

## 6 Surveillance, sensors, and knowledge through the machine

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### Proliferation

Digital existence today is to live amidst a bewildering proliferation of data and data-emitting machines. The pattern of their appearance to human subjects is *hyperobjective* (Morton 2013). Seemingly ubiquitous in their vast distribution, these new technologies instantiate in innumerable local objects – a branded platform, a piece of hardware, a function – without being reducible to them. The modern word *technology* was itself born out of the sentiment that a new and broader system was emerging (Marx 2010). Today, as we will see, Silicon Valley bestows the newest predictive technologies totalising descriptions like the ‘technium’ (Kelly 2010) or the ‘planetary nervous system’ (Hernandez 2012). The corollary is that this expansive imaginary increasingly overshoots the phenomenological purview of the human subject. A constellation of black boxes, dramatic visualisations, collective fantasies and individual material tool-relations – each of these objects constantly put us in *touch* with the ever-expanding technological landscape, but in doing so, they further impress our inadequacy in grasping this ubiquitous non-human pulse, flow, hum.

This sense of *excess* is reflected in contemporary descriptions of life in the new media society as paranoia (Majaca 2016), sleepless fatigue (Crary 2013; Han 2010), a manic obsession with patterns (Steyerl 2016) and conspiracies (Andrejevic 2013) . . . in short, a subject driven to hyperactivity whilst constantly afflicted with anxiety about what is beyond its grasp. Yet it is also the same excess that animates the seductive promise that new technologies will augment human knowability in unprecedented ways. Proliferation undergirds both the uncertainty around informational excess and the fantasy of unprecedented predictive and calculative capacity.

Much of these hopes and fears revolve around the project of human knowing – a relation to the world that was elevated to a defining duty and capacity of the Enlightenment subject (e.g., Dean 2001). But to ‘know’ amidst the digital swarm is less a question of firm evidence possessed by the rational individual than a collective investment into deferred and simulated heuristics. Wittgenstein (1969) identified the curious masking work

performed by the innocuous phrase, ‘I know this is a tree’: to say so does not establish any comprehensive or objectively certain ground for my knowledge. Rather, it expresses my commitment to treat the proposition as *no longer requiring such proof*, and thereby use it itself as ground for other statements and actions (say, my decision to fell it for lumber). To say we ‘know’ about new technologies, or about the world and ourselves through new technologies, therefore expresses our ability to keep up with the flow of machinic emissions, and to produce and justify socially ‘sufficient’ ground for judgment and action.

This chapter examines the ways in which the generalised condition of data proliferation is rewiring the relation of knowing at a phenomenological level. The question here is not whether we know ‘more’ or ‘less,’ but how *knowing* as human subjects’ mode of relating to the world out there is being reconfigured through new digital technologies as both the problem (of proliferation) and the solution (of data-driven predictivity). Two related scenes illustrate this pairing of proliferation/uncertainty and predictivity/knowledge, and the ways in which human subjects are enjoined to know through new technologies. The first – the controversial exposure of NSA surveillance in the ‘Snowden Affair,’ 2013 onwards – demonstrates a *recessive* relation: how technological knowing reassures the overwhelmed subject by withdrawing into the phenomenological background. The second – the empowering fantasies of better self-knowledge in the ‘Quantified Self’ community and self-surveillance technologies – then turns to a *protrusion* of objects, numbers, stimuli: how technological knowing appears into our most ‘private’ and domestic spaces of life, and seeks to pre-empt sense experience as a mode of self-knowledge.

These are sites for the public presentation<sup>1</sup> of technologies and claims to new knowledge. They chart the ways in which specific technologies of surveillance and data production were made object of debate, description, speculation, criticism. In other words, there is a certain ‘politics of visibility’ (Brighenti 2007; Flyverbom 2016; Thompson 2011) which governs the differential distribution of epistemic authority and information access. This chapter draws on news media, Snowden-leaked government files, interviews, field observations and more, over a three-year period (2014–2016) to sketch out the character of this publicised discourse.

## Recession

The first sightings occurred on 6 June 2013. “NSA collecting phone records of millions of Verizon customers daily” (Greenwald 2013). In subsequent days and weeks, the single story would grow into an agglomeration, filling the public view with images of supermassive databases, conspiratorial secrets and futuristic Big Brothers. (George Orwell’s estate would have an unexpected payday, with sales of *1984* rocketing by some 6,000% that month (Hendrix 2013).) Edward Snowden, suddenly the world’s most

famous living whistle-blower, called it the public's "right to know" (NDR 2014), the right to transparency.

But what kinds of things can secure the public's ability to 'know' when it comes to such vast, hyperobjective apparatuses? The NSA programs at the core of Snowden's revelations involve such vast volumes of material that its own analysts internally spoke of 'analysis paralysis'.<sup>2</sup> Their 'dragnets' fished from a wide variety of channels, from Skype video calls (Greenwald 2014) to video game chatter (Ball 2013), and their material footprint comes in tens of thousands of employees, housed in complexes the size of small towns (Fort Meade is larger than Cambridge, Massachusetts, in land area) as well as secret locations warded from photographic representation.<sup>3</sup> And in contrast to many traditional forms of surveillance, the surveillance activity itself is systematically withdrawn from the subject's experience – such that we might say, 'I know I am being watched, Snowden told me so – but I've never seen it happen'. How is the public supposed to secure any 'concrete' grasp of such knowledge?

The answer was apparently simple. That first report from *The Guardian* featured a rare scoop: a copy of the Foreign Intelligence Surveillance Court (FISC) order that addressed Verizon by name and demanded 'telephony metadata'. The slightly grainy text, a mysterious stamp-mark reading '13–80,' and the watermark TOP SECRET//SI//NOFORN (No Foreigners) attested to the materiality, secrecy, and (as if this followed naturally) authenticity of this document. PowerPoint slides, typically the object of fatigue and derision as the symbol of bureaucratic gesture without substance, were now respected as rare pieces of concrete evidence extracted from a secret domain. William Binney, a former NSA employee who had told the public much the same things Snowden did with much less impact, thought the documents made the difference: he now regrets that he didn't take documents himself, the "hard evidence [that] would have been invaluable" (Loewenstein 2014).

Yet these documents were also occasions for occlusion, speculation, simulation. Snowden's documents, the Snowden Files, make present surveillance as an uncertain and unknown world for public imagination. As such, they carry the secrets beyond lived experience, or the complex technological system 'out there,' back into the realm of knowledge-claims. Consider the following defense of the surveillance programs, raised by Dianne Feinstein a few days after the initial leaks (Knowlton 2013):

Here's the rub: the instances where [surveillance] has produced good – has disrupted plots, prevented terrorist attacks, is all classified, that's what's so hard about this.

Feinstein had been Chairman of the US State Select Committee on Intelligence (also called the Senate Intelligence Committee), a major oversight body for state intelligence activities. In other words, this external auditor to the NSA's activities was arguing to the public that what one does not know (and what

one is not even sure exists) should overrule what one has learned. Feinstein's formulation asks the public to establish a sense of knowledge (that surveillance has done good) by simulating the knowledge of another, and transposing its results unto ourselves in what I have called elsewhere an *interpassive* movement (Hong 2015b). Here, the secret is the presumptive background that hems in and bleeds in on what is publicly visible, and thereby qualifies the knowledge of what is (apparently) transparent with an inexhaustible outside. Meanwhile, the pattern of the exposé, by now built into the media news cycle and the frenetic pattern of constant update in new media platforms (Chun 2011, 2015), produces the 'public's persistent feeling that "there is always something"' more behind the scenes (Horn 2012, p. 118).

Since surveillance by its very definition can never be fully transparent, its critics and defenders continued to find ways to stake claim to the nature of its hidden truth. The US government and its intelligence agencies produced its own set of figures and witnesses as stand-ins for what must, they argued, remain state secrets. President Barack Obama assured the public that a very specific number of fifty-four terrorist attacks had been thwarted, "saving real lives" (Elliott and Meyer 2013; Sterman 2014), through the surveillance programs in question. Yet soon after, the number was in doubt. NSA's defenders were forced to backpedal to just *one* case that could be presented with certainty: the 2009 bombing plot by Najibullah Zazi (Clarke et al. 2013; Angwin 2014; Schwartz 2015). Of course, the idea that metadata surveillance 'saves lives' would continue to circulate, even as specific evidence of such efficacy, positive or negative, remained withdrawn from public knowledge. We might say that the fifty-four was a silhouette, a stand-in; an object which renders political secret and technological complexity into something we can think and speak about, delivering a sense of knowability. Here, the specificity and certainty implied by the figure gives an appearance of objectivity to what is more explicit in Feinstein's request: the ultimately groundless choice of believing (that we know, that 'they' know in our stead, that it is 'known').

In short, what we find is not a contest of transparent proofs, but objects that present an appearance of epistemic solidity while referencing broader unknowns. The Snowden Files themselves provide a kind of silhouetted or bracketed presence, wherein the appearance of numbers and statistics function as anchors for imagining proliferation. A symbolic case: one month after the leaks began, journalists at *The Guardian* descended into their headquarters' basement, power drill and angle grinder in hand. Observed by two UK state officials, they proceeded to physically destroy the offending laptop containing leaked material (Rusbridger 2013). It was, of course, a purely ceremonial gesture; Snowden's files had already been distributed to a global network of journalists and activists (Farivar 2013), including *The Guardian's* own offices in the United States. The pointlessness of the drill-and-grinder ritual reflects both the difficulty of catching up with proliferating data and the enduring desire to affix these new movements back onto old actors and identities.

The problem is that the Snowden Files were not only distributed; their very size, scope and location remains uncertain. Snowden himself has refused to give a firm number. In any case, he insists that he no longer even has access to the files, having turned them over to journalists; those journalists too have remained taciturn about the issue.<sup>4</sup> Meanwhile, the US government also tossed enormous numbers into the air, ranging from 900,000 from the Department of Defense (Leopold 2015) to the claim that Snowden ‘touched’ – a rather viral and visceral metaphor – 1.7 million files working for the NSA contractor, Booz Allen Hamilton (Kelley 2014). The secrecy archive Cryptome (2016) wryly noted that, as of October 2013, a mere 192 pages had been released, and that at current pace, it would take ‘20 to 620 years’ for the public to actually receive the information it had been promised. The large variance in these figures, and the gap between technical availability and actual accessibility, actually reflects these ‘insider’ institutions’ everyday difficulty in grasping the scope of their own proliferating secrets. Peter Galison (2008) reports that the US government as a whole has ‘reportedly’ classified 92,064,862 documents in the single year of 2011; not even 1.7 million scrapes the top of the iceberg. Meanwhile, the NSA had expanded massively following the September 11 attacks through internal hires, new infrastructure, and large outsourcing contracts to the private sector (e.g., Shorrock 2015) – such that, by 2010, it was lacking precise metrics for mapping its own surveillance apparatus and its total costs (Pasquale 2015, p. 13; Bamford 2008, p. 199).

Here, the wild numerical potshots work not so much to pin down the scope of the proliferation (of documents, of secret surveillance programs, of personal communications data), but to spray out a general horizon, a foreboding, the hyperobjective beyond – a function that is found more broadly in archives and databases as containers for epistemic fantasies.<sup>5</sup> After all, what difference does it make for public knowledge if there are 1.7 million documents, or 3 million, or 10? The complexity and size of the material guarantees that although the Files provide the idea of evidentiary availability to the public, few will be able to take the opportunity to ‘know for themselves’.<sup>6</sup> Here, availability is a promise never taken up, but always present in theory. The Snowden Files thus presents itself as a concrete artefact and indisputable proof, but turns out to enact a kind of ‘absent presence’ (Frers 2013; Saury 2008). They make visible the withdrawn, opaque, secret, uncertain nature of the sociotechnical systems they propose to expose.

Numbers and documents: both faithful staples of modern epistemology, and privileged forms of evidence in that *regime du savoir*. Yet the contact-points where these objects meet human subjects and the amorphous body of the public entail a panoply of deferrals and as-ifs, designed to mitigate the withdrawal of ‘actual’ realities from the horizon of ordinary subjects. The objects thus maintain a certain presence – even as they cover for the nonappearance of the reality ‘out there’. This is not to simply say that the information we had was not ‘transparent’ enough, which slips us back into

the rationalist fantasy that if we only knew enough/more then we would not need such ‘tricks’ (or that those who persist in employing such strategies of knowing are ignorant and/or irrational). The point is that ‘to know’ is a costly and limited affair, which constantly necessitates new techniques and conventions by which we can avoid some of the labour involved. If nonmodern societies produced myths of luck, chance, *mana* as a way to organise the world around them (e.g., Lears 2003), the digital age exhibits its own simulations of objectivity, correlation and predictive power in order to stabilise its grid of intelligibility. Amidst the proliferation of new media, the presence of statistical reason maintains the orientation towards objectivity and proof – even as the practices of knowing continue to defer the work of knowing onto someone else and something else.

The evidentiary objects involved in the Snowden Affair thus exhibit a *recessive* relation vis-à-vis the public’s ability to ‘know’ new data-driven technological systems. Merleau-Ponty (2012) says that my pre-reflective awareness of my body and its relation of physical *doing* always already grounds all sense perception – that is, a body-schema. The problem of recession is the problem of grasping what is beyond the experiential purview established by that schema – or rather, what *appears* to the embodied perceiver as coming from that beyond. Clearly, this ‘beyond’ is not born with surveillance or digital technology. The hyperobjectivity of the Anthropocene reprises – albeit through very different parameters – the mythological function of the medieval cosmic order. And just as we sought to grasp the modern nation through populational statistics, or to know the strangers of the urban metropolis through the heuristics of physiognomy, we turn in the Snowden affair to traditional representatives of objective certainty: documents, numbers, journalistic truth. The recessive relation couples the search for a stabilising grid of intelligibility with the irreducible ‘out there’ – that which lies beyond ordinary subjects’ lived experience or practical knowledge. The evidentiary objects, from the figure of the fifty-four to each of the Snowden files, thus appear publicly in order to announce the non-/dis-appearance of the referent. The consequence is that the more we know, the less of the knowing is ours.

### Protrusion

For a certain type of person . . . data is the most important thing you can trust. Certain people think a feeling of inner certainty is misleading.

– Gary Wolf, co-founder of the Quantified Self (Hesse 2008)

This contrast animates the Quantified Self, a community of experimenters in new self-tracking technologies (notably founded by two veterans of *Wired*, that singular hub for evangelising new technologies) – and more widely, the self-tracking industry that has grown in commercial and cultural prominence over the last decade. While there is a longer history of self-measuring

machines throughout the twentieth century (e.g., Crawford et al. 2015), and wearable technologies have been the object of futuristic imagination for decades, the confluence of miniaturised sensors and widespread wireless connectivity has resulted in a new generation of devices embraced by millions of consumers (e.g., Lupton 2016; Neff and Nafus 2016). These devices target problems of everyday living, of one's own body, that are so personal to the subject but never quite fully 'known': health, sleep, mood, sex, diet. Sleep trackers like Beddit generate numerical 'sleep scores' to grade each night's repose, and indeed, times its alarms to what it deems to be the right moment to wake the user. Each activity, each problem, is breached through its most discrete and measurable portions; hence the sex tracker Spreadsheets begins by yielding metrics like 'thrusts per minute,' though it is uncertain what this is supposed to tell us. The measuring machines themselves seek ever more persistent and intimate access to the subject, with experiments in tattoos, ingestible pills and miniature sensors dubbed 'neural dust' (see Mack 2016) as prospective heirs to present-day wristbands. The discursive foil around this new generation of devices express the hope that through smarter machines and their more intimate, persistent measuring, we will reach a degree of self-knowledge where *we cannot lie to ourselves anymore*; that prosthetics tracking mood, exercise, social relations, even sex will tell us what(/who) really makes us happy, how much we've really exercised, the hidden correlations between our eating and our productivity, the truth behind our illusions about our own habits and predilections.

And so, the technical and epistemic principles of data-driven surveillance are transposed unto the world of do-it-yourself datafication. Here, we find technical objects and machinic knowledge in *protrusion*. When we speak of recession, we think of things withdrawing out of my perception or reach; this in turn reflects the broader and older problem of locating 'knowledge' beyond lived experience and individual cognition. In protrusion, we may think of things that 'stick out' into notice, and coax the subject into interaction and engagement. The contrast is not between secretive uncertainty and democratised knowledge, but how claims to knowability are secured with regards to the world 'out there' or the me 'in here' (with the machines). Specifically, protrusion vis-à-vis self-tracking involves its promise to furnish savvy consumers with individualised and ultimately empowering access to the production of better 'self-knowledge' (that is, *their own knowledge about themselves*). Further, this is to be achieved through technologies which are literally in the home and on(in) the user's body. The McLuhanian vision of extension is emblematised by media coverage of early adopters, which plays up the trope of cyborg-like individuals dressed up in a conflagration of wires and gadgets.<sup>7</sup> Here, we find the intervention of new technologies into subjects' lived experience in their most private spaces and times – leading, it is claimed, to the subject's extended, upgraded, augmented capacity for knowledge.

Such protrusion should not be mistaken for any reduction in or elimination of mediation. It does not grant access to our 'true' selves, the nature of

which remains philosophically unclear and certainly anterior to the mediation of datafication. Instead, what we do produce, with greater fidelity than ever, is our *trace-bodies* (Hong 2015a): bodies reconstituted out of the debris left behind by our lived activity – whether in the form of a numerical sleep score, a mood emoji or a more complex set of metrics knitted together into visualisations. The many fissures between our trace-bodies and our everyday experience of ourselves, masked by the common reference to a ‘self,’ reflects the general trade-off in technological mediation of self-knowledge: we perceive ourselves precisely by having something else stand in for us. What appears to me as I gaze into a mirror is not simply ‘myself,’ for the me that I always already inhabit before any seeing is now actively visualising the self through this technologically produced apparition (which, as curved or otherwise warped mirrors make clear, is always subject to manipulation).<sup>8</sup>

The key here is that self-tracking machines produce trace-bodies through measurements that are typically too frequent, too persistent, too automatic, too closely attached to the body or home, for our consciousness to keep up. The sleep score on a Beddit is already distilled and ready as the user awakes – not to mention that his/her awakening was itself timed by the correlated conclusions of the algorithm. In this bid to constantly have us face off with our truths, these machines undercut the (alleged) traditional relation between the acting, experiencing subject and his/her truth. In other words, the promise is not only to know us better than we know ourselves, but to engage in this knowing *before* we are aware. Even as the trace-body looms larger the epistemic process, persistently connected to measuring machines that harvest its past to predict the future, the acting, experiencing, flesh-and-blood body in the present is nudged to the periphery.<sup>9</sup> These images of the self, generated by media whose workings we cannot consciously follow, are now celebrated as the path to empowerment and self-knowledge (Figure 6.1).

AuQ4

Such undercutting or bypassing of human consciousness explicitly calls out the phenomenological gap we saw in the problem of recession. If the gap between secrets ‘out there’ and the limited reach of the knowing subject was to be mitigated through deferrals and stand-ins, here it is the tracking device that stands in the gap between the thinking subject and its trace-body. This gap is not an artefact of the specificity of new media, but inherent in phenomenology’s fundamental problem: how we derive meaning and sense about the world around us (including our selves as objects of sense perception). Thomas Sheehan (2014) has shown that the lessons of Heidegger’s phenomenology have often been confused by the unfortunate terminology of *Sein/Dasein* (or, even worse, being/Being). Despite the metaphysical overtones of the words, Heidegger’s problem is essentially a phenomenological one: What is the basis of intelligibility, of anything’s making sense for us? In this context, Heidegger presents – in clear compatibility with Merleau-Ponty – what is variously described as *Geworfenheit* (a ‘thrownness’), *die Lichtung* (the clearing), or even *das Offene* (the open):



Figure 6.1 *Mood+Quantify*, by Laurie Frick, CC BY-SA 4.0. “All that creepy surveillance will turn into an entirely new way to see yourself”, exudes the artist.

to think or act dis-cursively entails ‘running back and forth’ (*dis-currere*) between the thing and its meaning, or the tool and the task, as we check out whether this thing actually does have that meaning or whether in fact this tool is suitable for that task . . . things do not show up directly as what and how they are, the way they might to a divine intellectual intuition. Rather, they appear only to a mediating and dis-cursive intellect, one that must “run”, so to speak, from subject to predicate . . . and back again.

(Sheehan 2014, pp. 21, 126)

This gap, this distance between the experiencing I and the object of my experience, implies that our sense and meaning of the object does not inhere in the latter, and always retains a contingent and dynamic character. In other words, to render something intelligible is not to discover the *a priori* truth, but to take up the responsibility of becoming subjective. (Also see the analysis of *Geworfenheit* in Lagerkvist 2017.)

Now, this distance is itself not something we typically experience; when we perceive a vase, we do not experience our own perceiving, but have an impression of some direct contact with the object. And distance of another, analogous kind is masked by the phrase ‘I know . . .’, as we saw through Wittgenstein. In contexts of recession, the object in question is removed from lived experience, challenging the illusion of direct or verifiable knowledge.

The subject's constant, *recursive* efforts at meaning making, relaying back and forth, and his/her reliance on various mediative figures, become more pronounced. In response, the spaces beyond the gap – the blind spots, the black boxes – are leveraged to restore a sense of access or contact.

In other words, even as the gap persists in every act of sensemaking, our techniques for making things sensible work towards a pragmatic closure that helps us get on with living. (As Wittgenstein says: we use 'I know' to establish a particular certainty, as distinct from 'I think that' or other such propositions.) Self-tracking technologies constitute the newest promise to eliminate this clearing, providing a direct injection of raw data and objective truth that dispenses with the meandering and distorted recollections of the experiencing subject. In this respect, what I call recession and protrusion are not opposites; they are variant forms of a common process by which the uncertainties built into the way we connect with the world out there and the us in here is problematised, solutionised. And in doing so, what we mean by 'knowing,' what kinds of dependencies, reductions to standardised form, faith in intermediaries are employed, is being reconfigured.

To understand such 'reconfigurations,' let us return to the promises of self-tracking. What exactly is being changed at the level of the phenomenological relationship between the experiencing subject and the 'self' as object of his/her knowing? A clear contrast may be drawn when we consider some pre-modern techniques of self-knowledge, some of which also grapple explicitly with the consequences of technological intervention.

### Knowledge's subject

Monday evening, I ate a cabbage and an omelet. Tuesday evening, I ate one half of the head of a kid and soup. Wednesday, fasted. Saturday, I went to the tavern: salad and omelet, and cheese, and I felt good.

(Pontormo cited Pilliod 2005)

In January 1554, the Italian painter Jacopo Pontormo began to write. His topics: food intake, social calls, bowel movements, self-diagnosed psychological states. A few decades later, the physician and inventor Sanctorius of Padua would track his weight, his food (input) and excretions (output). Both would later be duly referenced as early precursors to twenty-first-century self-tracking (Swan 2013; Crawford et al. 2015, Urist 2015). Benjamin Franklin, with his thirteen virtues, also made frequent cameos in journalistic coverage of self-tracking (Kronsberg 2013). Self-trackers of the twenty-first century were not left wanting when it came to historical precedents. To narrow the vast historical scope, we might take the cue from the Quantified Self community's adoption of the old Delphic maxim – *know thyself* [γνώθι σεαυτόν] – and turn to Antique practices of self-knowledge. Here we are guided by Michel Foucault, who positioned these techniques in terms of

*parrhesia* and avowal – that is, techniques of truth-telling (Foucault 1986, 1997, 2001, 2011, 2014a, 2014b). Rather than take the vast difference in technological capacity as the primary point of comparison, I emphasise how the relation of knowing, and the technical mediation of the ‘gap’ therein, is managed across the two groups.

‘Know thyself’. γνῶθι σεαυτόν was immortalised through Plato’s texts on Socrates – and these texts made clear that to know oneself was a methodology for living. The subject would come to know oneself through the challenge of the speaking interlocutor, and in one’s dialogic, experiential encounter with that challenge. In *Laches*, Socrates is described as an excellent interlocutor – that is, a human *medium* and indeed ‘technology’ for others’ pursuit of self-knowledge. Notably, Socrates is qualified for such a function not due to his erudition, but a certain relationship he has cultivated between his actions and speech – that is, his conscious ‘I’ – and his *self*:

Laches does not say: Socrates is qualified to talk about courage because he is courageous. [Rather, he does so] because there is this symphony, this harmony between what Socrates says, his way of saying things, and the way in which he lives.

(Foucault 2011, p. 148)<sup>10</sup>

This harmony is encapsulated by the term *basanos* [βάσανος]. The term originally referred to a silicon-based ‘touchstone’ which the Greeks used as a base to test the purity of precious metals. Here, it is Socrates who functions as a touchstone for others like Nicias and Laches, cross-examining them with his questions. If contemporary self-tracking tests according to its (often pre-designed) algorithms and classifications, the ‘test’<sup>11</sup> here is intersubjective and dialogic. Socrates’ subjects are not *told* any clear answer; there is no informational transfer in that sense. Instead, there is a lived, communicative, asymptotic process by which the way one considers courage, the way one should approach such a problem, and the way one reflects upon oneself, is transformed.

This centrality of human experience is in marked contrast to modern self-tracking machines, whose promise of better self-knowledge is predicated on a certain externalisation of the knowing process away from the thinking, feeling subject. Socrates makes this point in *Phaedrus*, where he warns of the dangers of writing as technology. He argues that such a radical increase in external mnemonic objects will take away from people’s ability to remember ‘of themselves’. But what is remembering ‘of ourselves,’ anyway? Once again, the problem comes down to the role of experience and cognition in the lived present.

I cannot help feeling, Phaedrus, that writing is unfortunately like painting; for the creations of the painter have the attitude of life, and yet if you ask them a question they preserve a solemn silence. And the same may be said of speeches. You would imagine that they had intelligence,

but if you want to know anything and put a question to one of them, the speaker always gives one unvarying answer. And when they have been once written down they are tumbled about anywhere among those who may or may not understand them, and know not to whom they should reply, to whom not: and, if they are maltreated or abused, they have no parent to protect them; and they cannot protect or defend themselves.

(Plato 1899, p. 581 [275d-e])

Here, the chief sin of writing as a technology for instruction and knowledge is its ossifying quality: wisdom, unmoored from the process of becoming-wise, is abused through indiscriminate circulation. Socrates asks: do we not already know a better way to know and remember – “an intelligent word graven in the soul of the learner, which can defend itself, and knows when to speak and when to be silent”? In this formulation, writing’s production of stable, unchanging information is analogous to self-tracking’s reliable, autonomous facts: the solid, data-driven assertion that you are depressed, or that chocolate makes you more productive, that does not change and transform with the caprice of my own perception or mood. But it is precisely such stability that Socrates warns against.

This is not to say that technologies like writing invariably push us towards a non-experiential mode of knowing. A host of writing-based techniques for self-examination in late Antique and early Christian periods sought precisely to produce its own kind of dialogic, transformative experience. Here, as in *Laches*, the critical element in self-knowledge is not the factual content of the written text, but the experience of the writing subject. Seneca writes in *De Ira*:

“What bad habit of yours have you cured to-day? what vice have you checked? in what respect are you better?” . . . I daily plead my cause before myself: . . . I pass the whole day in review before myself, and repeat all that I have said and done: I conceal nothing from myself, and omit nothing: for why should I be afraid of any of my shortcomings, when it is in my power to say, “I pardon you this time: see that you never do that anymore”?

(Seneca 2012, Book III, XXXVI)

Foucault (1986, p. 61) notes that these sessions were held in an ‘administrative’ spirit rather than guilt-wracked penitence. The point was to produce a reliable and accurate – it would be anachronistic to say ‘objective’ – form of self-knowledge. And so, with such self-writing, we find: the temporal and procedural regularity of the examinations; the model of the pseudo-rational, controlling I; the ‘administrative’ attitude as an affective regulator. These elements were designed to substitute the figure of the interlocutor with a relationship where I, in a specific sense, become other to myself. The emphasis is squarely on cultivating a subject that is then in a position to properly

perceive and internalise their own truths. Again, it is not the specific content of the experience that is conserved across these cases, but the centrality of *human experience, and the reflective (conscious) subject*, to the process of knowing. The experiencing I – as *basanos*, as ‘administrator’ – acts as a clearing house for producing, curating and analyzing data about the self. It is this function that contemporary self-tracking attempts to bypass and undercut in its promise of automated objectivity.

In short, there is a certain contrast between the integral ideal, where the experiencing subject *avows* the truth of the self, and a distributed network, where the subject is constantly reliant on and empowered by externalised input. Self-tracking’s pursuit of the latter, which I have depicted in terms of protrusion, entails two specific shifts in the phenomenal process of ‘knowing’. First, the experiencing, conscious subject is *displaced*; as ‘knowledge’ increasingly becomes understood as the achievement of stable, objective fact rather than a subject’s reflective transformation, the various powers of judgment concentrated in the subject become challenged and dispersed. Second, the externalisation of this self-knowledge into discrete and standardised forms of data, from sleep scores to heart rate variability readings, means that the aspects of knowing and judging the self that was previously internal to the subject now become available for scrutiny, optimisation, rationalisation – by myself, by my employers (who are increasingly the consumers of new self-tracking technologies), and more. The subject now faces a wider frontier where his/her truth is open to another’s scrutiny, and indeed, is exposed to scrutiny *before* the conscious subject can catch up.

### Future-forward

Recession and protrusion describe two felt tendencies in which new technological knowing appears to the human subject. They write new chapters in the long history of how things other than ourselves come to tell us what we are. They reconfigure which aspects of what we call ‘knowing’ becomes externalised, available for prediction and judgment, reduced to quantification and populational correlation; which aspects increasingly pre-empt human cognition and prefigure it; which aspects are secured by collective faith in statistical reason or the still-enduring aura of the state.

To be sure, what we are charting here is at the order of instructions, pre-descriptions, fantasies. These technologies are, in many ways, *imaginary media* (see Kluitenberg 2011): imperfect and flawed objects that orient us towards a currently impossible end, and in doing so, open up a certain mediated access to that impossible. Their present function is to produce effects of the real that authorise their claims towards actually delving into the real, and thereby build an informational paradigm where the effect can ‘count’.

The stakes in such future-forwarding are clear. Recession and protrusion describe problems of ‘knowing’ technological complexity and knowing *through* complex technology. In a more immediate sense, these problems

manifest as widespread cynicism in the political sphere; the continuing fetishisation of exposing secrets (Dean 2001); the normalisation of machinic conditioning of everyday self-experience. In the longer term, as rhetoric, investment and invention continues towards the already labelled vision of the ‘data-driven society,’ these phenomena signal a progressive demotion of the human subject and his/her lived experience to the periphery of what is able to count as ‘knowing’.

## Notes

- 1 My use of ‘public’ thus aligns with what has been called ‘publicly oriented’ (Warner 2002) or ‘publicised’ (Habermas 1991): discourse intended for, and circulated to, a wider community of indefinite strangers.
- 2 Internal NSA memos leaked by Edward Snowden (see Maass 2015) speak of ‘analysis paralysis’ and ‘too many choices,’ and featured titles such as “Data Is Not Intelligence” and “In Praise of Not Knowing.”
- 3 Trevor Paglen (2009) has documented the locations which have been rendered ‘blank spots’ on the map – excepted from visual and cartographic capture for fuller withdrawal from public imagination. In the NSA’s case, we might point to the windowless skyscraper in the heart of Manhattan at 33 Thomas Street – quite literally blacked out in both its solid façade and in the black-striped redactions in declassified documents (Gallagher and Moltke 2016).
- 4 Glenn Greenwald, Snowden’s primary journalist contact, has refused to give a firm number; the closest he came was in an obscure New Zealand television appearance, where he referred to ‘hundreds of thousands’ of documents (*The Nation* 2014). Janine Gibson, the Editor-in-Chief of *The Guardian* US, claimed ‘over 58,000 files,’ but apparently only once – at an event at Columbia University (Bell et al. 2014). In fact, the figure 58,000 only appeared in mainstream news outlets as part of the false rumour that David Miranda, Greenwald’s partner, was detained in Heathrow with that number of documents (Greenwald 2015).
- 5 This fantasy is epistemized in Borges’ “The Library of Babel” (1998) – and of course in Jacques Derrida’s *Archive Fever* (1998).
- 6 A survey, addressing news habits in the first four days of the Snowden leaks (6–9 June 2013), suggested that 50% of the Americans followed the news ‘not too closely’ or ‘not at all closely’ (*Pew Research Centre* 2013); we might well expect public attention to have declined in subsequent weeks.
- 7 For example, consider the media coverage of Chris Dancy, widely labelled the ‘most connected human on earth.’ His symbolic position is anchored through descriptions of ‘up to 700 sensors,’ and the many gadgets extracting data from his body at all times (See Griffiths 2014; Kelly 2014; Wainwright 2014).
- 8 Analogously, consider Merleau-Ponty’s analysis (2012, pp. 94–96) of the double sensation phenomenon (i.e., the feeling of the right hand touching the left hand, or vice versa).
- 9 Comparing self-tracking to the familiar science fiction fascination for bodies that ‘jack in’ to another space, Rebecca Lemov (2015) describes “the curious status of the body that serves as the passively patient platform for a self’s ‘remote’ activity or as the hooked-up object of endless measurement and observation – or indeed as both.” Especially since the flesh remains a privileged source of information for self-tracking’s claim to knowledge, it seems more appropriate here to contrast the body primed for machinic communication (the trace-body) with the thinking, experiencing subject (including his/her embodied, lived sense of self).

- 10 In the original text, Laches says: “I have no acquaintance with the words of Socrates, but . . . have had experience of his deeds, and there I found him a person privileged to speak fair words and to indulge in every kind of frankness” (Plato 1920, p. 64 [188e]).
- 11 Foucault (2011, p. 145) notes that *basanos* is derived to give *basanizesthai* [βασανίζεσθαι], a verb for being examined or tested. The latter form appears in Laches, most clearly in the Jowett translation: “To me, to be cross examined [βασανίζεσθαι] by Socrates is neither unusual nor unpleasant” (Plato 1920, p. 64 [188a]).

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