

A Study of Relationships between Distraction, Ubiquitous Computing, and Art Practice

Michael Day, November 2015

Aims & Objectives

- To explore relationships between attention, distraction and ubiquitous computing
- To reflect upon the social, political and artistic implications of these relationships
- To develop artistic approaches that shed light on attentional practices in relation to ubiquitous computing

Through an experimental, reflective art practice, I will explore the phenomenon of distraction in relation to mobile digital communications and ubiquitous computing. How might everyday experience be interleaved with mobile online experience, and how are attention and distraction staged, harnessed, designed for, and experienced through ubiquitous computing? A body of artwork will be produced that will form a practical inquiry into these distractions and the online practices that take place through them.

Rationale & Context

I applied for the PhD with the intention of exploring an issue that had emerged in my art practice. I had used computers as an artistic production tool for most of my career, and had developed an art practice that entered into a critical dialogue about the role of digital technology in contemporary life. My MA research project explored the phenomenon of boredom. The experience of boredom, at once politically charged in opposition to work and frustratingly unpleasant as an embodied temporal experience, stood counter to the prevailing ideology of entertainment that seemed central to the mediated world. Post-MA, my practice drew in and utilised restorative visual tropes such as landscape, and by joining this with moving image, began to connect these with the field of slow cinema.

This durational approach to the depiction of landscape did not take into account the rapid change in mediated experience that the advent and widespread adoption of smartphones and social media brought about. The trope of remote wilderness that I was using as a conservative indicator of disconnected solitude was undermined by the fact that almost everyone in this notional wilderness had a mobile phone.



Figure 1: Michael Day, *Analogue* (2007), installation view at Consortium, Amsterdam

I used the application process for the PhD to try and frame a possible question that would enable me to explore this, and have spent the first year of study developing an understanding of the theoretical territory in which my practice now resides. The overarching ‘meta’ question that I am attempting to resolve is one of what a critical art practice could be in response to the experiential phenomena invoked by ubiquitous computing.

My aims and objectives have been pursued in a cross-disciplinary way through a literature and contextual review, and a few consistent threads—or ‘clews’, as Nelson would have it—have emerged, namely **power & user agency; productivity & work; quantification; and quasi-materiality**.¹ What follows is a thematically organised review of literature and existing practice, which will include examples of work that I have already completed to support my argument and locate my practical research in a wider context.

Power & User Agency

There is a constant churn of new research and opinion about new technology that tells us how, for example, Google is making us stupid,² or that fifty per cent of year ten

¹ Robin Nelson, *Practice as Research in the Arts: Principles, Protocols, Pedagogies, Resistances* (Houndmills, Basingstoke, Hampshire: Palgrave Macmillan, 2013), pp. 10–11

² Nicholas Carr, ‘Is Google Making Us Stupid?’, *The Atlantic*, August 2008
<http://www.theatlantic.com/magazine/archive/2008/07/is-google-making-us-stupid/306868/?single_page=true> [accessed 6 November 2015].

students feel addicted to the Internet,³ or that our attention span is now shorter than that of a goldfish,⁴ all of these effects being attributed to Internet and mobile device usage. It is clear that the public imagination is preoccupied with the Internet and social media, and that this is an area of study that impacts on a number of different disciplines and fields.

A starting point for my research, following on from my previous practical work, was to look at solitude as a phenomenon. Can we be alone if we are always ‘on call’, and do the interruptions and distractions of mobile computing break the potentially restorative effects of solitude? Is solitude achievable while semi-permanently connected to a communications network via a smart device? These questions began to frame my inquiry as an exploration of relationships between ‘internal’ and ‘external’ distraction: does interruption compromise the possibility for daydreaming, reverie, or ennui?⁵

Anthony Storr’s accessible book on solitude outlines a persuasive case for the value of being alone, and of reverie’s significance to the process of creativity.⁶ Janna Malamud Smith writes about solitude as an iteration of privacy, and as an exercise of power: for her, entering a state of solitude is a way of limiting access to the self.⁷ Storr’s and Malamud Smith’s work, however, predates the Internet, let alone the mobile Internet.

In *Alone Together*, Sherry Turkle addresses the topic of solitude and being alone, covering a lot of ground with regard to her view of how mobile and digital technology might be changing social interaction.⁸ Turkle raises questions regarding mobile device usage that are of interest to a wider range of researchers. One of the main points in her research is the suggestion that being permanently connected to the network brings about ‘a new state of the self.’⁹ Among the characteristics of this ‘new state’ is the tendency to be permanently semi-distracted from events taking place in the surrounding physical location. She describes this as ‘continual copresence’, but also borrows Linda Stone’s

³ Peter Walker, ‘Poll: Nearly 50% of Year 10 Students Feel Addicted to the Internet’, *The Guardian*, 9 May 2014, section Technology <<http://www.theguardian.com/technology/2014/may/09/half-of-students-feel-addicted-to-the-internet>> [accessed 6 November 2015].

⁴ Microsoft Canada, ‘Attention Spans’ (Consumer Insights, Microsoft Canada, 2015) <<http://advertising.microsoft.com/en/cl/31966/how-does-digital-affect-canadian-attention-spans>>.

⁵ Oliver Burkeman, ‘Why Are We so Distracted All the Time?’, *99U by Behance* <<http://99u.com/articles/51300/why-are-we-so-distracted-all-the-time>> [accessed 6 November 2015].

⁶ Anthony Storr, *Solitude* (London: HarperCollins Publishers, 1997).

⁷ Janna Malamud M. Smith and Elizabeth Maguire, *Private Matters: In Defense of the Personal Life* (Reading, MA: Addison-Wesley Pub., 1997), pp. 37–40.

⁸ Sherry Turkle, *Alone Together: Why We Expect More from Technology and Less from Each Other* (New York: Basic Books, 2012).

⁹ *Ibid.*, p. 155.

term ‘continuous partial attention’.¹⁰ She goes on to write about the lack of downtime or stillness that can be experienced by mobile device users, and how the multiple stimuli that are experienced when a reader is ‘drawn elsewhere’ by hyperlinked online reading can generate feelings of anxiety.¹¹ Anxiety is also a theme in her discussion about the maintenance of an online profile, and more pertinently with regard to teenagers: she argues that constant connectivity might impact on separation anxiety and the development of independence in young mobile phone users.¹²

Throughout, the language she chooses is critical and pathologising. She writes of compulsions, symptoms and addictions; the word ‘tethered’ is preferred to ‘connected’, ‘absent’ to ‘elsewhere’.¹³ Throughout her argument, she reads online experiences as inferior to offline ones, and raises notes of caution about the social development of digital native teenagers. In the book’s hand-wringing conclusion, she claims, ‘we have agreed to an experiment in which we are the human subjects’.¹⁴

Jurgenson’s critique of Turkle is directed at the way she frames online experiences as different and opposite to offline experiences.¹⁵ She fails to acknowledge that our everyday interactions occur both online and offline, and that the fabric of our everyday communicative landscape comprises both these modalities. To see online and offline communication as separate is to engage in what Jurgenson describes as digital dualism. If connected and online communications are considered to be qualitatively lacking in reality, then this leads to a fetishisation of offline life, described evocatively by Keiles:

The man with the IRL fetish rubs himself up against the exposed brick wall of a loft in order to feel something. At 5 PM he makes a show of ‘logging off,’ heads out into the world where he aims to cop a feel of the authentic.¹⁶

‘Copping a feel of the authentic’ presupposes that there is a clear and unbridgeable distinction between authentic offline and inauthentic online experience, rather than considering the possibility that the two have an interrelated, symbiotic existence. A user

¹⁰ Fallows, James, ‘Linda Stone on Maintaining Focus in a Maddeningly Distractive World’, *The Atlantic*, 23 May 2013 <<http://www.theatlantic.com/national/archive/2013/05/linda-stone-on-maintaining-focus-in-a-maddeningly-distractive-world/276201/>> [accessed 6 November 2015].

¹¹ Sherry Turkle, *Alone Together*, p. 242.

¹² *Ibid.*, p. 243.

¹³ *Ibid.*, p. 155.

¹⁴ *Ibid.*, p. 296.

¹⁵ Nathan Jurgenson, ‘The IRL Fetish’, *The New Inquiry*, 2012 <<http://thenewinquiry.com/essays/the-irl-fetish/>> [accessed 6 November 2015].

¹⁶ Jamie Lauren Keiles, ‘Negotiations at the IRL/URL Border’, *Motherboard* <<http://motherboard.vice.com/read/negotiations-at-the-irlurl-border>> [accessed 6 November 2015].

may, for example, be at a conference tweeting updates about it. S/he will remain both at the conference *and* online: the two experiences are not mutually exclusive or divided temporally or spatially. How users of digital devices and systems navigate the points of contact between online and offline experience is where questions of attention and distraction arise, and these points of contact will form the focus of my study.

The literature on distraction (and attention) is divided across a number of disciplinary perspectives. While there is a huge body of literature that covers the functioning of attention in cognitive psychology, these accounts will not form a major part of my study. Most cognitive psychology studies employ objective methodologies, and seek generalised answers that explain the phenomenon under investigation. Since practice-based art research is conducted within a more relational epistemological frame that foregrounds subjective or constructionist approaches to the generation of knowledge, cognitive psychology seems at odds with artistic practice-as-research (hereafter referred to as PaR). While recognising the potentially fertile interaction between these two approaches, my inquiry is more in alignment with cultural understandings of the phenomenon of distraction than objective psychological understandings.

In art criticism, the literature on attention and distraction seems not to engage with contemporary technological questions to any great degree. Walter Benjamin's 'reception in distraction' as a characteristic of modernity seems to be the endpoint of the discussion.¹⁷ Relatively few writers, Ring Pietersen being one, write about distraction on a level other than seeing it as a failure of the artwork.¹⁸ If the viewer is distracted from an artwork, this is generally taken to mean that the artwork is not a very good artwork, as it has failed to attract the focused, directed attention that is usually applied to the appreciation of art.

Mainstream opinion blames connected digital technology for the erosion of the capacity to pay this type of focused attention. Nick Carr, for example, goes further, claiming that the Internet is also a challenge to our intelligence.¹⁹

In his book *The Shallows*, he argues that we are biologically predisposed to notice subtle changes in our surroundings, in case such changes might indicate a new risk or aid

¹⁷ Walter Benjamin, 'The Work of Art in the Age of Mechanical Reproduction', in *Illuminations*, ed. by Hannah Arendt, trans. by Harry Zorn (London: Pimlico, 1999), pp. 211–244.

¹⁸ Anne Ring Petersen, 'Anne Ring Petersen, Attention and Distraction: On the Aesthetic Experience of Video Installation Art', 2010 <<http://www.riha-journal.org/articles/2010/ring-petersen-attention-and-distraction>> [accessed 6 November 2015].

¹⁹ Nicholas Carr, *The Shallows: How the Internet Is Changing the Way We Think, Read and Remember* (London: Atlantic Books, 2011), p132.

to our survival, such as a predator or source of food. The practice of deep reading, and the ability to ‘lose oneself’ in a text, required training the brain to ignore many of the stimuli that might distract from such absorption. To read deeply was to think deeply, to disengage from the flow of the outer world and focus on an internal mental state of emotions and ideas.

Carr’s argument is that the technology of the book was central to the consolidation and democratisation of these capacities over the following centuries. He also raises the possibility that the increase in silent reading brought about a shift in the way that knowledge was brought into being:

The development of knowledge became an increasingly private act, with each reader creating, in his own mind, a personal synthesis of the ideas and information passed down through the writings of other thinkers. The sense of individualism strengthened. [...] Quiet, solitary research became a prerequisite for intellectual achievement. Originality of thought and creativity of expression became the hallmarks of the model mind.²⁰

Leading on from this, he suggests that neuroplasticity—the ability of the brain to adapt its structure and function in response to external stimuli—is evidence enough that our brains are susceptible to change from the technologies we use. He claims that we now ‘train our brains to be distracted’ through our use of the Internet and digital devices, and that this has consequences for memory, cognition, and empathy.²¹

Carr’s approach has been criticised as ‘hyperbolic determinism’, in that it ignores, for example, that other more distracted forms of reading existed at the same time as the development of deep reading.²² It’s also notable that many of the material changes in the brain that he writes about are not specific to exposure to Internet technology: the brain modifies its structure due to any kind of learning.

Technological determinism—that is, claims that technologies affect our lives yet are separate and external to them—can seem compelling in retrospect because it allows the nuances of everyday usage to be glossed over in favour of assumed generalised trends. Determinism downplays the social and historical context of the technology, and

²⁰ Ibid, p. 67.

²¹ Ibid, p. 194.

²² Chad Wellmon, ‘IASC: The Hedgehog Review - Volume 14, No. 1 (Spring 2012) - Why Google Isn’t Making Us Stupid...or Smart - Chad Wellmon’ <http://www.iasc-culture.org/THR/THR_article_2012_Spring_Wellmon.php> [accessed 6 November 2015].

assumes that technologies act upon us in ways that bypass our agency. This is highly questionable.

Writers in the fields of design theory, Science and Technology Studies (STS), and Social Media Studies (SMS) have investigated the topic of user agency in much more nuanced ways. Donald Norman's theory of affordances gives us a clue to how our interaction with systems and devices is framed through our perception of what they present as possible.²³ Affordances are considered to be a relationship between user and device, since what might be perceivable to one user might not be obvious to another. Jenny Davis has extended this theory to discuss how software systems offer their affordances: systems might request, demand, allow or encourage certain types of usage, leading to a more complex play of user agency.²⁴ We use our agency to renegotiate our relationships with distracting devices, and this is another rebuttal to the determinists.

In the field of Social Media Studies (SMS), Ben Light discusses how users disconnect from social media. He writes about how affordances that digital devices and software systems offer are being used in ways that weren't intended by the designers of these systems, offering up a taxonomy of 'shades of disconnection'.²⁵ He explores how users can engage in a range of 'disconnective practices' that allow them to enjoy different levels of distance from the distractions of social media at different times. Kate Crawford writes about how the experience of Twitter has been reported to be similar to the experience of radio: as a background noise that occasionally rises up to occupy the attentional focus before receding again.²⁶ The 'listener' tunes in and out, and this leads to 'ambient intimacy' rather than a close knowledge of the content of the feed.²⁷ The idea of the ambient, as it might be understood when referring to music, is relevant to computer studies discourses around the idea of 'calm technology', and to the burgeoning field of 'glanceable' information display that is gaining more traction in the transition from connected mobile devices to wearables and to the ubiquitous internet-of-things.²⁸ The Apple Watch interface guidelines, for example, outline 'short looks', 'long looks' and

²³ Donald A Norman, *The Design of Everyday Things* (Cambridge, MA: The MIT Press, 2013), p. 11.

²⁴ Jenny Davis, 'Theorizing Affordances - Cyborgology', 2015
 <<http://thesocietypages.org/cyborgology/2015/02/16/theorizing-affordances/>> [accessed 6 November 2015].

²⁵ Ben Light, *Disconnecting with Social Networking Sites* (Palgrave Macmillan M.U.A)
 <<https://www.dawsonera.com/abstract/9781137022479>> [accessed 6 November 2015].

²⁶ Kate Crawford, 'Following You: Disciplines of Listening in Social Media', *Continuum*, 23.4 (2009), 525–35
 <<http://dx.doi.org/10.1080/10304310903003270>>.

²⁷ Leisa Reichelt, 'Ambient Intimacy – Disambiguity', *Www.disambiguity.com*, 2007
 <<http://www.disambiguity.com/ambient-intimacy/>> [accessed 6 November 2015].

²⁸ Mark Weiser and John Seely Brown, 'The Coming Age of Calm Technology', 1996
 <<http://www.ubiq.com/hypertext/weiser/acmfuture2endnote.htm>> [accessed 6 November 2015].

‘glances’ as information display elements.²⁹ This means that information design needs to carve away extraneous information, only delivering an amount that can be assimilated in a glance. The guidelines don’t specify how often such notifications should be allowed to pop up.

The question of power is commonly explored by artists through institutional critique, and the institutions in question are often the state, or the art-world. Artists such as Hito Steyerl, Trevor Paglen, James Bridle, or Julian Oliver are well known for their work that comments on state surveillance or media power.

Adam Harvey’s *CV Dazzle*, is a good example of a body of research that frames itself in relation to the affordances of the system it critiques.³⁰ The hairstyles and make-up designs that this piece consists of are produced with the intention of thwarting automated facial recognition technology as deployed from CCTV cameras. The fashion designs were developed with knowledge of the capabilities of the recognition algorithms, and permit a type of oppositional user agency when mobilised against those algorithms.

Productivity and Work

Much of the writing that covers distraction by digital devices is written, broadly speaking, to improve wellbeing. This body of literature almost comprehensively frames distraction as distraction *from work*, offering a range of methods to cut down on info-glut, manage your email, improve your productivity and so on. Maggie Jackson, for example, is a polemic writer in this area.³¹ There is rarely any consideration of whether the demands on attention generated by the work are realistic, or appropriate, or ethical: this literature typically sees maximum productivity as an unquestioned goal, and distraction as an impediment to this. The intimation in much of this literature is that distractions are responsible for breaking concentration and making certain types of sustained focus, such as deep reading or intense productivity, impossible.

Carr’s use of the phrase ‘model mind’, as quoted above, warrants examination in these terms. A model mind is by definition a constructed one. We can only identify a model mind by measuring it against criteria that have been constructed by a range of

²⁹ ‘App Components - Apple Watch Human Interface Guidelines - Apple Developer’ <<https://developer.apple.com/watch/human-interface-guidelines/app-components/>> [accessed 6 November 2015].

³⁰ Adam Harvey, ‘CV Dazzle: Camouflage from Face Detection’ <<http://cvdazzle.com/>> [accessed 6 November 2015].

³¹ Maggie Jackson, ‘Distracted » Maggie Jackson’ <<http://maggie-jackson.com/books/distracted/>> [accessed 6 November 2015].

social forces and influences. A model mind at this historical moment might not share characteristics with model minds of the past or the future, as the social, economic, and technological relations that produce the norm against which the model is judged shift. A model mind can only be considered to be an exemplar in relation to normative practices of its production.

Jonathan Crary approaches the production of attentional norms in detail.³² He argues that the nineteenth century saw a reconfiguration of the field of attention and distraction, of the relation between a subject and the visual field. As reorganisations of capitalism brought new information sources, stimulations, and distractions into being, models of discipline were developed that formed normative standards of attention. Failures of attention were considered to be a danger in the industrialised settings of the factory floor, and inattentiveness was pathologised as sociopathic behaviour by writers of the time. These and other developments formed the model of an ideal attentive subject along lines that were compatible with the sorts of labour that nineteenth century mass industrialisation required. Crary contends that the emergence of distraction as a problem in the late nineteenth century is an effect that is inseparable from attempts to construct an attentive subject.

The relationship between attention, distraction, and work, then, is reiterated here, and more strongly so in Crary's most recent book, a polemic critique of 24/7 capitalism.³³ In it, Crary outlines a pessimistic view of an accelerated world with round-the-clock opportunities to consume objects and images, extending the argument about the construction of subjectivity by disciplinary practices. He takes a swipe at those who focus on young people's use of technology, questioning the historical designation of the contemporary world as a 'digital age'. To think that young people just 'get technology' suggests that one day the young people will grow up and this transitional phase will be over. He instead suggests that 'the very different actuality of our time is the calculated management of an ongoing state of transition'.³⁴ The speeding up of the development of technological novelty makes it impossible to be fully up to date. His argument is that analyses of any of the particular characteristics of a technology will offer less insight than an analysis of the way that the accelerated patterns of consumption facilitated by

³² Jonathan Crary, *Suspensions of Perception: Attention, Spectacle, and Modern Culture*, 1st edn (Cambridge, MA: The MIT Press, 2001).

³³ Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (United Kingdom: Verso Books, 2014).

³⁴ *Ibid.*, p. 37.

technologies are changing perception and experience.³⁵ For him, the only consistent factor in the development of new devices is that they make our investment in the electronic exchange of information more intensified, leading to ‘the relentless capture and control of time and experience’.³⁶ This control is articulated and enacted through practices of quantification. In our casual interaction with websites, the parts we pay more or less attention to can be minutely measured and tracked, allowing ever more targeted interventions in our consumptive behaviour. Recent discussions about frictionless shopping, on ‘zero choice’ or ‘anticipatory’ design, seem to uphold Crary’s view, as does the marketing use that data that we leak as we use apps on our mobile devices is put to.³⁷

Crary’s exploration of how work extends beyond the workplace can be understood in the context of what might be termed a neoliberal rationality. While the term ‘neoliberalism’ is contentious and complex, I refer to it here in the same sense as Wendy Brown:

I treat neoliberalism as a governing rationality through which everything is ‘economized’ and in a very specific way: human beings become market actors and nothing but, every field of activity is seen as a market, and every entity (whether public or private, whether person, business, or state) is governed as a firm. [...] Neoliberalism construes even non-wealth generating spheres—such as learning, dating, or exercising—in market terms, submits them to market metrics, and governs them with market techniques and practices. Above all, it casts people as human capital who must constantly tend to their own present and future value.³⁸

In these terms, Jackson’s anti-distraction writing, mentioned above, can be seen to reinforce the neoliberal idea of a self-actualising individual, whose release from distraction is an attempt to increase their personal value.

Pilvi Takala’s body of work entitled *The Trainee* stages an intervention in the marketing department of a major financial services company.³⁹ Takala is employed as an

³⁵ Ibid., p. 39.

³⁶ Ibid., p. 40.

³⁷ Anne Quito, ‘The next Design Trend Is One That Eliminates All Choices’, *Quartz* <<http://qz.com/429929/the-next-design-trend-is-one-that-eliminates-all-choices/>> [accessed 6 November 2015].

³⁸ Timothy Shen, ‘Booked #3: What Exactly Is Neoliberalism?’, *Dissent Magazine* <<https://www.dissentmagazine.org/blog/booked-3-what-exactly-is-neoliberalism-wendy-brown-undoing-the-demos>> [accessed 6 November 2015].

³⁹ Pilvi Takala, ‘The Trainee’ <<http://www.pilvitakala.com/thetrainee01.html>> [accessed 6 November 2015].

intern, but instead of working hard and being seen to be expending effort, she simply does nothing. When asked by her colleagues why she is doing nothing, she says she is thinking; she spends one entire day in the elevator. While this performance piece was conducted with the knowledge and collaboration of managers at the company, her colleagues weren't informed, and their progression from surprise, to disbelief, to concern for her welfare is documented in a series of videos and transcripts. This piece directly tackles the neoliberal idea that work provides the self with value, by staging idleness in the workplace as an up-front activity, rather than a more acceptable sneaky-checking-of-Facebook-on-work-time. It situates its critique of neoliberal rationality in the competitive workplace, where that rationality is most fervently propagated and articulated. Furthermore, the responses of her colleagues reveal how quickly any opposition to this rationality is judged to be pathological.

Quantification

One of the imperatives of neoliberal rationality is to improve efficiency, and this aim is often achieved by the control of space and time.⁴⁰ This can be seen in Taylorist time and motion studies, or in the way that Amazon employees are tracked and monitored as they move around warehouses, the routes between their pick-ups minutely timed and enforced.⁴¹ Our everyday web usage is tracked and measured by cookies and beacons which follow our browsing habits, collecting data that builds a picture of our interests which, unless explicitly blocked or obfuscated, can be mined to target advertisements.⁴² Big Data is an area of theory in itself that extends beyond the scope of my study, but for my purposes, considering the extension of quantified metrics into digitally mediated social interaction has interesting consequences for the understanding of distraction. These can be seen in Benjamin Grosser's *Facebook Demetricator*, an artwork in the form of a web-browser plug-in that removes all of the numbers from Facebook pages.⁴³ Instead of revealing the number of people who like a post, or the time since it was posted, the de-metricated Facebook page simply states that 'people like this', or that a post was made

⁴⁰ Pascal Gielen and Paul De Bruyne, 'Introduction: The Catering Regime', in *Teaching Art in the Neoliberal Realm - Idealism Versus Cynicism* (Amsterdam: Distributed Art Pub, 2011), pp. 1–11.

⁴¹ Simon Head, 'Worse than Wal-Mart: Amazon's Sick Brutality and Secret History of Ruthlessly Intimidating Workers' <http://www.salon.com/2014/02/23/worse_than_wal_mart_amazons_sick_brutality_and_secret_history_of_ruthlessly_intimidating_workers/> [accessed 6 November 2015].

⁴² Finn Brunton and Helen Nissenbaum, 'Vernacular Resistance to Data Collection and Analysis: A Political Theory of Obfuscation', *First Monday*, 16.5 (2011) <<http://firstmonday.org/ojs/index.php/fm/article/view/3493>> [accessed 6 November 2015].

⁴³ Benjamin Grosser, *Facebook Demetricator* | Benjamin Grosser, 2012–present <<http://bengrosser.com/projects/facebook-demetricator/>> [accessed 6 November 2015].

‘recently’. Quantification of social capital in social media conforms to the neoliberal imperative to measure, but Grosser claims that this is propelled by capitalism’s logic of accumulation.⁴⁴ By enumerating likes and friends, Grosser suggests, Facebook creates a desire for more likes and friends. This might be a clue as to why such platforms are permitted to deliver ever more distractions: the measurable accumulation of social capital creates a sense of personal value that is pleasurable, despite the notification’s potential to interrupt the flow of everyday life.

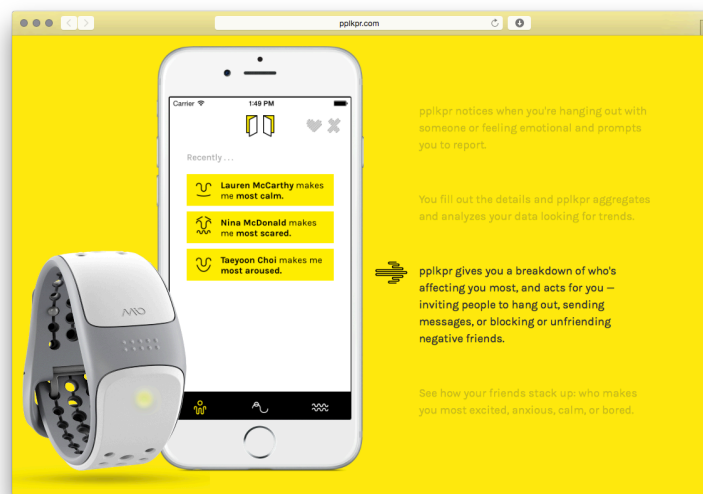


Figure 2: Screenshot of PPLKPR (2015), Kyle McDonald and Lauren McCarthy

This urge to quantify is the central proposition of *pplkpr* (people keeper), a mobile app created by artists Kyle McDonald and Lauren McCarthy (Figure 2).⁴⁵ It intervenes in the social interactions of the user by allowing them to associate fluctuations in their heart rate with their emotional responses to the people they are spending time with. It quantifies and measures the emotional states that particular social relationships bring about, auto-scheduling meetings with people that make the user feel good, and cutting out those that don't. This piece presents itself as an awkward version of many mindfulness apps that have the stated intention of improving the mood of the user, making the user feel calm and relaxed. Here, the quantification of the self is willingly carried out by the user, in return for a perceived service of self-improvement. But by employing a process of quantification to a phenomenon that is relational and qualitative,

⁴⁴ Matthew Fuller, 'Matthew Fuller » Don't Give Me the Numbers – an Interview with Ben Grosser about Facebook Demetricator', 2012 <<http://www.spc.org/fuller/interviews/don%E2%80%99t-give-me-the-numbers-%E2%80%93-an-interview-with-ben-grosser-about-facebook-demetricator/>> [accessed 6 November 2015].

⁴⁵ Lauren McCarthy and Kyle McDonald, *pplkpr*, 2015 <<http://pplkpr.com/>> [accessed 6 November 2015].

the logic of objectivist certainty is invoked, uncomfortably invoking Taylorist efficiency measures and misapplying them to friendships. The result is a tool that reinforces the neoliberal idea of a self-realising individual, and converts friendships into consumable commodities. Many users defer to objective, positivist scientific knowledge—hard data—in favour of subjective experience.⁴⁶ The amount of people who drive their cars into ditches under the instruction of sat-navs is testament to this. Here, raw data is being used as ammunition to end friendships. *Pplkpr* beautifully stages the awkwardness at the centre of the debate over quantification.

In my own research, I experimented with practices of quantification of my own computer usage, gathering data about my keystrokes and mouse movements over a specified period using benign key-logging software.⁴⁷

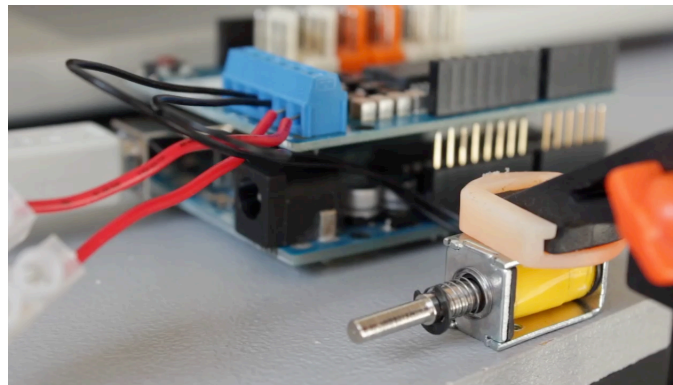


Figure 3: Solenoid keypress system: work in progress (2015)

I produced a number of experimental visualisations and sonifications of this data. The most successful was a piece that used pre-captured keystroke durations to activate a solenoid, producing a mechanical tapping sound that accurately reproduced my specific keystroke pattern while typing a conference paper (Figure 3). I made the instinctive decision to position the system in my studio against a metal surface—the radiator—so that when activated it would sound like a traditional typewriter. The tapping action on the radiator transmitted the sound through the heating system of the studios, sending a hard to locate but very annoying tapping around the building. A dataset that was generated by productive activity has been deployed as a distraction to someone else's productive activity in another part of the building. This reading invokes the idea that the unbidden arrival of information into the focus of attention is uncomfortable, distracting,

⁴⁶ Mark Andrejevic, *Infoglut: How the Digital Era Is Changing the Way We Think about Information*, 1st edn (United Kingdom: Routledge, 2013).

⁴⁷ For more information, see <<http://acs.ist.psu.edu/projects/RUI/>>.

and potentially overwhelming or anxiety-inducing; and locates this discomfort in relation to productive work.

Quasi-materiality

The term ‘quasi-material’ can be found in Judy Wajcman’s *Pressed for Time*, in which she discusses at length the extent to which we feel overwhelmed and harried by technology.⁴⁸ In her discussion of email as a stress-creating technology, she discusses the qualities of email that contribute to its stressfulness. Email is asynchronous (operating outside of the user’s current temporality, and accumulating while they are away); quantified (a countable number indicating what has been missed); and it is framed by social norms established on a workplace-by-workplace basis that demand a certain speed of responsiveness. This ‘entanglement of material, social and quasimaterial factors’ is, to Wajcman, why email is identified as stressful.⁴⁹ However, identifying email as the cause of stress and overload obscures that the real cause of the stress might be unrealistic workplace expectations of a quick response.

Questions of materiality are a central concern of many artists who might be bracketed under the term ‘post-internet’. As curator Karen Archey observed at the #FOMO conference at the ICA in May 2015, there is no agreed definition of what the term ‘post-internet’ actually means. Despite this, post-internet art is often characterised by an emphasis on documentation of a work being equivalent to the work itself, such that the work doesn’t exist in any other form; a preoccupation with visual styling common to websites in the 1990s; and a propulsion of these types of aesthetics into real or virtual contexts redolent of the white cube gallery. I agree with Droitcour,⁵⁰ who states that the initial writers that coined the term post-internet, such as Marisa Olson,⁵¹ have now been obscured by the spread of a visual style whose main aim is to make work that looks good online. Using visual tropes commonly found in advertising, much Post-internet work is low on criticality and high on visual sheen. It buys into the idea of art as meme, and as it simulates the environment of the white walled gallery (or white empty browser page) it reproduces the existing power relations of the art world, using social

⁴⁸ Judy Wajcman, *Pressed for Time: The Acceleration of Life in Digital Capitalism* (United States: University of Chicago Press, 2015).

⁴⁹ *Ibid.*, p. 97.

⁵⁰ Brian Droitcour, ‘The Perils of Post-Internet Art - Magazine - Art in America’, 2014 <<http://www.artinamericamagazine.com/news-features/magazine/the-perils-of-post-internet-art/>> [accessed 6 November 2015].

⁵¹ *You Are Here: Art After the Internet*, ed. by Omar Kholeif (United Kingdom: Cornerhouse Publications, 2013).

media to position artists as entrepreneurial brands. While seemingly a conservative practice, this area might demand further study, to explore its complex relationship to neoliberalism.



Figure 4: Robert Blair, *Junk Poems*. TXTBooks, Brooklyn, NYC, 2014. 22 pages.

Some post-internet projects have emerged that do ask pertinent and critically grounded questions of the material relations involved in digitally mediated experiences. Paul Soulellis's *Library of the Printed Web* is an ongoing project that 'collects and publishes works by artists who use screen capture, image grab, site scrape and search query to create printed matter from content found on the web'.⁵² Soulellis deploys Duchamp's concept of the *infrathin* to describe the condition of these printed out online works: like the difference between two casts of the same mould, the 'web-to-print' space creates a difference and a sameness that these works resonate between.⁵³

⁵² Paul Soulellis, 'About: Library of the Printed Web'

<<http://libraryoftheprintedweb.tumblr.com/post/43311353240/about>> [accessed 6 November 2015].

⁵³ Paul Soulellis, 'Performing Publishing: Infrathin Tales from the Printed Web', *Hyperallergic*

<<http://hyperallergic.com/165803/performing-publishing-infrathin-tales-from-the-printed-web/>> [accessed 6 November 2015].



Figure 5: Michael Day, *Epicentres*. The Editions, Sheffield, UK, 2015, 28 pages.

I have experimented with this approach in my own research. In the book *Epicentres* (Figure 5), I used USGS seismological images to produce a book of images of low-Richter scale earthquakes in remote locations, in this case, Alaska in winter. The book consisted of a collection of images that had been generated automatically by computer systems on the event of an earthquake. At a point in my inquiry when I was still considering ‘real’ and ‘online’ experiences to be separate, it interested me that these earthquakes might not actually have been felt by a human: the only experience of them is as an automated image generated from sensor data, and there’s no guarantee that the images themselves will receive a human viewing. There is an obvious metaphysical reading of the work that questions the existence of the unperceived earthquake at all, but I’m more interested in the devolution of the experience of noticing the earthquake to remote sensing equipment. The technology pays attention to this visceral geological event so we don’t have to; data is silently gathered, quantified, and visualised, and everyday life remains uninterrupted by these events. It might be said that the sensing apparatus constructs the real through an automated mediation of it, by determining what constitutes a seismological ‘event to be noticed’. The completely utilitarian aesthetic qualities of these images, whose diagrammatic form reveals almost nothing about the physically unsettling affectual experience they refer to, further distances the event from the realm of the subjective. Collecting the images in a book could be seen as an attempt to reclaim some humanness, or relatable materiality, from this automated sensing system, but the form of the book also invites the type of focused attention that Carr claims, as I have outlined above, is being eroded by digital technologies.

I later explored ways of highlighting the material quality of the smartphone screen, hoping to reveal something about the lack of material consequence in the process of

interacting with it. I explored this by making video recordings of staged smartphone interactions. These were refined and deployed as animations in the piece *Invisible Layers*.



Figure 6: Michael Day, *Invisible Layers* (2015). Installation view at The Scottish Queen, Sheffield.

Gershon's speculative paper asks how we might understand mediated selves not as performances, but as animations.⁵⁴ She asks what work an audience has to do to co-create an animated character, and applies this thinking to the fragmentary selves constructed collectively through social media profiles. With this at the back of my mind, I produced some tentative rotoscoped animations of hands swiping and zooming smartphones. I found the pinch-to-zoom gesture compelling, as it forges a relationship with images that can't be replicated with a physical material. Zooming is not something that the eye can do without help, and the factor of zoom caused by the gesture would seem vertigo-inducing if not bounded by the tiny edges of the smartphone screen. I experimented with a range of data sources, combining USGS topographic data, with infrastructural mapping from the crowd-sourced open street map database. The piece represents the user of the smartphone in the same schematic line drawing as the maps, and the pinch-to-zoom action is repeated to infer a lack of sustained attention to the overly complex imagery, or a lack of satisfaction with it. The hands constantly flick through the imagery, never quite settling on an image. The hands are close to life-size on the screen, allowing some sense of the overwhelming scale of the imagery and beginning to suggest disparity between material action and quasi-material consequence.

⁵⁴ Ilana Gershon, 'What Do We Talk about When We Talk About Animation', *Social Media + Society*, 1.1 (2015), 2056305115578143 <<http://dx.doi.org/10.1177/2056305115578143>>.

Methodology & Contribution

The study of attention and distraction is highly interdisciplinary, and I believe that art PaR has a valuable contribution to make to understanding in this field. Art has the capacity to evoke experiences that de-familiarise those modes of engagement with ubiquitous computing that viewers might be more or less oblivious to, inviting viewers to reconsider their relationship with these technologies. These reconsiderations can be invoked either by making representations of engagements with the technologies in question – ‘picturing’ it in new ways – or through creative intervention in the interactions themselves, turning viewers into performers or participants. The production of artworks can also help identify the right questions to ask about the experience of these technologies.

The substantial insight I hope to generate will be achieved through the reflective production of artworks that perform these functions, and I anticipate that the contribution to knowledge will be found in the production and interpretation of artworks that address and explore the research domain.

I use a PaR model for a reflective art practice to frame my research activities. I have gravitated to Nelson’s model of PaR to understand and structure my research process, although Nelson’s model is not a recipe that can be applied to my own practice without modifying some of the ingredients.⁵⁵ There is still some work to be done to consolidate this. I use a number of practical methods as part of a multi-modal enquiry, including:

- Moving image production (animation, video, GIF, dynamic web pages, etc)
- Still image production (photographs, digital collage, print production etc)
- Creative coding (production of programs and apps with aesthetic or critical functions; this includes data gathering and visualisation)
- Audio production (sound art, sonification)

I also read in order to acquire appropriate theoretical and contextual knowledge. Reflection and reflective writing draw these methods together into something akin to Nelson’s idea of praxis: a reflective, intelligent practice. Some of my approaches have iterative methods that resemble goal-oriented design or engineering approaches, and some are more intuitive, but all are being deployed as part of a critically reflective inquiry whose outcome will ultimately be a body of artwork.

⁵⁵ Robin Nelson, *Practice as Research in the Arts: Principles, Protocols, Pedagogies, Resistances* (Houndmills, Basingstoke, Hampshire: Palgrave Macmillan, 2013).

Future Work

As artist and ‘critical engineer’ Julian Oliver has inferred, artists often struggle to gain the technical skills required to make work that does more than merely represent technological debates.⁵⁶ In my research, *Invisible Layers* is a representation of interaction with a device, rather than actually intervening in an audience’s first-hand interaction with their own device. Generally speaking then, the direction for the research might be best understood as a more embedded, embodied, and everyday approach (borrowing from Hine’s useful Internet ethnography framework).⁵⁷ Developing the technical skills required to produce work that runs on mobile devices will allow me to explore the opaque internal workings of the systems under scrutiny, offering up a clearer view of what affordances have been chosen by the designers of distracting systems. Furthermore, developing interactive works acknowledges Crary’s suggestion that the idea of passive spectatorship as previously theorised needs to be revisited and rethought now that we occupy an attentional field that contains multiple temporal registers, choices and interactions.⁵⁸

An area that is currently under-explored in my research is the relationship between sound and distraction. Many of the interruptive notifications produced by devices and social media have an auditory component. As Seth Horowitz outlined at the recent *Listening Body* conference, we can hear even when we are asleep, but listening requires attention.⁵⁹ This needs to be addressed in future work.

The thematic concerns that have risen to the surface through my practical experiments are those flagged earlier as threads or ‘clews’: **quantification; power & user agency; quasi-materiality; and productivity & work**. These form the framework through which the relationships between attention, distraction and ubiquitous computing raised in my aims & objectives will be explored, and these will form the contextual frame for future practical enquiry.

⁵⁶ Julian Oliver, ‘Increasingly Meeting Artists Expressing Frustration They Lack Knowledge/skills to Engage Techno-Political Ideas, Able Only to Depict/discuss’, @julianoliver, 2015
<<https://twitter.com/julianoliver/status/618859039632572417>> [accessed 6 November 2015].

⁵⁷ Heather Ford, ‘Christine Hine on Virtual Ethnography’s E3 Internet’, *Ethnography Matters*, 2013
<<http://ethnographymatters.net/blog/2013/11/29/christine-hine-on-virtual-ethnographys-e3-internet/>> [accessed 6 November 2015].

⁵⁸ Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (United Kingdom: Verso Books, 2014), pp. 52–53.

⁵⁹ Seth Horowitz, ‘The Listening Body’ (presented at the The Listening Body, Sheffield: Site Gallery, 2015)
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