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Self-Tracking

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> The reason you begin tracking your data is that you have some uncertainty about yourself that you believe the data can illuminate. It's about introspection, reflection, seeing patterns, and arriving at realizations about who you are and how you might change.

> —Eric Boyd, self-tracker

Over the past decade, the capacity to gather, store, and analyze individuals' physiological, behavioral, and geolocational data has come to affect a wide array of domains, from policy-making to policing, corporate marketing to health care, entertainment to education—a phenomenon known as *datafication*, or the conversion of qualitative aspects of life into quantified data (Mayer-Schönberger and Cukier 2014; Van Dijck 2014).[1] So-called big data fundamentalists embrace this development, arguing that large data sets, properly mined for correlations and patterns, will render up previously elusive insights, predictions, and answers to challenges of individual and collective life, replacing the need for theory and science and facilitating new freedoms and forms of self-empowerment (e.g., Anderson 2008; Goetz 2010; Topol 2012).

Taking a more skeptical stance, scholars in the emerging field of critical data studies emphasize the ways in which datafication has benefited governments, medical institutions, and corporations at the expense of citizens' and consumers' liberty and privacy. To characterize the kind of subject that datafication produces, some apply Gilles Deleuze's (1992) prescient notion of the *dividual* as an archive of traits, habits, and preferences that can be systematically extracted and marketed to, reshuffled, and compared with those of others.[2] Bernard Harcourt (2015, 157) gives the term a twist, proposing that *duodividual* better describes "the object of the algorithmic data-mining quest of the digital age"—which, he argues, is not so much to divide an individual into parts as to find its digital "match" or "twin." Many adopt the term *data double* (Haggerty and Ericson 2000) to name this digital doppelgänger, while for Rob Horning (2012) *data self* best describes the virtual versions of ourselves that arise through our engagements with online media. "Disembodied exhaust gives rise to a *data-proxy*, an abstracted figure created from the amalgamation of data traces," writes Gavin Smith (2016, 110). Dana Greenfield (2016, 133) discusses the "pixelated person" as "a subject ever divided into

finer granularity, but also whose partial datasets can be joined with others." Switching from the register of data to that of the algorithm, John Cheney-Lippold (2011, 165) describes *algorithmic identities* as "categories of identity [that] are being inferred upon individuals based on their web use," while Frank Pasquale (2015, 39) argues that we are treated as *algorithmic selves* or "set[s] of data points subject to pattern recognition engines."

For all the subtle nuances and asymmetries this array of neologisms captures about the processes of fragmentation, amalgamation, and aggregation through which selves are made objects of power in a digitally networked world, they are less helpful when it comes to grasping how selves inhabit, experience, reflect on, and act in their datafied lives. Starting from the premise that the datafication of life does not simply benefit powerful stakeholders, this chapter explores the case of digitally facilitated self-tracking, in which individuals monitor, quantify, and make meaning of their own "data exhaust" via sensors, analytical algorithms, and visualization software. In archived sequences of bitified life and their aggregate sums, they seek to bring to awareness the patterns and rhythms that define their existence and that might, without digital tools, remain uncertain forces below the threshold of perception. Here, data and data technologies are a means not just for governing others but for cultivating oneself; they are "technologies of the self" in Michel Foucault's (1988) sense.[3] The point is to "arrive at realizations about who you are and how you might change," the self-tracker Eric Boyd tells us in the quotation that begins this piece. "You set up this kind of external person or version of yourself, an avatar or companion—or something." Boyd echoes Foucault's (1998) characterization of ethics as "establishing a relationship of oneself with oneself": "You're ultimately setting up a framework by which you can establish *a relationship with yourself.*" This chapter is an attempt to better understand the workings of this relationship—a worthwhile endeavor, I suggest, if one wishes to effectively critique the broader dynamics of datafication and its discontents.

Self-Knowledge through Numbers

Nearly a decade ago in the San Francisco Bay Area, small groups of technologically savvy, existentially inquisitive individuals began to gather and reflect on what they might learn from data-gathering devices and analytical software about the mundane mysteries, dynamics, and challenges of their day-to-day lives—drug side effects, sleep disorders, and the association between diet and productivity. One at a time, they would show-and-tell their experiments in self-data, delivering ten-

minute presentations scripted to answer a trio of guiding questions: *What did you do? How did you do it? What did you learn?* After sharing their experiences, speakers would entertain questions and solicit feedback from those in attendance.

The group was anointed Quantified Self (QS) and, evoking the Delphic maxim "know thyself," given the tagline "self-knowledge through numbers" by cofounders Gary Wolf and Kevin Kelly, both former editors of *Wired* magazine. Through social media, especially Meetup.com, QS quickly established a presence in major urban areas across North America and Europe, drawing in newcomers through a website featuring videos of members' presentations, a message board where people could discuss tracking tools, and links to local meetups. QS gained national prominence in the US in April of 2010, when a long-form essay by Wolf, "The Data-Driven Life," ran as the lead article in the *New York Times Sunday Magazine*, a human figure collaged from graph paper, calipers, and folding rulers appearing on the cover. The article proposed that data could serve not only as a means of inspecting others' lives (as an actuary, policy-maker, or welfare officer might) but as a new kind of digital mirror in which to see and learn new things about ourselves.

"Humans have blind spots in our field of vision and gaps in our stream of attention," wrote Wolf (2010). "We are forced to steer by guesswork. We go with our gut. That is, some of us do. Others use data." In heart rate spikes or mood dips charted over time, individuals could better grasp how they were affected by seemingly trivial habits or circumstances than by relying on expert advice, guesswork, or even intuition. "If you want to replace the vagaries of intuition with something more reliable, you first need to gather data," Wolf insisted. "Once you know the facts, you can live by them." In this do-it-yourself formula for self-care, data-intensive technologies such as automated sensors, enumerative metrics, and statistical correlation were presented as tools for living a good life—imagined here as an ongoing project of archiving data so as to clarify uncertainties.

Most readers reacted negatively to the cover story, expressing disdain for the intensively tracked and monitored life that Wolf prescribed, diagnosing it as a "loss of human-ness." A woman from New Jersey asked in her comment: "When do we reach the point that all we're doing is logging data for a life that's not being lived?" A reader from Kansas wondered what of lived experience we might miss by dwelling on "how many licks it takes to eat a lollipop" while one from Philadelphia wrote that "we are not machines and no amount of data will make us so—or give us all the answers to the bigger mysteries." The general response was that an excessive emphasis on that which can be measured degrades existence, rendering the unquantifiable stuff of life as so much noise to be filtered out.

A similar sentiment ran through the stream of one-off journalistic profiles of self-trackers that appeared between 2010 and 2013 in the pages of *Forbes*, *Vanity Fair,* and even *Wired* itself, accounts

that typically portrayed them as caricatures of technological boosterism and American individualism (e.g., Bhatt 2013; Hesse 2008; Morga 2011). The cultural critic Evgeny Morozov (2014), relying largely on these pieces, launched an acerbic attack on the QS community, alleging that its abandonment of narrative reflexivity in favor of soulless numerics was both dehumanizing and politically troubling.

Academic critiques of self-tracking technologies over the past decade rehearse many of the arguments appearing in these more popular sources, articulating them with a focus on themes of discipline, normalization, exploitation, neoliberal subjectification, and dispossession. Self-quantification algorithms are said to "structure and shape possibilities for action" (Williamson 2015, 141) and are designed to reinforce certain behaviors and discourage others (Millington 2016; Schüll 2016); social norms become embedded in tracking devices' target numbers, presentation of scores, and gamified incentives (Depper and Howe 2017), such that a "numerical ontology" comes to suffuse everyday practices and "the ways in which people relate to their own bodies" (Oxlund 2012, 53). Self-trackers are depicted as enacting cultural values of entrepreneurial, autonomous behavior, responsibly managing and optimizing their lives as cogs in a neoliberal wheel (Lupton 2013, 261; see also Ajana 2017; Depper and Howe 2017; Lupton 2016; Lupton and Smith 2018; Oxlund 2012; Rich and Miah 2017).

While these critiques are justified and important, an emerging body of ethnographic research has begun to pull the curtain back on a more nuanced reality, challenging the idea that quantified selves are necessarily existentially impoverished, depoliticized, exploited, or victims of false consciousness. Quantification "rarely produces a definitive truth, a one-to-one representation of one's life or one's identity" (Sharon 2017, 114); instead, it involves a "situated objectivity" (Pantzar and Ruckenstein 2017) in which certain prior experiences, understandings, and shared expectations come to matter. Self-tracking is an aesthetic practice in which bits of the self, extracted and abstracted, become material for differently seeing and experiencing the self (Sherman 2016). Looking at personal data charts and visualizations can trigger critical reflection and raise new questions to pursue; the data do not displace or freeze but rather enhance and enliven self-narratives (Ruckenstein 2014, 80). In this sense, data serve as a kind of "transducer" that preserves only some qualities of the thing being measured such that "there is much room for people to maneuver in the imperfect translation" (Neff and Nafus 2016, 25). Self-quantification "sets up a laboratory of the self" in which "devices and data contribute to new ways of seeing the self and shaping self-understanding and self-expression" (Kristensen and Ruckenstein 2018, 2). In this chapter I approach QS practices as a form of experimentation in datafied subjectivity that is reflexive, sometimes noncompliant, and often

creative—with as yet undetermined individual and collective possibilities. This experimentation comes to the fore in the following scenes and conversations, which unfolded among participants in a two-day QS meeting in 2013.[4]

Seeing the Signal

After the four hundred-odd conference attendees had settled into their seats in the airy main hall of an Amsterdam hotel for a weekend of presentations and discussions, Gary Wolf took the stage to open the proceedings with a question: What exactly is a *quantified* self? While it was clear that "quantification" involved collecting and computing data about ourselves, "self" was a more ambiguous term. How to understand the self in quantified self? What happens to the self when we quantify it—when "computing comes all the way in"?

Robin Barooah, a British technology designer now working in Silicon Valley, offered his answer to that question in the first show-and-tell session following Wolf's address. Wearing his signature fleece jumpsuit, he used a mixture of data visualization and personal backstory to share how he had measured his mood. Less fleeting than emotion but not as entrenched as temperament, "mood is mysterious," he noted. Robin had been drawn to a QS approach to mood because he thought it could help him find nonintuitive, nonobvious connections between his life circumstances, daily habits, and mood. In 2008, a year he described as the most painful of his adult life, finding these connections was a matter of necessity rather than curiosity or self-experimentation. "I had to start examining my life and work out what to do."

He turned to look at the time line of data projected on the large screen behind him, which spanned four years and plotted two variables whose relationship to his mood he had been curious to explore: above the line, in blue, appeared the amount of time he meditated daily, which he had tracked with a timer; below the line, in red, appeared the number of entries he made each day in an online calendar he had set up to track his mood (see figure 48.1). The choice to plot *how many* entries he was putting in the journal rather than some measure of their semantic content (a rating of the relative turmoil or calmness expressed in his words, for instance) was deliberate; as with the variable of meditation minutes, it was a way to measure the practice of journaling and see what it might reveal about his mood. What he was surprised to see when he finally (years later) plotted his data on minutes meditated and entries written was the uncanny correspondence between those two variables: "The

coupling between the two lines should be very clear," he told us. On any given day, more minutes of meditation were mirrored by more journaling, and vice versa. The tight correspondence gave his time line the look of a Rorschach inkblot turned on its side, its top half in blue and its bottom half in red.

Robin drew the audience's attention to particularly volatile moments in the moving averages along the time line: "This dip is where I was flying a lot"; "This trough with no color at all is a time of crippling anxiety and depression." Travel and major life events, including the death of his father, decoupled his otherwise correlated routines or lessened their symmetry. He pointed out a spot on the time line with a large glacier of red activity beneath it and explained that a new psychopharmacological regimen had spurred a period of intensive journaling. "A massive amount of narrative began to unfold at that time," Robin remembered. The color red fell off his time line entirely in November 2012, at which point the intensity of his anxiety had for the most part resolved, and he no longer felt "the same impulse" to write in his journal.
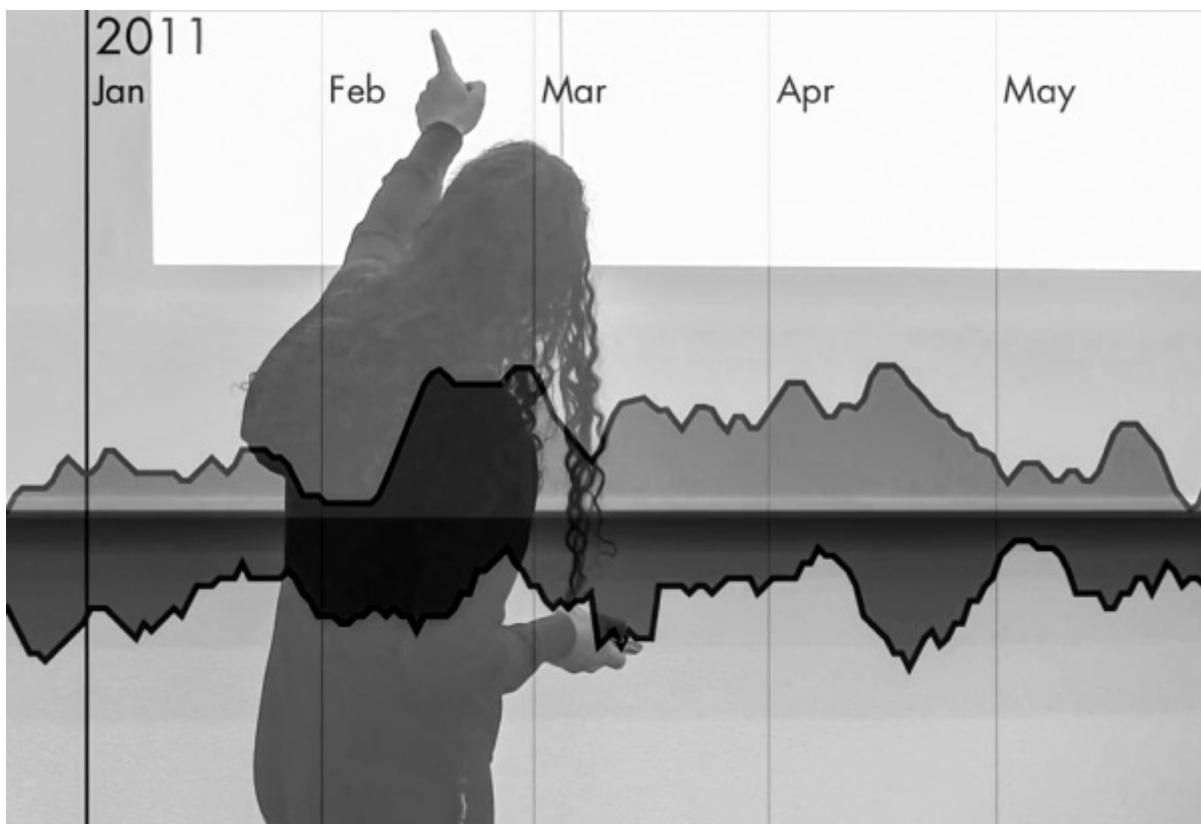
Figure 48.1

Robin Barooah on stage at QS 2013, explaining his data time line. Screenshot from Snyder (2013). Photograph by author.

Contemplating the visualization, Robin reviewed what he had learned. The overlaying of disparate tracking routines, though not a direct representation of his mood, was profoundly revelatory: "It's a kind of signal, one I hadn't seen before; it reflects my activation level, my energy level, my ability to

engage with the world. . . . It's there as an envelope around my whole life, affecting everything I'm doing." Being an engineer, Robin uses the word *signal* to describe information transmission—in this case, the conveyance of energies that powerfully affect his lived experience into a form he can perceive and assimilate. The signal, communicated visually in a shifting silhouette of numeric values, is "beyond words. . . . It's this very deep thing that ultimately becomes thinking and becomes action."

Discussing the Data

The next day, in a smaller "breakout session" dedicated to the theme of data and identity, Robin elaborated on how (data-)tracking turns into action and thinking. "Tracking isn't additive—it's *subtractive*: you work on some question about yourself in relation to this machine-produced thing and, afterward, you're left with a narrower range of attributions you can make about your behavior or your feelings; *you have eliminated uncertainty* and gained a kind of liberation—you can move on with your life, with a new perspective."

Joshua, a bearded venture capitalist in his early thirties from California, agreed that the conversion of qualitative into quantitative could help one to exit uncertain impasses: "The self can be very overwhelming as an integrated, whole thing. By doing QS, you can *disaggregate* various aspects of self, work on just those aspects, maybe let them go, put them back in. . . . It takes an incredible burden off you when you can take these small slices out and say, *all that other stuff is complicated, let's just look at this*." This extractive, bitifying process was a form of self-narration, he concluded, and we should call it *quantitative autobiography*.

Joerg, a German activist with a background in business and philosophy, further specified the term *narrative* as it pertained to self-quantification: "Numeric expressions of ourselves are inherently *syntactic*, not *semantic*." The power of self-data lay in the relational grammar that emerged across their data points—not in the authorial intentions of "transcendent phenomenal selves" storying themselves forth. His position at once echoed and countered Morozov's criticism of self-quantification: yes, it departed from traditional humanist modes of narrative—but that did not make it *dehumanizing*; rather, it was vital, enlivening.

An American anthropologist in her thirties, employed at a leading technology firm, suggested that art, rather than narrative, might be a better metaphor to describe what selves do with their data. "Maybe tracking is like *sketching* yourself," still another participant speculated. "You have to fill in the details, it's a kind of self-portrait, an art." Robin, from his seat along the side wall, nodded in agreement. He remarked that he had once characterized his tracking as a kind of "digital mirror" but

now felt the metaphor was inaccurate "because mirrors represent a whole, projected image—which is not what we get from our data bits." Robin had come to prefer the metaphor of self-portraiture: "What we're doing when we track and plot our data is focusing in on one part of our lives and slowly building up that portrait as we collect data on it." The session moderator pressed the group to further specify the metaphor. If not photorealistic, was the portrait expressionist? Impressionistic? Pixelated? "I think it would have to be an algorithmic mosaic, with shifting composition, color, and patterns," Robin suggested. "And the portrait is ever-changing." "It's continuous," Joshua chimed in. "We are all continuously selfing—at all times we have to make decisions about what to take as relevant points."

Joerg wondered about the risk of self-*un*making—that "if you start breaking yourself down piece by piece, it could lead to non-self, disaggregation, seeing ourselves as a big stream of data." Robin thought not: "If self-quantification, breaking ourselves down into bits, enables us to create new experiences of ourselves, then those experiences are gateways to *new degrees of freedom* in how to act." The kind of portraiture at stake in the quantified self, he suggested, "allows you to imagine new types of self and move in new directions; you are no longer trapped in a limited set of pathways." Self-tracking, it seemed by the end of the discussion, was a means of liberation not only from the impasses of uncertainty but from those of certainty as well.

Askesis 2.0

At the close of the 2015 Quantified Self summit, held in San Francisco's Presidio, longtime QS show-and-tell organizer Steven Jonas gave a short tribute to the community's "practice of self-examination." He began with a quote from Sarah Blakewell's (2011) book on the sixteenth-century French philosopher Montaigne, whose work she characterized as "capturing that distinctive modern sense of being unsure where you belong, who you are, and what you are expected to do." What distinguished Montaigne's sometimes "meandering and digressive" essays, Jonas went on, was their probing honesty and self-reflection. "Montaigne's philosophical inquiries were not expansive and universal; they were small." Their resonance for the reader derived from their limited scope and personal experience. Likewise, QS show-and-tell talks are "small, honest, and vulnerable." They are presented by individuals who are "trying to figure out who they are and what they should be doing." In them, "we can see ourselves and figure out how to navigate our own place in a huge, immensely interesting but very confounding world."

As the media scholar Mark Hansen (2014, 196) suggests, "The specific affordances of technical data gathering and analysis" can be used "not solely to anticipate our tendencies and susceptibilities

for purposes of manipulation and exploitation, but also to inform us about these tendencies and susceptibilities and let us act on and in virtue of them." As Robin told us earlier, archives of personal data bits can be "gateways to *new degrees of freedom* in how to act." The kind of freedom he invokes here is not the freedom of autonomy or self-mastery but rather, as Colin Koopman (2016) has characterized the philosophy and life of William James, "freedom amid uncertainty as the work of self-transformation." James's ethics of self-transformation was "not only a means for adjusting to modern chance," notes Koopman (2016), "but also an energy for resisting its normalization." It involved "instigating alternatives, provoking differentia, becoming undisciplined and even undisciplinable" (43). Likewise, for self-trackers metrics can serve for "detouring from prescribed courses, exploring limits, and defying rules" (Sanders 2017, 21).

Rather than dismiss self-quantifiers—as life avoiding and robotically inclined, as victims of data capitalism and its surveillance apparatus, or as symptomatic figures of neoliberal subjectivity and its self-mastering, entrepreneurial ethos—we might regard them as pioneers in the art of living with and through data. Their experiments in "quantitative autobiography," "continuous self-portraiture of shifting composition," and computational-graphic analyses of time-series data to detect signals "beyond words" can be understood as an important accompaniment to the scholarly neologisms that have proliferated to describe the fragmented, alienated, and exploited selves of the datafied world. Inviting digital tools and epistemologies to partake in and supplement their self-transformational ethics, they gain new methods for apprehending, knowing, and inhabiting their lives—and, potentially, for resisting, repurposing, and rendering uncertain the big data proxies,[5] behavioral categories, and governing logics that seek to drive their conduct down certain pathways.

Notes

1. This essay draws from Schüll (2018; 2019) and adapts two opening passages from Ruckenstein and Schüll (2017).

2. It should be noted that a different conceptual trajectory for the term *dividual* exists in anthropology, where it is used to describe forms of selfhood that are not based in Western dualisms and that are constituted by social relations rather than discrete units (e.g., Strathern 2004).

3. Michel Foucault (1988, 18) distinguished between technologies of power, "which determine the conduct of individuals and submit them to certain ends or domination, an objectivizing of the subject," and technologies of the self, through which individuals perform "operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality." The latter take a literal, material form in the assemblages of sensors, analytical algorithms, and data visualizations that constitute contemporary self-tracking practices.

4. This chapter draws on ethnographic research conducted between 2013 and 2017 at QS meetups in Boston and New York as well as three annual conferences.

5. For more on the work that proxies perform in the world of big data, see chapter 44 of this volume by Chun, Levin, and Tollmann.

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