can be understood as a *false problem*, in that it is badly stated – pre-supposing that memory *can* be quantified. Through cross-disciplinary critique, the thesis challenged tendencies of thought around remembering as a function of the *individual*, as *quantifiable* and as *recall of the past*. It took an archaeological approach to interrogating these modes of thinking, arguing that such tendencies could be traced back from the present to a European-historical assumption that memory works like an archive, like a kind of ‘storehouse in the mind’, or, more recently, like a computer hard drive and processor. Furthermore, it suggested such an assumption of memory *as knowledge* or *information* has lent itself to erroneous ideas that biological memories may be extended or even replaced by media- or data-artefacts.

The thesis then made two interventions, following the philosophical method of intuition. Firstly, it proposed a methodological reformulation of the question, to be one not of *how much* we are remembering through and with new technologies, but how we are remembering *differently*. Secondly, conceptually, it argued for a re-orienting of the approach toward empirical analysis to be once concerned not with memories as *things in space* but as *processes in time* – introducing Bergson’s notion of *duration* as the continuous flow of the present, through which life is experienced.

Through the Theory Chapter, the thesis explored Bergson’s philosophical thinking on perception and memory. Perception, it characterised within Bergson’s thinking on *images* – “an existence placed half-way between the ‘thing’ and the ‘representation’” (Bergson,

2004, pp. vii-viii). Memory-potential is realised – relationally with perception – into memory-images, to inform useful *action* for the body, in duration. Conducting a reading of Gilbert Simondon’s theorising on individuation and technology – itself understood to be developed through a negotiation with Bergson’s work – it established the combined philosophical foundation for a synthesis of affective, biological and cultural modes of *transindividual* remembering. In such a synthesis, we may see remembering as a biological drive to excite memory-potential out of previous experience, in the present, realised into psychic memory-images to inform useful action for the being. The greater a degree of voluntary choice such a function may offer, the greater a conscious sense of *selfhood* may emerge.

Through Simondon, we understood this emergence of selfhood to be a process of *psychic individuation* – the feeling of temporally and relationally recognising oneself as a stable being, in the present yet relational to its own past and future. And, through Bergson’s thinking on the extension of body and intelligence through technology, and Simondon’s thinking on technics, we developed an understanding of the relationship between human and more complex technologies to be a form of ‘man-machine’ coupling, performing functions neither human nor machine could accomplish alone. Furthermore, the thesis conceptualised collective remembering as the technological use of artefacts as *signifiers of cultural value*, through which a stabilised sense of *sociality* may emerge, with its own past and future perceivable by group-members in the present. Artefacts, whether psychically, bodily, socially or artificially reproduced, it argued, can be understood not so much as *memory*, but as *habit memory* – repetitions, re-engagements, that stabilise an image, re-enacting it from the past and into the future. Thus, just as knowledge of the body – learning *how* – may be considered habit memory in the repetition of action, knowledge of the mind may be considered habit memory in the repetition of *conceptual movements* – learning *what*. Both bodily- and psychically-constituted habit memory, the chapter argued, may in this way be more properly considered as *artefacts*. Likewise, the physical re-presenting of information in artefactual *objects* and the performative re-enacting of cultural, artefactual *tradition* we might consider forms of variously personal and more collective *externalised* or *social* habit – repeated to stabilise a sense of *the social* across time.

Theoretical position broadly established, the thesis then engaged with recent academic notions of the *anarchive* as a process-oriented rethinking of the traditional, seemingly-static archive. It drew a parallel between anarchival thinking on archival objects and our

own position on artefactual remembering. In this way, objects are not seen as possessing potential themselves, but as *carriers* of potential – facilitating, through their significations and engagements, opportunities for the *transindividual* realisation of memory-potential, with perception and into action. Furthermore, the thesis argued that the embrace of the *anti-metaphor* of the anarchival as conceptual tool for thinking this kind of remembering may be intuitively useful – on the one hand consciously disrupting culturally-informed tendencies to conceptualise memory *archivally*, and on the other reminding us to think in terms of action-oriented *processes* in duration, bringing us perhaps closer to an appreciation of *direct experience*.

Through the ensuing Case-Study Chapters, the thesis now applied this theoretical anarchival approach to more nuanced examples of how we may be remembering differently in the online era through new technologies – training its focus on changes to connectivity, temporality or instantaneity, and materiality. Exploring processes of personal, private, public and social acts of digital-artefact-enabled remembering through the likes of Google Maps, Google Photos, Facebook, Twitter and YouTube, it developed an understanding of new, networked and ‘feed-forward’ (Hansen, 2015) technologies as affording artefact-facilitated, man-machine *expansions* of perception, remembering and action in the psychically- and collectively-individuated sense of the *now*. Yet, through more socio-economic-political explorations of the relationships of these man-machine couplings, it argued that significant agential implications may be raised around what perceptions, remembrances and actions take place through these ‘perception portals’, and their complex, on- and off-line inter-relations between connections in the wider ‘hybrid media system’ (Chadwick, 2017). Memory and perception serve action, it reminded us. And a sense of *consciousness* lies in the *choice* of selection and limitation of what to perceive, in tandem with the relational-realisation of memory-potential, to inform *choice* of useful action. Thus, if we were to find the problem for memory, it became necessary not only to examine the different *ways* in which processes of perception, remembrance and action may be facilitated through new, online, networked technologies, but also to consider the wider social and economic *reasons* these processes may occur in such ways.

In ‘Me, Myself and iPhones’ the thesis explored how remembrances of personal pasts may voluntarily or more involuntarily take place, indeed be extended, through new, online-connected technologies - engaging mainly with Google Maps and Facebook as vehicles for empirical analysis. From our anarchival perspective, the chapter conceptualised the smartphone-interface-facilitated experience of using these apps as a

database-archive informed *expansion of perception* in the present – artefacts of the past and present (re)presented through the apps to produce a digital-virtual, man-machine-enabled sense of spatio-temporal *now*. In doing so, it argued, the apps offer opportunities, in their various ways, for individuation – informing a sense of the personal *self* and its relation to a wider social. Data collected from users’ own and others’ private and more public activity may be repurposed in the present into artefacts explicitly signifying *the past* – for example, On This Day style features in social media, or public reviews from previous visitors in Google Maps – or into artefacts more implicitly *feeding-forward* one’s past into the perceived present – for example, in the algorithmically-informed curation of the Facebook News Feed, or predictive ‘matches’ locations in Google Maps. As an avenue into further exploration in subsequent chapters, the chapter then considered how artefacts signifying one’s personal past might be used by others in wider acts of more social or *collective* remembrance – using the ‘Memorialization’ of Facebook profiles as a useful vehicle for discussion of how artefacts may continue to be used, even when (indeed *especially* when) the author or subject ceases to exist.

Having explored the *experiences* and *processes* of remembering personal pasts through each of these case-study examples, the chapter moved to examine more socio-economic considerations around the functioning of the platforms – raising questions around the *agencies* involved in such consciousness-informing, inter-related processes of perceiving, remembering and acting. It contextualised the explored experiences within business models of *surveillance capitalism*, in which platforms use often covert collection and analysis of data from *behavioural surplus*, largely to facilitate the sale of targeted advertisements. Within such a model, it established, the primary goal is to secure and retain *user-engagement* – both to ensure advert-impressions and to collect further data, in turn informing further engagements. Because of the principally clandestine nature of these operations, the chapter argued, a pharmacological tension may be seen to emerge – in terms of what the user *perceives* to be the service-transaction, versus the service in which they are actually engaged. Indeed, given that consciousness lies in the choice over what to perceive, and the use of parallel, relationally-realised remembrances to choose *how to act*, it argued that such a limitedly-consensual relationship raises significant implications around the balance of agency toward the constitution of the *conscious self* within these kinds of man-machine couplings. In such interactions, processes of perceiving and remembering, and their resultant action, may be guided to serve useful action not only for the transindividual-as-user but also, perhaps *principally*, for the platform-as-corporation. Yet, the chapter, argued, struggles between the agencies of the

human-as-body and the platform-as-machine should not be taken as indicative of a binary human/technology or worker/corporation dichotomy. Rather, as evidenced by the development of memorialised Facebook accounts, we must take into consideration the role played by wider *social* or *cultural* agencies in changing processes of remembering in the online era – thus gesturing toward consideration in the subsequent chapter.

In ‘Error 404 – Memory File Not Found’, the thesis moved to consider more social or cultural drives within collective remembering – examining ways in which collective acts of remembrance may be changing in the twenty-first century, through engagement with various prevalent, instantaneous and connective media-technologies, such as social networking sites, forums and search engines. The chapter used three case-study examples as vehicles to explore the engagement with, and spread of, media-artefacts-of-remembrance from our anarchival approach: the 2013 memefication of ‘unflattering’ photos of US popular music artist, Beyoncé; the 2016 events around Facebook’s apparent censorship of Vietnam War photograph, *The Terror of War*; and the contemporary on- and off-line political campaign, Led by Donkeys, that re-presents past statements, often contradictory, of UK politicians.

From our anarchival perspective, it conceptualised these artefactually-facilitated acts of collective remembering not only as the re-presenting of media objects from the past, but as the repurposing and re-versioning of media artefacts to cement social bonds *in the present* – their being shared and interacted with understood as highly-networked manifestations of drives toward collective individuation, reconstituting an *expanded* sense of always-emergent sociality, of *belonging*, out of which a conscious sense of *the individual* may emerge. In such a conceptualisation, media-artefacts are not seen as objects in cyber space, but as markers of relationships, or anarchival *carriers of cultural value* – carriers of transindividual *potential* – through an expanded, digital-virtual sense of the social in duration, in *cyber time*. And the significations of *the past* afforded by such artefactual interactions need not represent a fully-historically-accurate past, but rather an *idea* of shared social past around which bodies may socially coalesce, to usefully reconstitute a sense of identity in the present. Furthermore, through the re-versioned, re-representation of these artefacts for useful action in the present, members of perceived socialities may experience a *stabilised* sense of that sociality’s extension, in the present, out of its historical past and into its anticipated future – engendering an *expanded* sense of the always-emergent social *now*.

Once more, the thesis here turned its attention to the more socio-economic factors inherent in platforms' designs to consider those agencies *informing* these changing processes of remembering, beyond the biological and in-group social. While artefactually-expanded senses of perception and remembrance such as those examined through the case studies might for the human involve exchanges of signified cultural value, through their content and context, the chapter emphasised that for the platform what is prioritised is not *content* but *connection*. Monetisable engagement and interaction is in the platform's essential *design* prioritised over ethical considerations of publication. Therefore, it argued, platforms might in their essence be seen to not control *perceptions* so much as control *connections* – harnessing cultural drives toward collective individuation. Such an approach, it suggested, has led to various platforms' weaknesses in fulfilling legislative and perhaps more ethical obligations in controlling content's *spreadability*, and thus visibility and affectability – as demonstrated through the apparently impulsive spread of, and difficulty in censoring, the likes of copyrighted or culturally or legally inappropriate material, hate speech and misinformation. Through discussion, the platform put forward the argument that we might recognise peculiar, contemporary, *cultural* struggles in platform-facilitated remembering – between the competing agencies and drives of, for example, the economic-technological, the in-group and broader social, and the more legislative.

The final Case-Study Chapter, 'Facts, Fakes and Filter Bubbles', picked up from the observation that, in serving primarily not to *inform* but to create monetisable *connections*, platforms may engender widespread communication and action not necessarily *useful* for the transindividual-as-user – either through more 'organic', culturally-driven spread of media-artefact-significations, or through various, more 'organised' exploitations of such drives. Furthermore, argued that 'ideas of the past' – whose mediation and remembrance we may understand as informing sociality-constituting acts of collective individuation in the present – need not be truthful to the 'facts' of the past at all. The chapter began by attempting to conceptualise belief in false pasts from our anarchival position on remembering. Through case-study examples of contemporary online 'false remembering', it on the one hand developed an understanding of belief in false *personal, experienced* pasts as a creative process of sense-making in the present, through relational movements of psychic individuation. On the other hand, it conceptualised belief in *collective, non-experienced* pasts (historical and more contemporary) as processes of *collective* individuation – reconstituting an ongoing sense of the always-emergent sociality, the grouped individual, and thus *identity*, in the present, and in opposition to the

idea or perceived threat of *the other*. This established, it moved to consider in what new ways these processes may take place through online, networked technologies such as social media.

Through an examination of three recent examples of content that has ‘gone viral’ through online platforms, and a reading of Bergson’s thinking on the social sources of morality (1935), it conceptualised the spread of collective false remembering as driven by a kind of moral imperative, functioning to conserve the perceived sociality and its in-group members in response to perceived threat. Thus, it argued that we may see the apparent phenomenon of fake news as a kind of *moral lure* – unintentionally or more intentionally exploiting drives toward preservation of the social, across near-instantaneous, more impulsive movements of social-media interaction. Using the so-called Facebook ‘dark ads’ of the Leave campaign in the UK’s referendum on EU membership, the chapter argued that the micro-targeted model of surveillance media risks platforms being experienced as socially-artificial ‘perception portals’, through which more unscrupulous agents may exploit users’ predicted ‘vulnerabilities’. Moreover, in the targeted, affective exciting of users’ drives toward actions of moral-imperative, through tailored media content, it suggested, such agents might affectively effect apparent conscious *action* – useful not necessarily for the transindividual-as-user, as for their *own* special interests.

Furthermore, in exploring recent news exposés of hybridised online propaganda networks, the chapter argued that platforms’ models of prioritising micro-targeted, engagement-inducing connections over usefulness of content risked exploitation in tailoring an experience of *manufactured consensus*. In such situations, sophisticated encouragement of engagement with various, seemingly-independent – yet interconnected and centrally-governed – news sources and other users leads the transindividual-as-user to experience an artificial sense of *the social*. In the *en masse*, surveillance-capitalist, micro-targeted manipulation of perceptions of society, the chapter argued, agents with the financial means may encourage sociality-informing senses of *identity*. Through this, they may manipulate beliefs and actions that once more afford seemingly-conscious, long-term social and political consensus and action not necessarily useful to the user, but to the special interests of the agents themselves.

Yet, such operations, the chapter ultimately reminded us, are accomplished not only through *means*, but *opportunity* – their influence made possible through the feed-forward, surveillance-capitalist business model of the platforms through which consciousness-informing processes of perceiving, remembering and acting increasingly take place. Thus,

the chapter argued, through uncritical engagement with surveillance technologies, we risk non-consensually and unwittingly surrendering personal control over our own conscious sense of identity *and* action to the interests of various other interests.

Struggling to Remember

Through applying our anarchival approach to an empirical analysis of acts of contemporary online remembering, the thesis has arrived, then, at a *found problem* for memory in the twenty-first century. And, while we began this research problem in considering the struggles for *studying* memory – recognising tensions between linguistically- and metaphorically-informed conceptualisations of remembering – we have found a problem for memory that lies in the struggles for processes of *remembering*, themselves.

Through case-study analysis, we have identified a series of ongoing tensions between the various always-emergent and always-competing, more biological, cultural and technological consciousness-informing drives of remembering, perceiving and acting. And we have examined how these struggles between competing drives may be experienced differently in the twenty-first century through various prevalent forms of pervasive, online and networked media. Yet, beyond, or indeed underpinning these tensions between, for example, the personal, the social, the legislative and the political, we have found a more fundamental struggle. Through the clandestine nature of the economic model of platforms in which these inter-affective interactions take place, we risk a significant struggle for voluntary control over how we perceive, remember and act in the world, and thus a struggle for relationally-informed consciousness itself – in terms both of *selfhood* and grouped *individuality*.

While surveillance technologies like Google search engine, Facebook or YouTube may offer opportunity for *expanded* senses of perception, remembering and acting in the digital-virtual-world-made-actual, the extension of processes of consciousness with such technologies is afforded through an only semi-consensual, ethically-questionable exchange or transaction. Perceptions, remembrances and actions are guided not in terms of usefulness for ourselves, but principally to encourage connections that secure and retain *user-engagement*. Thus, the consciousness- and society-informing significations inherent in these perhaps-addictive mediated connections need not be useful for the user, but for whichever more organic or manufactured drives might better exploit surveillance-technology platform infrastructures.

As we move further into the era of Web 3.0 – or ‘the internet of things’ – processes of surveillance capitalism are becoming more deeply, and perhaps more clandestinely, engrained in the affective movements of contemporary life. While we have here focused largely on the pervasiveness of surveillance technologies through ubiquitous smartphone use, since this research project began, surveillance technologies have begun to popularly move off-screen, embedding themselves at once more intrinsically yet more ethereally into domestic life. Wearable tech such as fitness trackers, for example, allow platforms to log and analyse bodily data as intimate as exercise, sleep and heartrate (as well as location) – and they and synced parties can use such analysis to, for example, make tailored recommendations on (or *nudge*) activity. And Google’s AI assistant now operates in many households through Google Hub – a speaker and voice-interface, through which users may interact with Google’s portfolio of own-brand and third-party synced services, as well as myriad compatible ‘smart home’ devices. Indeed, smart home products – or “everyware” (Greenfield, 2006) – are fast becoming ubiquitous in themselves – for example, computer-controlled ‘smart’ light bulbs, media systems, thermostats, door locks, door bells and fridges. As such, Google’s data-collection and -analysis operations may now encompass user-behaviours just a few years ago unimaginable. And, while convenience and usefulness of wearables and smart-home devices may enjoy popular reception, they may be significant implications for privacy and human agency in the man-machine coupling. As post-modern theorist N. Katherine Hayles reminds us:

We are now in a period when the interests of individuals are in dynamic interplay with the vested interests of large corporations, sometimes working together to create win-win situations, other times in sharp conflict over whose interests will prevail. (2013, p. 18)

“Consciousness is the note of the present”, Bergson claims. Yet, when this note is played through an instrument composed of myriad more surreptitious and manipulative processes, consciousness risks becoming synthesised on terms dictated not by the needs of the body-as-transindividual, but those of the special interests able to exploit such a synthesis. As with a lack of critical awareness of the ‘framing power’ of the archive metaphor in conceptualising and thinking memory, in a lack of critical awareness of the increasingly-pervasive, clandestine framing power of the *surveillance capitalist interface*, and its implications, we may find ourselves inadvertently surrendering consciousness-informing agency in how we perceive, remember and act in the world. We find ourselves struggling to remember.

Toward New Struggles

We might comment here on the *limitations* of this research project, perhaps the most significant two of which are here identified.

In one sense, the thesis must firstly accept that, in seeking to *find* what is at stake for remembering in the online era, its synthesis serves only to identify a problem, and not on face-value to offer up a solution. To be sure, this philosophical contribution does not seek to assume authority nor expertise on appropriate solutions, going forward – nor would word-count permit such an extension of the research project. However, we might suggest that the thesis does offer at least *something* to the pursuit of solutions. To return to our initial thinking on *intuition*, it is worth remembering that, for Bergson, “The stating and solving of the problem are here very close to being equivalent” (1946, p. 59). And we might argue that, in finding a problem in *lack of critical awareness* around the more clandestine interests inherent in remembering through surveillance technologies, the study points somewhat straightforwardly toward *increasing awareness* as potential ground for finding solutions.

“[T]he machine is a slave whose purpose is to make other slaves”, Simondon claims (2017, p. 141) – and, in this respect, through the user’s seeming critical detachment from the wider model and *implications* of surveillance capitalism, it might be tempting to think ourselves risking becoming such slaves. Yet, the struggles we have explored above do not lend themselves easily to a binary slave/master, worker/corporation, man/machine dichotomy, but a complex inter-negotiation between various drives of the biological, the cultural and the technological. “What Simondon offers”, philosopher and feminist theorist Elizabeth Grosz notes, “is a new way of understanding a world that is not ultimately controlled or ordered through a central apparatus or system, that has no inherent or necessary hierarchies” (2013, p. 53). “[T]he machine is only a means ... the domestication of natural forces by means of a first act of enslavement” (Simondon, 2017, p. 141). And this ‘first act of enslavement’ is subject to its own set of affective, external forces: “[I]t is culture that governs man, even if this man in turn governs other men and machines”, Simondon argues (2017, p. 161). Moreover, it is those very creative shifts and movements of culture out transindividual drives toward individuation – toward the future, through action in the present – that *enable* and *fuel* surveillance technologies’ model. The world “does not require animation or coordination *by* culture but instead enables and makes *culture itself possible*” (Grosz, 2013, p. 53; italics my own).

Here, then, we may consider a second limitation of the research – albeit one that perhaps equally fortunately gestures as much toward potential for solution as restriction of analysis. The functions, features and uses of technologies of remembering are changing all of the time through human engagement – bodily and cultural. Indeed, it is not only possible but likely that, by the time of its reading, following submission, some of the platform-specific observations made in this thesis may be ‘out of date’. Thus, this research project can offer only a snapshot of what appears to be the pressing issue for remembering at its time – it is *of its time*.

Nevertheless, such a limitation again offers up something toward solutions for the problem the research project has found. Business and sociology scholar Shoshana Zuboff notes that “surveillance capitalists discovered that the most-predictive behavioral data come from intervening in the state of play ... to nudge, coax, tune and herd behavior toward profitable outcomes” (2019, p. 8), suggesting that “it is no longer enough to automate information flows about us; the goal is now to automate us.” (2019, p. 8). Indeed, our final case-study chapter argued its case through similar observations. Yet, platform-infrastructure hierarchies or apparent ‘systems’ of remembering are not fixed, but fluid – affected by human biological and cultural behaviours and demand. Platforms’ features attempt to harness and encourage transindividual drives toward individuation, through cultural expression – but, when unable to simply *automate* users’ actions, corporations must adapt their offer around changing and user-expected techno-cultural practices to survive. We might think, for example, of Facebook’s emulation of Snapchat’s ‘Stories’ feature on its Facebook and Instagram platforms, as it sought to offer popular experiences offered to users by rival platforms. Or we might think of its delicate treatment of ‘Memorialized accounts’ in response to users’ feedback – ensuring users do not disconnect from the platform due to upsetting experiences.

Users are surveillance-capitalist technologies’ resource, without whom the corporation would cease to be able to operate. Thus, as media theorist Tero Karppi observes, “If disconnection is a solution for some social media users, for the social media platforms and their shareholders, it becomes an existential crisis. Social media live and breathe their users” (2018, p. 7).

We explored in the Case-Study Chapters how an awareness of surveillance may affect users’ behaviours in various ways. Here, then, we might speculatively ask: In placing a greater, popular, ethical focus on the mechanisms within the *platform-as-audience*, might we begin to witness a new kind of struggle – one perhaps between platforms’ economic

drives toward monetisation of engagement and interaction, against a mainstream, *informed* cultural resistance?

Education, we might suggest, offers overt opportunities for raising awareness. For example, in finding in 2011 that, among other things, one in four British schoolchildren did not apply any checks on the veracity of information encountered on line – and that less than one in ten questioned who made the website and for what reasons – think tank Demos recommended that “[d]igital judgement must become a core part of the National Curriculum and teacher training” (Bartlett & Miller, 2011, p. 7). As well as encouraging critical thinking, the teaching of “[d]igital fluency” (2011, p. 7), it argued, should be a “a foundational, core skill that ... underlie[s] teaching and learning across all subjects, and is not confined to a single subject”. Under various pressures, the UK Department for Education in 2015 introduced the “Essential digital skills framework” – designed to ensure that all children will have foundational digital skills by adulthood (HM Government, 2019a).

Yet, might an increase in awareness around the connection-over-content model of surveillance technologies lead to changes in the *wider* hybrid media system?

Journalist and academic Peter Pomerantsev draws attention to the example of “constructive news” (2019, p. 239) – or “solutions journalism” (Curry & Hammonds, 2014) – which aims to report objectively not only on contemporary issues, but on their potential solutions. Researchers at the University-of-Texas-based Center for Media Engagement tentatively claim that solutions-based articles improve readers’ experience by “heightening audiences’ perceived knowledge and sense of efficacy, strengthening the connection between audiences and news organizations, and catalyzing potential engagement on an issue” (Curry & Hammonds, 2014, p. 1) – representing, perhaps, a shift toward media distribution as principally useful to the user. For Pomerantsev, constructive news “could help reinspire trust in journalism, because we trust those who work together with us for some greater goal” (2019, p. 239). Moreover, he opines, “[I]t can overcome the sense of helplessness which conspiracy-peddling politicians so like to push to make you feel that only they can guide you” (2019, p. 239). Furthermore, the Center for Media Engagement argues that such articles lead to longer times spent on the page, and similar rates for sharing and commenting, compared to more traditional articles (Curry, Stroud & McGregor, 2016), offering potential for platform monetisation – a seeming Haylesean ‘win-win’.

Beyond approaches to improving access to and engagement with higher-quality media content, others argue closer to an overhaul of the surveillance-capitalist model itself. Might greater awareness of the mechanisms of surveillance technologies lead to increased industry competition from alternative, perhaps more ethical, techno-economic models?

Ex-Google Design Ethicist Tristan Harris – described by *The Atlantic* as “the closest thing Silicon Valley has to a conscience” (Bosker, 2016) – argues for a wider shift toward ethical design across technologies. Arguing that “[w]e need our smartphones, notifications screens and web browsers to be exoskeletons for our minds and interpersonal relationships that put our values, not our impulses, first” (Harris, 2016), Harris established non-profit organisation the Center for Humane Technology – who employ “a combination of thought leadership, pressure, and inspiration to create market demand and momentum for products and services based on Humane Technology principles” (Center for Humane Technology, no date). Similarly, the very inventor of the worldwide web and founder of the non-profit World Wide Web Foundation, Tim Berners-Lee, argues for creative changes to help “[m]ake the web work for people ... [rather than] a few dominant platforms” (2018). This, he suggests, may be possible through moving away from the advertising model of surveillance technology all together:

Two myths currently limit our collective imagination: the myth that advertising is the only possible business model for online companies, and the myth that it’s too late to change the way platforms operate. On both points, we need to be a little more creative. (Berners-Lee, 2018)

And might an increase in awareness equally lead to more legislative interventions in the surveillance capitalist model?

Berners-Lee argues for a “legal or regulatory framework that accounts for social objectives” (2018) – around, for example, competition law in corporations acquiring rival startup companies, or regulation around personal data. And, as suggested in ‘Error 404 – Memory File Not Found’, struggles between more legislative and techno-economic cultural drives may already play a significant part in overcoming our struggle to remember. The EU’s General Data Protection Regulation (GDPR), for example, became enforceable in Europe in May 2018. As well as guaranteeing various “Data Subject Rights”, GDPR requires, among other things, that websites secure explicit, ‘opt-in’ user-consent for the collection of data – for example, through cookies. Furthermore, the regulation specifies that “[i]t must be as easy to withdraw consent as it is to give it” (EU

GDPR.ORG, no date), perhaps affording some protection from the force of *convenience* over critical choice. Equally, while it has gained little traction at the time of writing, a 2019 proposed US-Senate bill has suggested similar controls over companies that “manipulate people into consenting by making it difficult to decline consent” (Hawley, 2019). The Social Media Addiction Reduction Technology (SMART) Act, if passed, would “ban certain features that are designed to be addictive, would require choice parity for consent, and would give users the power to monitor their time spent on social media” (Hawley, 2019). Likewise, the UK government’s 2019 white paper on Online Harms sets out aims to regulate “[d]esigned addiction” (HM Government, 2019, p. 26), through anticipated transparency around design-practices – as well as aiming to tackle issues around the ways in which “the internet, social media and AI provide ever more effective ways to manipulate opinion” (HM Government, 2019, p. 24).

Perhaps most radically of all, media theorist Mark Hansen proposes a “principle of data neutrality” (2015, p. 74), in which the potential out of collected and analysed data-as-behavioural-surplus “is a potential that is, and must be made to remain, fundamentally common to all, publicly accessible and open to multiple uses” (2015, p. 74).

--

The examples outlined above are not intended as academic or comprehensive anticipations of solutions, but rather as an illustrative gesture, in coming to the end of this thesis, toward the forms potential solutions might take.

This research project set out to consider the role new, networked and pervasive technologies play in changing individual and collective memory processes. It argued that many popularly-framed problems of whether we are today remembering ‘more’ or ‘less’ may be philosophically underpinned by the conceptualisation of memories as things in space – characterised perhaps most strongly by the metaphor of the archive. Acknowledging some key failings of the archive as a creative metaphor for thinking memory, three aims emerged for the project, which have now been accomplished. Firstly, to develop a non-archival philosophical understanding of memory. Secondly, to conceive a useful empirical method for considering the research question. And, thirdly, to then employ this method to contribute new knowledge to the field. Firstly, then, drawing on the thinking of Bergson and Simondon, it progressed an understanding of memory that focused on affective process and action in duration, blurring the supposed boundaries between the ‘individual’ and the ‘collective’ and between the biological and the

technological. In doing so, it hopes to offer a philosophical platform for more ‘joined-up’, multi-disciplinary approaches to considering memory across its fractured contemporary areas of study. This philosophical understanding established, the thesis secondly developed the ‘anarchival approach’ as a novel method for considering the research question. Using the conceptual tool of the anarchival anti-metaphor, it reformulated the research question in order to find what ‘problem’, if any, may exist for memory in the online era. Thus, it argued for a question not spatially informed in considering *how much* we are remembering today, but experientially informed in considering how we are remembering *differently*. It proposed case studies as a way to examine the relational processes and experience of remembering through new technologies, and it argued that these changes should be analysed and made sense of within a wider socio-political context, toward considering a political economy of remembering. Thirdly, it employed this method to produce new embodied data on how we may be remembering differently through and with new technologies, analysed through a wider socio-economic lens. In doing so, it has contributed new academic knowledge to the field of studying memory, and it has found a novel problem around ‘struggling to remember’ in the online era – struggles of power and control between complex, distributed and overlapping processes and tensions of the biological, the technological and the cultural. It is perhaps fitting, then, that the thesis should end with an unassuming hope that, in finding such a problem, the research project might contribute to finding more joined-up, multi-disciplinary *solutions*.

----oo0oo----

List of References

A Picture Held Us Captive (2017) BBC Radio 4. 29 November 2017

ABC News (2015) *Donald Trump Doubles Down on Claim He Saw Muslims Celebrating After 9/11* (24 November 2015) Available at: <https://www.youtube.com/watch?v=z8mpcZYD1-4> (Accessed: 2 May 2019)

ABC News Politics (2015) 23 November 2015. Available at: <https://twitter.com/ABCPolitics/status/668874961373696000> (Accessed: 2 May 2019)

Allan, R. (2018) 'Increasing Transparency for Ads Related to Politics in the UK', *Facebook Newsroom* (16 October 2018) Available at: <https://newsroom.fb.com/news/2018/10/increasing-transparency-uk/> (Accessed: 8 August 2019)

Alphabet Inc. (2018) *Annual Report Pursuant to Section 13 or 15(D) of the Securities Exchange Act Of 1934 For The Fiscal Year Ended December 31, 2017*. Available at: https://abc.xyz/investor/static/pdf/20171231_alphabet_10K.pdf (Accessed: 21 August 2019)

American Gods, Series 2, Episode 7, 'Treasure of the Sun' (2019) [online] Directed by Cabezas, P., Available from Amazon Prime Video

Anonymous (7 November 2007) Retrieved from: https://web.archive.org/web/20080621070830/http://4chanarchive.org/brchive/dspl_thread.php5?thread_id=32640395 (Accessed: 28 July 2019)

Ansell-Pearson, K. (2010) 'Bergson on Memory', in Radstone, S. & Schwarz, B. (Eds.) *Memory: Histories, Theories, Debates*. Fordham University Press

Ansell-Pearson, K. (2010a) 'Bergson', in Moyar, D. (Ed.) *The Routledge Companion to Nineteenth Century Philosophy*. Routledge: Oxfordshire

Ansell-Pearson, K. (2018) *Bergson: Thinking Beyond the Human Condition*. London: Bloomsbury

Arthur, P. L. (2009) 'Saving Lives: Digital Biography and Life Writing', in in Garde-Hansen, J., Hoskins A. & Reading, A. (Eds.) (2009) *Save As ... Digital Memories*. Palgrave Macmillan. pp. 44-59

- Assmann, A. (2006) 'Memory, Individual and Collective', in Goodin, R. & Tilly, C. (Eds.) *The Oxford Handbook of Contextual Political Analysis*. Oxford: Oxford University Press, pp. 210-24.
- Assman, J. (2008) 'Communicative and Cultural Memory'. In Erll, A. & Nünning, A. (Eds.) *Cultural Memory Studies. An International and Interdisciplinary Handbook*. De Gruyter. Berlin, New York. pp.. 109-118
- Atkinson, R. C. & Shiffrin, R. M. (1968) 'Human memory: A proposed system and its control processes', in Spence, K. W., & Spence, J. T. (Eds.) *The psychology of learning and motivation (Volume 2)* New York: Academic Press, pp. 89–195.
- Barad, K. (2007) *Meeting the universe halfway: quantum physics and the entanglement of matter and meaning*. Durham and London: Duke University Press
- Bardin, A. (2015) *Epistemology and Political Philosophy in Gilbert Simondon: Individuation, Technics, Social Systems* [eBook] London: Springer
- Bartlett, F. C. (1932) *Remembering: A Study in Experimental and Social Psychology* (1967 paperback edition) Cambridge: Cambridge University Press
- Bartlett, J. & Miller, C. (2011) 'truth, lies and the internet: a report into young people's digital fluency', *Demos* (11 September 2011)
- BBC News (2016) 'Vote Leave launches £50m Euro 2016 football contest', *BBC News* (27 May 2019) Available at: <https://www.bbc.co.uk/news/uk-politics-36397725> (Accessed: 8 August 2019)
- BBC News (2018) *Facebook ruling: German court grants parents rights to dead daughter's account* (12 July 2018) Available at: <https://www.bbc.co.uk/news/world-europe-44804599> (Accessed: 12 July 2018)
- Bennett, R. & Hacker, P. M. S. (2013) *History of Cognitive Neuroscience*. Chichester: Wiley-Blackwell
- Berger, J. (2009) 'Uses of Photography', *About Looking*. London: Bloomsbury. pp. 52-67
- Berger, J. (2015) "'I think the dead are with us": John Berger at 88', Interview with Maughan, P., *New Statesman* (11 June 2015) Available at: <https://www.newstatesman.com/culture/2015/06/i-think-dead-are-us-john-berger-88> (Accessed: 1 September 2019)

- Bergson, H. (1911) *Creative Evolution*. Translated by A. Mitchell. New York: Henry Holt & Company
- Bergson, H. (1912) *An Introduction to Metaphysics*. London: G. P. Putnam's Sons
- Bergson, H. (1920) *Mind-Energy: Lectures and Essays*. Translated by H. R. Carr. New York: Henry Holt and Company
- Bergson, H. (1935) *The Two Sources of Morality and Religion*. Translated by R. A. Audra & C. Brereton. London: Macmillan & Co.
- Bergson, H. (1946) *The Creative Mind*. New York: The Philosophical Library Inc.
- Bergson, H. (2001) *Time and Free Will: An Essay on the Immediate Data of Consciousness*. 1913 third edition reprint. Dover Publications
- Bergson, H. (2004) *Matter and Memory*. Dover Philosophical Classics Edition. Dover Publications
- Berners-Lee, T. (2018) 'The web is under threat. Join us and fight for it', *World Wide Web Foundation* (12 March 2018) Available at: <https://webfoundation.org/2018/03/web-birthday-29/> (Accessed: 1 September 2019)
- Blackman, L. (2012) *Immaterial Bodies: Affect, Embodiment, Mediation*. Sage Publishing
- Bollmer, G. D. (2011) 'Virtuality in systems of memory: Toward an ontology of collective memory, ritual, and the technological', *Memory Studies*, Volume 4, Number 4, pp. 450-464
- Bond, L., Craps, S. & Vermeulen, P. (2016) *Memory Unbound: Tracing the Dynamics of Memory Studies*. New York/Oxford: Berghahn Books
- Bondarenko, V. (2017) 'Facebook quietly stopped offering flag profile-picture filters after terrorist attacks', *Business Insider* (10 June 2017) Available at: <https://www.businessinsider.com/facebook-stops-offering-flag-profile-picture-filters-after-terrorist-attacks-2017-5> (Accessed: 1 September 2019)
- Bosker, B. (2016) 'The Binge Breaker', *The Atlantic* (November 2016) Available at: <https://www.theatlantic.com/magazine/archive/2016/11/the-binge-breaker/501122/> (Accessed: 1 June 2017)

- Brewer, W. F. & Treyens, J. C. (1981) 'Role of schemata in memory for places', *Cognitive Psychology*. Volume 13, Issue Number 2 (April) pp. 207-230
- Brockmeier, J. (2010) 'After the Archive: Remapping Memory', *Culture & Psychology*, Volume 16, Number 1, pp. 5-35
- Brockmeier, J. (2015) *Beyond the Archive: Memory, Narrative, and the Autobiographical Process*. Oxford University Press
- Broome, F. (no date) 'Theories', *The Mandela Effect*. Available at: <https://mandelaeffect.com/possible-explanations/> (Accessed: 11 April 2019)
- Broome, F. (2010) 'Nelson Mandela Died in Prison?', *The Mandela Effect* (9 September 2010) Available at: <https://mandelaeffect.com/nelson-mandela-died-in-prison/> (Accessed: 11 April 2019)
- Broome, F. (2014) 'Berenstein or Berenstain Bears?', *The Mandela Effect* (25 June 2014) Available at: <https://mandelaeffect.com/berenstein-or-berenstain-bears/> (Accessed: 11 April 2019)
- Broome, F. (2016) 'Sinbad as a Genie – Shazaam', *The Mandela Effect* (30 January 2016) Available at: <https://mandelaeffect.com/sinbad-as-a-genie/> (Accessed: 11 April 2019)
- Brown, C. (2013) 'Memory, identity and the archival paradigm: introduction to the special issue' [Editorial Note] *Archival Science*, Volume 13, Number 2–3 (June) pp. 85–93
- Brown, S. D. (2008) 'The quotation marks have a certain importance: Prospects for a 'memory studies'', *Memory Studies*, Volume 1, Number 3, pp. 261-71
- Brown, S. D. & Reavey, P. (2015) *Vital Memory and Affect*. East Sussex: Routledge
- Brubaker, J. & Vertesi, J. (2010) 'Death and the Social Network', *Department of Informatics* Donald Bren School of Information and Computer Sciences, University of California, Irvine. Available at: https://www.academia.edu/394566/Death_and_the_Social_Network (Accessed: 21 April 2014)
- Brubaker, J. R., Hayes, G. R. & Dourish, P. (2013) 'Beyond the Grave: Facebook as a Site for the Expansion of Death and Mourning', *The Information Society*, Volume 29, Number 3, pp. 152–163

- Bruel-Jungerman, E., Davis, S. & Laroche, S. (2007) 'Brain Plasticity Mechanisms and Memory: A Party of Four', *The Neuroscientist*, Volume 13, Number 5, pp. 492–505
- Burton, J. (2008) 'Bergson's non-archival theory of memory'. *Memory Studies*. Volume 1, Number 3. pp. 321-339
- Butler, W. (2018) 'Beyoncé doesn't want fans posting pictures of her Coachella performance online' *NME* (15 April 2018) Available at: <https://www.nme.com/news/music/beyonce-headline-coachella-2018-unflattering-photos-2293308> (Accessed; 27 May 2019)
- BuzzFeedCeleb (2013) 'The "Unflattering" Photos Beyoncé's Publicist Doesn't Want You To See', *BuzzFeed* (5 February 2013) Available at: <https://www.buzzfeed.com/buzzfeedceleb/the-unflattering-photos-beyonces-publicist-doesnt-want-you-t> (Accessed: 27 May 2019)
- Cadwalladr, C. (2017) 'Revealed: how US billionaire helped to back Brexit', *The Observer* (26 February 2017) Available at: <https://www.theguardian.com/politics/2017/feb/26/us-billionaire-mercero-helped-back-brexit> (Accessed: 1 June 2019)
- Cadwalladr, C. (2017a) 'The great British Brexit robbery: how our democracy was hijacked', *The Guardian* (7 May 2017) Available at: <https://www.theguardian.com/technology/2017/may/07/the-great-british-brexit-robbery-hijacked-democracy> (Accessed: 1 August 2019)
- Cadwalladr, C. & Graham-Harrison, E. (2018) 'Revealed: 50 million Facebook profiles harvested for Cambridge Analytica in major data breach', *The Guardian* (17 March 2018) Available at: <https://www.theguardian.com/news/2018/mar/17/cambridge-analytica-facebook-influence-us-election> (Accessed: 17 March 2018)
- Callison-Bruch, V., Probst, J. & Govea, M. (2015) 'Adding a Legacy Contact' *Facebook Newsroom* (12 February 2015) Available at: <https://newsroom.fb.com/news/2015/02/adding-a-legacy-contact/> (Accessed: 1 July 2019)
- Campbell, E. (2015) 'Pro tips: How to get even more out of Dropbox for Android', *Dropbox: work in progress* (10 June 2015) Available at: <https://blog.dropbox.com/topics/work-culture/dropbox-android-pro-tips> (Accessed: 5 September 2019)

- Cariou, M. (1999) 'Bergson: The Keyboards of Forgetting', in J. Mullarkey (ed.) *The New Bergson*, pp. 99–117. Manchester: Manchester University Press.
- Carr, N. (2008) 'Is Google Making Us Stupid? What the Internet is Doing to Our Brains', *The Atlantic*, 1 July [Online]. Available at: <http://www.theatlantic.com/magazine/archive/2008/07/is-google-making-us-stupid/306868/> (Accessed: 7 July 2014)
- Carr, N. (2011) *The Shallows*. London: Atlantic Books
- Carrie Wong, J. (2016) 'Mark Zuckerberg accused of abusing power after Facebook deletes "napalm girl" post' *The Guardian* (9 September 2016) Available at: <https://www.theguardian.com/technology/2016/sep/08/facebook-mark-zuckerberg-napalm-girl-photo-vietnam-war> (Accessed: 31 May 2019)
- Carroll, L. (2015) 'Fact-checking Trump's claim that thousands in New Jersey cheered when World Trade Center tumbled', *Politifact* (22 November 2015) Available at: <https://www.politifact.com/truth-o-meter/statements/2015/nov/22/donald-trump/fact-checking-trumps-claim-thousands-new-jersey-ch/> (Accessed: 12 April 2019)
- Center for Humane Technology (no date) *Our Work*. Available at: <https://humanetech.com/problem/#our-work> (Accessed: 1 September 2019)
- Cerf, V. (2015) 'Google's Vint Cerf warns of "digital Dark Age"', Interview with Ghosh, P., *BBC News* (13 February 2015) Available at: <http://www.bbc.co.uk/news/science-environment-31450389> (Accessed: 13 February 2015)
- Cerf, V. (2016) 'Digital Vellum and Archives', Talk at *FASTER CoP*, 12 August. Available at: <https://www.nitrd.gov/nitrdgroups/index.php?title=DigitalVellumAndArchives> (Accessed: 1 July 2019)
- Chadwick, A. (2017) *The Hybrid Media System: Politics and Power*. Second Edition. New York: Oxford University Press
- Chiu, A. (2018) 'The "Momo Challenge": A sinister threat to young people or an urban myth?', *The Washington Post* (5 September 2018) Available at: <https://www.washingtonpost.com/news/morning-mix/wp/2018/09/05/the-momo-challenge-a-sinister-threat-to-young-people-or-an-urban-myth/> (Accessed: 2 May 2019)

- Chun, W. H. K. (2011) 'The Enduring Ephemeral, or The Future is a Memory' in Huhtamo, E. & Parikka, J. (Eds.) *Media Archaeology: Approaches, Applications, and Implications*. University of California Press
- Clancy, S. A. (2005) *Abducted: Why people come to believe they were kidnapped by aliens*. Harvard University Press
- Clark, A. & Chalmers, D. J. (1998) 'The Extended Mind', *Analysis*, Volume 58, Number 1, pp. 7-19.
- Clark Barr, N. (1913) 'The Dualism of Bergson', *Philosophical Review*, Volume 22, Number 6 (November) pp. 639-652
- Clough, P. T. (2008) 'The Affective Turn: Political Economy, Biomedicine and Bodies', *Theory, Culture & Society*, Vol. 25, Number 1, pp. 1–22
- Clough, P. T. (2009) 'The New Empiricism: Affect and Sociological Method', *European Journal of Social Theory*. Volume 12, Number 1. pp. 43-61
- Clough, P. T. (2018) *The User Unconscious: On Affect, Media and Measure*. Minneapolis: University of Minnesota Press
- Cohen (2013) 'Memory Implants' in *MIT Technology Review* [online] Available at: <https://www.technologyreview.com/s/513681/memory-implants/> (Accessed 5 December 2016)
- Cohen, J. & Schmidt, E. (2013) *The New Digital Age*. John Murray Publishers Ltd.
- Coleman, R. (2018) 'Social Media and the Materialisation of the Affective Present', in Sampson, T. D, Maddison, S. & Ellis, D. (Eds.) *Affect and Social Media: Emotion, Mediation, Anxiety and Contagion*. London: Rowman & Littlefield International Ltd
- Combes, M. (2013) *Gilbert Simondon and the Philosophy of the Transindividual*. Massachusetts: Massachusetts Institute of Technology
- Connerton, P. (1989). *How Societies Remember* (Themes in the Social Sciences) Cambridge: Cambridge University Press
- Connerton, P. (2008) 'Seven types of forgetting', *Memory Studies*, Volume 1, Number 1 (January) pp. 59-71
- Connolly, W. E. (2018) 'Fake News and "Postmodernism": The Fake Equation', in *The Contemporary Condition* [online] Available at:

<http://contemporarycondition.blogspot.com/2018/05/fake-news-and-postmodernism-fake.html> (Accessed: 12 April 2019)

Corfield, G. (2018) 'Here is how Google handles Right To Be Forgotten requests', *The Register* (19 March 2018) Available at: https://www.theregister.co.uk/2018/03/19/google_right_to_be_forgotten_request_process/ (Accessed: 1 August 2019)

Court of Justice of the European Union (2014) *An internet search engine operator is responsible for the processing that it carries out of personal data which appear on web pages published by third parties* [Press Release] (13 May 2014) Available at: <https://curia.europa.eu/jcms/upload/docs/application/pdf/2014-05/cp140070en.pdf> (Accessed: 29 July 2019)

Crews, F. (1995). *The memory wars: Freud's legacy in dispute*. London: Granta Books

Cummings, D. (2016) 'On the referendum #20: the campaign, physics and data science – Vote Leave's 'Voter Intention Collection System' (VICS) now available for all', *Dominic Cummings's Blog* (29 October 2016) Available at: <https://dominiccummings.com/2016/10/29/on-the-referendum-20-the-campaign-physics-and-data-science-vote-leaves-voter-intention-collection-system-vics-now-available-for-all/> (Accessed: 8 August 2019)

Curry, A. L. & Hammonds, K. H. (2014) *The Power of Solutions Journalism* [White Paper] (June 2014) University of Texas in Austin: Centre for Media Engagement. Available at: http://mediaengagement.org/wp-content/uploads/2014/06/ENP_SJN-report.pdf (Accessed: 1 September 2019)

Curry, A., Stroud, N. J. & McGregor, S. (2016) *Solutions Journalism and News Engagement* [Report] (March 2016) University of Texas in Austin: Centre for Media Engagement. Available at: <https://mediaengagement.org/wp-content/uploads/2016/03/ENP-Solutions-Journalism-News-Engagement.pdf> (Accessed: 1 September 2019)

Dagnall, N. & Drinkwater, K. (2018) 'The Mandela effect: Explaining the science behind false memories', *The Independent* (15 February 2018) Available at: <https://www.independent.co.uk/news/science/mandela-effect-false-memories-explain-science-time-travel-parallel-universe-matrix-a8206746.html> (Accessed: 11 April 2019)

- Debaise, D. (2017) *Nature as Event: The Lure of the Possible*. Durham and London: Duke University Press
- Death Online Research, *The Network*. Available at: <http://deathonlineresearch.net/sample-page/> (no date) (Accessed: 22 March 2014)
- De Boever, A., Murray, A. Roffe, J. & Woodward, A. (Eds.) (2013) *Gilbert Simondon: Being and Technology*. Edinburgh University Press Ltd.
- Deleuze, G. (2011) *Bergsonism*. Translated by H. Tomlinson & B. Habberjam. First paperback edition, seventh printing. New York: Zone Books
- DeMayo, F. (2016) *Lightning almost strikes girl in Sydney!!! Boyfriend's reaction is priceless!!!!* (1 February 2016) Available at: <https://www.youtube.com/watch?v=JHOBhgjc1Jc> (Accessed: 9 May 2019)
- de Vito, S., Roberto, C. & Della Sala, S. (2009) 'Collective representations elicit widespread individual false memories' (letter) *Cortex*, Number 45, pp. 686-687
- Donk, A. (2009) The Digitization of Memory: Blessing or Curse? [Presentation] *Media in Transition Conference MIT6: Stone and Papyrus, Storage and Transmission*, Massachusetts Institute of Technology, Boston, 24-26 April. Available at: <http://web.mit.edu/comm-forum/mit6/papers/Donk.pdf> (Accessed: 28 July 2014)
- Draaisma, D. (2000) *Metaphors of Memory: A History of Ideas About the Mind*. Cambridge University Press
- Dutton, W. H., Reisdorf, B., Dubois, E., Blank, G. (2017) 'Search and Politics: The Uses and Impacts of Search in Britain, France, Germany, Italy, Poland, Spain, and the United States', *Quello Center Working Paper No. 5-1-17*. Available at: <https://ssrn.com/abstract=2960697> (Accessed: 23 July 2019)
- Dwoskin, E. & Timberg, C. (2019) 'New Zealand Shooting: Inside YouTube's Struggle To Stop Attack Videos Spreading Online', *The Independent* (18 March 2019) Available at: <https://www.independent.co.uk/life-style/gadgets-and-tech/new-zealand-shooting-video-youtube-christchurch-mosque-latest-a8828316.html> (Accessed 21 July 2019)
- Dwoskin, E. (2019) 'Inside Facebook, the second-class workers who do the hardest job are waging a quiet battle', *The Washington Post* (8 May 2019) Available at: <https://www.washingtonpost.com/technology/2019/05/08/inside-facebook-second-class-workers-who-do-hardest-job-are-waging-quiet-battle/> (Accessed: 29 July 2019)

Dwyer, R. (2016) 'Irish: The Forgotten White Slaves', *Setting the Record Straight* (16 March 2015) Available at: <http://settingrecordstraight.blogspot.com/2015/03/irish-forgotten-white-slaves.html> (Accessed: 12 April 2019)

Dwyer, J. (2015) 'A Definitive Debunking of Donald Trump's 9/11 Claims' *The New York Times* (24 November 2015) Available at: <https://www.nytimes.com/2015/11/25/nyregion/a-definitive-debunking-of-donald-trumps-9-11-claims.html> (Accessed: 12 April 2019)

Dzieza, J. (2015) 'Facebook's new nostalgia feature is already bringing up painful memories', *The Verge* (2 April 2015) Available at: <https://www.theverge.com/2015/4/2/8315897/facebook-on-this-day-nostalgia-app-bringing-back-painful-memories> (Accessed: 29 August 2019)

Ebbinghaus, H. (1885) *Memory: A Contribution to Experimental Psychology*. Translated by H. A. Ruger & C. E. Bussenius (1913) New York: Teachers College, Columbia University

Egil Hansen, E. (2016) 'Dear Mark. I am writing this to inform you that I shall not comply with your requirement to remove this picture.', *Aftenposten* (8 September 2016) Available at: <https://www.aftenposten.no/meninger/kommentar/i/G892Q/Dear-Mark-I-am-writing-this-to-inform-you-that-I-shall-not-comply-with-your-requirement-to-remove-this-picture> (Accessed: 31 May 2019)

The Electoral Commission (2019) *Results and turnout at the EU referendum*. Available at: <https://www.electoralcommission.org.uk/who-we-are-and-what-we-do/elections-and-referendums/past-elections-and-referendums/eu-referendum/results-and-turnout-eu-referendum> (Accessed: 11 August 2019)

Ellis, C., Theiry, G., Vaughan-Evans, A. & Wyn Jones, M. (2018) 'Languages flex cultural thinking', *Bilingualism: Language and Cognition*. Volume 21, Issue 2 (March) pp. 219-227

Emery, D. (2016) 'Were There Irish Slaves in America, Too?', *Snopes* (24 September 2016) Available at: <https://www.snopes.com/fact-check/irish-slaves-early-america/> (Accessed: 25 October 2017)

Engelbart, D. C. (1962). *Augmenting Human Intellect: A Conceptual Framework* [Summary Report] AFOSR-3223 under Contract AF 49(638)-1024, SRI Project 3578 for Air Force Office of Scientific Research. Menlo Park, Ca., Stanford Research Institute

Erlil, A. (2011) *Memory in Culture*. Translated by S. B. Young. New York: Palgrave Macmillan

Ernst, W. (2004) 'The Archive as Metaphor: From Archival Space to Archival Time', *Open*, 2004, Number 7, (No)Memory, pp. 46-53

European Parliament (2019) *Proposal for a directive on copyright and related rights in the Digital Single Market and amending Directives* (20 March 2019) Available at: http://www.europarl.europa.eu/doceo/document/A-8-2018-0245-AM-271-271_EN.pdf (Accessed: 28 July 2019)

EU GDPR.ORG (no date) *GDPR Key Changes*. Available at: <https://eugdpr.org/the-regulation/> (Accessed: 1 September 2019)

Evans, G. (2019) 'MPs are being brilliantly trolled by billboards featuring their own tweets', *The Independent* (10 January 2019) Available at: <https://www.indy100.com/article/mp-poster-campaign-tweets-led-by-donkeys-brexit-david-cameron-davis-8720916> (Accessed: 6 June 2019)

Evon, D. (2018) 'Were These Mexican Police Officers Brutalized by Members of a Migrant Caravan?', *Snopes* (22 October 2018) Available at: <https://www.snopes.com/fact-check/mexican-police-caravan-photos/> (Accessed: 30 April 2019)

Evans, S. (2019) 'What is the Momo challenge? Sick WhatsApp "suicide" game targeting young kids' *Mirror* (28 February 2019) Available at: <https://www.mirror.co.uk/news/uk-news/what-is-momo-challenge-whatsapp-13018367> (Accessed: 2 May 2019)

Facebook (2015) 14 November. Available at: <https://www.facebook.com/facebook/photos/we-stand-together-jesuisparis/10154189824321729/> (Accessed: 15 November 2015)

Facebook (no date) 'News Feed', *Facebook*. Available at: <https://www.facebook.com/facebookmedia/solutions/news-feed> (Accessed: 10 May 2019)

Facebook (no data a) 'Community Standards', *Facebook*. Available at: <https://en-gb.facebook.com/communitystandards/> (Accessed: 5 August 2019)

Facebook Business (no date) *Ads about social issues, elections or politics*. Available at: <https://www.facebook.com/business/help/167836590566506> (Accessed: 7 August 2019)

- Facebook Help Centre (no date) *How do I control what I see in Memories?* Available at: <https://www.facebook.com/help/1483212911992231> (Accessed: 29 August 2019)
- Facebook Help Centre (no date a) *Memorialised Accounts*. Available at: <https://en-gb.facebook.com/help/1506822589577997/> (Accessed: 29 August 2019)
- Facebook Inc. (2015) *Annual Report 2015*
- Faulders, K. (2015) 'Ben Carson 'Doesn't Stand Behind' His Own Remarks About American Muslims Cheering on 9/11', *ABC News* (23 November 2015) Available at: <https://abcnews.go.com/Politics/ben-carson-newsreels-american-muslims-cheering-911/story?id=35376256> (Accessed: 2 May 2019)
- Fenton, N. (2012) 'The internet and social networking', in Curran, J., Fenton, N. & Freedman, D. *Misunderstanding the Internet*. Routledge: Oxford. pp. 123-148
- Fisher, M. & Taub, A. (2019) 'On YouTube's Digital Playground, an Open Gate for Pedophiles', *The New York Times* (3 June 2019) Available at: <https://www.nytimes.com/2019/06/03/world/americas/youtube-pedophiles.html> (Accessed: 21 July 2019)
- Foster Wallace, D. (2009) *This is Water: Some Thoughts, Delivered on a Significant Occasion, about Living a Compassionate Life*. New York: Little, Brown and Company
- Frankfurt, H. G. (2005) *On Bullshit*. Princeton University Press
- Freedman, D. (2012) 'Web 2.0 and the death of the blockbuster economy', in Curran, J., Fenton, N. & Freedman, D. *Misunderstanding the Internet*. Routledge: Oxford. pp. 69-94
- Friedman, T.L. (1999). *The Lexus and the Olive Tree: Understanding Globalization*. New York: Random House.
- Gaetz, M. (2018) 17 October 2018. Available at: <https://twitter.com/RepMattGaetz/status/1052629557826736129> (Accessed: 2 May 2019)
- Garde-Hansen, J. (2009) 'MyMemories?: Personal Digital Archive Fever and Facebook', in Garde-Hansen, J., Hoskins A. & Reading, A. (Eds.) (2009) *Save As ... Digital Memories*. Palgrave Macmillan. pp. 135-150
- Garde-Hansen, J. (2011) *Media and Memory*. Edinburgh University Press Ltd.

- Garde-Hansen, J., Hoskins A. & Reading, A. (Eds.) (2009) *Save As ... Digital Memories*. Palgrave Macmillan
- Garry, M., Manning, C.G., Loftus, E.F. & Sherman, S. J. (1996) 'Imagination inflation: Imagining a childhood event inflates confidence that it occurred', *Psychonomic Bulletin & Review* Volume 3, Number 2, pp. 208-214
- Gass, N. (2015) 'Carson blames the media for 9/11 mistake', *Politico* (24 November 2015) Available at: <https://www.politico.com/story/2015/11/ben-carson-muslims-911-216175> (Accessed: 12 April 2019)
- Gelblum, B. (2019) 'Brexit Party refuse to publish policies, so Led By Donkeys are helping', *The London Economic* (17 May 2019) Available at: <https://www.thelondoneconomic.com/news/brexit-party-refuse-to-publish-policies-so-led-by-donkeys-are-helping/17/05/> (Accessed: 1 July 2019)
- Geraghty, L. (2019) 'A campaign to put politician's words on billboards has hit £30k in nine hours', *The Big Issue* (18 January 2019) Available at: <https://www.bigissue.com/latest/a-campaign-to-put-politicians-words-on-billboards-has-hit-30k-in-nine-hours/> (Accessed: 6 June 2019)
- Gheller, J. (2015) 'Introducing On This Day: A New Way to Look Back at Photos and Memories on Facebook', *Facebook Newsroom* (24 March 2015) Available at: <https://newsroom.fb.com/news/2015/03/introducing-on-this-day-a-new-way-to-look-back-at-photos-and-memories-on-facebook/> (Accessed: 31 July 2019)
- Gill, E. (2019) 'Mum's warning over "Momo challenge" after seven-year-old told school pals the character would kill them', *Manchester Evening News* (20 February 2019) Available at: <https://www.manchestereveningnews.co.uk/news/greater-manchester-news/mum-warning-momo-suicide-challenge-15861489> (Accessed: 7 May 2019)
- Gillam, C. (2019) 'How Monsanto manipulates journalists and academics' *The Guardian* (2 June 2019) Available at: <https://www.theguardian.com/commentisfree/2019/jun/02/monsanto-manipulates-journalists-academics> (Accessed: 7 August 2019)
- Goldman, R. (2017) 'Update on Our Advertising Transparency and Authenticity Efforts', *Facebook Newsroom* (27 October 2017) Available at: <https://newsroom.fb.com/news/2017/10/update-on-our-advertising-transparency-and-authenticity-efforts/> (Accessed: 7 August 2019)

Goodings, L. & Tucker, I. (2014) 'Social media and the coproduction of bodies online: Bergson, Serres and Facebook's Timeline', *Media, Culture & Society*. Volume 36, Number1, pp. 37–51

Google (no date) Our Mission. Available at: <https://www.google.com/search/howsearchworks/mission/> (Accessed: 6 August 2019)

Google Maps Help (no date) *Find & save parking locations*. Available at: <https://support.google.com/maps/answer/7257797?co=GENIE.Platform%3DAndroid&hl=en> (Accessed: 21 August 2019)

Greenfield, A. (2006) *Everyware: The Dawning Age of Ubiquitous Computing*. New Riders Publishing.

Greenfield, S. (2015) *Mind Change: How digital technologies are leaving their marks on our brains*. Penguin Random House UK

Gregg, M. & Seigworth, G. J. (Eds.) (2010) *The Affect Theory Reader*. Duke University Press

Grosz, E. (2007) 'Deleuze, Bergson and the Concept of Life'. *Revue internationale de philosophie*. Number 241. pp. 287-300

Grosz, E. (2013) 'Identity and Individuation: Some Feminist Reflections', in De Boever, A., Murray, A. Roffe, J. & Woodward, A. (Eds.) (2013) *Gilbert Simondon: Being and Technology*. Edinburgh University Press Ltd.

Guerlac, S. (2006) *Thinking in Time: An Introduction to Henri Bergson*. Cornell University Press

Hakim, D. (2017) 'Monsanto Emails Raise Issue of Influencing Research on Roundup Weed Killer', *The New York Times* (1 August 2017) Available at: <https://www.nytimes.com/2017/08/01/business/monsantos-sway-over-research-is-seen-in-disclosed-emails.html> (Accessed: 7 August 2019)

Halbwachs, M. (1925) *Les cadres sociaux de la mémoire*. Paris : Librairie Félix Alcan

Halbwachs, M. (1950) *La mémoire collective*. Presses universitaires de France

Halbwachs, M. (1992) *On Collective Memory*. London: The University of Chicago Press

Halpern, D. (2015) *Inside the Nudge Unit: How small changes can make a big difference*. London: WH Allen

- Hansen, M. B. (1996) "'Schindler's List' Is Not 'Shoah': The Second Commandment, Popular Modernism, and Public Memory', *Critical Inquiry*, Volume 22, Number 2 (Winter) pp. 292-312
- Hansen M. B. N. (2006) *New Philosophy for New Media*. First Paperback Edition. MIT Press
- Hansen, M. B. N. (2015) Hansen, M. B. N. (2015) *Feed-Forward: On the Future of Twenty-first-century Media*. London: University of Chicago Press
- Haraway, D. J. (2016) 'A Cyborg Manifesto', in Haraway, D. J., *Manifestly Haraway*. University of Minnesota Press
- Harris, T. (2016) 'How Technology is Hijacking Your Mind — from a Magician and Google Design Ethicist', *Thrive Global* (18 May 2016) Available at: <https://medium.com/thrive-global/how-technology-hijacks-peoples-minds-from-a-magician-and-google-s-design-ethicist-56d62ef5edf3> (Accessed: 1 June 2016)
- Haverinen, A. (2014) *Memoria Virtualis: Digitalization of mourning rituals in virtual environments*. Turku: University of Turku
- Hawley, J. (2019) 'Sen. Hawley Introduces Legislation to Curb Social Media Addiction', *Josh Hawley* (30 July 2019) Available at: <https://www.hawley.senate.gov/sen-hawley-introduces-legislation-curb-social-media-addiction> (Accessed: 1 September 2019)
- Hayles, N. K. (1999) *How We Became Posthuman: Virtual Bodies In Cybernetics, Literature, And Informatics*. Chicago and London: University of Chicago Press
- Hayles, Katherine. (2007) 'Hyper and Deep Attention: The Generational Divide in Cognitive Modes', *Profession* (2007) pp. 187-199
- Hayles, N. Katherine (2010) 'How We Read: Close, Hyper, Machine' *ADE Bulletin*, Number 150. pp. 62-79.
- Hayles, N. K. (2013) *How We Think: Digital Media and Technogenesis*. London: The University of Chicago Press, Ltd.
- Hayles, N. K. (2016) 'Foreword: From Causality to Correlation', in Groes, S. (Ed) *Memory in the Twenty-First Century: New Critical Perspectives from the Arts, Humanities, and Sciences*. Hampshire: Palgrave Macmillan. pp. x-xiii
- Hebb, D. O. (1949) *The organization of behavior*, New York: Wiley

Hillis, D. Quoted in: Maclean & Davis (1998) *Time and Bits: Managing Digital Continuity*. Getty Research Institute

Hirst, W., Phelps, E. A., Meksin, R., Vaidya, C. J., Johnson, M. K., Mitchell, K. J., Buckner, R. L., Budson, A. E., Gabrieli, J. D. E., Lustig, C., Mather, M., Ochsner, K. N., Schacter, D., Simons, J. S., Lyle, K. B., Cuc, A. F., (2015) ‘A Ten-Year Follow-Up of a Study of Memory for the Attack of September 11, 2001: Flashbulb Memories and Memories for Flashbulb Events’, *Journal of Experimental Psychology: General*. Vol. 144, No. 3, pp. 604 – 623

HM Government (2019) *Online Harms White Paper* (April 2019) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/793360/Online_Harms_White_Paper.pdf (Accessed: 21 July 2019)

HM Government (2019a) *Essential digital skills framework* (Updated 23 April 2019) Available at: <https://www.gov.uk/government/publications/essential-digital-skills-framework/essential-digital-skills-framework> (Accessed: 21 July 2019)

Hod, O. (2017) ‘Announcing New Ways to Enjoy Memories with Friends’, *Facebook Newsroom* (25 August 2017) Available at: <https://newsroom.fb.com/news/2017/08/facebook-announces-new-ways-to-enjoy-memories-with-friends/> (Accessed: 29 August 2019)

Hod, O. (2018) ‘All of Your Facebook Memories Are Now in One Place’, *Facebook Newsroom* (11 June 2018) Available at: <https://newsroom.fb.com/news/2018/06/all-of-your-facebook-memories-are-now-in-one-place/> (Accessed: 31 July 2019)

Hogan, L. (2015) ‘A review of the numbers in the “Irish slaves” meme’, *Medium* (4 November 2015) Available at: <https://medium.com/@Limerick1914/a-review-of-the-numbers-in-the-irish-slaves-meme-1857988fd93c> (Accessed: 25 October 2017)

Hogan, L. (2015a) ““Irish slaves”: the convenient myth’, *openDemocracy* (14 January 2015) Available at: <https://www.opendemocracy.net/en/beyond-trafficking-and-slavery/irish-slaves-convenient-myth/> (Accessed: 25 October 2017)

Hogan, L. (2015b) ‘Debunking the imagery of the “Irish slaves” meme’, *Medium* (14 September 2015) Available at: <https://medium.com/@Limerick1914/the-imagery-of-the-irish-slaves-myth-dissected-143e70aa6e74> (Accessed: 25 October 2017)

Hogan, L. (2016) ‘Open letter to Irish Central, Irish Examiner and Scientific American about their “Irish slaves” disinformation’, *Medium* (8 March 2016) Available at:

- <https://medium.com/@Limerick1914/open-letter-to-irish-central-irish-examiner-and-scientific-american-about-their-irish-slaves-3f6cf23b8d7f#.tb66klcft> (Accessed: 25 October 2017)
- Hoskins, A. (2004) 'Television and the Collapse of Memory', *Time & Society*. Volume 13, Number 1, pp. 109-127
- Hoskins, A. (2009) 'Digital Network Memory'. In Rigney, A. & Erll, A. (Eds.) *Mediation, Remediation, and the Dynamics of Cultural Memory*. Berlin and New York: de Gruyter. pp. 91-106.
- Hoskins, A. (2009a) 'The Mediatisation of Memory', in Garde-Hansen, J., Hoskins A. & Reading, A. (Eds.) (2009) *Save As ... Digital Memories*. Palgrave Macmillan. pp. 27-43
- Hoskins, A. (2009b) *The Digital Distribution of Memory*. Available at: <http://www.interdisciplinary.net/wp-content/uploads/2009/03/hoskins-paper.pdf> (Accessed: 16 June 2014)
- Hoskins, A. (2011) 'Media, Memory, Metaphor: Remembering and the Connective Turn', *Parallax*, Volume 17, Number 4, pp. 19-31
- Hoskins, A. (2013) 'The End of Decay Time', *Memory Studies*, Volume 6, pp. 387-389
- Hoskins, A. (2014) 'Mediatization of Memory', in Lundby, K. (Ed.) *Mediatization of Communication*, De Gruyter, pp.661-679
- Hoskins, A. (2016) 'Memory Ecologies', *Memory Studies*, Volume 9, Number 3, pp. 348-357
- Hughes, A. (2019) 'Momo challenge SHOCK: Is SICK Momo challenge "harvesting" YOUR personal data?' *Express* (27 February 2019) Available at: <https://www.express.co.uk/news/uk/1093318/Momo-challenge-shock-news-personal-data-phone-number-whatsapp-scam> (Accessed: 2 May 2019)
- Huysen, A. (2000) 'Present Pasts: Media, Politics, Amnesia', *Public Culture*, Volume 12, Number 1 (Winter), pp. 21-38
- Hyppolite, J. (1949) 'Various Aspects of Memory in Bergson', trans. Athena V. Colman, in Lawlor, L. (2003) *The Challenge of Bergsonism*. London: Continuum Press, pp. 112–27.
- Ings, S. (2007) *The Eye: A Natural History*. London: Bloomsbury Publishing Plc

- Instagram (no date) 'Feed'. *Instagram*. Available at: <https://help.instagram.com/1986234648360433> (Accessed: 1 August 2019)
- Internet Archive (no date) *About the Internet Archive*. Available at: <https://archive.org/about/> (Accessed: 10 September 2019)
- Internet Archive (no date a) *Wayback Machine*. Available at: <https://archive.org/web/> (Accessed: 10 September 2019)
- Jasonkioko (2019) 20 January 2019. Available at: <https://twitter.com/jasonkioko/status/1087104949815783426> (Accessed: 29 August 2019)
- Juzwiak, R. (2013) "'Unflattering' Beyoncé Photos Have Been Removed From Getty's Website', *Gawker* (7 February 2013) Available at: <https://gawker.com/5982635/unflattering-beyonce-photos-have-been-removed-from-gettys-website> (Accessed: 1 June 2019)
- Karppi, T. (2018) *Disconnect: Facebook's Affective Bonds*. University of Minnesota Press: Minneapolis
- Kasket, E. (2019) *All the Ghosts in the Machine: Illusions of Immortality in the Digital Age*. Robinson
- Kaspersky Lab (2015) *The Rise and Impact of Digital Amnesia: Why we need to protect what we no longer remember* [online] Available at: <https://blog.kaspersky.com/files/2015/06/005-Kaspersky-Digital-Amnesia-19.6.15.pdf> Accessed: 14 December 2016
- Kelly, M. (2009) *Memories of Friends Departed Endure on Facebook*. Available at: <https://www.facebook.com/notes/facebook/memories-of-friends-departed-endure-on-facebook/163091042130> (Accessed: 21 April 2014)
- Kessler, G. (2015) 'Trump's outrageous claim that 'thousands' of New Jersey Muslims celebrated the 9/11 attacks', *The Washington Post* (22 November 2015) Available at: <https://www.washingtonpost.com/news/fact-checker/wp/2015/11/22/donald-trumps-outrageous-claim-that-thousands-of-new-jersey-muslims-celebrated-the-911-attacks/> (Accessed: 14 April 2019)

- Khaleej Times, 2017 *A Conversation With Elon Musk, CEO of Tesla Inc At World Government Summit 2017 Dubai*. Available at: <https://www.youtube.com/watch?v=jBuLgBX2bKQzzv> (Accessed: 16 February 2017)
- Kiely, E. (2015) 'Trump, Carson on 9/11 'Celebrations'', *FactCheck.Org* (24 November 2015) Available at: <https://www.factcheck.org/2015/11/trump-carson-on-911-celebrations/> (Accessed: 12 April 2019)
- Klastrup, L. (2014) "'I Didn't know her, but...': Affected Strangers' Mourning Practices on Facebook R.I.P. Pages', Presentation at *The First Death Online Research Symposium*, Durham University, 9-10 April 2014
- KnowYourMeme (2019) *The Great Subscriber War / Subscribe to PewDiePie* (29 May 2019) Available at: <https://knowyourmeme.com/memes/events/the-great-subscriber-war-subscribe-to-pewdiepie> (Accessed: 21 July 2019)
- Knudsen, B. T. & Stage, C. (2015) 'Introduction: Affective Methodologies', in Knudsen, B. T. & Stage, C. (Eds.) *Affective Methodologies*. London: Palgrave Macmillan
- Konrad, A. (2017) 'Facebook memories: The research behind the products that connect you with your past', *Prototypr.io* (25 August 2017) Available at: <https://blog.prototypr.io/facebook-memories-the-research-behind-the-products-that-connect-you-with-your-past-f9a1d8a49a43> (Accessed: 31 July 2019)
- Kroker, A. & Kroker, M. (2010) 'Code Drift', *CTHEORY* (14 April 2010) Available at: http://ctheory.net/ctheory_wp/code-drift-code-drift/ (Accessed: 12 June 2019)
- Landi, M. (2014) 'The Snapping: How Were Snapchat User's Images Hacked And Should We All Be Worried?', *The Independent* (14 October 2014) Available at: <https://www.independent.co.uk/life-style/gadgets-and-tech/the-snapping-how-were-snapchat-users-images-hacked-and-should-we-all-be-worried-9794296.html> (Accessed: 20 August 2019)
- Lacapria, K. (2015) 'Trump Insists He Witnessed Cheering Muslims on 9/11', *Snopes* (22 November 2015) Available at: <https://www.snopes.com/news/2015/11/22/donald-trump-cheering-911/> (Accessed: 12 April 2019)
- Landsberg, A. (1995) 'Prosthetic Memory: Total Recall and Blade Runner', *Body & Society*, Volume 1, Number 3-4, pp.175-189

Landsberg, A. (2003) 'Prosthetic memory: the ethics and politics of memory in an age of mass culture', in Grainge, P. (Ed.) *Memory and popular film*. Manchester and New York: Manchester University Press

Landsberg, A. (2004) *Prosthetic Memory: The Transformation of American Remembrance in the Age of Mass Culture*. New York: Columbia University Press

Langenbacher, E. & Wittlinger, R. (2018) 'The End of Memory? German-American Relations under Donald Trump', *German Politics*, Volume 27, Number 2, pp. 174-192

Lara, A., Liu, W., Ashley, C.P. et al. (2017) 'Affect and subjectivity', *Subjectivity*, Number 10, pp. 30–43

Lashley, K. S. (1950) 'In search of the engram', in *Society for Experimental Biology, Physiological mechanisms in animal behavior* [Society's Symposium IV] Oxford: Academic Press, pp. 454-482

Led by Donkeys (2019) 9 January 2019. Available at:

<https://twitter.com/bydonkeys/status/1082938368491700224> (Accessed: 11 June 2019)

Led by Donkeys (2019a) 'Led by Donkeys show their faces at last: "No one knew it was us"', Interview with Harriet Sherwood, *The Observer* (25 May 2019) Available at: (Accessed: 26 May 2019)

Led by Donkeys (2019b) *Twitter*. Available at: <https://twitter.com/bydonkeys/> (Accessed: 6 June 2019)

Led by Donkeys (2019c) 'Crowdfunder: Let's paste these tweets* all over Britain', *Crowdfunder*. Available at: <https://www.crowdfunder.co.uk/by-donkeys> (Accessed: 6 June 2019)

Led by Donkeys (2019d) 4 April 2019. Available at: <https://twitter.com/ByDonkeys/status/1113827097930280960> (Accessed: 6 June 2019)

Led by Donkeys (2019e) 2 June 2019. Available at: <https://twitter.com/ByDonkeys/status/1135436716683272192> (Accessed: 6 June 2019)

Lefebvre, A. & White, M. (Eds.) (2012) *Bergson, Politics and Religion*. Durham and London: Duke University Press

Lepore, J. (2015) 'The Cobweb: Can the Internet be archived?', *The New Yorker* (19 January 2015) Available at <http://www.newyorker.com/magazine/2015/01/26/cobweb> (Accessed: 10 April 2017)

Leta Jones, M. (2016) *Ctrl+Z: The Right to Be Forgotten*. London: New York University Press

Levin, S. (2019) 'Revealed: how Monsanto's 'intelligence center' targeted journalists and activists', *The Guardian* (8 August 2019) Available at: <https://www.theguardian.com/business/2019/aug/07/monsanto-fusion-center-journalists-roundup-neil-young> (Accessed: 8 August 2019)

Levin, S., Carrie Wong, J., & Harding, L. (2016) 'Facebook backs down from 'napalm girl' censorship and reinstates photo', *The Guardian* (9 September 2016) Available at: <https://www.theguardian.com/technology/2016/sep/09/facebook-reinstates-napalm-girl-photo> (Accessed: 31 May 2019)

Lewandowsky, S., Ecker, U. K. H. & Cook, J. (2017) 'Beyond Misinformation: Understanding and Coping with the "Post-Truth" Era', *Journal of Applied Research in Memory and Cognition*. Number 6, pp. 353-369

Lewis, P. (2018) 'Fiction is outperforming reality': how YouTube's algorithm distorts truth', *The Guardian* (2 February 2018) Available at: <https://www.theguardian.com/technology/2018/feb/02/how-youtubes-algorithm-distorts-truth> (Accessed: 1 August 2019)

Lewis, P. & Hilder, P. (2018) 'Leaked: Cambridge Analytica's blueprint for Trump victory', *The Guardian* (23 March 2018) Available at: <https://www.theguardian.com/uk-news/2018/mar/23/leaked-cambridge-analyticas-blueprint-for-trump-victory> (Accessed: 1 August 2019)

Ley, T. (2013) 'Photoshop Contest: Unflattering Beyoncé Pictures', *Deadspin* (7 February 2019) Available at: <https://deadspin.com/photoshop-contest-unflattering-beyonce-pictures-5982561> (Accessed: 1 June 2019)

Light, B. (2014) *Disconnecting with Social Networking Sites*. Basingstoke: Palgrave Macmillan

Loftus, E. F. (2005) 'Planting misinformation in the human mind: A 30-year investigation of the malleability of memory', *Learning & Memory*, Volume 12, pp. 361-366

- Loftus, E. F. & Ketcham, K. (1994) *The Myth of Repressed Memory: False Memories and Allegations of Sexual Abuse*. New York: St. Martin's Griffin
- Loftus, E. F., & Palmer, J. C. (1974) 'Reconstruction of automobile destruction: An example of the interaction between language and memory', *Journal of verbal learning and verbal behavior*, Volume 13, Number 5, pp. 585-589
- Loftus, E. F. & Pickrell, J. E. (1995). 'The formation of false memories', *Psychiatric Annals*, Volume 25, pp. 720–725, Available at: <https://www.healio.com/psychiatry/journals/psycann/1995-12-25-12/%7B2060e727-5296-43bd-8580-55b09b96f074%7D/the-formation-of-false-memories> (Accessed: 1 September 2019)
- Lorenz, T. (2019) 'Momo Is Not Trying to Kill Children', *The Atlantic* (28 February 2019) Available at: <https://www.theatlantic.com/technology/archive/2019/02/momo-challenge-hoax/583825/> (Accessed: 20 April 2019)
- Lowenthal, D. (2006) Archival Perils: An Historian's Plaint. *Archives: The Journal of the British Records Association*, Volume 31, Number 114, pp. 49–75
- Lundy, C. (2018) *Deleuze's Bergsonism*. Edinburgh: Edinburgh University Press
- Maclean & Davis (1998) *Time and Bits: Managing Digital Continuity*. Getty Research Institute
- Mackey, R. (2015) 'The Video of Celebrations That Was Broadcast on 9/11', *The New York Times* (24 November 2015) Available at: <https://www.nytimes.com/politics/first-draft/2015/11/24/the-video-of-celebrations-that-was-broadcast-on-911/> (Accessed: 12 April 2019)
- Maier, M. & Rahman, R. A. (2018) 'Native Language Promotes Access to Visual Consciousness', *Psychological Science*. Volume 29, Issue 11 (24 September)
- Manning, E. (2018) 'What Things Do When They Shape Each Other – The Way Of The Anarchive'. Talk at *Affects, Interfaces, Events* conference. Godsbanen Aarhus, 29-30 August 2018
- Marshall, L. (2000) 'Some Shadows of Eternity: The Internet and Memorials to the Dead', *Department of Computing Science Technical Report Series*. University of Newcastle upon Tyne. Available at: <http://www.cs.ncl.ac.uk/publications/trs/papers/718.pdf> (Accessed: 21 April) p.1

- Massumi, B. (2002) *Parables for the Virtual*. Durham and London: Duke University Press
- Massumi, B. (2013) ‘Technical Mentality’ Revisited’, in De Boever, A., Murray, A. Roffe, J. & Woodward, A. (Eds.) (2013) *Gilbert Simondon: Being and Technology*. Edinburgh University Press Ltd.
- Massumi, B. (2015) *Politics of Affect*. Reprint. Polity Press. 2018
- Mayer-Schönberger, V. (2011) *Delete: The Virtue of Forgetting in the Digital Age*. Princeton University Press
- McLuhan, M. (1964) *Understanding media: the extensions of man*. New American Library: New York
- McLuhan, M. (2011) *The Book of Probes*. Gingko Press Inc..
- Middleton, D. & Edwards, D. (1990) *Collective Remembering*. London: SAGE Publications Ltd
- Middleton, D. & Brown, S. D. (2005) *The Social Psychology of Experience: Studies in Remembering and Forgetting*. London: SAGE Publications Ltd
- Mikkelsen, D. (2019) ‘How Much of a Threat Is the Purported ‘Momo Challenge’ Suicide Game?’, *Snopes* (26 February 2019) Available at: <https://www.snopes.com/news/2019/02/26/momo-challenge-suicide-game/> (Accessed: 2 May 2019)
- Misztal, B. A. (2003) *Theories of Social Remembering*. Maidenhead: Open University Press
- Misztal, B. (2007) ‘Memory Experience: The Forms and Functions of Memory’, in: Watson, S. (Ed.) *Museums and their Communities*. London: Routledge, pp. 379-396.
- MIT Technology Review (2019) *YouTube’s algorithm makes it easy for pedophiles to find more videos of children* (4 June 2019) Available at: <https://www.technologyreview.com/f/613620/youtubes-algorithms-make-it-easier-for-pedophiles-to-find-more-videos-of-children/> (Accessed: 21 July 2019)
- Morozov, E. (2011) *The Net Delusion: The Dark Side of Internet Freedom*. New York: PublicAffairs

Murphie, A. (2000) 'The Dusk of the Digital is the Dawn of the Virtual', in *Enculturation*. Volume 3, No. 1, Spring 2000. Available at: http://enculturation.net/3_1/murphie.html (Accessed: 31 July 2019)

Murphie, A. & Potts, J. (2003) *Culture and Technology*. London: Palgrave

Murphy, K. (2016) *Snowboarder Girl Chased By Bear - I Was Singing Rihanna Work And Didn't Know It Was Behind Me!* (10 April 2016) Available at: https://www.youtube.com/watch?v=vT_PNKg3v7s (Accessed: 2 May 2019)

Murphy, M. (2019) 'How Google Photos became the search giant's secret AI weapon', *The Telegraph* (7 April 2019) Available at: <https://www.telegraph.co.uk/technology/2019/04/07/google-photos-became-search-giants-secret-ai-weapon/> (Accessed: 31 July 2019)

Murphy, M. (2019a) 'YouTube deletes award-winning history teacher's World War II videos in 'hate speech' purge', *The Telegraph* (6 June 2019) Available at: <https://www.telegraph.co.uk/technology/2019/06/06/youtube-deletes-award-winning-history-teachers-videos-hate-speech/> (Accessed: 21 July 2019)

O'Neill, P. H. (2014) '8chan, the central hive of Gamergate, is also an active pedophile network', *The Daily Dot* (17 November 2014) Available at: <https://www.dailydot.com/layer8/8chan-pedophiles-child-porn-gamergate/> (Accessed: 5 August 2019)

Orwell, G. (1961) *1984*. New York: Signet Classics

Nash, R. A. (2018) 'Changing beliefs about past public events with believable and unbelievable doctored photographs', *Memory*, Volume 26, Number 4, pp. 439-450

National Archives and Records Administration (no date) *2016 Electoral College Results*. Available at: <https://www.archives.gov/federal-register/electoral-college/2016/election-results.html> (Accessed: 11 August 2019)

National Intelligence Council (2017) *Assessing Russian Activities and Intentions in Recent US Elections* [Intelligence Community Assessment] Available at: https://www.dni.gov/files/documents/ICA_2017_01.pdf (Accessed: 6 August 2019)

National Online Safety (2019) 26 February 2019. Available at: <https://twitter.com/natonlinesafety/status/1100453894814158848/photo/1> (Accessed: 2 May 2019)

Ohlheiser, A. (2016) 'A question we never thought we would have to ask after someone dies', *The Washington Post* (20 May 2016) Available at: <https://www.washingtonpost.com/news/the-intersect/wp/2016/05/20/what-happens-when-a-deceased-persons-twitter-account-starts-posting-spam/> (Accessed: 15 August 2019)

Olick, J. K., Vinitzky-Seroussi, V. & Levy, D. (Eds.) (2011) *The Collective Memory Reader*. New York: Oxford University Press

O'Malley, K. (2019 MOMO 'CHALLENGE' APPEARING IN FORTNITE AND PEPPA PIG YOUTUBE VIDEOS, PARENTS WARNED', *Independent* (27 February 2019) Available at: <https://www.independent.co.uk/life-style/gadgets-and-tech/momo-challenge-youtube-fortnite-peppa-pig-video-parents-a8799776.html> (Accessed: 2 May 2019)

Online Privacy Foundation (no date) *Exploring the Efficacy of Psychographic Marketing in Political Campaigns: An Examination of Authoritarianism, Motivated Numeracy and Targeting in Relation to Support for Electronic Communication Surveillance*. Available at: <https://www.onlineprivacyfoundation.org/opf-research/psychographic-targeting/> (Accessed: 8 August 2019)

Parikka, J. (2013) 'Archival Media Theory: An Introduction to Wolfgang Ernst's Media Archaeology', in Ernst, W., *Digital Memory and the Archive*, Minneapolis: University of Minnesota Press

Pariser, E. (2011) *The Filter Bubble: What The Internet Is Hiding From You*. Penguin Books Ltd.

PBS Game/Show (2014) *Can Video Games Be A Spiritual Experience?* Available at: https://www.youtube.com/watch?v=vK91LAiMOio&lc=UgiRkYPdbaIm_HgCoAEC (Accessed: 1 July 2019)

Peterson, A. Yahr, E. & Warwick, J. (2014) 'Leaks of nude celebrity photos raise concerns about security of the cloud', *The Washington Post* (1 September 2014) Available at: https://www.washingtonpost.com/politics/leaks-of-nude-celebrity-photos-raise-concerns-about-security-of-the-cloud/2014/09/01/59dcd37e-3219-11e4-8f02-03c644b2d7d0_story.html (Accessed: 20 August 2019)

- Phelps, J. (2015) 'Donald Trump Again Says He Saw Cheering in New Jersey on 9/11', *ABC News* (22 November 2015) Available at: <https://abcnews.go.com/Politics/donald-trump-cheering-jersey-911/story?id=35355447> (Accessed: 12 April 2019)
- Piatti, G. (2016) 'The life and the crystal. Paths into the virtual in Bergson, Simondon and Deleuze', *La Deleuziana – Online Journal Of Philosophy*. 2016: Number 3
- Plato (1952) *Plato's Phaedrus*. Translated by R. Hackforth. Cambridge: Cambridge University Press
- Police Service of Northern Ireland (2019) 'PSNI Statement regarding Momo Challenge', *Police Service of Northern Ireland* (25 February 2019) Available at: <https://www.psni.police.uk/news/Latest-News/250219-psni-statement-regarding-momo-challenge/> (Accessed: 2 May 2019)
- Pomerantsev, P. (2019) *This is Not Propaganda: Adventures in the War Against Reality*. London: Faber & Faber Limited
- Portelli, A. (2003) *The Order Has Been Carried Out: History, Memory, and Meaning of a Nazi Massacre in Rome*.
- Potter, L. (2013) 'Beyoncé's publicist asks for "unflattering" Superbowl photos to be removed', *Marie Claire* (8 February 2013) Available at: <https://www.marieclaire.co.uk/news/celebrity-news/beyonc-s-publicist-asks-for-unflattering-superbowl-photos-to-be-removed-130394#V6jFA9q5JVI905OP.99> (Accessed: 1 June 2019)
- Proust, M. (1981) *Remembrance of Things Past*. Chatto & Windus Ltd.
- Polage, D. C. (2012) 'Making up History: False Memories of Fake News Stories', *Europe's Journal of Psychology*, Volume 8, Number 2, pp. 245-250
- Quinn, B. (2019) 'Billboard campaign reminds voters of MPs' Brexit promises', *The Guardian* (16 January 2019) Available at: <https://www.theguardian.com/politics/2019/jan/16/billboard-campaign-reminds-voters-of-mps-brexit-promises> (Accessed: 6 June 2019)
- Radley, A. (1990) 'Artefacts, Memory and a Sense of the Past', in Middleton, D. & Edwards, D. (1990) *Collective Remembering*. London: SAGE Publications Ltd, pp. 46-59

- Radstone, S. (2008) 'Memory studies: For and against', *Memory Studies*, Volume 1, Number 1, pp. 31-39
- Reading, A. (2009) 'Memobilia: The Mobile Phone and the Emergence of Wearable Memories', in Garde-Hansen, J., Hoskins A. & Reading, A. (Eds.) (2009) *Save As ... Digital Memories*. Palgrave Macmillan
- Reddit (no date) 'r/MandelaEffect', *Reddit*. Available at: <https://www.reddit.com/r/mandelaeffect> (Accessed: 11 April 2019)
- Reddit user Drive-or-doze84 (2018) 'I'm new to this and I'm freaking out- there was a movie when I was a kid- with Sinbad as a genie- it was called Shazaam', *Reddit* (6 November) Available at: https://www.reddit.com/r/MandelaEffect/comments/9ukrka/im_new_to_this_and_im_freaking_out_there_was_a/ (Accessed: 11 April 2019)
- Reynolds, M. (2019) 'What is Article 13? The EU's divisive new copyright plan explained', *Wired* (24 May 2019) Available at: <https://www.wired.co.uk/article/what-is-article-13-article-11-european-directive-on-copyright-explained-meme-ban> (Accessed: 28 July 2019)
- Riot Content (no date) *The Viral Experiment*. Available at: <https://riotcontent.com/virals1#/the-viral-experiment-2/> (Accessed: 21 February 2019)
- Robertson, A. (2019) '8chan goes dark after hardware provider discontinues service', *The Verge* (5 August 2019) Available at: <https://www.theverge.com/2019/8/5/20754943/8chan-epik-offline-voxility-service-cutoff-hate-speech-ban> (Accessed: 5 August 2019)
- Roediger, H. L., (1980) 'Memory Metaphors in cognitive psychology', *Memory & Cognition*, Volume 8, Number 3, pp. 231–246
- Roediger, H. L. & McDermott, K. B. (1995) 'Creating false memories: Remembering words not presented in lists' *Journal of Experimental Psychology: Learning, Memory, & Cognition*, Volume 21, Number 4, pp. 803–814.
- Rogers, S. (2013) 'Behind the numbers: how to understand big moments on Twitter', *Twitter Blog* (8 August 2013) Available at: https://blog.twitter.com/official/en_us/a/2013/behind-the-numbers-how-to-understand-big-moments-on-twitter.html (Accessed: 27 May 2019)

Roose, K. (2018) 'Debunking 5 Viral Images of the Migrant Caravan', *The New York Times* (24 October 2018) Available at: <https://www.nytimes.com/2018/10/24/world/americas/migrant-caravan-fake-images-news.html> (Accessed: 30 April 2019)

Rose, S. (2003) *The Making of Memory: From Molecules to Mind*. Revised Edition. London: Vintage

Rosen, E. (2005) 'Student's Start-Up Draws Attention and \$13 Million', *The New York Times* (26 May 2005) Available at: <https://www.nytimes.com/2005/05/26/business/students-startup-draws-attention-and-13-million.html> (Accessed: 2 September 2019)

Rosenfield, I. (1988) *The Invention of Memory*. New York: Basic Books

Ross, A. & Carrie Wong, J. (2016) 'Facebook deletes Norwegian PM's post as 'napalm girl' row escalates', *The Guardian* (9 September 2016) Available at: <https://www.theguardian.com/technology/2016/sep/09/facebook-deletes-norway-pms-post-napalm-girl-post-row> (Accessed: 31 May 2019)

Rothbaum, B. O., Rizzo, A. & Difede, J. (2010) 'Virtual reality exposure therapy for combat-related posttraumatic stress disorder', *Annals of the New York Academy of Sciences*, Volume 1208, Issue1: Psychiatric and Neurologic Aspects of War (October) pp. 126- 132

Rushkoff, D. (2016) 'I'm thinking it may be good to be off social media altogether', Interview with Tucker, I., *The Guardian* (12 February 2016)

Russell, N. (2006) 'Collective Memory before and after Halbwachs', *The French Review*, Volume 79, Number 4 (March) pp. 792-804

Sabbagh, D. (2019) 'Army fights fake news with propagandists and hackers in one unit', *The Guardian* (31 July 2019) Available at: <https://www.theguardian.com/technology/2019/jul/31/army-fights-fake-news-with-propagandists-and-hackers-in-one-unit> (Accessed: 1 August 2019)

Sandberg, S. (2019) 'Making It Easier to Honor a Loved One on Facebook After They Pass Away', *Facebook Newsroom* (9 April 2019) Available at: <https://newsroom.fb.com/news/2019/04/updates-to-memorialization/> (Accessed 1 August 2019)

- Sandler R. (2019) 'LGBTQ Creators Sue YouTube For Alleged Discrimination', *Forbes* (14 August 2019) Available at: <https://www.forbes.com/sites/rachelsandler/2019/08/14/lgbtq-creators-sue-youtube-for-alleged-discrimination/#52a56fbc788e> (Accessed: 14 August 2019)
- Schacter, D. L. (1996) *Searching for Memory*. Basic Books: New York
- Schacter, D. L. (2001) *The Seven Sins of Memory*. New York: Houghton Mifflin Company
- Schmidt, D. N. (2018) *Google Data Connection*. Distributed by Digital Context Next
- Schomer, A. (2019) 'Google ad revenue growth is slowing as Amazon continues eating into its share', *Business Insider* (1 May 2019) Available at: <https://www.businessinsider.com/google-ad-revenue-growth-slows-amazon-taking-share-2019> (Accessed: 31 July 2019)
- Scott, D. (2014) *Gilbert Simondon's Psychic and Collective Individuation*. Edinburgh University Press Ltd.
- Semon, R. (1904) *Die Mneme als erhaltendes Prinzip im Wechsel des organischen Geschehens*. Leipzig: Wilhelm Engelmann
- Sengupta, K. (2019) 'Army to form new hybrid-warfare division', *The Independent* (1 August 2019) Available at: <https://www.independent.co.uk/news/uk/home-news/uk-army-hybrid-warfare-division-conflict-intelligence-cyber-a9030281.html> (Accessed: 1 August 2019)
- SenseLab (no date) *Anarchiving*. Available at <http://senselab.ca/wp2/immediations/anarchiving/> (Accessed: 1 September 2018)
- SenseLab (no date a) *Anarchive – Concise Definition*. Available at <http://senselab.ca/wp2/immediations/anarchiving/anarchive-concise-definition/> (Accessed: 1 September 2018)
- Seymour, R. (2019) *The Twittering Machine*. London: The Indigo Press
- Shapiro, R. & Mirkinson, J. (2013) 'Beyonce's Publicist Asks BuzzFeed To Remove "Unflattering" Photos And We're Confused (PHOTOS)', *The Huffington Post* (6 February 2013) Available at: https://www.huffingtonpost.co.uk/2013/02/06/beyonce-publicist-buzzfeed-remove-photos_n_2630184.html (Accessed: 1 June 2019)

- Shaw, J. (2016) *Julia Shaw on "Memory Hackers" Nova* (17 February 2016) Available at: www.youtube.com/watch?v=NfPLTtlo2oY (Accessed: 11 April 2019)
- Shields, R. (2018) 'Bergson's GIS: Experience, Time and Memory in Geographical Information Systems', in *Media Theory*, Volume 2, Number 1, pp. 316-332
- Shu, C. (2019) 'Facebook is introducing a new 'Tributes' section for memorialized accounts', *TechCrunch* (5 March 2019) Available at: <https://techcrunch.com/2019/03/04/facebook-is-introducing-a-new-tributes-section-for-memorialized-accounts/> (Accessed: 1 June 2019)
- Shulman, R., G. (2013) *Brain Imaging: What It Can (and Cannot) Tell Us About Consciousness*. New York: Oxford University Press
- Simek, R. (1993) *A Dictionary of Norse Mythology*. Translated by A. Hall. Boyden & Brewer Inc.
- Simondon, G. (1989) *L'individuation psychique et collective: À la lumière des notions de forme, information, potentiel et métastabilité*. Editions Aubier
- Simondon, G. (2005) *L'Individuation à la lumière des notions de formes et d'information*. Editions Jérôme Millon
- Simondon, G. (2009) 'The Position of the Problem of Ontogenesis'. Translated by G. Flanders. *Parrhesia*, Number 7 (November), pp. 4-16
- Simondon, G. (2017) *On the Mode of Existence of Technical Objects*. Translated by C. Malaspina & J. Rogove, Minneapolis: Univocal Publishing
- Sinbad (2016) 22 December 2016. Available at: <https://twitter.com/sinbadbad/status/812149532477661185> (Accessed: 11 April 2019)
- Sky News (2019) 'Brexit tweets MPs "can't delete" shown on billboards', *Sky News* (18 January 2019) Available at: <https://news.sky.com/story/brexit-tweets-mps-cant-delete-shown-on-billboards-11609810> (Accessed: 6 June 2019)
- Sontag, S. (2005) *On Photography* [eBook] New York: RosettaBooks LLC
- Sparrow B, Liu J, Wegner D. M. (2011) 'Google effects on memory: Cognitive consequences of having information at our fingertips', *Science*, Volume 333, pp. 776-778
- Spinoza, B. de (1994) *A Spinoza Reader: The Ethics and Other Works*. Translated by E. Curley. Princeton University Press

Stack, L. (2017) 'Debunking a Myth: The Irish Were Not Slaves, Too', *The New York Times* (17 March 2017) Available at: <https://www.nytimes.com/2017/03/17/us/irish-slaves-myth.html> (Accessed: 25 October 2017)

Stiegler, Bernard (2010). *What makes life worth living: On pharmacology*. Cambridge: Polity

Tahir, T. (2019) 'Momo WhatsApp 'suicide challenge' sparks warning to parents after mysterious death of 12-year-old girl' (21 August 2019) Available at: <https://www.thesun.co.uk/news/6922459/momo-whatsapp-suicide-challenge-parents-girl-death-argentina/> (Accessed: 2 May 2019)

Tait, A. (2016) 'The movie that doesn't exist and the Redditors who think it does', *New Statesman* (21 December 2016) Available at: <https://www.newstatesman.com/science-tech/internet/2016/12/movie-doesn-t-exist-and-redditors-who-think-it-does> (Accessed: 12 April 2019)

Thaler, R. H. & Sunstein, C. R. (2009) *Nudge: Improving Decisions About Health, Wealth and Happiness*. Reprint edition. Penguin

Thaler, R. H. (2018) 'Nudge, not sludge', *Science* [Editorial] Volume 361, Issue 6401 (3 August 2018) p. 431

The Cleaners (2018) [Film] Directed by H. Block & M. Rieseewieck. Germany: Gebrüder Beetz Filmproduktion

The Virtual Memorial Garden (no date) *The Virtual Memorial Garden*. Available at: <http://catless.ncl.ac.uk/vmg/> (Accessed: 10 September 2019)

The Week (2013) "'Unflattering" Beyonce photos: singer's PR asks for removal', *The Week* (6 February 2013) Available at: <https://www.theweek.co.uk/entertainment/51378/unflattering-beyonce-photos-singers-pr-asks-removal> (Accessed: 1 June 2019)

Time: 100 Photos (no date) 'The Terror of War', *Time*. Available at: <http://100photos.time.com/photos/nick-ut-terror-war> (Accessed: 1 May 2019)

Titcomb, J. & Boland, H. (2019) 'Facebook aims to finally free the nipple as it agrees to talks with artists' (8 June 2019) Available at: <https://www.telegraph.co.uk/technology/2019/06/08/facebook-aims-finally-free-nipple-agrees-talks-artists/> (Accessed: 8 June 2019)

- Trotta, D. (2007) 'New Jersey town has its own kind of Jihad', *Reuters* (26 July 2007) Available at: <https://www.reuters.com/article/us-usa-muslims/new-jersey-town-has-its-own-kind-of-jihad-idUSN2536037320070726#7w6b11eJFvy8fTIh.97> (Accessed: 12 April 2019)
- Trump, D. (2015) 23 November. Available at: <https://twitter.com/realDonaldTrump/status/668867262456156160> (Accessed: 12 April 2019)
- Trump, D. (2018) 22 October 2018. Available at: <https://twitter.com/realdonaldtrump/status/1054351078328885248> (Accessed: 2 May 2019)
- Tucker, I. (2013) 'Bodies and surveillance: Simondon, information and affect', To be published in *Distinktion: Scandinavian Journal of Social Theory*, Volume 14, Number 1 [Preprint]
- Tucker, I. (2018) 'Digitally Mediated Emotion: Simondon, Affectivity and Individuation', in Sampson, T. D., Maddison, S. & Ellis, D. *Affect and Social Media*. Rowan & Littlefield International Ltd.: London. pp. 35-41
- Tufferson, T. (2014) *GoPro: Man Fights Off Great White Shark In Sydney Harbour* (11 June 2014) Available at: https://www.youtube.com/watch?v=-m3N_BnVdOI (Accessed: 2 May 2019)
- Tulving, E. (1972) 'Episodic and semantic memory', in Tulving, E. & Donaldson, W. (Eds.) *Organization of Memory*. New York: Academic Press, pp. 381-403
- Twitter (no date) 'About your timeline', *Twitter*. Available at: <https://help.twitter.com/en/using-twitter/twitter-timeline> (Accessed: 10 May 2019)
- Twitter (no data a) 'The Twitter Rules', *Twitter*. Available at: <https://help.twitter.com/en/rules-and-policies/twitter-rules> (Accessed: 5 August 2019)
- Twitter (no date b) 'About your timeline', *Twitter*. Available at: <https://help.twitter.com/en/using-twitter/twitter-timeline> (Accessed: 10 May 2019)
- Twitter Inc. (2016) *Annual Report 2016*
- UK Parliament (no date) *Vote Leave / 50 Million Ads*. Available at: https://www.parliament.uk/documents/commons-committees/culture-media-and-sport/Fake_news_evidence/Vote-Leave-50-Million-Ads.pdf (Accessed: 1 August 2019)

U.S. House of Representatives (no date) *Exposing Russia's Effort to Sow Discord Online: The Internet Research Agency and Advertisements* [Report by Permanent Select Committee on Intelligence] Available at: <https://intelligence.house.gov/social-media-content/> (Accessed: 11 August 2019)

Vancouver Sun (2013) 'See the "unflattering" Beyonce Super Bowl photos her publicist didn't want you to see', *Vancouver Sun* (6 February 2013) Available at: <http://www.vancouversun.com/entertainment/unflattering+Beyonce+Super+Bowl+photos+publicist+didn+want/7926737/story.html> (Accessed: 1 June 2019)

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

Vaughan, M. (2007) 'Henri Bergson's "Creative Evolution"', *Substance*, Volume 36, Number 3, Issue 114, pp. 7-24

Verma, J. (2019) 'Select Instagram users surprised with Instagram Memories', *Social Samosa* (21 January 2019) Available at: <http://www.socialsamosa.com/2019/01/instagram-memories-update/> (Accessed: 31 July 2019)

Vincent, A. (2013) 'Beyoncé's publicist asks for "unflattering" Superbowl photos to be pulled', *The Telegraph* (7 February 2013) Available at: <https://www.telegraph.co.uk/culture/music/music-news/9854872/Beyonces-publicist-asks-for-unflattering-Superbowl-photos-to-be-pulled.html> (Accessed: 1 June 2019)

Vincent, J. (2017) 'AI trained on Yelp data writes fake restaurant reviews 'indistinguishable' from real deal', *The Verge* (31 August 2017) Available at: <https://www.theverge.com/2017/8/31/16232180/ai-fake-reviews-yelp-amazon> (Accessed: 1 August 2019)

Wakefield, J. (2019) 'Christchurch shootings: Social media races to stop attack footage', *BBC News* (16 March 2019) Available at: <https://www.bbc.co.uk/news/technology-47583393> (Accessed: 21 July 2019)

Waldman, P. (2018) 'Trump's long history of lying about 9/11 and exploiting it for personal gain', *The Washington Post* (11 September 2018) Available at: <https://www.washingtonpost.com/blogs/plum-line/wp/2018/09/11/trumps-long-history-of-lying-about-9-11-and-exploiting-it-for-personal-gain/> (Accessed: 12 April 2019)

- Walter, T., Hourizi, R., Moncur, W., Pitsillides, S., (2012) 'Does the internet change how we die and mourn?'. To be published in *Omega: Journal of Death & Dying* [Preprint]. Available at https://www.academia.edu/798905/Does_the_internet_change_how_we_die_and_mourn_A_review_article._2011-12_ (Accessed: 23 April 2014)
- Walter, T. (2014) *New Mourners, Old Mourners* [Keynote Speech] *Death Online Research Symposium*. Durham University, Durham, 10 April 2014.
- Waterson, J. (2019) 'YouTube blocks history teachers uploading archive videos of Hitler', *The Guardian* (6 June 2019) Available at: <https://www.theguardian.com/technology/2019/jun/06/youtube-blocks-history-teachers-uploading-archive-videos-of-hitler> (Accessed: 21 July 2019)
- Waterson, J. (2019a) 'Viral 'Momo challenge' is a malicious hoax, say charities', *The Guardian* (28 February 2019) Available at: <https://www.theguardian.com/technology/2019/feb/28/viral-momo-challenge-is-a-malicious-hoax-say-charities> (Accessed: 20 April 2019)
- Waterson, J. (2019b) 'Revealed: Johnson ally's firm secretly ran Facebook propaganda network', *The Guardian* (1 August 2019) Available at: <https://www.theguardian.com/politics/2019/aug/01/revealed-johnson-allys-firm-secretly-ran-facebook-propaganda-network> (Accessed: 1 August 2019)
- Watts, J. (2019) 'New Zealand attack: Downing Street demands all media firms remove video of Christchurch mosque shooting', *The Independent* (15 March 2019) Available at: <https://www.independent.co.uk/news/uk/politics/new-zealand-attack-video-theresa-may-shooting-facebook-twitter-youtube-a8824491.html> (Accessed: 21 July 2019)
- Wheeler, M. (2016) 'The Knowledge Ecology: Epistemic Credit and the Technologically Extended Mind', talk at *Streams of Consciousness* conference, University of Warwick, 21-22 April 2016
- White, M. & Lefebvre, A. (2012) *Bergson, Politics, and Religion*. Durham and London: Duke University Press
- Whitehead, A. N. (1938) *Modes of Thought*. Macmillan: New York
- Whitehead, A. N. (1953) *Alfred North Whitehead: An Anthology*. Macmillan
- Whitehead, A. N. (1969) *Process and Reality*. Free Press: New York

Whitworth, D. (2017) 'Social media is tearing society apart', *The Times* (15 November 2017) Available at: <https://www.thetimes.co.uk/article/social-media-is-tearing-societyapart-sj7km2ds7> (Accessed: 15 January 2018)

Williams, R. (1977) *Marxism and Literature*. Oxford University Press

Williams, T. (2019) 'Fears Momo 'suicide game' has spread to Britain after seven-year-old boy tells his school friends doll-like creature would kill them in their sleep', *MailOnline* (21 February 2019) Available at: <https://www.dailymail.co.uk/news/article-6728427/Fears-Momo-spread-Britain-boy-tells-school-friends-creature-kill-them.html> (Accessed: 2 May 2019)

Wilson, S. (2009) 'Remixing History in Digital Media', in Garde-Hansen, J., Hoskins, A. & Reading, A. (2009) *Save As ... Digital Memories*. Hampshire: Palgrave Macmillan

Winters, J. (2017) 'Coda: Web archives for humanities research – some reflections'. In Brügger N. & Schroeder R. (Eds.), *Web as History: Using Web Archives to Understand the Past and the Present* (pp. 238-248). London: UCL Press

Wired Staff (2004) 'College Facebook Mugs Go Online', *Wired* (9 June 2004) Available at: <https://www.wired.com/2004/06/college-facebook-mugs-go-online/> (Accessed: 2 September 2019)

Wollaston, S. (2019) 'Four men with a ladder: the billboard campaigners battling Brexit', *The Guardian* (7 February 2019) Available at: <https://www.theguardian.com/politics/2019/feb/07/billboard-campaigners-brexit-led-by-donkeys> (Accessed: 6 June 2019)

Wong, J. C. (2017) 'Former Facebook executive: social media is ripping society apart', *The Guardian* (12 December 2017) Available at: <https://www.theguardian.com/technology/2017/dec/11/facebook-former-executive-ripping-society-apart> (Accessed: 15 January 2018)

Woolf, V. (2003) *Orlando*. Wordsworth Classics, 2003 Edition. Hertfordshire: Wordsworth Editions Limited

Woolley, S. C. & Guilbeault, D. (2017) 'Computational Propaganda in the United States of America: Manufacturing Consensus Online', in Woolley, S. and Howard, P. N. (Eds.) *Working Paper 2017.5*. Oxford: Project on Computational Propaganda

The Woolshed Company (2016) *Independent Australian Production Studio Repeatedly Achieves World Wide News Coverage And Gains Over 200 Million Views With A Series Of Fake Viral Videos Without Any Paid Media, Promotion Or Publicity* (Media Release) 11 July 2016

Worrall, P. (2019) 'Vote Leave's "dark" Brexit ads', *Channel 4 News FactCheck* (27 July 2018) Available at: <https://www.channel4.com/news/factcheck/factcheck-vote-leaves-dark-brexit-ads> (Accessed: 1 August 2019)

Yapalater, L. (2013) 'The 33 Fiercest Moments From Beyoncé's Halftime Show', *BuzzFeed* (4 February 2013) Available at: <https://www.buzzfeed.com/lyapalater/the-fiercest-moments-from-beyonces-halftime-show> (Accessed: 27 May 2019)

York, C. (2019) 'A Mysterious "Led By Donkeys" Poster Campaign Is Trolling Politicians With Their Own Words', *HuffPost* (9 January 2019) Available at: https://www.huffingtonpost.co.uk/entry/led-by-donkeys_uk_5c35d038e4b0dbd06601e60b (Accessed: 6 June 2019)

YouTube Help (no date) *Advertiser-friendly content guidelines*. Available at: <https://support.google.com/youtube/answer/6162278> (Accessed: 1 August 2019)

YouTube Official Blog (2019) *Our ongoing work to tackle hate* (5 June 2019) Available at: <https://youtube.googleblog.com/2019/06/our-ongoing-work-to-tackle-hate.html> (Accessed: 21 July 2019)

YouTube Official Blog (2019a) *An update on our efforts to protect minors and families* (4 June 2019) Available at: <https://youtube.googleblog.com/2019/06/an-update-on-our-efforts-to-protect.html> (Accessed: 21 July 2019)

Yurief, K. (2017) 'Google Maps now remembers where you parked your car', *CNN Business* (26 April 2017) Available at: <https://money.cnn.com/2017/04/26/technology/google-maps-parking-spot/index.html> (Accessed: 21 August 2019)

Yusuf, H. (2019) 'Facebook and eBay urged to act on fake reviews', *Which?* (21 June 2019) Available at: <https://www.which.co.uk/news/2019/06/facebook-and-ebay-urged-to-act-on-fake-reviews/> (Accessed: 7 August 2019)

Zuboff, S. (2019) *The Age of Surveillance Capitalism: The Fight for a Future at the New Frontier of Power*. London: Profile Books Ltd.

Zuckerberg, M. (2017) <https://www.facebook.com/zuck/videos/10103658355917211/>
(Accessed: 5 June 2018)

Zuckerberg, M. (2017a) *Bringing the World Closer Together*. Available at:
<https://www.facebook.com/notes/mark-zuckerberg/bringing-the-world-closer-together/10154944663901634/> (Accessed: 10 September 2019)

List of Figure References

Me, Myself and iPhones

Figure 1

Screenshot of 'Save your parking' Google Maps feature

Figure 2

Screenshot of Google Maps Timeline feature

Figure 3

Screenshot of Google Maps Point-to-point route-tracker

Figure 4

Screenshot of Google Maps countries/regions visited feature

Figure 5

Screenshot of Google Maps 'you visited this place' feature

Figure 6

Google Maps Gmail-scraped schedule overlay. Available at: <https://www.blog.google/products/maps/now-you-can-see-your-google-calendar-events-google-maps/> (Accessed: 29 August 2019)

Figure 7

Google Maps Street View coverage. Available at: <https://www.google.com/streetview/explore/> (Accessed: 29 August 2019)

Figure 8

Figure from Douglas C. Schmidt's research into 'Traffic data sent from idle Android and iPhone mobiles'. Schmidt, D. N. (2018) *Google Data Connection*. Distributed by Digital Context Next

Figure 9

Screenshot of Facebook 'Memories' feature

Figure 10

Screenshot of Facebook 'Memories' feature

Figure 11

Facebook 'Memories' product-flow image. Available at: <https://newsroom.fb.com/news/2018/06/all-of-your-facebook-memories-are-now-in-one-place/> (Accessed: 31 July 2019)

Figure 12

Screenshot of Google Photos 'Rediscover this day' feature

Figure 13

Screenshot of 00WARTHETAPY00's 'Ghost Rider' YouTube comment. Available at: https://www.youtube.com/watch?v=vK91LAIiMOio&lc=UgiRkYPdbaIm_HgCoAEC (Accessed: 1 July 2019)

Figure 14

Figure 14 – Memorialized Facebook Account. Available at: <https://newsroom.fb.com/news/2015/02/adding-a-legacy-contact/>

Figure 15

Figure 15 – Memorialized Facebook Account with Tributes section. Available at: <https://newsroom.fb.com/news/2019/04/updates-to-memorialization/>

Error 404 – Memory File Not Found

Figure 1:

From: KnowYourMeme (2013) *Unflattering Beyonce*. Available at: <https://knowyourmeme.com/memes/unflattering-beyonce> (Accessed 6 June 2019)

Figure 2:

From: KnowYourMeme (2013) *Unflattering Beyonce*. Available at: <https://knowyourmeme.com/memes/unflattering-beyonce> (Accessed 6 June 2019)

Figure 3:

From: KnowYourMeme (2013) *Unflattering Beyonce*. Available at: <https://knowyourmeme.com/memes/unflattering-beyonce> (Accessed 6 June 2019)

Figure 4:

Searches for ‘unflattering Beyoncé’, from the meme’s emergence through to 5 June 2019. Available at: <https://trends.google.com/trends/explore?date=2013-02-03%202019-06-05&q=unflattering%20beyonce> (Accessed: 6 June 2019)

Figure 5:

Searches for ‘unflattering Beyoncé’, over subsequent years. Available at: <https://trends.google.com/trends/explore?date=2014-03-02%202019-06-05&q=unflattering%20beyonce> (Accessed: 6 June 2019)

Figure 6:

Screenshot of the most recent Imgur posts labelled ‘Beyonce’ as at 6 June 2019. Source: www.imgur.com

Figure 7:

The Terror of War. Photograph © Nick Ut

Figure 8:

Worldwide Searches for ‘napalm girl’ over five years – a significant spike at the time of its censorship on Facebook. Available at: <https://trends.google.com/trends/explore?date=2014-06-06%202019-05-06&q=napalm%20girl> (Accessed: 6 June 2019)

Figure 9:

Worldwide Searches for ‘led by donkeys’ over the year prior to writing. Available at: <https://trends.google.com/trends/explore?date=2018-06-06%202019-05-06&q=led%20by%20donkeys> (Accessed: 6 June 2019)

Figure 10:

Screenshot of the tweet of the original billboard installed by Led by Donkeys. Available at: <https://twitter.com/bydonkeys/status/1082938368491700224> (Accessed: 6 June 2019)

Facts, Fakes and Filter Bubbles

Figure 1:

From: Evon, D. (2016) ‘Did Sinbad Play a Genie in the 1990s Movie ‘Shazaam’?’, *Snopes* (28 December 2018) Available at: <https://www.snopes.com/fact-check/sinbad-movie-shazaam/> (Accessed 15 April 2019)

Figure 2:

Theatrical poster for: *Kazaam* (1996) [Film] Directed by Paul Michael Glaser. Touchstone Pictures; Interscope Communications; PolyGram Filmed Entertainment (Copyright © 1996 by Touchstone Pictures. All Rights Reserved.)

Figure 3:

From: Hogan, L. (2015b) 'Debunking the imagery of the "Irish slaves" meme', *Medium* (14 September 2015) Available at: <https://medium.com/@Limerick1914/the-imagery-of-the-irish-slaves-myth-dissected-143e70aa6e74> (Accessed: 25 October 2017)

Figure 4:

From: Evon, D. (2018) 'Were These Mexican Police Officers Brutalized by Members of a Migrant Caravan?', *Snopes* (22 October 2018) Available at: <https://www.snopes.com/fact-check/mexican-police-caravan-photos/> (Accessed: 30 April 2019)

Figure 5:

Screenshot of: DeMayo, F. (2016) *Lightning almost strikes girl in Sydney!!! Boyfriend's reaction is priceless!!!!* (1 February 2016) Available at: <https://www.youtube.com/watch?v=JHOBhgjc1Jc> (Accessed: 9 May 2019)

Figure 6:

From: Gill, E. (2019) 'Mum's warning over "Momo challenge" after seven-year-old told school pals the character would kill them', *Manchester Evening News* (20 February 2019) Available at: <https://www.manchestereveningnews.co.uk/news/greater-manchester-news/mum-warning-momo-suicide-challenge-15861489> (Accessed: 7 May 2019)

Figure 7:

Screenshot of: National Online Safety (2019) 26 February 2019. Available at: <https://twitter.com/natonlinesafety/status/1100453894814158848/photo/1> (Accessed: 2 May 2019)

Figure 8:

Graphic from The Guardian newspaper, illustrating the CTF disinformation campaign. From: Waterson, J. (2019a) 'Revealed: Johnson ally's firm secretly ran Facebook propaganda network', *The Guardian* (1 August 2019) Available at:

<https://www.theguardian.com/politics/2019/aug/01/revealed-johnson-allys-firm-secretly-ran-facebook-propaganda-network> (Accessed: 1 August 2019)

Figure 9:

Figure 9 – Thaler and Sunstein’s ‘Two cognitive systems’. From: Thaler, R. H. & Sunstein, C. R. (2009) *Nudge: Improving Decisions About Health, Wealth and Happiness*. Reprint edition. Penguin, p. 20

Figures 10-16:

From: UK Parliament (no date) *Vote Leave / 50 Million Ads*. Available at: https://www.parliament.uk/documents/commons-committees/culture-media-and-sport/Fake_news_evidence/Vote-Leave-50-Million-Ads.pdf (Accessed: 1 August 2019)

Bibliography

A Picture Held Us Captive (2017) BBC Radio 4. 29 November 2017

ABC News (2015) *Donald Trump Doubles Down on Claim He Saw Muslims Celebrating After 9/11* (24 November 2015) Available at: <https://www.youtube.com/watch?v=z8mpcZYD1-4> (Accessed: 2 May 2019)

ABC News Politics (2015) 23 November 2015. Available at: <https://twitter.com/ABCPolitics/status/668874961373696000> (Accessed: 2 May 2019)

Alphabet Inc. (2018) *Annual Report Pursuant to Section 13 or 15(D) of the Securities Exchange Act Of 1934 For The Fiscal Year Ended December 31, 2017*. Available at: https://abc.xyz/investor/static/pdf/20171231_alphabet_10K.pdf (Accessed: 21 August 2019)

Allan, R. (2018) 'Increasing Transparency for Ads Related to Politics in the UK', *Facebook Newsroom* (16 October 2018) Available at: <https://newsroom.fb.com/news/2018/10/increasing-transparency-uk/> (Accessed: 8 August 2019)

American Gods, Series 2, Episode 7, 'Treasure of the Sun' (2019) [online] Directed by Cabezas, P., Available from Amazon Prime Video

Anonymous (7 November 2007) Retrieved from: https://web.archive.org/web/20080621070830/http://4chanarchive.org/brchive/dspl_thread.php5?thread_id=32640395 (Accessed: 28 July 2019)

Ansell-Pearson, K. (2010) 'Bergson on Memory', in Radstone, S. & Schwarz, B. (Eds.) *Memory: Histories, Theories, Debates*. Fordham University Press

Ansell-Pearson, K. (2010) 'Bergson', in Moyar, D. (Ed.) *The Routledge Companion to Nineteenth Century Philosophy*. Routledge: Oxfordshire

Ansell-Pearson, K. (2018) *Bergson: Thinking Beyond the Human Condition*. London: Bloomsbury

Arthur, P. L. (2009) 'Saving Lives: Digital Biography and Life Writing', in in Garde-Hansen, J., Hoskins A. & Reading, A. (Eds.) (2009) *Save As ... Digital Memories*. Palgrave Macmillan. pp. 44-59

- Assmann, A. (2006) 'Memory, Individual and Collective', in Goodin, R. & Tilly, C. (Eds.) *The Oxford Handbook of Contextual Political Analysis*. Oxford: Oxford University Press, pp. 210-24.
- Assman, J. (2008) 'Communicative and Cultural Memory'. In Erll, A. & Nünning, A. (Eds.) *Cultural Memory Studies. An International and Interdisciplinary Handbook*. De Gruyter. Berlin, New York. pp.. 109-118
- Atkinson, R. C. & Shiffrin, R. M. (1968) 'Human memory: A proposed system and its control processes', in Spence, K. W., & Spence, J. T. (Eds.) *The psychology of learning and motivation (Volume 2)* New York: Academic Press, pp. 89–195.
- Barad, K. (2007) *Meeting the universe halfway: quantum physics and the entanglement of matter and meaning*. Durham and London: Duke University Press
- Bardin, A. (2015) *Epistemology and Political Philosophy in Gilbert Simondon: Individuation, Technics, Social Systems* [eBook] London: Springer
- Bartlett, F. C. (1932) *Remembering: A Study in Experimental and Social Psychology* (1967 paperback edition) Cambridge: Cambridge University Press
- Bartlett, J. & Miller, C. (2011) 'truth, lies and the internet: a report into young people's digital fluency', *Demos* (11 September 2011)
- BBC News (2016) 'Vote Leave launches £50m Euro 2016 football contest', *BBC News* (27 May 2019) Available at: <https://www.bbc.co.uk/news/uk-politics-36397725> (Accessed: 8 August 2019)
- BBC News (2018) *Facebook ruling: German court grants parents rights to dead daughter's account* (12 July 2018) Available at: <https://www.bbc.co.uk/news/world-europe-44804599> (Accessed: 12 July 2018)
- Bennett, R. & Hacker, P. M. S. (2013) *History of Cognitive Neuroscience*. Chichester: Wiley-Blackwell
- Berger, J. (2009) 'Uses of Photography', *About Looking*. London: Bloomsbury. pp. 52-67
- Berger, J. (2015) "'I think the dead are with us": John Berger at 88', Interview with Maughan, P., *New Statesman* (11 June 2015) Available at: <https://www.newstatesman.com/culture/2015/06/i-think-dead-are-us-john-berger-88> (Accessed: 1 September 2019)

- Bergson, H. (1911) *Creative Evolution*. Translated by A. Mitchell. New York: Henry Holt & Company
- Bergson, H. (1912) *An Introduction to Metaphysics*. London: G. P. Putnam's Sons
- Bergson, H. (1920) *Mind-Energy: Lectures and Essays*. Translated by H. R. Carr. New York: Henry Holt and Company
- Bergson, H. (1935) *The Two Sources of Morality and Religion*. Translated by R. A. Audra & C. Brereton. London: Macmillan & Co.
- Bergson, H. (1946) *The Creative Mind*. New York: The Philosophical Library Inc.
- Bergson, H. (2001) *Time and Free Will: An Essay on the Immediate Data of Consciousness*. 1913 third edition reprint. Dover Publications
- Bergson, H. (2004) *Matter and Memory*. Dover Philosophical Classics
- Berners-Lee, T. (2018) 'The web is under threat. Join us and fight for it', *World Wide Web Foundation* (12 March 2018) Available at: <https://webfoundation.org/2018/03/web-birthday-29/> (Accessed: 1 September 2019)
- Blackman, L. (2012) *Immaterial Bodies: Affect, Embodiment, Mediation*. Sage Publishing
- Bollmer, G. D. (2011) 'Virtuality in systems of memory: Toward an ontology of collective memory, ritual, and the technological', *Memory Studies*, Volume 4, Number 4, pp. 450-464
- Bond, L., Craps, S. & Vermeulen, P. (2016) *Memory Unbound: Tracing the Dynamics of Memory Studies*. New York/Oxford: Berghahn Books
- Bondarenko, V. (2017) 'Facebook quietly stopped offering flag profile-picture filters after terrorist attacks', *Business Insider* (10 June 2017) Available at: <https://www.businessinsider.com/facebook-stops-offering-flag-profile-picture-filters-after-terrorist-attacks-2017-5> (Accessed: 1 September 2019)
- Bosker, B. (2016) 'The Binge Breaker', *The Atlantic* (November 2016) Available at: <https://www.theatlantic.com/magazine/archive/2016/11/the-binge-breaker/501122/> (Accessed: 1 June 2017)
- Brewer, W. F. & Treyens, J. C. (1981) 'Role of schemata in memory for places', *Cognitive Psychology*. Volume 13, Issue Number 2 (April) pp. 207-230

- Brockmeier, J. (2010) 'After the Archive: Remapping Memory', *Culture & Psychology*, Volume 16, Number 1, pp. 5-35
- Brockmeier, J. (2015) *Beyond the Archive: Memory, Narrative, and the Autobiographical Process*. Oxford University Press
- Broome, F. (no date) 'Theories', *The Mandela Effect*. Available at: <https://mandelaeffect.com/possible-explanations/> (Accessed: 11 April 2019)
- Broome, F. (2010) 'Nelson Mandela Died in Prison?', *The Mandela Effect* (9 September 2010) Available at: <https://mandelaeffect.com/nelson-mandela-died-in-prison/> (Accessed: 11 April 2019)
- Broome, F. (2014) 'Berenstein or Berenstain Bears?', *The Mandela Effect* (25 June 2014) Available at: <https://mandelaeffect.com/berenstein-or-berenstain-bears/> (Accessed: 11 April 2019)
- Broome, F. (2016) 'Sinbad as a Genie – Shazaam', *The Mandela Effect* (30 January 2016) Available at: <https://mandelaeffect.com/sinbad-as-a-genie/> (Accessed: 11 April 2019)
- Brown, C. (2013) 'Memory, identity and the archival paradigm: introduction to the special issue' [Editorial Note] *Archival Science*, Volume 13, Number 2–3 (June) pp. 85–93
- Brown, S. D. (2008) 'The quotation marks have a certain importance: Prospects for a 'memory studies'', *Memory Studies*, Volume 1, Number 3, pp. 261-71
- Brown, S. D. & Reavey, P. (2015) *Vital Memory and Affect*. East Sussex: Routledge
- Burton, J. (2008) 'Bergson's non-archival theory of memory'. *Memory Studies*. Volume 1, Number 3. pp. 321-339
- Brubaker, J. & Vertesi, J. (2010) 'Death and the Social Network', *Department of Informatics* Donald Bren School of Information and Computer Sciences, University of California, Irvine. Available at: https://www.academia.edu/394566/Death_and_the_Social_Network (Accessed: 21 April 2014)
- Brubaker, J. R., Hayes, G. R. & Dourish, P. (2013) 'Beyond the Grave: Facebook as a Site for the Expansion of Death and Mourning', *The Information Society*, Volume 29, Number 3, pp. 152–163

- Bruel-Jungerman, E., Davis, S. & Laroche, S. (2007) 'Brain Plasticity Mechanisms and Memory: A Party of Four', *The Neuroscientist*, Volume 13, Number 5, pp. 492–505
- Butler, W. (2018) 'Beyoncé doesn't want fans posting pictures of her Coachella performance online' *NME* (15 April 2018) Available at: <https://www.nme.com/news/music/beyonce-headline-coachella-2018-unflattering-photos-2293308> (Accessed; 27 May 2019)
- BuzzFeedCeleb (2013) 'The "Unflattering" Photos Beyoncé's Publicist Doesn't Want You To See', *BuzzFeed* (5 February 2013) Available at: <https://www.buzzfeed.com/buzzfeedceleb/the-unflattering-photos-beyonces-publicist-doesnt-want-you-t> (Accessed: 27 May 2019)
- Cadwalladr, C. (2017) 'Revealed: how US billionaire helped to back Brexit', *The Observer* (26 February 2017) Available at: <https://www.theguardian.com/politics/2017/feb/26/us-billionaire-mercator-helped-back-brexit> (Accessed: 1 June 2019)
- Cadwalladr, C. (2017) 'The great British Brexit robbery: how our democracy was hijacked', *The Guardian* (7 May 2017) Available at: <https://www.theguardian.com/technology/2017/may/07/the-great-british-brexit-robbery-hijacked-democracy> (Accessed: 1 August 2019)
- Cadwalladr, C. & Graham-Harrison, E. (2018) 'Revealed: 50 million Facebook profiles harvested for Cambridge Analytica in major data breach', *The Guardian* (17 March 2018) Available at: <https://www.theguardian.com/news/2018/mar/17/cambridge-analytica-facebook-influence-us-election> (Accessed: 17 March 2018)
- Callison-Bruch, V., Probst, J. & Govea, M. (2015) 'Adding a Legacy Contact' *Facebook Newsroom* (12 February 2015) Available at: <https://newsroom.fb.com/news/2015/02/adding-a-legacy-contact/> (Accessed: 1 July 2019)
- Cariou, M. (1999) 'Bergson: The Keyboards of Forgetting', in J. Mullarkey (ed.) *The New Bergson*, pp. 99–117. Manchester: Manchester University Press.
- Campbell, E. (2015) 'Pro tips: How to get even more out of Dropbox for Android', *Dropbox: work in progress* (10 June 2015) Available at: <https://blog.dropbox.com/topics/work-culture/dropbox-android-pro-tips> (Accessed: 5 September 2019)

Carr, N. (2008) 'Is Google Making Us Stupid? What the Internet is Doing to Our Brains', *The Atlantic*, 1 July [Online]. Available at: <http://www.theatlantic.com/magazine/archive/2008/07/is-google-making-us-stupid/306868/> (Accessed: 7 July 2014)

Carr, N. (2011) *The Shallows*. London: Atlantic Books

Carrie Wong, J. (2016) 'Mark Zuckerberg accused of abusing power after Facebook deletes "napalm girl" post' *The Guardian* (9 September 2016) Available at: <https://www.theguardian.com/technology/2016/sep/08/facebook-mark-zuckerberg-napalm-girl-photo-vietnam-war> (Accessed: 31 May 2019)

Carroll, L. (2015) 'Fact-checking Trump's claim that thousands in New Jersey cheered when World Trade Center tumbled', *Politifact* (22 November 2015) Available at: <https://www.politifact.com/truth-o-meter/statements/2015/nov/22/donald-trump/fact-checking-trumps-claim-thousands-new-jersey-ch/> (Accessed: 12 April 2019)

Center for Humane Technology (no date) *Our Work*. Available at: <https://humanetech.com/problem/#our-work> (Accessed: 1 September 2019)

Cerf, V. (2015) 'Google's Vint Cerf warns of "digital Dark Age"', Interview with Ghosh, P., *BBC News* (13 February 2015) Available at: <http://www.bbc.co.uk/news/science-environment-31450389> (Accessed: 13 February 2015)

Cerf, V. (2016) 'Digital Vellum and Archives', Talk at *FASTER CoP*, 12 August. Available at: <https://www.nitrd.gov/nitrdgroups/index.php?title=DigitalVellumAndArchives> (Accessed: 1 July 2019)

Chadwick, A. (2017) *The Hybrid Media System: Politics and Power*. Second Edition. New York: Oxford University Press

Chiu, A. (2018) 'The "Momo Challenge": A sinister threat to young people or an urban myth?', *The Washington Post* (5 September 2018) Available at: <https://www.washingtonpost.com/news/morning-mix/wp/2018/09/05/the-momo-challenge-a-sinister-threat-to-young-people-or-an-urban-myth/> (Accessed: 2 May 2019)

Chun, W. H. K. (2011) 'The Enduring Ephemeral, or The Future is a Memory' in Huhtamo, E. & Parikka, J. (Eds.) *Media Archaeology: Approaches, Applications, and Implications*. University of California Press

- Clancy, S. A. (2005) *Abducted: Why people come to believe they were kidnapped by aliens*. Harvard University Press
- Clark, A. & Chalmers, D. J. (1998) 'The Extended Mind', *Analysis*, Volume 58, Number 1, pp. 7-19.
- Clark Barr, N. (1913) 'The Dualism of Bergson', *Philosophical Review*, Volume 22, Number 6 (November) pp. 639-652
- Clough, P. T. (2008) 'The Affective Turn: Political Economy, Biomedicine and Bodies', *Theory, Culture & Society*, Vol. 25, Number 1, pp. 1–22
- Clough, P. T. (2009) 'The New Empiricism: Affect and Sociological Method', *European Journal of Social Theory*. Volume 12, Number 1. pp. 43-61
- Clough, P. T. (2018) *The User Unconscious: On Affect, Media and Measure*. Minneapolis: University of Minnesota Press
- Cohen (2013) 'Memory Implants' in *MIT Technology Review* [online] Available at: <https://www.technologyreview.com/s/513681/memory-implants/> (Accessed 5 December 2016)
- Cohen, J. & Schmidt, E. (2013) *The New Digital Age*. John Murray Publishers Ltd.
- Coleman, R. (2018) 'Social Media and the Materialisation of the Affective Present', in Sampson, T. D, Maddison, S. & Ellis, D. (Eds.) *Affect and Social Media: Emotion, Mediation, Anxiety and Contagion*. London: Rowman & Littlefield International Ltd
- Combes, M. (2013) *Gilbert Simondon and the Philosophy of the Transindividual*. Massachusetts: Massachusetts Institute of Technology
- Connerton, P. (1989). *How Societies Remember* (Themes in the Social Sciences) Cambridge: Cambridge University Press
- Connerton, P. (2008) 'Seven types of forgetting', *Memory Studies*, Volume 1, Number 1 (January) pp. 59-71
- Connolly, W. E. (2018) 'Fake News and "Postmodernism": The Fake Equation', in *The Contemporary Condition* [online] Available at: <http://contemporarycondition.blogspot.com/2018/05/fake-news-and-postmodernism-fake.html> (Accessed: 12 April 2019)

Corfield, G. (2018) 'Here is how Google handles Right To Be Forgotten requests', *The Register* (19 March 2018) Available at: https://www.theregister.co.uk/2018/03/19/google_right_to_be_forgotten_request_process/ (Accessed: 1 August 2019)

Court of Justice of the European Union (2014) *An internet search engine operator is responsible for the processing that it carries out of personal data which appear on web pages published by third parties* [Press Release] (13 May 2014) Available at: <https://curia.europa.eu/jcms/upload/docs/application/pdf/2014-05/cp140070en.pdf> (Accessed: 29 July 2019)

Crews, F. (1995). *The memory wars: Freud's legacy in dispute*. London: Granta Books

Cummings, D. (2016) 'On the referendum #20: the campaign, physics and data science – Vote Leave's 'Voter Intention Collection System' (VICS) now available for all', *Dominic Cummings's Blog* (29 October 2016) Available at: <https://dominiccummings.com/2016/10/29/on-the-referendum-20-the-campaign-physics-and-data-science-vote-leaves-voter-intention-collection-system-vics-now-available-for-all/> (Accessed: 8 August 2019)

Curry, A. L. & Hammonds, K. H. (2014) *The Power of Solutions Journalism* [White Paper] (June 2014) University of Texas in Austin: Centre for Media Engagement. Available at: http://mediaengagement.org/wp-content/uploads/2014/06/ENP_SJN-report.pdf (Accessed: 1 September 2019)

Curry, A., Stroud, N. J. & McGregor, S. (2016) *Solutions Journalism and News Engagement* [Report] (March 2016) University of Texas in Austin: Centre for Media Engagement. Available at: <https://mediaengagement.org/wp-content/uploads/2016/03/ENP-Solutions-Journalism-News-Engagement.pdf> (Accessed: 1 September 2019)

Dagnall, N. & Drinkwater, K. (2018) 'The Mandela effect: Explaining the science behind false memories', *The Independent* (15 February 2018) Available at: <https://www.independent.co.uk/news/science/mandela-effect-false-memories-explain-science-time-travel-parallel-universe-matrix-a8206746.html> (Accessed: 11 April 2019)

Death Online Research, *The Network*. Available at: <http://deathonlineresearch.net/sample-page/> (no date) (Accessed: 22 March 2014)

- Debaise, D. (2017) *Nature as Event: The Lure of the Possible*. Durham and London: Duke University Press
- De Boever, A., Murray, A., Roffe, J. & Woodward, A. (Eds.) (2013) *Gilbert Simondon: Being and Technology*. Edinburgh University Press Ltd.
- Deleuze, G. (2011) *Bergsonism*. Translated by H. Tomlinson & B. Habberjam. First paperback edition, seventh printing. New York: Zone Books
- DeMayo, F. (2016) *Lightning almost strikes girl in Sydney!!! Boyfriend's reaction is priceless!!!!* (1 February 2016) Available at: <https://www.youtube.com/watch?v=JHOBhgjc1Jc> (Accessed: 9 May 2019)
- de Vito, S., Roberto, C. & Della Sala, S. (2009) 'Collective representations elicit widespread individual false memories' (letter) *Cortex*, Number 45, pp. 686-687
- Donk, A. (2009) The Digitization of Memory: Blessing or Curse? [Presentation] *Media in Transition Conference MIT6: Stone and Papyrus, Storage and Transmission*, Massachusetts Institute of Technology, Boston, 24-26 April. Available at: <http://web.mit.edu/comm-forum/mit6/papers/Donk.pdf> (Accessed: 28 July 2014)
- Draaisma, D. (2000) *Metaphors of Memory: A History of Ideas About the Mind*. Cambridge University Press
- Dutton, W. H., Reisdorf, B., Dubois, E., Blank, G. (2017) 'Search and Politics: The Uses and Impacts of Search in Britain, France, Germany, Italy, Poland, Spain, and the United States', *Quello Center Working Paper No. 5-1-17*. Available at: <https://ssrn.com/abstract=2960697> (Accessed: 23 July 2019)
- Dwoskin, E. & Timberg, C. (2019) 'New Zealand Shooting: Inside YouTube's Struggle To Stop Attack Videos Spreading Online', *The Independent* (18 March 2019) Available at: <https://www.independent.co.uk/life-style/gadgets-and-tech/new-zealand-shooting-video-youtube-christchurch-mosque-latest-a8828316.html> (Accessed 21 July 2019)
- Dwoskin, E. (2019) 'Inside Facebook, the second-class workers who do the hardest job are waging a quiet battle', *The Washington Post* (8 May 2019) Available at: <https://www.washingtonpost.com/technology/2019/05/08/inside-facebook-second-class-workers-who-do-hardest-job-are-waging-quiet-battle/> (Accessed: 29 July 2019)

Dwyer, R. (2016) 'Irish: The Forgotten White Slaves', *Setting the Record Straight* (16 March 2015) Available at: <http://settingrecordstraight.blogspot.com/2015/03/irish-forgotten-white-slaves.html> (Accessed: 12 April 2019)

Dwyer, J. (2015) 'A Definitive Debunking of Donald Trump's 9/11 Claims' *The New York Times* (24 November 2015) Available at: <https://www.nytimes.com/2015/11/25/nyregion/a-definitive-debunking-of-donald-trumps-9-11-claims.html> (Accessed: 12 April 2019)

Dzieza, J. (2015) 'Facebook's new nostalgia feature is already bringing up painful memories', *The Verge* (2 April 2015) Available at: <https://www.theverge.com/2015/4/2/8315897/facebook-on-this-day-nostalgia-app-bringing-back-painful-memories> (Accessed: 29 August 2019)

Ebbinghaus, H. (1885) *Memory: A Contribution to Experimental Psychology*. Translated by H. A. Ruger & C. E. Bussenius (1913) New York: Teachers College, Columbia University

Egil Hansen, E. (2016) 'Dear Mark. I am writing this to inform you that I shall not comply with your requirement to remove this picture.', *Aftenposten* (8 September 2016) Available at: <https://www.aftenposten.no/meninger/kommentar/i/G892Q/Dear-Mark-I-am-writing-this-to-inform-you-that-I-shall-not-comply-with-your-requirement-to-remove-this-picture> (Accessed: 31 May 2019)

The Electoral Commission (2019) *Results and turnout at the EU referendum*. Available at: <https://www.electoralcommission.org.uk/who-we-are-and-what-we-do/elections-and-referendums/past-elections-and-referendums/eu-referendum/results-and-turnout-eu-referendum> (Accessed: 11 August 2019)

Ellis, C., Theiry, G., Vaughan-Evans, A. & Wyn Jones, M. (2018) 'Languages flex cultural thinking', *Bilingualism: Language and Cognition*. Volume 21, Issue 2 (March) pp. 219-227

Emery, D. (2016) 'Were There Irish Slaves in America, Too?', *Snopes* (24 September 2016) Available at: <https://www.snopes.com/fact-check/irish-slaves-early-america/> (Accessed: 25 October 2017)

Engelbart, D. C. (1962). *Augmenting Human Intellect: A Conceptual Framework* [Summary Report] AFOSR-3223 under Contract AF 49(638)-1024, SRI Project 3578 for Air Force Office of Scientific Research. Menlo Park, Ca., Stanford Research Institute

Erlil, A. (2011) *Memory in Culture*. Translated by S. B. Young. New York: Palgrave Macmillan

Ernst, W. (2004) 'The Archive as Metaphor: From Archival Space to Archival Time', *Open*, 2004, Number 7, (No)Memory, pp. 46-53

EU GDPR.ORG (no date) *GDPR Key Changes*. Available at: <https://eugdpr.org/the-regulation/> (Accessed: 1 September 2019)

European Parliament (2019) *Proposal for a directive on copyright and related rights in the Digital Single Market and amending Directives* (20 March 2019) Available at: http://www.europarl.europa.eu/doceo/document/A-8-2018-0245-AM-271-271_EN.pdf (Accessed: 28 July 2019)

Evans, G. (2019) 'MPs are being brilliantly trolled by billboards featuring their own tweets', *The Independent* (10 January 2019) Available at: <https://www.indy100.com/article/mp-poster-campaign-tweets-led-by-donkeys-brexit-david-cameron-davis-8720916> (Accessed: 6 June 2019)

Evon, D. (2018) 'Were These Mexican Police Officers Brutalized by Members of a Migrant Caravan?', *Snopes* (22 October 2018) Available at: <https://www.snopes.com/fact-check/mexican-police-caravan-photos/> (Accessed: 30 April 2019)

Evans, S. (2019) 'What is the Momo challenge? Sick WhatsApp "suicide" game targeting young kids' *Mirror* (28 February 2019) Available at: <https://www.mirror.co.uk/news/uk-news/what-is-momo-challenge-whatsapp-13018367> (Accessed: 2 May 2019)

Facebook (2015) 14 November. Available at: <https://www.facebook.com/facebook/photos/we-stand-together-jesuisparis/10154189824321729/> (Accessed: 15 November 2015)

Facebook (no date) 'Community Standards', *Facebook*. Available at: <https://en-gb.facebook.com/communitystandards/> (Accessed: 5 August 2019)

Facebook (no date) 'News Feed', *Facebook*. Available at: <https://www.facebook.com/facebookmedia/solutions/news-feed> (Accessed: 10 May 2019)

Facebook Business (no date) *Ads about social issues, elections or politics*. Available at: <https://www.facebook.com/business/help/167836590566506> (Accessed: 7 August 2019)

- Facebook Help Centre (no date) *How do I control what I see in Memories?* Available at: <https://www.facebook.com/help/1483212911992231> (Accessed: 29 August 2019)
- Facebook Help Centre (no date a) *Memorialised Accounts*. Available at: <https://en-gb.facebook.com/help/1506822589577997/> (Accessed: 29 August 2019)
- Facebook Inc. (2015) *Annual Report 2015*
- Faulders, K. (2015) 'Ben Carson 'Doesn't Stand Behind' His Own Remarks About American Muslims Cheering on 9/11', *ABC News* (23 November 2015) Available at: <https://abcnews.go.com/Politics/ben-carson-newsreels-american-muslims-cheering-911/story?id=35376256> (Accessed: 2 May 2019)
- Fenton, N. (2012) 'The internet and social networking', in Curran, J., Fenton, N. & Freedman, D. *Misunderstanding the Internet*. Routledge: Oxford. pp. 123-148
- Fisher, M. & Taub, A. (2019) 'On YouTube's Digital Playground, an Open Gate for Pedophiles', *The New York Times* (3 June 2019) Available at: <https://www.nytimes.com/2019/06/03/world/americas/youtube-pedophiles.html> (Accessed: 21 July 2019)
- Foster Wallace, D. (2009) *This is Water: Some Thoughts, Delivered on a Significant Occasion, about Living a Compassionate Life*. New York: Little, Brown and Company
- Frankfurt, H. G. (2005) *On Bullshit*. Princeton University Press
- Freedman, D. (2012) 'Web 2.0 and the death of the blockbuster economy', in Curran, J., Fenton, N. & Freedman, D. *Misunderstanding the Internet*. Routledge: Oxford. pp. 69-94
- Friedman, T.L. (1999). *The Lexus and the Olive Tree: Understanding Globalization*. New York: Random House.
- Gaetz, M. (2018) 17 October 2018. Available at: <https://twitter.com/RepMattGaetz/status/1052629557826736129> (Accessed: 2 May 2019)
- Garde-Hansen, J. (2009) 'MyMemories?: Personal Digital Archive Fever and Facebook', in Garde-Hansen, J., Hoskins A. & Reading, A. (Eds.) (2009) *Save As ... Digital Memories*. Palgrave Macmillan. pp. 135-150
- Garde-Hansen, J. (2011) *Media and Memory*. Edinburgh University Press Ltd.

Garde-Hansen, J., Hoskins A. & Reading, A. (Eds.) (2009) *Save As ... Digital Memories*. Palgrave Macmillan

Garry, M., Manning, C.G., Loftus, E.F. & Sherman, S. J. (1996) 'Imagination inflation: Imagining a childhood event inflates confidence that it occurred', *Psychonomic Bulletin & Review* Volume 3, Number 2, pp. 208-214

Gass, N. (2015) 'Carson blames the media for 9/11 mistake', *Politico* (24 November 2015) Available at: <https://www.politico.com/story/2015/11/ben-carson-muslims-911-216175> (Accessed: 12 April 2019)

Gelblum, B. (2019) 'Brexit Party refuse to publish policies, so Led By Donkeys are helping', *The London Economic* (17 May 2019) Available at: <https://www.thelondoneconomic.com/news/brexit-party-refuse-to-publish-policies-so-led-by-donkeys-are-helping/17/05/> (Accessed: 1 July 2019)

Geraghty, L. (2019) 'A campaign to put politician's words on billboards has hit £30k in nine hours', *The Big Issue* (18 January 2019) Available at: <https://www.bigissue.com/latest/a-campaign-to-put-politicians-words-on-billboards-has-hit-30k-in-nine-hours/> (Accessed: 6 June 2019)

Gheller, J. (2015) 'Introducing On This Day: A New Way to Look Back at Photos and Memories on Facebook', *Facebook Newsroom* (24 March 2015) Available at: <https://newsroom.fb.com/news/2015/03/introducing-on-this-day-a-new-way-to-look-back-at-photos-and-memories-on-facebook/> (Accessed: 31 July 2019)

Gill, E. (2019) 'Mum's warning over "Momo challenge" after seven-year-old told school pals the character would kill them', *Manchester Evening News* (20 February 2019) Available at: <https://www.manchestereveningnews.co.uk/news/greater-manchester-news/mum-warning-momo-suicide-challenge-15861489> (Accessed: 7 May 2019)

Gillam, C. (2019) 'How Monsanto manipulates journalists and academics' *The Guardian* (2 June 2019) Available at: <https://www.theguardian.com/commentisfree/2019/jun/02/monsanto-manipulates-journalists-academics> (Accessed: 7 August 2019)

Goldman, R. (2017) 'Update on Our Advertising Transparency and Authenticity Efforts', *Facebook Newsroom* (27 October 2017) Available at: <https://newsroom.fb.com/news/2017/10/update-on-our-advertising-transparency-and-authenticity-efforts/> (Accessed: 7 August 2019)

Goodings, L. & Tucker, I. (2014) 'Social media and the coproduction of bodies online: Bergson, Serres and Facebook's Timeline', *Media, Culture & Society*. Volume 36, Number1, pp. 37–51

Google (no date) Our Mission. Available at: <https://www.google.com/search/howsearchworks/mission/> (Accessed: 6 August 2019)

Google Maps Help (no date) *Find & save parking locations*. Available at: <https://support.google.com/maps/answer/7257797?co=GENIE.Platform%3DAndroid&hl=en> (Accessed: 21 August 2019)

Greenfield, A. (2006) *Everyware: The Dawning Age of Ubiquitous Computing*. New Riders Publishing.

Greenfield, S. (2015) *Mind Change: How digital technologies are leaving their marks on our brains*. Penguin Random House UK

Gregg, M. & Seigworth, G. J. (Eds.) (2010) *The Affect Theory Reader*. Duke University Press

Grosz, E. (2007) 'Deleuze, Bergson and the Concept of Life'. *Revue internationale de philosophie*. Number 241. pp. 287-300

Grosz, E. (2013) 'Identity and Individuation: Some Feminist Reflections', in De Boever, A., Murray, A., Roffe, J. & Woodward, A. (Eds.) (2013) *Gilbert Simondon: Being and Technology*. Edinburgh University Press Ltd. pp. 37-56

Guerlac, S. (2006) *Thinking in Time: An Introduction to Henri Bergson*. Cornell University Press

Hakim, D. (2017) 'Monsanto Emails Raise Issue of Influencing Research on Roundup Weed Killer', *The New York Times* (1 August 2017) Available at: <https://www.nytimes.com/2017/08/01/business/monsantos-sway-over-research-is-seen-in-disclosed-emails.html> (Accessed: 7 August 2019)

Halbwachs, M. (1925) *Les cadres sociaux de la mémoire*. Paris : Librairie Félix Alcan

Halbwachs, M. (1950) *La mémoire collective*. Presses universitaires de France

Halbwachs, M. (1992) *On Collective Memory*. London: The University of Chicago Press

Halpern, D. (2015) *Inside the Nudge Unit: How small changes can make a big difference*. London: WH Allen

- Hansen, M. B. (1996) "'Schindler's List' Is Not 'Shoah': The Second Commandment, Popular Modernism, and Public Memory', *Critical Inquiry*, Volume 22, Number 2 (Winter) pp. 292-312
- Hansen M. B. N. (2006) *New Philosophy for New Media*. First Paperback Edition. MIT Press
- Hansen, M. B. N. (2015) *Feed-Forward: On the Future of Twenty-first-century Media*. London: University of Chicago Press
- Haraway, D. J. (2016) 'A Cyborg Manifesto', in Haraway, D. J., *Manifestly Haraway*. University of Minnesota Press
- Harris, T. (2016) 'How Technology is Hijacking Your Mind — from a Magician and Google Design Ethicist', *Thrive Global* (18 May 2016) Available at: <https://medium.com/thrive-global/how-technology-hijacks-peoples-minds-from-a-magician-and-google-s-design-ethicist-56d62ef5edf3> (Accessed: 1 June 2016)
- Haverinen, A. (2014) *Memoria Virtualis: Digitalization of mourning rituals in virtual environments*. Turku: University of Turku
- Hawley, J. (2019) 'Sen. Hawley Introduces Legislation to Curb Social Media Addiction', *Josh Hawley* (30 July 2019) Available at: <https://www.hawley.senate.gov/sen-hawley-introduces-legislation-curb-social-media-addiction> (Accessed: 1 September 2019)
- Hayles, N. K. (1999) *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics*. London: The University of Chicago Press, Ltd.
- Hayles, N. K. (2007) 'Hyper and Deep Attention: The Generational Divide in Cognitive Modes' *Profession* (2007), pp. 187-199
- Hayles, N. Katherine (2010) 'How We Read: Close, Hyper, Machine' *ADE Bulletin*, Number 150. pp. 62-79.
- Hayles, N. K. (2013) *How We Think: Digital Media and Technogenesis*. London: The University of Chicago Press, Ltd.
- Hayles, N. K. (2016) 'Foreward: From Causality to Correlation', in Groes, S. (Ed.) *Memory in the Twenty-First Century: New Critical Perspectives from the Arts, Humanities, and Sciences*. Palgrave Macmillan
- Hebb, D. O. (1949) *The organization of behavior*, New York: Wiley

Hillis, D. Quoted in: Maclean & Davis (1998) *Time and Bits: Managing Digital Continuity*. Getty Research Institute

Hirst, W., Phelps, E. A., Meksin, R., Vaidya, C. J., Johnson, M. K., Mitchell, K. J., Buckner, R. L., Budson, A. E., Gabrieli, J. D. E., Lustig, C., Mather, M., Ochsner, K. N., Schacter, D., Simons, J. S., Lyle, K. B., Cuc, A. F., (2015) ‘A Ten-Year Follow-Up of a Study of Memory for the Attack of September 11, 2001: Flashbulb Memories and Memories for Flashbulb Events’, *Journal of Experimental Psychology: General*. Vol. 144, No. 3, pp. 604 – 623

HM Government (2019) *Online Harms White Paper* (April 2019) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/793360/Online_Harms_White_Paper.pdf (Accessed: 21 July 2019)

HM Government (2019) *Essential digital skills framework* (Updated 23 April 2019) Available at: <https://www.gov.uk/government/publications/essential-digital-skills-framework/essential-digital-skills-framework> (Accessed: 21 July 2019)

Hod, O. (2017) ‘Announcing New Ways to Enjoy Memories with Friends’, *Facebook Newsroom* (25 August 2017) Available at: <https://newsroom.fb.com/news/2017/08/facebook-announces-new-ways-to-enjoy-memories-with-friends/> (Accessed: 29 August 2019)

Hod, O. (2018) ‘All of Your Facebook Memories Are Now in One Place’, *Facebook Newsroom* (11 June 2018) Available at: <https://newsroom.fb.com/news/2018/06/all-of-your-facebook-memories-are-now-in-one-place/> (Accessed: 31 July 2019)

Hogan, L. (2015) ‘A review of the numbers in the “Irish slaves” meme’, *Medium* (4 November 2015) Available at: <https://medium.com/@Limerick1914/a-review-of-the-numbers-in-the-irish-slaves-meme-1857988fd93c> (Accessed: 25 October 2017)

Hogan, L. (2015a) “Irish slaves”: the convenient myth’, *openDemocracy* (14 January 2015) Available at: <https://www.opendemocracy.net/en/beyond-trafficking-and-slavery/irish-slaves-convenient-myth/> (Accessed: 25 October 2017)

Hogan, L. (2015b) ‘Debunking the imagery of the “Irish slaves” meme’, *Medium* (14 September 2015) Available at: <https://medium.com/@Limerick1914/the-imagery-of-the-irish-slaves-myth-dissected-143e70aa6e74> (Accessed: 25 October 2017)

Hogan, L. (2016) ‘Open letter to Irish Central, Irish Examiner and Scientific American about their “Irish slaves” disinformation’, *Medium* (8 March 2016) Available at:

<https://medium.com/@Limerick1914/open-letter-to-irish-central-irish-examiner-and-scientific-american-about-their-irish-slaves-3f6cf23b8d7f#.tb66klcft> (Accessed: 25 October 2017)

Hoskins, A. (2004) 'Television and the Collapse of Memory', *Time & Society*. Volume 13, Number 1, pp. 109-127

Hoskins, A. (2009) 'Digital Network Memory'. In Rigney, A. & Erll, A. (Eds.) *Mediation, Remediation, and the Dynamics of Cultural Memory*. Berlin and New York: de Gruyter. pp. 91-106.

Hoskins, A. (2009) *The Digital Distribution of Memory*. Available at: <http://www.interdisciplinary.net/wp-content/uploads/2009/03/hoskins-paper.pdf> (Accessed: 16 June 2014)

Hoskins, A. (2009) 'The Mediatization of Memory', in Garde-Hansen, J., Hoskins A. & Reading, A. (Eds.) (2009) *Save As ... Digital Memories*. Palgrave Macmillan. pp. 27-43

Hoskins, A. (2011) 'Media, Memory, Metaphor: Remembering and the Connective Turn', *Parallax*, Volume 17, Number 4, pp. 19-31

Hoskins, A. (2013) 'The End of Decay Time', *Memory Studies*, Volume 6, pp. 387-389

Hoskins, A. (2014) 'Mediatization of Memory', in Lundby, K. (Ed.) *Mediatization of Communication*, De Gruyter, pp.661-679

Hoskins, A. (2016) 'Memory Ecologies', *Memory Studies*, Volume 9, Number 3, pp. 348-357

Hughes, A. (2019) 'Momo challenge SHOCK: Is SICK Momo challenge "harvesting" YOUR personal data?' *Express* (27 February 2019) Available at: <https://www.express.co.uk/news/uk/1093318/Momo-challenge-shock-news-personal-data-phone-number-whatsapp-scam> (Accessed: 2 May 2019)

Huysen, A. (2000) 'Present Pasts: Media, Politics, Amnesia', *Public Culture*, Volume 12, Number 1 (Winter), pp. 21-38

Hyppolite, J. (1949) 'Various Aspects of Memory in Bergson', trans. Athena V. Colman, in Lawlor, L. (2003) *The Challenge of Bergsonism*. London: Continuum Press, pp. 112–27.

Jasonkioke (2019) 20 January 2019. Available at: <https://twitter.com/jasonkioke/status/1087104949815783426> (Accessed: 29 August 2019)

Ings, S. (2007) *The Eye: A Natural History*. London: Bloomsbury Publishing Plc

Instagram (no date) 'Feed'. *Instagram*. Available at: <https://help.instagram.com/1986234648360433> (Accessed: 1 August 2019)

Internet Archive (no date) *About the Internet Archive*. Available at: <https://archive.org/about/> (Accessed: 10 September 2019)

Internet Archive (no date a) *Wayback Machine*. Available at: <https://archive.org/web/> (Accessed: 10 September 2019)

Juzwiak, R. (2013) "'Unflattering' Beyoncé Photos Have Been Removed From Getty's Website', *Gawker* (7 February 2013) Available at: <https://gawker.com/5982635/unflattering-beyonce-photos-have-been-removed-from-gettys-website> (Accessed: 1 June 2019)

Karppi, T. (2018) *Disconnect: Facebook's Affective Bonds*. University of Minnesota Press: Minneapolis

Kaspersky Lab (2015) *The Rise and Impact of Digital Amnesia: Why we need to protect what we no longer remember*. Available at: <https://media.kasperskycontenthub.com/wp-content/uploads/sites/100/2017/03/10084613/Digital-Amnesia-Report.pdf> (Accessed: 20 July 2016)

Kasket, E. (2019) *All the Ghosts in the Machine: Illusions of Immortality in the Digital Age*. Robinson

Kelly, M. (2009) *Memories of Friends Departed Endure on Facebook*. Available at: <https://www.facebook.com/notes/facebook/memories-of-friends-departed-endure-on-facebook/163091042130> (Accessed: 21 April 2014)

Kessler, G. (2015) 'Trump's outrageous claim that 'thousands' of New Jersey Muslims celebrated the 9/11 attacks', *The Washington Post* (22 November 2015) Available at: <https://www.washingtonpost.com/news/fact-checker/wp/2015/11/22/donald-trumps-outrageous-claim-that-thousands-of-new-jersey-muslims-celebrated-the-911-attacks/> (Accessed: 14 April 2019)

- Khaleej Times, 2017 *A Conversation With Elon Musk, CEO of Tesla Inc At World Government Summit 2017 Dubai*. Available at: <https://www.youtube.com/watch?v=jBuLgBX2bKQzzv> (Accessed: 16 February 2017)
- Kiely, E. (2015) 'Trump, Carson on 9/11 'Celebrations'', *FactCheck.Org* (24 November 2015) Available at: <https://www.factcheck.org/2015/11/trump-carson-on-911-celebrations/> (Accessed: 12 April 2019)
- Klastrup, L. (2014) "'I Didn't know her, but...': Affected Strangers' Mourning Practices on Facebook R.I.P. Pages', Presentation at *The First Death Online Research Symposium*, Durham University, 9-10 April 2014
- KnowYourMeme (2019) *The Great Subscriber War / Subscribe to PewDiePie* (29 May 2019) Available at: <https://knowyourmeme.com/memes/events/the-great-subscriber-war-subscribe-to-pewdiepie> (Accessed: 21 July 2019)
- Knudsen, B. T. & Stage, C. (2015) 'Introduction: Affective Methodologies', in Knudsen, B. T. & Stage, C. (Eds.) *Affective Methodologies*. London: Palgrave Macmillan
- Konrad, A. (2017) 'Facebook memories: The research behind the products that connect you with your past', *Prototypr.io* (25 August 2017) Available at: <https://blog.prototypr.io/facebook-memories-the-research-behind-the-products-that-connect-you-with-your-past-f9a1d8a49a43> (Accessed: 31 July 2019)
- Kroker, A. & Kroker, M. (2010) 'Code Drift', *CTHEORY* (14 April 2010) Available at: http://ctheory.net/ctheory_wp/code-drift-code-drift/ (Accessed: 12 June 2019)
- Lacapria, K. (2015) 'Trump Insists He Witnessed Cheering Muslims on 9/11', *Snopes* (22 November 2015) Available at: <https://www.snopes.com/news/2015/11/22/donald-trump-cheering-911/> (Accessed: 12 April 2019)
- Landi, M. (2014) 'The Snapping: How Were Snapchat User's Images Hacked And Should We All Be Worried?', *The Independent* (14 October 2014) Available at: <https://www.independent.co.uk/life-style/gadgets-and-tech/the-snapping-how-were-snapchat-users-images-hacked-and-should-we-all-be-worried-9794296.html> (Accessed: 20 August 2019)
- Langenbacher, E. & Wittlinger, R. (2018) 'The End of Memory? German-American Relations under Donald Trump', *German Politics*, Volume 27, Number 2, pp. 174-192

- Landsberg, A. (1995) 'Prosthetic Memory: Total Recall and Blade Runner', *Body & Society*, Volume 1, Number 3-4, pp.175-189
- Landsberg, A. (2003) 'Prosthetic memory: the ethics and politics of memory in an age of mass culture', in Grainge, P. (Ed.) *Memory and popular film*. Manchester and New York: Manchester University Press
- Landsberg, A. (2004) *Prosthetic Memory: The Transformation of American Remembrance in the Age of Mass Culture*. New York: Columbia University Press
- Lara, A., Liu, W., Ashley, C.P. et al. (2017) 'Affect and subjectivity', *Subjectivity*, Number 10, pp. 30–43
- Lashley, K. S. (1950) 'In search of the engram', in *Society for Experimental Biology, Physiological mechanisms in animal behavior* [Society's Symposium IV] Oxford: Academic Press, pp. 454-482
- Led by Donkeys (2019) *Twitter*. Available at: <https://twitter.com/bydonkeys/> (Accessed: 6 June 2019)
- Led by Donkeys (2019) 'Crowdfunder: Let's paste these tweets* all over Britain', *Crowdfunder*. Available at: <https://www.crowdfunder.co.uk/by-donkeys> (Accessed: 6 June 2019)
- Led by Donkeys (2019) 9 January 2019. Available at: <https://twitter.com/bydonkeys/status/1082938368491700224> (Accessed: 11 June 2019)
- Led by Donkeys (2019d) 4 April 2019. Available at: <https://twitter.com/ByDonkeys/status/1113827097930280960> (Accessed: 6 June 2019)
- Led by Donkeys (2019) 'Led by Donkeys show their faces at last: "No one knew it was us"', Interview with Harriet Sherwood, *The Observer* (25 May 2019) Available at: (Accessed: 26 May 2019)
- Led by Donkeys (2019) 2 June 2019. Available at: <https://twitter.com/ByDonkeys/status/1135436716683272192> (Accessed: 6 June 2019)
- Lefebvre, A. & White, M. (Eds.) (2012) *Bergson, Politics and Religion*. Durham and London: Duke University Press

Lepore, J. (2015) 'The Cobweb: Can the Internet be archived?', *The New Yorker* (19 January 2015) Available at <http://www.newyorker.com/magazine/2015/01/26/cobweb> (Accessed: 10 April 2017)

Leta Jones, M. (2016) *Ctrl+Z: The Right to Be Forgotten*. London: New York University Press

Levin, S., Carrie Wong, J., & Harding, L. (2016) 'Facebook backs down from 'napalm girl' censorship and reinstates photo', *The Guardian* (9 September 2016) Available at: <https://www.theguardian.com/technology/2016/sep/09/facebook-reinstates-napalm-girl-photo> (Accessed: 31 May 2019)

Levin, S. (2019) 'Revealed: how Monsanto's 'intelligence center' targeted journalists and activists', *The Guardian* (8 August 2019) Available at: <https://www.theguardian.com/business/2019/aug/07/monsanto-fusion-center-journalists-roundup-neil-young> (Accessed: 8 August 2019)

Lewandowsky, S., Ecker, U. K. H. & Cook, J. (2017) 'Beyond Misinformation: Understanding and Coping with the "Post-Truth" Era', *Journal of Applied Research in Memory and Cognition*. Number 6, pp. 353-369

Lewis, P. (2018) 'Fiction is outperforming reality': how YouTube's algorithm distorts truth', *The Guardian* (2 February 2018) Available at: <https://www.theguardian.com/technology/2018/feb/02/how-youtubes-algorithm-distorts-truth> (Accessed: 1 August 2019)

Lewis, P. & Hilder, P. (2018) 'Leaked: Cambridge Analytica's blueprint for Trump victory', *The Guardian* (23 March 2018) Available at: <https://www.theguardian.com/uk-news/2018/mar/23/leaked-cambridge-analyticas-blueprint-for-trump-victory> (Accessed: 1 August 2019)

Ley, T. (2013) 'Photoshop Contest: Unflattering Beyoncé Pictures', *Deadspin* (7 February 2019) Available at: <https://deadspin.com/photoshop-contest-unflattering-beyonce-pictures-5982561> (Accessed: 1 June 2019)

Light, B. (2014) *Disconnecting with Social Networking Sites*. Basingstoke: Palgrave Macmillan

Loftus, E. F. (2005) 'Planting misinformation in the human mind: A 30-year investigation of the malleability of memory', *Learning & Memory*, Volume 12, Number 4, pp. 361–366

- Loftus, E. F. & Ketcham, K. (1994) *The Myth of Repressed Memory: False Memories and Allegations of Sexual Abuse*. New York: St. Martin's Griffin
- Loftus, E. F. & Palmer, J. C. (1974). 'Reconstruction of automobile destruction: An example of the interaction between language and memory'. *Journal of Verbal Learning and Verbal Behavior*. Volume 13, Issue Number 5, pp. 585–589
- Loftus, E. F. & Pickrell, J. E. (1995). 'The formation of false memories', *Psychiatric Annals*, Volume 25, pp. 720–725, Available at: <https://www.healio.com/psychiatry/journals/psycann/1995-12-25-12/%7B2060e727-5296-43bd-8580-55b09b96f074%7D/the-formation-of-false-memories> (Accessed: 1 September 2019)
- Lorenz, T. (2019) 'Momo Is Not Trying to Kill Children', *The Atlantic* (28 February 2019) Available at: <https://www.theatlantic.com/technology/archive/2019/02/momo-challenge-hoax/583825/> (Accessed: 20 April 2019)
- Lowenthal, D. (2006) Archival Perils: An Historian's Plaint. *Archives: The Journal of the British Records Association*, Volume 31, Number 114, pp. 49–75
- Lundy, C. (2018) *Deleuze's Bergsonism*. Edinburgh: Edinburgh University Press
- Mackey, R. (2015) 'The Video of Celebrations That Was Broadcast on 9/11', *The New York Times* (24 November 2015) Available at: <https://www.nytimes.com/politics/first-draft/2015/11/24/the-video-of-celebrations-that-was-broadcast-on-911/> (Accessed: 12 April 2019)
- Maclean & Davis (1998) *Time and Bits: Managing Digital Continuity*. Getty Research Institute
- Maier, M. & Rahman, R. A. (2018) 'Native Language Promotes Access to Visual Consciousness', *Psychological Science*. Volume 29, Issue 11 (24 September)
- Manning, E. (2018) 'What Things Do When They Shape Each Other – The Way Of The Anarchive'. Talk at *Affects, Interfaces, Events* conference. Godsbanen Aarhus, 29-30 August 2018
- Marshall, L. (2000) 'Some Shadows of Eternity: The Internet and Memorials to the Dead', *Department of Computing Science Technical Report Series*. University of Newcastle upon Tyne. Available at: <http://www.cs.ncl.ac.uk/publications/trs/papers/718.pdf> (Accessed: 21 April) p.1

- Massumi, B. (2002) *Parables for the Virtual*. Durham and London: Duke University Press
- Massumi, B. (2013) ‘Technical Mentality’ Revisited’, in De Boever, A., Murray, A. Roffe, J. & Woodward, A. (Eds.) (2013) *Gilbert Simondon: Being and Technology*. Edinburgh University Press Ltd.
- Massumi, B. (2015) *Politics of Affect*. Reprint. Polity Press. 2018
- Mayer-Schönberger, V. (2011) *Delete: The Virtue of Forgetting in the Digital Age*. Princeton University Press
- McLuhan, M. (1964) *Understanding media: the extensions of man*. New American Library: New York
- McLuhan, M. (2011) *The Book of Probes*. Gingko Press Inc..
- Middleton, D. & Brown, S. D. (2005) *The Social Psychology of Experience: Studies in Remembering and Forgetting*. London: SAGE Publications Ltd
- Middleton, D. & Edwards, D. (1990) *Collective Remembering*. London: SAGE Publications Ltd
- Mikkelsen, D. (2019) ‘How Much of a Threat Is the Purported ‘Momo Challenge’ Suicide Game?’, *Snopes* (26 February 2019) Available at: <https://www.snopes.com/news/2019/02/26/momo-challenge-suicide-game/> (Accessed: 2 May 2019)
- Misztal, B. A. (2003) *Theories of Social Remembering*. Maidenhead: Open University Press
- Misztal, B. (2007) ‘Memory Experience: The Forms and Functions of Memory’, in: Watson, S. (eds.) *Museums and their Communities*. London: Routledge, pp. 379-396.
- MIT Technology Review (2019) *YouTube’s algorithm makes it easy for pedophiles to find more videos of children* (4 June 2019) Available at: <https://www.technologyreview.com/f/613620/youtubes-algorithms-make-it-easier-for-pedophiles-to-find-more-videos-of-children/> (Accessed: 21 July 2019)
- Morozov, E. (2011) *The Net Delusion: The Dark Side of Internet Freedom*. New York: PublicAffairs

Murphie, A. (2000) 'The Dusk of the Digital is the Dawn of the Virtual', in *Enculturation*. Volume 3, No. 1, Spring 2000. Available at: http://enculturation.net/3_1/murphie.html (Accessed: 31 July 2019)

Murphie, A. & Potts, J. (2003) *Culture and Technology*. London: Palgrave

Murphy, K. (2016) *Snowboarder Girl Chased By Bear - I Was Singing Rihanna Work And Didn't Know It Was Behind Me!* (10 April 2016) Available at: https://www.youtube.com/watch?v=vT_PNKg3v7s (Accessed: 2 May 2019)

Murphy, M. (2019) 'How Google Photos became the search giant's secret AI weapon', *The Telegraph* (7 April 2019) Available at: <https://www.telegraph.co.uk/technology/2019/04/07/google-photos-became-search-giants-secret-ai-weapon/> (Accessed: 31 July 2019)

Murphy, M. (2019) 'YouTube deletes award-winning history teacher's World War II videos in 'hate speech' purge', *The Telegraph* (6 June 2019) Available at: <https://www.telegraph.co.uk/technology/2019/06/06/youtube-deletes-award-winning-history-teachers-videos-hate-speech/> (Accessed: 21 July 2019)

Nash, R. A. (2018) 'Changing beliefs about past public events with believable and unbelievable doctored photographs', *Memory*, Volume 26, Number 4, pp. 439-450

National Archives and Records Administration (no date) *2016 Electoral College Results*. Available at: <https://www.archives.gov/federal-register/electoral-college/2016/election-results.html> (Accessed: 11 August 2019)

National Intelligence Council (2017) *Assessing Russian Activities and Intentions in Recent US Elections* [Intelligence Community Assessment] Available at: https://www.dni.gov/files/documents/ICA_2017_01.pdf (Accessed: 6 August 2019)

National Online Safety (2019) 26 February 2019. Available at: <https://twitter.com/natonlinesafety/status/1100453894814158848/photo/1> (Accessed: 2 May 2019)

Ohlheiser, A. (2016) 'A question we never thought we would have to ask after someone dies', *The Washington Post* (20 May 2016) Available at: <https://www.washingtonpost.com/news/the-intersect/wp/2016/05/20/what-happens-when-a-deceased-persons-twitter-account-starts-posting-spam/> (Accessed: 15 August 2019)

Olick, J. K., Vinitzky-Seroussi, V. & Levy, D. (Eds.) (2011) *The Collective Memory Reader*. New York: Oxford University Press

O'Malley, K. (2019) MOMO 'CHALLENGE' APPEARING IN FORTNITE AND PEPPA PIG YOUTUBE VIDEOS, PARENTS WARNED', *Independent* (27 February 2019) Available at: <https://www.independent.co.uk/life-style/gadgets-and-tech/momo-challenge-youtube-fortnite-peppa-pig-video-parents-a8799776.html> (Accessed: 2 May 2019)

O'Neill, P. H. (2014) '8chan, the central hive of Gamergate, is also an active pedophile network', *The Daily Dot* (17 November 2014) Available at: <https://www.dailydot.com/layer8/8chan-pedophiles-child-porn-gamergate/> (Accessed: 5 August 2019)

Online Privacy Foundation (no date) *Exploring the Efficacy of Psychographic Marketing in Political Campaigns: An Examination of Authoritarianism, Motivated Numeracy and Targeting in Relation to Support for Electronic Communication Surveillance*. Available at: <https://www.onlineprivacyfoundation.org/opf-research/psychographic-targeting/> (Accessed: 8 August 2019)

Orwell, G. (1961) *1984*. New York: Signet Classics

Parikka, J. (2013) 'Archival Media Theory: An Introduction to Wolfgang Ernst's Media Archaeology', in Ernst, W., *Digital Memory and the Archive*, Minneapolis: University of Minnesota Press

Pariser, E. (2011) *The Filter Bubble: What The Internet Is Hiding From You*. Penguin Books Ltd.

PBS Game/Show (2014) *Can Video Games Be A Spiritual Experience?* Available at: https://www.youtube.com/watch?v=vK91LAiMOio&lc=UgiRkYPdbaIm_HgCoAEC (Accessed: 1 July 2019)

Peterson, A. Yahr, E. & Warwick, J. (2014) 'Leaks of nude celebrity photos raise concerns about security of the cloud', *The Washington Post* (1 September 2014) Available at: https://www.washingtonpost.com/politics/leaks-of-nude-celebrity-photos-raise-concerns-about-security-of-the-cloud/2014/09/01/59dcd37e-3219-11e4-8f02-03c644b2d7d0_story.html (Accessed: 20 August 2019)

- Phelps, J. (2015) 'Donald Trump Again Says He Saw Cheering in New Jersey on 9/11', *ABC News* (22 November 2015) Available at: <https://abcnews.go.com/Politics/donald-trump-cheering-jersey-911/story?id=35355447> (Accessed: 12 April 2019)
- Piatti, G. (2016) 'The life and the crystal. Paths into the virtual in Bergson, Simondon and Deleuze', *La Deleuziana – Online Journal Of Philosophy*. 2016: Number 3
- Police Service of Northern Ireland (2019) 'PSNI Statement regarding Momo Challenge', *Police Service of Northern Ireland* (25 February 2019) Available at: <https://www.psni.police.uk/news/Latest-News/250219-psni-statement-regarding-momo-challenge/> (Accessed: 2 May 2019)
- Plato (1952) *Plato's Phaedrus*. Translated by R. Hackforth. Cambridge: Cambridge University Press
- Polage, D. C. (2012) 'Making up History: False Memories of Fake News Stories', *Europe's Journal of Psychology*, Volume 8, Number 2, pp. 245-250
- Pomerantsev, P. (2019) *This is Not Propaganda: Adventures in the War Against Reality*. London: Faber & Faber Limited
- Portelli, A. (2003) *The Order Has Been Carried Out: History, Memory, and Meaning of a Nazi Massacre in Rome*.
- Potter, L. (2013) 'Beyoncé's publicist asks for "unflattering" Superbowl photos to be removed', *Marie Claire* (8 February 2013) Available at: <https://www.marieclaire.co.uk/news/celebrity-news/beyonc-s-publicist-asks-for-unflattering-superbowl-photos-to-be-removed-130394#V6jFA9q5JVI905OP.99> (Accessed: 1 June 2019)
- Proust, M. (1981) *Remembrance of Things Past*. Chatto & Windus Ltd.
- Quinn, B. (2019) 'Billboard campaign reminds voters of MPs' Brexit promises', *The Guardian* (16 January 2019) Available at: <https://www.theguardian.com/politics/2019/jan/16/billboard-campaign-reminds-voters-of-mps-brexit-promises> (Accessed: 6 June 2019)
- Radley, A. (1990) 'Artefacts, Memory and a Sense of the Past', in Middleton, D. & Edwards, D. (1990) *Collective Remembering*. London: SAGE Publications Ltd, pp. 46-59

- Radstone, S. (2008) 'Memory studies: For and against', *Memory Studies*, Volume 1, Number 1, pp. 31-39
- Reading, A. (2009) 'Memobilia: The Mobile Phone and the Emergence of Wearable Memories', in Garde-Hansen, J., Hoskins A. & Reading, A. (Eds.) (2009) *Save As ... Digital Memories*. Palgrave Macmillan
- Reddit (no date) 'r/MandelaEffect', *Reddit*. Available at: <https://www.reddit.com/r/mandelaeffect> (Accessed: 11 April 2019)
- Reddit user Drive-or-doze84 (2018) 'I'm new to this and I'm freaking out- there was a movie when I was a kid- with Sinbad as a genie- it was called Shazaam', *Reddit* (6 November) Available at: https://www.reddit.com/r/MandelaEffect/comments/9ukrka/im_new_to_this_and_im_freaking_out_there_was_a/ (Accessed: 11 April 2019)
- Reynolds, M. (2019) 'What is Article 13? The EU's divisive new copyright plan explained', *Wired* (24 May 2019) Available at: <https://www.wired.co.uk/article/what-is-article-13-article-11-european-directive-on-copyright-explained-meme-ban> (Accessed: 28 July 2019)
- Riot Content (no date) *The Viral Experiment*. Available at: <https://riotcontent.com/virals1#/the-viral-experiment-2/> (Accessed: 21 February 2019)
- Robertson, A. (2019) '8chan goes dark after hardware provider discontinues service', *The Verge* (5 August 2019) Available at: <https://www.theverge.com/2019/8/5/20754943/8chan-epik-offline-voxility-service-cutoff-hate-speech-ban> (Accessed: 5 August 2019)
- Roediger, H. L., (1980) 'Memory Metaphors in cognitive psychology', *Memory & Cognition*, Volume 8, Number 3, pp. 231–246
- Roediger, H. L. & McDermott, K. B. (1995) 'Creating false memories: Remembering words not presented in lists' *Journal of Experimental Psychology: Learning, Memory, & Cognition*, Volume 21, Number 4, pp. 803–814.
- Rogers, S. (2013) 'Behind the numbers: how to understand big moments on Twitter', *Twitter Blog* (8 August 2013) Available at: https://blog.twitter.com/official/en_us/a/2013/behind-the-numbers-how-to-understand-big-moments-on-twitter.html (Accessed: 27 May 2019)

Roose, K. (2018) 'Debunking 5 Viral Images of the Migrant Caravan', *The New York Times* (24 October 2018) Available at: <https://www.nytimes.com/2018/10/24/world/americas/migrant-caravan-fake-images-news.html> (Accessed: 30 April 2019)

Rose, S. (2003) *The Making of Memory: From Molecules to Mind*. Revised Edition. London: Vintage

Rosen, E. (2005) 'Student's Start-Up Draws Attention and \$13 Million', *The New York Times* (26 May 2005) Available at: <https://www.nytimes.com/2005/05/26/business/students-startup-draws-attention-and-13-million.html> (Accessed: 2 September 2019)

Rosenfield, I. (1988) *The Invention of Memory*. New York: Basic Books

Ross, A. & Carrie Wong, J. (2016) 'Facebook deletes Norwegian PM's post as 'napalm girl' row escalates', *The Guardian* (9 September 2016) Available at: <https://www.theguardian.com/technology/2016/sep/09/facebook-deletes-norway-pms-post-napalm-girl-post-row> (Accessed: 31 May 2019)

Rothbaum, B. O., Rizzo, A. & Difede, J. (2010) 'Virtual reality exposure therapy for combat-related posttraumatic stress disorder', *Annals of the New York Academy of Sciences*, Volume 1208, Issue1: Psychiatric and Neurologic Aspects of War (October) pp. 126- 132

Rushkoff, D. (2016) 'I'm thinking it may be good to be off social media altogether', Interview with Tucker, I., *The Guardian* (12 February 2016)

Russell, N. (2006) 'Collective Memory before and after Halbwachs', *The French Review*, Volume 79, Number 4 (March) pp. 792-804

Sabbagh, D. (2019) 'Army fights fake news with propagandists and hackers in one unit', *The Guardian* (31 July 2019) Available at: <https://www.theguardian.com/technology/2019/jul/31/army-fights-fake-news-with-propagandists-and-hackers-in-one-unit> (Accessed: 1 August 2019)

Sandberg, S. (2019) 'Making It Easier to Honor a Loved One on Facebook After They Pass Away', *Facebook Newsroom* (9 April 2019) Available at: <https://newsroom.fb.com/news/2019/04/updates-to-memorialization/> (Accessed 1 August 2019)

- Sandler R. (2019) 'LGBTQ Creators Sue YouTube For Alleged Discrimination', *Forbes* (14 August 2019) Available at: <https://www.forbes.com/sites/rachelsandler/2019/08/14/lgbtq-creators-sue-youtube-for-alleged-discrimination/#52a56fbc788e> (Accessed: 14 August 2019)
- Schacter, D. L. (2001) *The Seven Sins of Memory*. New York: Houghton Mifflin Company
- Scott, D. (2014) *Gilbert Simondon's Psychic and Collective Individuation*. Edinburgh University Press Ltd.
- Schacter, D. (1996) *Searching for Memory*. Basic Books: New York
- Schmidt, D. N. (2018) *Google Data Connection*. Distributed by Digital Context Next
- Schomer, A. (2019) 'Google ad revenue growth is slowing as Amazon continues eating into its share', *Business Insider* (1 May 2019) Available at: <https://www.businessinsider.com/google-ad-revenue-growth-slows-amazon-taking-share-2019> (Accessed: 31 July 2019)
- Scott, D. (2014) *Gilbert Simondon's Psychic and Collective Individuation*. Edinburgh University Press Ltd.
- Semon, R. (1904) *Die Mneme als erhaltendes Prinzip im Wechsel des organischen Geschehens*. Leipzig: Wilhelm Engelmann
- Sengupta, K. (2019) 'Army to form new hybrid-warfare division', *The Independent* (1 August 2019) Available at: <https://www.independent.co.uk/news/uk/home-news/uk-army-hybrid-warfare-division-conflict-intelligence-cyber-a9030281.html> (Accessed: 1 August 2019)
- SenseLab (no date) *Anarchiving*. Available at <http://senselab.ca/wp2/immediations/anarchiving/> (Accessed: 1 September 2018)
- SenseLab (no date) *Anarchive – Concise Definition*. Available at <http://senselab.ca/wp2/immediations/anarchiving/anarchive-concise-definition/> (Accessed: 1 September 2018)
- Seymour, R. (2019) *The Twittering Machine*. London: The Indigo Press
- Shapiro, R. & Mirkinson, J. (2013) 'Beyonce's Publicist Asks BuzzFeed To Remove "Unflattering" Photos And We're Confused (PHOTOS)', *The Huffington Post* (6

- February 2013) Available at: https://www.huffingtonpost.co.uk/2013/02/06/beyonce-publicist-buzzfeed-remove-photos_n_2630184.html (Accessed: 1 June 2019)
- Shaw, J. (2016) *Julia Shaw on "Memory Hackers" Nova* (17 February 2016) Available at: www.youtube.com/watch?v=NfPLTtlo2oY (Accessed: 11 April 2019)
- Shields, R. (2018) 'Bergson's GIS: Experience, Time and Memory in Geographical Information Systems', in *Media Theory*, Volume 2, Number 1, pp. 316-332
- Shu, C. (2019) 'Facebook is introducing a new 'Tributes' section for memorialized accounts', *TechCrunch* (5 March 2019) Available at: <https://techcrunch.com/2019/03/04/facebook-is-introducing-a-new-tributes-section-for-memorialized-accounts/> (Accessed: 1 June 2019)
- Shulman, R., G. (2013) *Brain Imaging: What It Can (and Cannot) Tell Us About Consciousness*. New York: Oxford University Press
- Simek, R. (1993) *A Dictionary of Norse Mythology*. Translated by A. Hall. Boyden & Brewer Inc.
- Simondon, G. (2005) *L'Individuation à la lumière des notions de formes et d'information*. Editions Jérôme Millon
- Simondon, G. (2009) 'The Position of the Problem of Ontogenesis'. Translated by G. Flanders. *Parrhesia*, Number 7 (November), pp. 4-16
- Simondon, G. (2017) *On the Mode of Existence of Technical Objects*. Translated from French by C. Malaspina & J. Rogove. Minneapolis: Univocal Publishing
- Sinbad (2016) 22 December 2016. Available at: <https://twitter.com/sinbadbad/status/812149532477661185> (Accessed: 11 April 2019)
- Sky News (2019) 'Brexit tweets MPs "can't delete" shown on billboards', *Sky News* (18 January 2019) Available at: <https://news.sky.com/story/brexit-tweets-mps-cant-delete-shown-on-billboards-11609810> (Accessed: 6 June 2019)
- Sontag, S. (2005) *On Photography* [eBook] New York: RosettaBooks LLC
- Sparrow B, Liu J, Wegner D. M. (2011) 'Google effects on memory: Cognitive consequences of having information at our fingertips', *Science*, Volume 333, pp. 776-778
- Spinoza, B. de (1994) *A Spinoza Reader: The Ethics and Other Works*. Translated by E. Curley. Princeton University Press

Stack, L. (2017) 'Debunking a Myth: The Irish Were Not Slaves, Too', *The New York Times* (17 March 2017) Available at: <https://www.nytimes.com/2017/03/17/us/irish-slaves-myth.html> (Accessed: 25 October 2017)

Stiegler, Bernard (2010). *What makes life worth living: On pharmacology*. Cambridge: Polity

Sugar, R. (2018) *Time Adventure*. Atlanta: Cartoon Network

Tahir, T. (2019) 'Momo WhatsApp 'suicide challenge' sparks warning to parents after mysterious death of 12-year-old girl' (21 August 2019) Available at: <https://www.thesun.co.uk/news/6922459/momo-whatsapp-suicide-challenge-parents-girl-death-argentina/> (Accessed: 2 May 2019)

Tait, A. (2016) 'The movie that doesn't exist and the Redditors who think it does', *New Statesman* (21 December 2016) Available at: <https://www.newstatesman.com/science-tech/internet/2016/12/movie-doesn-t-exist-and-redditors-who-think-it-does> (Accessed: 12 April 2019)

Thaler, R. H. & Sunstein, C. R. (2009) *Nudge: Improving Decisions About Health, Wealth and Happiness*. Reprint edition. Penguin

Thaler, R. H. (2018) 'Nudge, not sludge', *Science* [Editorial] Volume 361, Issue 6401 (3 August 2018) p. 431

The Cleaners (2018) [Film] Directed by H. Block & M. Rieseewieck. Germany: Gebrüder Beetz Filmproduktion

The Virtual Memorial Garden (no date) *The Virtual Memorial Garden*. Available at: <http://catless.ncl.ac.uk/vmg/> (Accessed: 10 September 2019)

The Week (2013) "'Unflattering" Beyonce photos: singer's PR asks for removal', *The Week* (6 February 2013) Available at: <https://www.theweek.co.uk/entertainment/51378/unflattering-beyonce-photos-singers-pr-asks-removal> (Accessed: 1 June 2019)

Thaler, R. H. & Sunstein, C. R. (2009) *Nudge: Improving Decisions About Health, Wealth and Happiness*. Reprint edition. Penguin

Time: 100 Photos (no date) 'The Terror of War', *Time*. Available at: <http://100photos.time.com/photos/nick-ut-terror-war> (Accessed: 1 May 2019)

- Titcomb, J. & Boland, H. (2019) 'Facebook aims to finally free the nipple as it agrees to talks with artists' (8 June 2019) Available at: <https://www.telegraph.co.uk/technology/2019/06/08/facebook-aims-finally-free-nipple-agrees-talks-artists/> (Accessed: 8 June 2019)
- Trotta, D. (2007) 'New Jersey town has its own kind of Jihad', *Reuters* (26 July 2007) Available at: <https://www.reuters.com/article/us-usa-muslims/new-jersey-town-has-its-own-kind-of-jihad-idUSN2536037320070726#7w6b11eJFvy8fTIh.97> (Accessed: 12 April 2019)
- Trump, D. (2015) 23 November. Available at: <https://twitter.com/realDonaldTrump/status/668867262456156160> (Accessed: 12 April 2019)
- Trump, D. (2018) 22 October 2018. Available at: <https://twitter.com/realdonaldtrump/status/1054351078328885248> (Accessed: 2 May 2019)
- Tucker, I. (2013) 'Bodies and surveillance: Simondon, information and affect', To be published in *Distinktion: Scandinavian Journal of Social Theory*, Volume 14, Number 1 [Preprint]
- Tucker, I. (2018) 'Digitally Mediated Emotion: Simondon, Affectivity and Individuation', in Sampson, T. D., Maddison, S. & Ellis, D. *Affect and Social Media*. Rowan & Littlefield International Ltd.: London. pp. 35-41
- Tufferson, T. (2014) *GoPro: Man Fights Off Great White Shark In Sydney Harbour* (11 June 2014) Available at: https://www.youtube.com/watch?v=-m3N_BnVdOI (Accessed: 2 May 2019)
- Tulving, E. (1972) 'Episodic and semantic memory', in Tulving, E. & Donaldson, W. (Eds.) *Organization of Memory*. New York: Academic Press, pp. 381-403.
- Twitter (no date) 'About your timeline', *Twitter*. Available at: <https://help.twitter.com/en/using-twitter/twitter-timeline> (Accessed: 10 May 2019)
- Twitter (no date) 'The Twitter Rules', *Twitter*. Available at: <https://help.twitter.com/en/rules-and-policies/twitter-rules> (Accessed: 5 August 2019)
- Twitter Inc. (2016) *Annual Report 2016*

UK Parliament (no date) *Vote Leave / 50 Million Ads*. Available at: https://www.parliament.uk/documents/commons-committees/culture-media-and-sport/Fake_news_evidence/Vote-Leave-50-Million-Ads.pdf (Accessed: 1 August 2019)

U.S. House of Representatives (no date) *Exposing Russia's Effort to Sow Discord Online: The Internet Research Agency and Advertisements* [Report by Permanent Select Committee on Intelligence] Available at: <https://intelligence.house.gov/social-media-content/> (Accessed: 11 August 2019)

Vancouver Sun (2013) 'See the "unflattering" Beyonce Super Bowl photos her publicist didn't want you to see', *Vancouver Sun* (6 February 2013) Available at: <http://www.vancouversun.com/entertainment/unflattering+Beyonce+Super+Bowl+photos+publicist+didn+want/7926737/story.html> (Accessed: 1 June 2019)

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

Verma, J. (2019) 'Select Instagram users surprised with Instagram Memories', *Social Samosa* (21 January 2019) Available at: <http://www.socialsamosa.com/2019/01/instagram-memories-update/> (Accessed: 31 July 2019)

Vaughan, M. (2007) 'Henri Bergson's "Creative Evolution"', *Substance*, Volume 36, Number 3, Issue 114, pp. 7-24

Vincent, A. (2013) 'Beyoncé's publicist asks for "unflattering" Superbowl photos to be pulled', *The Telegraph* (7 February 2013) Available at: <https://www.telegraph.co.uk/culture/music/music-news/9854872/Beyonces-publicist-asks-for-unflattering-Superbowl-photos-to-be-pulled.html> (Accessed: 1 June 2019)

Vincent, J. (2017) 'AI trained on Yelp data writes fake restaurant reviews "indistinguishable" from real deal', *The Verge* (31 August 2017) Available at: <https://www.theverge.com/2017/8/31/16232180/ai-fake-reviews-yelp-amazon> (Accessed: 1 August 2019)

Wakefield, J. (2019) 'Christchurch shootings: Social media races to stop attack footage', *BBC News* (16 March 2019) Available at: <https://www.bbc.co.uk/news/technology-47583393> (Accessed: 21 July 2019)

Waldman, P. (2018) 'Trump's long history of lying about 9/11 and exploiting it for personal gain', *The Washington Post* (11 September 2018) Available at:

- <https://www.washingtonpost.com/blogs/plum-line/wp/2018/09/11/trumps-long-history-of-lying-about-9-11-and-exploiting-it-for-personal-gain/> (Accessed: 12 April 2019)
- Walter, T., Hourizi, R., Moncur, W., Pitsillides, S., (2012) 'Does the internet change how we die and mourn?'. To be published in *Omega: Journal of Death & Dying* [Preprint]. Available at https://www.academia.edu/798905/Does_the_internet_change_how_we_die_and_mourn_A_review_article._2011-12_ (Accessed: 23 April 2014)
- Walter, T. (2014) *New Mourners, Old Mourners* [Keynote Speech] *Death Online Research Symposium*. Durham University, Durham, 10 April 2014.
- Waterson, J. (2019) 'YouTube blocks history teachers uploading archive videos of Hitler', *The Guardian* (6 June 2019) Available at: <https://www.theguardian.com/technology/2019/jun/06/youtube-blocks-history-teachers-uploading-archive-videos-of-hitler> (Accessed: 21 July 2019)
- Waterson, J. (2019a) 'Viral 'Momo challenge' is a malicious hoax, say charities', *The Guardian* (28 February 2019) Available at: <https://www.theguardian.com/technology/2019/feb/28/viral-momo-challenge-is-a-malicious-hoax-say-charities> (Accessed: 20 April 2019)
- Waterson, J. (2019b) 'Revealed: Johnson ally's firm secretly ran Facebook propaganda network', *The Guardian* (1 August 2019) Available at: <https://www.theguardian.com/politics/2019/aug/01/revealed-johnson-allys-firm-secretly-ran-facebook-propaganda-network> (Accessed: 1 August 2019)
- Watts, J. (2019) 'New Zealand attack: Downing Street demands all media firms remove video of Christchurch mosque shooting', *The Independent* (15 March 2019) Available at: <https://www.independent.co.uk/news/uk/politics/new-zealand-attack-video-theresa-may-shooting-facebook-twitter-youtube-a8824491.html> (Accessed: 21 July 2019)
- Wheeler, M. (2016) 'The Knowledge Ecology: Epistemic Credit and the Technologically Extended Mind', talk at *Streams of Consciousness* conference, University of Warwick, 21-22 April 2016
- White, M. & Lefebvre, A. (2012) *Bergson, Politics, and Religion*. Durham and London: Duke University Press
- Whitehead, A. N. (1938) *Modes of Thought*. Macmillan: New York

- Whitehead, A. N. (1953) *Alfred North Whitehead: An Anthology*. Macmillan
- Whitehead, A. N. (1969) *Process and Reality*. Free Press: New York
- Whitworth, D. (2017) 'Social media is tearing society apart', *The Times* (15 November 2017) Available at: <https://www.thetimes.co.uk/article/social-media-is-tearing-societyapart-sj7km2ds7> (Accessed: 15 January 2018)
- Williams, R. (1977) *Marxism and Literature*. Oxford University Press
- Williams, T. (2019) 'Fears Momo 'suicide game' has spread to Britain after seven-year-old boy tells his school friends doll-like creature would kill them in their sleep', *MailOnline* (21 February 2019) Available at: <https://www.dailymail.co.uk/news/article-6728427/Fears-Momo-spread-Britain-boy-tells-school-friends-creature-kill-them.html> (Accessed: 2 May 2019)
- Wilson, S. (2009) 'Remixing History in Digital Media', in Garde-Hansen, J., Hoskins, A. & Reading, A. (2009) *Save As ... Digital Memories*. Hampshire: Palgrave Macmillan
- Winters, J. (2017) 'Coda: Web archives for humanities research – some reflections'. In Brügger N. & Schroeder R. (Eds.), *Web as History: Using Web Archives to Understand the Past and the Present* (pp. 238-248). London: UCL Press
- Wired Staff (2004) 'College Facebook Mugs Go Online', *Wired* (9 June 2004) Available at: <https://www.wired.com/2004/06/college-facebook-mugs-go-online/> (Accessed: 2 September 2019)
- Wollaston, S. (2019) 'Four men with a ladder: the billboard campaigners battling Brexit', *The Guardian* (7 February 2019) Available at: <https://www.theguardian.com/politics/2019/feb/07/billboard-campaigners-brexite-led-by-donkeys> (Accessed: 6 June 2019)
- Wong, J. C. (2017) 'Former Facebook executive: social media is ripping society apart', *The Guardian* (12 December 2017) Available at: <https://www.theguardian.com/technology/2017/dec/11/facebook-former-executive-ripping-society-apart> (Accessed: 15 January 2018)
- Woolf, V. (2003) *Orlando*. Wordsworth Classics, 2003 Edition. Hertfordshire: Wordsworth Editions Limited

Woolley, S. C. & Guilbeault, D. (2017) 'Computational Propaganda in the United States of America: Manufacturing Consensus Online', in Woolley, S. and Howard, P. N. (Eds.) *Working Paper 2017.5*. Oxford: Project on Computational Propaganda

The Woolshed Company (2016) *Independent Australian Production Studio Repeatedly Achieves World Wide News Coverage And Gains Over 200 Million Views With A Series Of Fake Viral Videos Without Any Paid Media, Promotion Or Publicity* (Media Release) 11 July 2016

Worrall, P. (2019) 'Vote Leave's "dark" Brexit ads', *Channel 4 News FactCheck* (27 July 2018) Available at: <https://www.channel4.com/news/factcheck/factcheck-vote-leaves-dark-brexit-ads> (Accessed: 1 August 2019)

Yapalater, L. (2013) 'The 33 Fiercest Moments From Beyoncé's Halftime Show', *BuzzFeed* (4 February 2013) Available at: <https://www.buzzfeed.com/lyapalater/the-fiercest-moments-from-beyonces-halftime-show> (Accessed: 27 May 2019)

York, C. (2019) 'A Mysterious "Led By Donkeys" Poster Campaign Is Trolling Politicians With Their Own Words', *HuffPost* (9 January 2019) Available at: https://www.huffingtonpost.co.uk/entry/led-by-donkeys_uk_5c35d038e4b0dbd06601e60b (Accessed: 6 June 2019)

YouTube Help (no date) *Advertiser-friendly content guidelines*. Available at: <https://support.google.com/youtube/answer/6162278> (Accessed: 1 August 2019)

YouTube Official Blog (2019) *Our ongoing work to tackle hate* (5 June 2019) Available at: <https://youtube.googleblog.com/2019/06/our-ongoing-work-to-tackle-hate.html> (Accessed: 21 July 2019)

YouTube Official Blog (2019) *An update on our efforts to protect minors and families* (4 June 2019) Available at: <https://youtube.googleblog.com/2019/06/an-update-on-our-efforts-to-protect.html> (Accessed: 21 July 2019)

Yurief, K. (2017) 'Google Maps now remembers where you parked your car', *CNN Business* (26 April 2017) Available at: <https://money.cnn.com/2017/04/26/technology/google-maps-parking-spot/index.html> (Accessed: 21 August 2019)

Yusuf, H. (2019) 'Facebook and eBay urged to act on fake reviews', *Which?* (21 June 2019) Available at: <https://www.which.co.uk/news/2019/06/facebook-and-ebay-urged-to-act-on-fake-reviews/> (Accessed: 7 August 2019)

Zuboff, S. (2019) *The Age of Surveillance Capitalism: The Fight for a Future at the New Frontier of Power*. London: Profile Books Ltd.

Zuckerberg, M. (2017) *Bringing the World Closer Together*. Available at:
<https://www.facebook.com/notes/mark-zuckerberg/bringing-the-world-closer-together/10154944663901634/> (Accessed: 10 September 2019)

Zuckerberg, M. (2017) <https://www.facebook.com/zuck/videos/10103658355917211/>
(Accessed: 5 June 2018)