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Statistics of the Self: Shaping the Self Through Quantified Self-Tracking

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STATISTICS OF THE SELF:
SHAPING THE SELF THROUGH QUANTIFIED SELF-TRACKING

by

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Introduction

"I staggered home with my flashlight knowing that I'd advance to sixty-five thousand, and that there will be no end to it until my feet snap off at the ankles. Then it'll just be my jagged bones stabbing into the soft ground. Why is it some people can manage a thing like a Fitbit, while others go off the rails and allow it to rule, and perhaps even ruin, their lives?" –David Sedaris, "Stepping Out: Living the Fitbit Life," The New Yorker

An interesting phenomenon is building in Western society; with the popularization of wearable tech such as the Fitbit, there is a growing trend of self-tracking. As Sedaris articulates in his article, for some this trend seems entirely positive—having a tool to track steps lends itself towards greater mindfulness of physical activity. Others, such as Sedaris, find themselves consumed by the game. "When I hit thirty-five thousand steps a day," recalls Sedaris, "Fitbit sent me an e-badge, and then one for forty thousand, and forty-five thousand" (Sedaris, 2014, "Stepping Out"). It appears that particular people are distinctly drawn to the process of self-tracking, and thereby behavioral quantification, who actively pursue a life of self-monitoring. These are the people whom this thesis will study, striving to understand how they analyze themselves and what this means within the larger framework of today's Western society.

Humans have quantified their behaviors for centuries—a classic (albeit relatively modern) example is weight tracking. Weight is a numerical identity people assign to themselves to represent their mass as experienced on Earth. This value fluctuates as the person ages, and thus provides them with information about themselves. Yet this information is not merely personal, it acquires meaning as people compare their weight data with one another. Through comparison against the average, "normal" and "abnormal" weights come to exist. Understanding our physical states is thus intimately intertwined with the numerical values that our culture has agreed to assign to them.

Essentially, our culture is already imbued with ubiquitous practices of quantification, which are used to track changes in the self over time. While journaling and other forms of written-self expression can likewise be considered "self-tracking," quantification facilitates an analytic component that the written word convolutes. As illustrated by the weight-tracking example, quantification readily enables comparisons between people, and developments over time in numerical data can be graphically expressed or otherwise coherently analyzed. People are drawn to quantified self-tracking for more than its comprehensibility—our culture also promotes quantification because it has become associated with values of scientific knowledge (Porter, 1953, 3). Western society tends to view scientific methodologies (primarily in the sense of striving towards objective observation, experimentation, and analysis) as the surest path towards "truth." It is largely accepted that language is inherently influenced by culture, as it only possesses meaning for those who speak it. Mathematics, on the other hand, is often touted as the "universal language." Although there are many different numbering systems across cultures, Arabic numerals (used by the Western world) have largely come to dominate scientific fields. Because of this, numbers are often viewed as neutral, intercultural (or cultureless) entities.

As assigning numerical identities to personal states (such as health) is already normalized in Western culture, what distinguishes overt, technologically centered, self-tracking practices from practices of the past? Without his Fitbit "walking twenty-five miles, or even running up the stairs and back, suddenly seemed pointless," writes Sedaris, "since, without the steps being counted and registered, what use were they?" This specific, focused form of accumulating numerical data for the sake of tracking changes

plays a particular role in the lives of those who choose to fully engage with it. It informs why and how they interact with the world around them. For Sedaris, it gives him a reason to walk until his "feet snap off at the ankles," while for others, it provides a means of restructuring how they approach emotions. A community has formed online for people of Sedaris' ilk; those who find self-tracking productive, if not necessary, to conducting their lives in ways that they believe maximize their experiences and/or potential. This community exists via a website, QuantifiedSelf.com (created and moderated by QS Labs LLC), which will serve as the central site of empirical research within the scope of this thesis. Those who consistently engage in self-tracking practices and work to maximize how such practices shape their lives is still a relatively small population. However, self-trackers, (henceforth interchangeably referred to as quantified selfers), see their practices as not merely a limited trend, but a growing global movement. In fact, the QuantifiedSelf.com "About" page describes QS Labs, LLC as a "California-based social enterprise that supports the *Quantified Self movement* worldwide" [emphasis added]. This thesis will examine self-proclaimed members of this movement as they discuss their methods and strategies on the forums of QuantifiedSelf.com. Their discussions shed light on what theories lie behind the utilization of quantification and self-tracking as means towards self-improvement, which can perhaps be used to elucidate the larger picture of where quantification practices are leading Western society.

Over the course of five chapters, this thesis will explore conceptualizations of the "self" as practiced and theorized by quantified selfers, building into a discussion on how this understanding of being might be expressed in larger society. The first chapter, a literature review, will briefly outline all of the considerations addressed by the central

chapters. It will start by tracing the history of theories of the self, followed by a modern view of the self (the reflexive project) that is applicable to analyzing the Quantified Self movement. It will then discuss attractions to objectivity and the allure of numerical expression. This will lead into an exploration of today's societal push towards quantified tracking, and introduce the question of how communities could form and societies would run given a numerical understanding of the self. The following chapter, "Welcome to Quantified Self Labs," will introduce the site of the serious self-tracking sub-culture of Western society, the quantified selfers. This chapter details all of the features of QuantifiedSelf.com. Chapter Three, "Tracking to a Happy Self," explores the role of self-tracking within the framework of the reflexive understanding of self introduced in Chapter One. The following chapter, "Not a Screw Loose," utilizes the ideas developed in chapter one to unpack the underlying assumptions about the self that are at play in the practice of self-tracking. These assumptions include the notion that the self is an entity that can be studied, and further, that it can be manipulated. Finally, "Knowledge is Power: Control in(g) the Quantified Self," ties the theories of the self brought to bear by the preceding chapters to the motivations behind the desire to understand the self quantitatively. It explores in what sense this understanding of being could be concerning, making use of the works of Donna Haraway, John McDermott, and Martin Heidegger to predict how these concerns may play out, or have already begun to rear their heads, in modern society.

Chapter 1
Literature Review

"I knew this was my number location of 'this is not okay.' It's helpful to be aware of when we deviate from the routine so we give our body the chance to regulate." –self-tracker on the utility of numbers to evaluate physical experience

The twenty-first century has come to be known as the Information Age, as data seems integrated into every facet of life. Participating in this digital society, data is constantly created through email usage, website visits, cellphone minutes, social media connections, and much more. Many behaviors are associated with numbers, and numbers inform big data companies how best to advertise to their target audiences. Alternatively, they can work towards our personal advantage, helping us to be more efficient and productive. The latter concept underlies the Quantified Self movement. Those dedicated to the movement are a collection of people invested in self tracking; everything from blood pressure to emotional states can now be quantified, monitored, and graphically displayed by convenient sensors and smart phone applications. These quantified selfers are concerned with all varieties of self-data production, and are utilizing these numbers to teach themselves about themselves for the sake of behavioral optimization.

The Modern Self to the Self of Today

To understand today's conception of the technology-intertwined-self, perhaps it is useful to look at the ideological backdrop from which it grew: the Modern self. As Charles Taylor claims in his book, *Sources of the Self: The Making of Modern Identity*, "much of what we live today consists of reactions to [Modernism] and, more, of the dissociation and prolongation of the strands it united" (Taylor, 1989, 482). The early twentieth century was well entrenched in mechanical industry. The pervasive industrial rationale that touted efficiency and process above all else led to a yearning for a world

unobstructed by mass society, decay of community, and standardization that technological innovation had brought (Taylor, 1989, 456). According to Taylor, this created a turn inward that imagined a self that was less stable and more complex than the artistic self of Romanticism. One method of achieving satisfaction in this decentered self-conception was to embrace the industrial civilization, "by making it an instrument of untrammelled transforming will" (Taylor, 1989, 469). In the effort to re-center the self, these modernists sought to force the world to submit to individual creative power through technological means. Art and writing took a reflexive turn, focusing on the artist or the creative process that informed the work. And this is where the Quantified Self movement may be situated—in a form of reflexivity that employs technological tools and processes in order to analyze the self.

The Self of the Information Age

The self of today can be construed as a "reflexive project" in which one builds identity through an intentional monitoring geared towards self-improvement (Giddens, 1991, 75). By this logic, self and identity are not determined by any predestined soul or nature, but created through a self-interrogative process. This takes the Modernist idea of the self and—without viewing the self as a singular, cohesive unit—turns this multiplicity of existence into something which can be grown and cultivated at will. Rather than a fractured self (denoting a once whole being shattered into many parts), the self of the information age is a singular reflexive project comprised of many aspects. This modern self is determined by lifestyle—which in today's Western cultures has more mobility than the societal structures of the past (Giddens, 1991, 81). This self-made self has been termed by Postmodernists as "autopoiesis," which describes living beings by their

circular structures that work to create the organism and retain its identity (Hayles, 1999, 136). Autopoiesis considers reality to be contingent on the experience of the observer (and thereby rejects the idea of universal objectivity which we will return to later), and some strands of thought have introduced the notion that the autopoetic organism is a "fast, responsible, flexible, and self-organizing system" that constantly reinvents itself (Hayles, 1999, 158).

This notion of an all-pervasive reflexivity of the self, it would seem, is at the heart of the Quantified Self movement. Within this framework, self-help and self-therapy are grounded in continuous self-observation (Giddens, 1991, 71), and just like the Moderns, today's self-trackers believe in the power of technology to develop the self. While observation of the self is not new, this modern iteration's emphasis on the necessity of quantification differentiates it from prior self-monitoring. As Gary Wolf, a writer and editor for *Wired* magazine and a co-founders of the self-tracker discussion site QuantifiedSelf.com stated, "Instead of interrogating their inner worlds thorough talking and writing, [quantified selfers] are using numbers" (Wolf, 2010). In other words, through using external technologies to track data, quantified selfers are allowing technology to perform the self-reflexive process for them. Self-trackers are "looking to understand their strengths and weaknesses" in order to "uncover potential they didn't know they had, but in doing so, they are accepting that their technologies have a certain agency in how they behave." Wolf further states that we are already "analyzed by machines in ways we can't always anticipate or control" through "search histories, friend networks and status updates." However, he also claims that gathering data on ourselves for our own use is a way of reclaiming agency (Wolf 2010). Creating data structures that

model our thoughts, feelings, and behaviors can be seen as a way of providing insight into ourselves that we could not previously analyze with such ease. Quantification can be seen as a means for simplifying highly nuanced "data" of daily experience, and tracking as a way in which such data can be comprehensibly analyzed over time. By gathering data on themselves, self-trackers are developing a new understanding of being that is reliant upon numerical representations of the self. In many ways, the streamlined simplicity of this form of representation appears to provide a more direct avenue towards self-improvement.

The Self as an Instrument

"For better or worse, we are data-generating machines" (McFedries, 2013). By paying a bill, placing a phone call, weight tracking, or adding a new friend on Facebook, a set of numbers is being created. From these numbers, a person can recalibrate how they understand and perform their life. In this way, the improved self as sought by the self-trackers can be understood as a finely calibrated instrument, in which the body is "part of an action system rather than merely a passive object" (Giddens, 1991, 77). The autopoietic body is thereby cultivated and *created* through the practice of bodily regimes (Giddens, 1991, 100). Quantified Self technologies take advantage of this. Practically all that pertains to the body and mind can now be quantified—at least to a considerable degree: "Sleep, exercise, sex, food, mood, location, alertness, productivity, even spiritual well-being are being tracked and measured, shared and displayed" (Wolf, 2010). By the process of intentional self-quantification, a quantified and technological approach to understanding selfhood comes into being. While this perhaps appears to be merely the most efficient available path to self-improvement—especially given the modern tracking

technologies that make self-monitoring so simple—some aspects of enabling numbers to guide self-understanding can become highly problematic.

In their work, "Curves to Bodies: the material life of graphs," Joseph Dumit and Marianne de Laet argue that statistical operations have agency in their creation of normative expressions. For example, a graphical display of healthy calorie intake versus age (and separated into genders), is a technology that informs users how much they "ought" to eat and exercise in order to be "healthy." By quantifying what it means to be in a "healthy" range, these graphs "perform idealized, typed bodies and selves" (Dumit and de Laet, 2014, 73), thereby participating in the users' understandings of themselves. The user becomes 'unhealthy' *by* the standard of the graph, which is purportedly based on the "average" woman or man. This "average" is necessarily based on a segment of the population that someone along the way decided was adequately representative of the whole. Simply by utilizing the graph, a person becomes reflexively engaged with their performance of self, since within an autopoietic system, the "act of observation necessarily entails reflexivity" (Hayles, 1999, 142). To apply this technological agency to the gamut of Quantified Self technologies makes the idea of a self-tracker as a "body hacker" (McFedries, 2013) even more powerful. For in believing that these technologies provide numerical representations of ourselves that are reported '"truthfully' from otherwise immanent and invisible processes" ((Kjærgaard and Sorensen, 2014), we are allowing them to provide the reflexive process of our self creation.

The Scientific Self and Good Objectivity

Perhaps the most notable feature of how the self is being construed by self-trackers is that it must be understood "objectively." If we are the reflexive project of our

observations, our very nature is the result of constant self-analysis. It seems paradoxical to try to understand the self in a manner that necessitates the reduction of individually pertinent biases of the thoughts and feelings tied *to* the self. However, in societies that prioritize scientific methodology as the most reliable means of exploring reality, the idea of "studying" the nature of the self becomes problematic. For if the idea of humans as inherently autopoietic is to be scientifically validated, it has to be "insulated against subjectivity" and have "potential for rigorous (preferably mathematical) formulation" (Hayles, 1999, 133). Digitizing the self arises as the obvious answer; "more information, better processing, improved data mining, faster connections, wider bandwidth, stronger cryptography—these are the answers" to the conundrums of the Information Age (Brown and Duguid, 2000, 15). If the self can become numerical, reflexivity becomes simple—view the provided data, adjust behavior accordingly, and optimize results. To eliminate the subjectivity inherent in traditional data acquisition (such as constantly, discursively asking the questions "What to do? How to act? Who to be?" (Giddens, 1991, 70), a multitude of tracking devices have been introduced that produce supposedly objective numerical values. But why would is the removable of subjectivity from understanding the self desirable if "objectivity is the suppression of some aspect of the self, the countering of subjectivity" (Daston and Galison, 2007, 36)? To understand the self, must the self be *repressed*?

In short, yes. Understanding objectivity as an epistemic value did not develop until the nineteenth century when a "will-based scientific self was built up, reinforced—through concrete acts, repeated thousands of times in a myriad of fields in which observers struggled to act, record, draw, trace, and photograph their way to minimize the

impact of their will" (Daston and Galison, 2007, 38). This cultural shift within science has extended into other areas of knowledge, including the field of self-knowledge creation. From this, it follows that if the self is to be understood, scientifically (and supposedly thereby accurately), we must learn about "self" from an objective source. And therefore, systems and machines have been developed to track everything from blood pressure to emotions (As of 2012, several companies and academic labs were working on tools to measure emotion (Swan, 2012, 225)). Of course, as Dumit and de Laet are careful to point out, the technologies used for such quantitative measurements are imbued with the subjectivities of their creators who decide how to quantify certain traits and how best to analyze or normalize them. So instead of placing trust in ourselves, trust is passed to the normative and universalizing power of information technologies (Brown and Duguid, 2000, 15).

Number theory

"We tolerate the pathologies of quantification — a dry, abstract, mechanical type of knowledge — because the results are so powerful. Numbering things allows tests, comparisons, and experiments. Numbers make problems less resonant emotionally but more tractable intellectually" (Wolf, 2010). In short, people are willing to rely on numbers over their own sensibilities because numbers are simple and useful. People have the "tendency to value ideal-types over variation; to figure three-dimensional things in two dimensions; to rigorously categorize" (Dumit and de Laet, 2014, 73), so numerical interpretations of self, in many ways, seem simplifying. Society assigns ranges and expressions for "normalcy" "health" and "happiness" and if the numerical data markers

of individuals fall within such predetermined ranges, they can consider themselves safely within their categories.

Furthermore, numbers can provide a sense of unity as our culture increasingly opts for interacting over digital mediums instead of face-to-face interpersonal communication. Not only can "greater numbers of data flows" enable the analysis of phenomena that are both "hypothesized to be related and those seemingly unrelated" (Swan, 2012, 238) within individuals, but they also can connect people to a greater online community. Wolf provides the example of a Quantified Self tool that tracks emotion, and proceeds to share this accumulated data with friends who can reach out to the person when they see a dramatic change (Wolf, 2010). Similarly, many calorie counting and fitness devices have aspects that allow the users to communicate amongst each other and encourage each other's progress. More and more, Quantified Self technologies are connecting data streams to various social networking sites, so that the data can be used "in a more fruitful manner" (Kjærgaard and Sorensen, 2014). In other words, the technologies are becoming more than a self-analytic tool, they can be integrated into our social lives as well. Assuming some of the data introspectively accumulated about is born out of relationships, now there are communities *within* the technologies that enable friends and relations access to the data itself. Numbers, unlike emotive expressions, are exactly transferrable; people can share the data of their lives and expect an equally "infallible" understanding of the trends and tendencies that have been extrapolated into "solid and stable truths" (Dumit and de Laet, 2014, 73).

From Quantification to Capital

So where is data-tracking leading? In the immediate future, towards a world of highly personalized advertising. In contrast to the reflexive motivation self-tracking, corporate data mining practices are a capitalistically and politically motivated push towards the quantification of individuals. It is well-known that search engines track individual histories so that sites such as Facebook can feed its users advertising that is relevant to their interests, and that large corporations know just how valuable this information can be. In the health sector, quantification is gaining even more monetary attraction, as companies such as Qualcomm and Nokia have issued prizes for the best handheld device for monitoring health conditions in real time (for $10 million dollars by Qualcomm) and an innovative sensor technology for improving consumer health ($2.25 million by Nokia) (Swan, 2012, 218). The technological monitoring of patients was projected—as of 2012—to be a market worth $21 billion by 2016, $12 billion more than in 2011 (Swan, 2012, 223).

But isn't this is all for the betterment of universal health that will transform the industry into a more equitable force? "Despite talk about modern computer technology being necessarily democratizing," authors of *The "Virtual Corporation" and Army Organization,* Fukuyama and Shulsky argue, "a number of important productivity-enhancing applications of information technology over the past decade or two have involved highly centralized data systems that are successful because all their parts conform to a single architecture dictated from the top" (Brown and Duguid, 2000, 29). That is to say, technology encourages mass centralization of information power (as is exemplified by the success of big data giants such as Google and Amazon), even as the

subject matter becomes more personalized. As the popularity of quantified self technologies grows, the product of information that these technologies produce will likely decrease the amount of choice individuals have in choosing how and when their data is produced, or who has access to it. Take the smartphone for example: through various apps, geographic location trackers, and Internet access, users are creating substantially more information about themselves, including those who would not classify themselves as "self-trackers." And yet, the smartphone has become an "essential" item for many Americans: as of 2012, 78% of the U.S. population owned one (Swan, 2012, 226). Though the penetration of most quantifying technologies may seem unnecessary in their present state, there may come a time in which it would be hard to imagine life without them.

The Age of Cyborgs

Many believe that this new life, imbued with self-reflexive technologies, will look very different from non-data-centric societies of the past. In his article, "The Data Driven Self," Wolf introduces self-trackers with a striking statement: human "weaknesses put us at a disadvantage. We make decisions with partial information. We are forced to steer by guesswork. We go with our gut. That is, some of us do. Others use data" (Wolf, 2010). With the expressions of such sentiments, one might conclude that the Quantified Self movement is pushing towards the elimination of human weakness. It seems that signs have already begun to appear; for instance, stretchable electronic tattoos are being developed that have the capacity to continuously monitor vital signs and wirelessly transmit their information (Swan, 2012, 222). Science fiction is filled with stories of humanoid cyborgs packed with mechanical gadgetry that gives them superhuman

abilities. Perhaps self-quantification is the first step towards mechanizing our humanity. It has already been argued that technologies have a certain degree of agency just by nature of how data is normalizing, and that they are becoming integrated into our social lives. “The ends of information, after all, are human ends,” Brown and Duguid claim, “and the logic of information must ultimately be the logic of humanity” (Brown and Duguid, 2000, 18). But what happens when the ability of technology is relied upon to create and present self-reflexive information?

Chapter 2
Welcome to Quantified Self Labs:
An Exploration of the Home Site of the Quantified Self Movement

"I like to work out when I can quantify it and look at it. I've started swimming again since I can track it." –self-tracker on the motivating force of self-tracking

Self-tracking is a growing phenomenon that seems to bring with it a culture of its own. Though self-monitoring may sound as though it would be a practice highly centered on the individual, communities of self-trackers have developed that share and improve the mechanisms of quantitative self-improvement together. By engaging in dialogue with one another on the most efficient, accurate, and useful methods for self-tracking, these quantified selfers are developing methods of understanding and utilizing numerical representations of the self down to a science. A popular space for self-trackers to collaborate is via the website of Quantified Self Labs, QuantifiedSelf.com. Through this site, people engaged with the Quantified Self movement as self-trackers, app developers, psychologists, exercise-enthusiasts, and truly anyone else curious about the process of self-monitoring can connect to others who share interests. Through such inclusive collaboration, QuantifiedSelf.com has developed a culture of its own that actively participates in perpetuating the belief that we can improve ourselves through self-tracking.

QuantifiedSelf.com

Guests and members enter the site, greeted by a dark blue QS logo comprised of tiny dots followed by the bright blue and orange tag line: Quantified Self: self knowledge through numbers. The front page is a simple blog, contributed to by members of the site and the QS Labs team (Gary Wolf, Kevin Kelly, Ernesto Ramirez, Kate Farnady, Marcia Seidler, and Joshua Kauffman). Gary Wolf and Kevin Kelly, prior editors of *Wired*

magazine, cofounded QS Labs to create an online community of users and makers of self-tracking tools. This California based team states that its "aim is to help people get meaning out of their personal data," and quantifiedself.com makes that possible. Offering a variety of ways for self-trackers and personal data-collecting device developers to interact and share material, the site has become a space for everything from thought experiments to start-up advancement in the world of self-analytics. The main components include Forums, Meetup (a tool for creating and expanding in-person involvement between self-trackers), and a daily blog—conveniently located on the home page.

The Home Page

Today, the blog post lists the "Meetups This Week" happening in Cambridge and London (England), Lansing (Michigan), Zürich and Lausanne (Switzerland), and Groningen (Netherlands), accompanied by pictures of a similar Meetup that occurred in San Francisco. Scrolling through the ten blog posts occupying the home page, the reader will come across videos, graphical displays of fitness data and marketing analytics, reading lists, and the pictures of the newest wearable tech. To the right of the blog post, is an advertisement for the 2015 Quantified Self Conference and Exposition to be held in San Francisco above an invitation to subscribe to "What We're Reading." A subscription provides subscriber with a curated weekly list of articles, videos, and visualizations. Below this, is a link to information on the QS Access App (featuring an image of a heart → the QS logo). This app is simply a table to help the budding self-tracker take note of their behaviors on an hourly or daily basis. This is followed by an invitation to "Make a Sparktweet," essentially a data visualization of what users self track that can be automatically tweeted to their Twitter feed. One user commented, "Love this! Tweeted

my Everylog mood log for the last ten days – warning all to avoid me on the big dips, which are now easily broadcast." The following two links in the side bar are guidelines for how to integrate certain types of data into other formats. "Map Your Moves Data" provides different options for visually mapping your movements as recorded by the app "Moves," while "How to Download Fitbit Data" gives step by step instructions for easily transferring this Fitbit data onto a Google Spreadsheet. Below these links lies an extensive list of existing QS Meetup Groups.

Meetup Groups

Prefer to discuss your experiences with fellow trackers in person rather than through a forum post? On the sidebar of the main page, there are "Meetup Groups" listed by international regions delineated as West and East USA, Australia and New Zealand, Latin America, Canada, Europe, and Asia. Want to find a group more specific to your area? Quantifiedself.com has a page to help find quantified-selfers in specified locations with an interactive map. With over 41,600 members in 128 cities across 40 countries, there are almost 200 groups internationally—a number that is only growing. Underneath the map, readers will find a list of the top ten largest groups and the top ten newest groups, each accompanied by a short description and their membership count. If one is unable to find a nearby group that focuses on their specific interest, they can start up their own through the site. For a group of up to four organizers and fifty members, quantifiedself.com will connect users with people who are potentially interested for ten dollars per month, or fifteen per month for services for unlimited members and organizers. Coming soon, they advertise, will be a forty-dollar unlimited membership option that includes extra promotion and (fittingly) statistics and data. If paying for this

organizational tool is a hindrance to starting a group, the Quantified Self administrative team states that they can often help. In any case, they highly recommend Meetup because is connects each group with all others of related topics, enabling easier communication among them.

How to Start Your Own QS Show & Tell

For those who decided to start a Meetup group, quantifiedself.com has a page to guide the "active, international community" to organizing show-and-tell-style meetings. For organizing platforms, the site recommends their "Meetup.com" tool discussed above, the quantified self blog (i.e. the home page of quantifiedself.com), and following #quantifiedself on twitter. Quantified Self show-and-tells involve a series of first-person accounts of members' self-tracking projects that last 5 to 10 minutes a piece. This page also includes guidance on specific formatting and structuring for the talks, where the event should be held, necessary technologies (i.e. chairs, a sound system, nametags, and a projector), and an appropriate amount to charge participants to cover the costs. Organizers are requested not to find commercial sponsors in order to avoid "entangling us (that is, Quantified Self Labs) in commitments we don't know about." Furthermore, Quantified Self Labs requests that show-and-tell organizers refrain from explicitly using the Quantified Self name or logo regarding their event, which seems oddly contradictory to their claim to support the expansion of "Quantified Self movement." Rather, this suggests that QS Labs exclusively supports practices that they explicitly condone.

Forums

Quantifiedself.com has an extensive collection of forums, particularly on the subject of the Quantified Self movement. These include a forum for newcomers, apps and

tools, guidance on utilizing data and export procedures for common QS systems, data ownership and privacy debates, design issues, dietary tracking conversation (sub-titled "You are what you [quantify] you eat," self tracking and health, business models and startup tips, learning and cognition, mood tracking "ideas, experiments, tools, and advice," QS related articles, sleep tracking and modification, fitness, topics from the QS Toolmaker Newsletter, the 2013 Global and 2014 European QS conference information, and an open forum for any other topics. There is a second forums collection for "Quantified Self Admin," which includes general announcements to the QS community, forum feedback and suggestions, and a forum for discussing the organizational aspects of the site. It is clear that the forums are the central social hub of the online Quantified Self community. From messages of welcome scattered through the newcomers page to how to "discover the fortune that lies hidden in your data" in the Jobs forum, this site has become an broad source of information and discussion for people at all levels of self-tracking interest.

Each forum indicates how many users are currently browsing, how many topics there are, and the number of total replies. The forums are organized by order of their creation (most-recent to oldest), with each topic displaying the member who began it. Through this information, browsing guests can gauge the level of interest each forum has aroused from other users. After selecting a topic thread, the reader can see what "level" of member the original poster is, how many posts they have written, threads they have started, and the month and year they gained membership. For instance, Lisa79 is a two-star, Junior Member with 5 posts, and 1 thread who joined in May 2013. There is also a "Reputation" listed, which gives a score based on other members' reviews of the

member's posts. Ernesto Ramirez, for example, is a Forum Admin with a total Reputation of 2, having received 2 "All Time" (as opposed to weekly, monthly, or semi-annually) positive responses. Posters can also receive neutral or negative responses. This enables members to collaborate, while also supporting (or devaluing) the track records of their fellow members.

The forums also provide information on the general user base, such as how many people have been active in the past 15 minutes, whether someone holds "guest" or "membership" status, the browsers being utilized, the daily birthdays of members, and the total posts, threads, and members to date. This small data section also tallies the maximum number of users who have been online at one time, and the username of the website's newest member. A link to "forum statistics" is provided at the bottom of the page, which lists the average numbers of posts, threads, replies per thread, and number of new members per day. It also lists the top poster of the day, the most popular forum, and the "top referrer" of the moment. This section is followed by the "Most Popular…" including "Most Replied to Threads" and the "Most Viewed Threads." This provides a convenient means for accessing the most popular discussion topics of the self-tracking community.

Leaving the Site to Enter the Subject

QuantifiedSelf.com, and its Forum page in particular, has become a space for self-trackers to confer with one another about the best methods for quantifying aspects of themselves and analyzing their data on the path towards self-understanding and improvement. All aspects of the site point towards a growing community of people who believe in the power of numerical representation to guide them towards individual growth

or personal fulfillment. Perhaps unsurprisingly, the site itself is full of quantified representations of its users, and both implicitly and explicitly encourages its quantified-selfers to use numerical data to understand the world around them. The users teach each other, both in-person Meetup groups and online, how to optimize their self-tracking strategies for maximum self-improvement. Together, these self-trackers are building a new system, one might even say a new science, for understanding the self.

Chapter 3
Tracking To A Happy Self

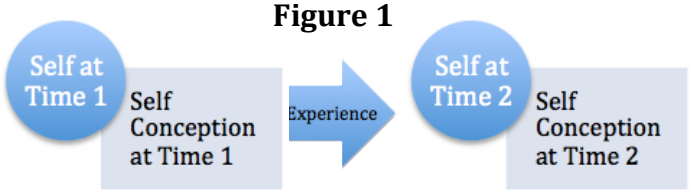
"It's like getting this number better is always a good decision. There's this conflation of improvement with happiness. If you keep improving yourself, eventually you'll be happy, but no one can say where the threshold is." – self-tracker on the purpose of tracking.

Quantified Self Labs promotes "self-knowledge through numbers": the idea that the self can be understood through quantified behavioral monitoring. However, the use of the site would seem to suggest that there is a draw to self-quantification beyond strictly knowledge—that there is an intention behind this study of the self. The people who participate in the QuantifiedSelf.com forums, particularly those of the Mood forum, insinuate that they aim to use the knowledge they glean from various self-tracking practices in order to create a change in their behavior and reactions to particular experiences. The quote above describes the deeper drive behind tracking practices; it is a drive that seeks happiness through self-improvement. Self-improvement is sought through quantifying aspects of the self, monitoring the data that this practice generates, and analyzing patterns in the data. The analysis enables the tracker to know which behaviors or reactions need to be changed in order to produce more favorable numerical data. This process requires the self-tracker to practice under certain assumptions of what the "self" is, and how understanding it ("self-knowledge") can be used to alter its form. The idea of the reflexive project can serve as a useful starting point for understanding how this particular view of the self operates in the world of self-tracking.

The reflexive project, as it pertains to self-conceptualization, describes the idea that an individual purposively constructs their perception of self through a process of introspection and analysis. This opposes the notion that the self is a static entity that is born into a person. This idea of self resonates as a form similar to the idea of a soul. In

the Judeo-Christian mentality that historically dominated the Western ideological landscape (and to an extent still does), the soul was considered essential to understanding the self. Some understand the soul as the "essence" of the self, a non-material entity that—while not synonymous to everything that encompasses the term "self"—is the integral center of being. One might argue that the self is numerically identical (it can change over time though it remains the same entity of the same individual) while the soul is qualitatively identical (from birth to death, it is an immutable entity that is uninfluenced by experience or external factors). This, of course, is not a universal differentiation between the soul and self, but provides a useful understanding for our purposes here. Here, the practice of quantifying the self is not a project of changing the *essence* of being, the soul or center broadly understood, but rather seeks changes of properties of the self. If the self is numerically identical through these changes, changes of behavior or experiences that alter self-conception can be viewed as having truly *altered* the self; the self at time one is a different self (a non-qualitatively identical self) from the self at time two. The reflexive project interprets the self as malleable and, more importantly, that it is constructed through the knowing intervention of the individual. Essentially, imagine there exists a self that possesses certain conceptions of itself, which undergoes an experience. The self introspectively examines these experiences, and through this examination, undergoes an alteration of self-conception. As the perception of what the self *is* has been altered, then future events are likely experienced differently than they would have under the previous understanding of self. Therefore, the self

Figure 1



following the change of self-conception is arguably a *different* self than it was formerly, as illustrated in Figure 1. The self is thereby created not merely through experiences, but through actively reflecting on them.

Today, the reflexive project can be seen in as the philosophy underlying the Quantified Self movement. Instead of introspectively (and largely qualitatively) monitoring behavior, trackers use extracorporeal data tracking devices to quantify behavior. The technology can be as simple as a table drawn on a pad of paper to an android phone that records the user's "location, [takes a] photo of [their] face and what [they're] facing at that moment, current weather conditions, recently open apps, content of what [they've] communicated recently and whom with, light level, air pressure, the direction [they're] facing," and "strength of nearby electromagnetic radiation" (QuantifiedSelf.com, Mood forum, "Mood Tracking Methods?", ThisUsernameIsNotMyRealName). Even in utilizing the least technologically advanced methods to quantify behaviors, the self-tracker is insuring that the analytical process is a numbers game, rather than an implicit, more emotive response to an experience. If one believes in the validity of the reflexive project model for human development, tracking and quantifying is technologizing an aspect the human experience. The forums on the Quantified Self website would suggest that trackers are not only comfortable with this idea, but enthusiastic about where it may lead.

Those involved in the community built within and around QuantifiedSelf.com have, by and large, asserted through their use that they believe in the capacity of self-tracking to change the way that they exist within the world. As aforementioned, self-tracking can range from culturally normalized practice of weight monitoring to the less

common emotional experience tracking of the cognizant quantified-selfer. With weight monitoring, the numbers on a scale in conjunction with social associations or medical charts (as discussed by Dumit and de Laet) provide people with a numerical sense of how they relate to others. However, the numbers are quickly internalized and translated into more qualitative notions of the self. Am I "skinny" or "fat?" Am I "too skinny?" Am I "*normal*?" In this reflexive process, a person may step on to the scale with a preconceived self-categorization, and yet as soon as the number appears, the data can shift the self-identification.

The analysis, even a split second interpretation of what the number means in the context of larger societal connotations, has the power to change connotations of the self—and by consequence, *the* self. Among the more modern varieties of tracking, the intentionality behind the reflexive project becomes even more evident. No one would step on the scale (without the prompting of a medical practitioner) if they anticipated that the number it provided would have no impact on their life or behavior—it would serve no purpose. Similarly, "when you decide to track something statistically with a metric," posts "Established user" Bryan Lundeen, "then you usually start off with a purpose in mind" (QuantifiedSelf.com, Mood forum, "Has anyone actually tried tracking all the fights they've been in?," Bryan Lundeen). Weight tracking, or any monitor of physicality, can have profound effects on how people envision their existences in the world, so what happens when people track their psychological states? In the case of mood tracking, the change that is sought is quite clear: they want to become happier. "The happiness movement," states Margie Morris in the first thread of the mood forums, "prioritizes positive emotion as the end goal" (QuantifiedSelf.com, Mood forum, "why we track,"

Margie Morris). This is more than just an alteration of situational happiness, it is an alteration of a general state of being. They seek to become happier people, and by using the data they have collected, change themselves into "happy" selves.

DrPaulVella, a Junior Member of the Quantified Self forums, began self-tracking with the usual suspects, "BMI, Body Fat…height, weight, waist, etc." (QuantifiedSelf.com, Mood forum, "Monitoring daily emotions," DrPaulVella). But at the start of 2015, he decided to expand his pursuits to monitor emotions. Of the "numerous benefits" he believes this might incur, he lists three: identifying the onset of depression, tracking the frequency of undesirable cravings, and monitoring the duration of negative feelings associated with severely negative experiences. He would track his emotions by first creating a "long list of most of the emotions we could feel and categorizing them according to one of the 'primary emotions' theories in psychology." He would then keep a checklist of the regularity and intensity he experienced these emotions throughout the day, and organize it all through an "Excel formula that add[s] up the intensity of each emotion of each of the 'core' emotion groups." His methods are interesting for a variety of reasons. Firstly, he bases his strategy off of accredited theories in psychology; he is pulling from pre-existing scientific theories as the foundation for his methods. This could be viewed as a way to legitimize his practices through the societal value attributed to scientific practices, and it also is indicative of an avenue through which modern scientific beliefs are directly playing a role in the shaping of self. In other words, through integrating psychology into his methods, DrPaulVella is supporting his practices with external theories (thus rendering his practices more "scientifically

objective") and simultaneously, intentionally integrating these theories into his understanding of self.

Another interesting facet of his methods appears through a deeper analysis of his statement that we "might identify the onset of depression." This implies that being able to identify when someone begins to feel the effects of a depressive episode might enable them engage differently with their emotions than they had been before. A friend of mine has stated that she generally feels the growing impact of a depressive episode over the course of two weeks before she notices it. If DrPaulVella is correct in his assessment of the possibilities born out of the self-awareness made explicit through self-monitoring analysis, she could know (and prevent) what was to come within the first few days of her drop in mood. Similarly, tracking cravings or, as he puts it, the "strength of an addiction and how close we are to overcoming it" implicitly divulges the hope that quantifying the intensity and frequency of cravings could help the self-tracker cure their addiction. Or by knowing "how long it takes to return to the same level of happiness" that a person felt prior to experiencing "something terrible," the next time a terrible feeling was experienced, the tracker could reduce the duration of the negative emotions. While Quantified Self Labs' tagline is "Self Knowledge Through Numbers," the intent seems to be more than knowledge for the sake of knowledge. Rather, as DrPaulVella illustrates, there is an underlying belief that how we interact with ourselves (our emotions, our physicality, etcetera) can be altered through the insights that numbers provide. As discussed previously, how we interact with ourselves—how we form our self-conceptions—is intrinsically tied to changes of self.

As a burgeoning mood-tracker, DrPaulVella's post provides insight into how self-tracking technologies are enabling the practice of the reflexive project. The data, the product of the hypothetical Excel algorithm, is the reflexive tool. It is the analytic process intended to alter self-awareness (creating "Self Knowledge") that shifts self-conception. For example, in DrPaulVella's model, someone who experiences something terrible may not have a clear sense of "how long it takes to get over something" (QuantifiedSelf.com, Mood forum, "Monitoring daily emotions," DrPaulVella). Through tracking, in DrPaulVella's ideal, people who experience something negative can figure out how long it takes them to see the light at the end of the tunnel. One could argue that this does not imply an alteration in self-conception—it is merely uncovering a preexisting pattern. However, to revisit the example of my friend who experiences depressive episodes; it took her years of reflective self-examination to recognize that her episodes were ephemeral and not a permanent state. Upon this realization, she began to cope with her episodes differently. Where before she viewed her self as damaged, permanently under the darkened veil of a depressed world-view, she now sees herself as a generally positive person who occasionally experiences depressive episodes that tend to disappear quickly when treated properly. In other words, she saw herself *as* depressed (a "depressed self") where now she sees herself as happy with occasional depressive episodes (a "happy self"). DrPaulVella, and others of the mood forums, seem to want to expedite this process of self-discovery.

Rather than undergoing years of sadness, anxiety, addiction, or prolonged grief in order to develop methods for reducing the duration and intensity of negative experiences, a self-tracker believes that the monitoring and quantifying process can illuminate the

most efficient path to experiencing happiness. Instead of allowing for the time and nuance of human reflection, self-tracking technologies quantify behaviors and experiences into rapidly interpretable data. For example, if DrPaulVella were to build his Excel program, perhaps it would show him that his intensity of daily anxiety increased from 2 to 6 with a frequency increase of 1 to 7 in the week prior to the onset of a depressive episode. He would then have a quantifiable indicator to be aware of the next time he viewed a similar pattern. But perhaps there is even more to this; perhaps this data would in and of itself provide a sense of an end in sight. Rather than emotions and emotional responses building out of nowhere and surprising the person who experiences them, an emotional record would exist. There would be a way to see that the tracker was "happy" (within the quantifiable standards the quantified-selfer had set) prior to the negative experience, and reason to believe that through manipulating behaviors for a different numerical outcome, they might be "happy" again. The numbers could provide a way to track conceptions (and thereby alterations) of the self.

It can be argued that quantification can reflect states of the self, but perhaps the data provides more than a neutral reflection—what if the practice of quantifying has its own agency? The manner in which Margie Morris describes her experience with mood tracking suggests that it does: "why is this app making me confront this feeling…?" (QuantifiedSelf.com, Mood forum, "why we track," Margie Morris). It is the application, the quantifying tool, which forces the user to analyze the data supplied by the self-tracker. Furthermore, the application comes equipped with its own categorical breakdown of what is to be tracked, so the user must self-analyze within the framework that it provides. While the categories may have been initially supplied by the user, either

imagined by them from scratch or imposed by their adherence to a previously existing system like DrPaulVella's psychological categories, the self-tracker must commit to a strict set of categorizations throughout their tracking for the sake of consistency and analytic feasibility. Tracking tools do more than provide neutral analytics, and Margie Morris is not the only forum poster to imply as such. Marina says that the results "ground" her, and help her retain emotional balance in her life (QuantifiedSelf.com, Mood forum, "why we track," Marina). Steve Whittaker describes an application that enables the user to "better understand how reactions to events affects [their] mood and longer term happiness" (QuantifiedSelf.com, Mood forum, "Trying out an Emotion Regulation Tool?," Steve Whittaker). shawndimantha describes a new tool as having the potential to become "a tangible emotional motivator" (QuantifiedSelf.com, Mood forum, "Using facial images to track mood?", shawndimantha). The tools are not only replacing the human reflective process by amassing data inputs that would otherwise be casually stored emotionally, but also plays an active role in the process of analysis. The data makes Marina realize that she is *actually* happy when she believed herself to be upset by providing a quantifiable illustration of "how good many spheres of [her] life are." The data in Steve Whittaker's application will teach the users how to understand the impact of emotional responses on long-term happiness, and through this education, the user will presumably learn how to optimize their emotional responses to result in such happiness. Through self-quantification, the data becomes "a tangible emotional motivator." Though forum posts only explicitly claim that self-quantification increases mindfulness, quantifying practices also teach users how to experience their emotions in the quest to maximize overall happiness.

Quantified-selfers assign numerical representations to their behaviors, thoughts, and emotions in today's version of the reflexive project. Rather than the internal process of traditional self-reflexivity, trackers use various forms of self-monitoring technologies that are external to the mind and body to analyze the self. To believe in the validity and potential of self-change through these methods carries with it a series of underlying assumptions about how the self can be both studied and manipulated for the sake of self-improvement. This approach seems more "scientific" than previous versions of self-reflexivity in that it appears to be an attempt to limit the subjectivity of both the data and the self-trackers interpretation of it. If data tracking can be externalized, it not only provides a visual history of behavioral patterns, but it also limits a degree of the qualitative subjectivity that non-numerical forms of personal tracking (such as journaling) would necessitate. Rather than verbally descriptive expressions of what the self is and how it develops over time, quantified tracking provides a simplified and streamlined expression of personal history.

Scientific endeavors have historically aimed to separate observation from the biases of theory, although the scientific method begins with a hypothesis that is inevitably entrenched on some pre-conceived theory. Science has moreover been practiced under the pretense that observation would not innately affect the subject being observed, and thus the act of observation would not be considered intervention. The accuracy of these assumptions has now been thoroughly questioned by both anthropology and science and technology studies for decades. Self-tracking, however, intentionally combines the three: observation, theory, and intervention. Not only are all involved in the process, they are involved simultaneously. Self-trackers observe themselves based on their theories of

what the self is and how it operates, and use such observational practices to make conscious interventions in their behavior. Since one practice necessitates the other, in order to rely on the feasibility of the process, the self-tracker must adhere to a very particular understanding of what the self is and how it can be modified.

Chapter 4
Not a Screw Loose

"This is something I have control over—I can control what I eat and how much I exercise. It was quantifiable, it was easy. It was a way that I didn't have to deal with my problems… numbers are comforting. They feel more objective in that they have one meaning: you know exactly what it is because it has a number x. You can make an intervention and the number will respond." – self-tracker on self-control through numerical intervention

You lean back in your chair, and the back creaks. You notice the screws holding it in place have loosened, dooming the next person who takes a seat to having a chair that falls apart on them. You pull out your screwdriver and tighten the hinges, and the problem is solved. What if human problems could be solved with such ease? In a sense, self-trackers seem to believe this to be the case. Using the data they accumulate through various self-monitoring methods, quantified-selfers adjust their behavior in ways they know can affect their numerical representations. As the self-tracker of the quote above elucidates, quantification provides a means for understanding the self that seems to enable a certain feeling of control. One can change a behavior, and see a direct response in the numbers. Every aspect of the self can be monitored, tweaked, and screwed back into place, thanks to insights made possible by quantified self-tracking.

To recapitulate the previous chapter, with all self-tracking, the obvious goal is to generate a positive change. Self-trackers want to change from "unhealthy" to "healthy," from "depressed" to "happy" or from "easily distracted" to "focused." All of these alterations can be construed as alterations of self-conception, and they have determined that the way to achieve this is through quantifying behaviors with the assistance of technical tools, and analyzing them. By changing their behaviors based on the conclusions they draw through this analysis, they can change how they experience the

world—they can change who they are. But in order to change, self-trackers must first believe that such change is possible. In other words, the practice of self-tracking comes along with a set of underlying assumptions about selfhood and rationality. Firstly, the self is not static. Its components can be intentionally manipulated. Secondly, the self has components. It is not a singular unit, but can be understood as many different cooperating aspects that function autonomously and may be manipulated individually. And finally, the self can be studied. In order to manipulate something to achieve a precise change, it must be understood. This relies on the notion that the self (body, emotion, personality, etc.) can reflexively analyze itself, and has the capacity to correctly assess its shortcomings.

The Mood forum on QuantifiedSelf.com provides many examples of how people interact with tracking under these assumptions. First of all, the mood trackers must believe that self-conception is malleable. "You can't control your emotions," writes QS moderator Alexandra Carmichael, "but you can control what you focus on and what you do" (QuantifiedSelf.com, Mood forum, "why we track," Alexandra Carmichael). At first, this may sound as if it contradicts the idea from the prior chapter that emotional responses can be altered through self-tracking practices. However, Alexandra Carmichael's statement insinuates the subtle distinction between changing *that* one experiences emotions versus changing *how* one experiences them. She goes on to discuss the important "mindfulness" that tracking can bring about, which parallels the other Mood forum participants who seek to use the numbers to establish patterns of experience and behavior. To be mindful is to be present in a different way—it is to experience the environment differently. Through the mindfulness a history of numbers enables, self-

trackers can establish a degree of control in how they respond to their emotional experiences. If their self-monitoring indicates the existence of certain patterns, the forum posts suggest that they believe they can control "what you focus on and what you do" as a means for altering the established patterns. Essentially, they are using tracking as a guide for behavioral changes. As discussed in the previous chapter, changing responses to emotional patterns will lead to a change of self-conception, which in turn becomes a change of self. Kyrani99 claims that "observing the mind… is the single most important observation a person can do, not simply to improve their wellbeing but also to overcome disease and I am talking about overcoming diseases like cancer without medical intervention" (QuantifiedSelf.com, Mood forum, "Trying out an Emotion Regulation Tool?," Kyrani99). It seems that Kyrani99 believes that the mere act of self-observation can physically cure life-threatening diseases, suggesting that both the physical self and mental self are alterable through the behavioral intervention of actively observing thought patterns. One could argue that physical and mental states are still only pieces of overall self-conception, leaving out concepts such as personality and relationships with others, but the Mood forum indicates that self-trackers are after these as well.

In a thread started by measuredme entitled "Why don't Quantified Selfer like tracking psyche?", measuredme explores how self-tracking could be expanded into the realms of character. After a personal attempt to track self-esteem, measuredme concluded that this trait was "more stable than… mood or happiness," but admitted that there was a methodological "causality issue." measuredme assumed that self-esteem impacted mood and perceived charisma and interpreted the results of the data-collection accordingly. That is to say that measuredme assumed that mood and perceived personality traits were

intertwined and thus anticipated a direction of causality, but recognized that "for other people, it could be the other way around." There have also been numerous experiments with quantifying relationships, or at the very least, incorporating them into individuated self-tracking practices. Promoting his "MoodPanda" application on the forums, mrjake notes that the users of his app are a "large community of people, who all share their problems and share in each other's happiness" (QuantifiedSelf.com, Apps & Tools forum, "Mood Tracking/Happiness Tracking – With a Large Supportive Community – Mood Panda," mrjake). Taking it one step further, in a video posted on QuantifiedSelf.com, Fabio Ricardo dos Santos explains how he quantified the relationships in his life to insure that he was spending his time efficiently with everyone he was close to and limiting the amount of time he spent interacting with people superficially. Through documenting his interactions via a complex point system, he felt he was able to adjust his time allotments accordingly and improve the relationships he cared most deeply about. The self may be multifaceted, extending beyond breakdowns of the physical and the emotional, but quantified selfers are extending their tracking methods into all areas.

Thus, there is ample evidence that quantified-selfers believe that all aspects of the self can be quantified, the only question remains what methods they will use to accomplish this. While there appears to be no universal approach, there is one notion underlying the ability *to* track that most posters on the Mood forums seem to agree upon: the mind can be compartmentalized. "I believe in Minsky's Society of the Mind theory," writes ichabod901, "that rather than a single entity the mind is a collection of mental agents. Each mental agent itself is a collection of other mental agents, until you get down

to the minimal mental agents that twitch your thumb" (QuantifiedSelf.com, Mood forum, "Mood Tracking Methods?", ichabod901). But how does the theory that the mind is compartmentalized further the belief in the validity of tracking methods leading towards self-improvement? ichabod901 explains further, "my interpretation of feeling happy and sad at the same time is that one mental agent is happy while another is sad. In that view, positive and negative are still opposites on the same scale." If happiness exists on a scale for autonomous categories of emotion, then by tracking each component, the self-tracker can isolate the areas that are inhibiting overall happiness. Essentially, mood quantification is made possible through the understanding of the mind as comprised of distinct components. Marina also describes how compartmentalization furthers her ability to track her emotions (though she does not necessarily argue for the existence of distinct mental agents). She "found that it works… to break happiness concept down into multiple not related categories, so when [she] feels badly about one of them, [her] overall happiness is not impacted that much, because all other categories are the same as before or fluctuate just a little" (QuantifiedSelf.com, Mood forum, "why we track," Marina). Established User Bryan Lundeen goes as far as to claim that "our brains are basically a computer with on/off switches," and happiness can therefore be measured as "yes or no (i.e. zero or one)" (QuantifiedSelf.com, Mood forum, "Mood Tracking Methods?", Bryan Lundeen). If each compartment or aspect of the brain, of thought and emotion, is nothing more or less than an on or off switch, then there is nothing about the human condition, least of all evaluating "happiness" that cannot be quantified, monitored, and analyzed.

This brings us to the assumption that the self is "studiable" through rational, objective means. To understand the root of this assumption, we must first explore what

"rational means" described in the context of self-quantification. Rational, in today's Western culture, has become associated with objectivity (Porter, 1953, 3). If it is objective, it is as true to nature as humans have the capacity to understand; it is realistic. In discussing the history of "objectivity" as the ideal for scientific practices, Daston and Galison claim that in the 19th century, "a will-based scientific self was built up, reinforced—through concrete acts, repeated thousands of times in a myriad of fields in which observers struggled to act, record, draw, trace, and photograph their way to minimize the impact of their will" (Daston and Galison, 2007, 36). This is relevant to the foundation of the Quantified Self movement in that through self-tracking, one is creating a record in such a way that the amount of subjective input in the data is limited. Once a tracking algorithm has been set (by the user or by their technology of choice), it must maintain consistency in order to make self-analysis feasible. For the idea is, after all, that the more objective the practice, the less skewed by personal biases the depiction will be. Yet Daston and Galison point out an intriguing contradiction in idolizing objective practices—it would appear that, by definition, "objectivity is the suppression of some aspect of the self, the countering of subjectivity" (Daston and Galison, 2007, 36). Thus to objectively analyze the self, one must first suppress the will *of* the self. Enter self-tracking practices. If the self is carefully monitored, just as one might meticulously record the methods and results of a scientific experiment, perhaps even the self can be viewed objectively. One might even say trackers are viewing themselves through a scientific approach.

In his seminal work *The Structure of Scientific Revolutions,* Thomas Kuhn discusses the process by which science comes to be. In this process, he delimitates a "pre-

paradigm" state of science in which an explicit "science" in a particular field has yet to be established. This state appears to be similar to the current state of the Quantified Self movement, particularly expressed by the Mood forum. Kuhn initially defines a "paradigm" as an achievement that is "sufficiently unprecedented to attract an enduring group of adherents away from competing modes of scientific activity," and "sufficiently open-ended to leave all sorts of problems for the redefined group of practitioners to resolve" (Kuhn, 1962, 11). This achievement thus creates a degree of normative unity of thought and practice among the given scientific community. As this has yet to exist in a pre-paradigmatic period, pre-paradigm states are "marked by frequent and deep debates over legitimate methods, problems, and standards of solution" (Kuhn, 1962, 48).

The QuantifiedSelf.com forums provide a space for this debate: methods can be shared, discussed, and evaluated by members of this "scientific" community as together they develop their theories on how to improve the self. As there are no consistent standards for the proper way to "practice" self-quantification, tracking practices may not seem particularly scientific. However, Kuhn himself states that pre-paradigmatic states are often characterized by members of a group individually engaging in scientific-type practices (setting control states, creating self-consistent methods, and attempting to remove subjective biases from all components of the practice), but as a group, "their gross product scarcely resembles science at all" (Kuhn, 1962, 101). As various methods become normalized throughout society (take the Fitbit for example), particular practices will gain clout as being "reliable," "objective," and thereby, more scientific.

Though many self-trackers find paper and pen to be the easiest approach to monitoring, many others find that they can track a higher number of variables with

greater efficiency with the help of more technologically advanced tools. As self-trackers begin to use the same tools as each other (as opposed to individually developed monitoring methods), tracking practices will begin to become more normalized within society and theories about tracking practices will become more standardized. Through these developments, the Quantified Self movement can move slowly out of the pre-paradigmatic period. As the theme of several mood forums is the question, "what app can facilitate the tracking I want to accomplish?" and a growing number of companies are pouring resources into wearable tracking devices, it appears that utilizing increasingly advanced technologies is the wave of the future. Technological devices, especially as their popularity increases, have the potential to give numbers a sense of consistency and normalcy. For, as Dumit and de Laet put it, "both the normal and the abnormal body are a result of statistical operations" (Dumit and de Laet, 2014, 74). As particular practices of collecting data become normalized, just as weight tracking is today, these practices will gain a social sense of accuracy, objectivity, and rationality. The self-tracking community is already in the process of establishing this new normal; as they collaborate with each other, they are validating their analysis of what the self is comprised of, how it can be rationally manipulated.

When everything has been objectively optimized for maximum health, happiness, efficiency, etcetera, theoretically, the goal of the self-tracker has been achieved. At the nexus of all self-tracking assumptions, is the aspiration to be optimized. Martin Heidegger predicted that this technologized understanding of being would one day come to fruition, and he found this eventuality deeply concerning. Hubert L. Dreyfus explains Heidegger's views in his 1995 essay "Heidegger on Gaining a Free Relation to

Technology." By Dreyfus's account, Heidegger saw the greatest danger of the technological understanding of existence to be "not the destruction of nature or culture but a restriction in our way of thinking—a leveling of our understanding of being," in the belief that "'calculative thinking," (that is, thinking instrumentally in terms of means-ends relationships), is "the only way of thinking" (Dreyfus, 1995, 43). Heidegger refers to the technologization of being as the "essence of technology," in which the goal of being is to "seek more and more flexibility and efficiency for *its own sake*... That is, our only goal is optimization" (Dreyfus, 1995, 45). Does this not ring true of the quantified selfers essential understanding of being? Self-trackers need to believe that the self can be treated as an optimizable technology. This is seen in Marina's optimization of her happiness through her practice of evaluating individuated categories of her emotions on distinct scales and in Bryan Lundeen's suggestion that emotional categories be treated as a series of binary switches. In this mindset, "human beings…become a resource… to be enhanced—like any other" (Dreyfus, 1995, 45). The self can be modeled, molded, quantified, tweaked, measured, and adjusted for maximum efficiency. The self becomes "scientific:" a rational technology, an objectification of the self.

The idea of a "scientific self" develops in conjunction with the development of the "quantified self." The former can be described as an analytical understanding of the self, in which markers of self-improvement are given primacy of the human values. The Quantified Self movement would seem to enable this in that it facilitates the understanding of self as an optimizable entity. Just as efficiency is a highly valued quality (perhaps the most valued quality) of modern technologies, the practice of quantifying the self and altering behaviors for the maximization of human potential renders efficiency

perhaps as equally important to human improvement as technological improvement. For decades, philosophers, social scientists, and science fiction filmmakers have theorized about the eventuality of humanity becoming variants of scientific selves. Unsurprisingly, each concept of the scientific self takes on a different shape, bringing along with it a different set of concerns. Some see the scientific self as an individuating movement, destined to be the end of intimate, natural human connection. Others see it as a political future, in which those who control technology control the masses. Still others see it as a larger social movement, destined to change the way humans interact with the world, though not necessarily apocalyptic.

Chapter 5

Knowledge Is Power: Control in(g) the Quantified Self

"I was conforming to a standard; I used to try to eat a certain caloric number, which led to worse things. I got too obsessed with the numbers. I knew I needed to make a change when I realized that I was allowing the quantified norm to set my quantified self. " – self-tracker on monitoring weight and eating habits

There are many appealing aspects of quantifying the self, particularly the simplicity and clarity that numeric representation seems to provide. However, the clarity and apparent efficiency of this type of self-evaluative process comes with its own complications. The self-tracker quoted above discovered that his self-tracking practices were leading him to try to normalize himself to the numeric identities of fellow self-trackers. In the "idealized practice of objective self-fashioning" that is seen within the Quantified Self movement, "biometric and demographic statistical operations are agents, in that they *perform* idealized, typed bodies and selves" (Dumit and de Laet, 2014, 73). That is to say that quantification possesses an agency in how people understand themselves. People will seek to adjust themselves in order to optimize their data based on normative statistics, which can be an unhealthy or unsuccessful path towards an individual's goal of self-improvement. Yet despite the concerns circulating around this efficiency-idolizing form of being, people are continually, and as the growing numbers of Quantified Self Meetup groups would suggest, increasingly, drawn to self-tracking and quantification.

Why to Understand the Self Quantitatively

Quantified selfers seek to change the self through a system that is so analytical, it could be said to resemble a science. The central way in which it resembles a scientific system is the high value placed on the importance of objectivity—rather than knowing

the self through systems inherent in natural human capabilities, the self is understood through a numerical system. In general, numbers lack the qualitative connotations of words, and appear as though they contain less subjective information. In fact, numbers often carry plenty of subjective information as they represent qualities and categories that have been specified by the person who ascribed the number to the object. "Quantification is a way of making decisions without seeming to decide" (Porter, 1953, 8), which is to say that quantification gives the appearance of containing a lack of subjectivity. Numbers appear to be an objective form (though how the numbers come to represent data is at some point a subjective decision), so the analysis of numbers comes to be viewed as an objective practice. In this view, one is not manipulating the numbers to their will, but rather the numbers provide an accurate depiction or representation of reality. To make a decision based off of emotions or individual perception is dangerously unpredictable, to make a decision based off of numbers is methodologically scientific. Considering objectivity to be an "ideal of knowing," and a "moral value" (Porter, 1953, 5) has become prevalent throughout Western democratic societies in part because objectiveness has become associated with "impartiality and fairness" (Porter, 1953, 8). Juries, for example, are viewed as objective—or at least the most objective option—because they ideally have no personal attachment to the case at hand. In this scenario, subjective bias is rendered the "enemy" that clouds otherwise impartial judgment and obscures the truth.

Quantification is also appealing for its perceived equalizing nature. Take doctors as an example: with online resources, many people feel as though they are qualified to diagnose themselves of lesser ailments, and treat themselves via methods suggested by others on the Internet. This could be viewed as a side effect of knowledge becoming more

pervasive in general rather than anything specific to quantification, but quantification adds an important element. Rather than trusting the subjective opinions of a single doctor, online resources often seem to be backed by many voices that come in the form statistics. Moreover, doctors have (in part) historically been given credence for the knowledge they can glean through their use of medical instruments. Measuring the temperature, weight, height, and blood pressure of a patient can tell a doctor much about the person's health—the doctors possess a knowledge of the numbers that enables them to compare their patient to a larger normative population size. To a certain extent, the capacity to measure and understand these numbers is what gives doctors the social authority to inform people about themselves. The tools used by the experts are thought to not carry the subjectivity of their users—even if users inherently imbue their subjectivity into the readings via analysis or the small mannerisms by which they manipulate the objects—so the tools are allotted a higher degree of trust. As tools for monitoring medical data become increasingly more accessible to the masses, the authority of interpreting medical knowledge is partially transferred to the masses along with the data. While positions of expertise still certainly exist, the influence of these expert individuals is highly de-emphasized. The numbers remove the doctor as a potentially subjective middleman between the "facts" (the numerical data) and the patient.

The Cost of Objectivity

Numbers—statistics in particular—provide the semblance of a universal truth, an accuracy gleaned from the objective practice of the scientific method. Doctors themselves may use graphs and data charts to support their opinions and to assure their patients that the views they propound are supported by others. Numbers also protect doctors from their

patients in the case of legal disputes where they would have to argue before a court for the ethical and rational legitimacy of their decisions (Porter, 1953, 7). If it all comes back to a number, to the use of generally reliable instruments, their methods will seem less suspect than a gamut of personally (subjectively) reasoned decisions. However, there may be a cost associated with attempting to take an objective approach to understanding the self. In *Objectivity,* Daston and Galison claim that "first and foremost, objectivity is the suppression of some aspect of the self, the countering of subjectivity" (Daston and Galison, 2007, 36). They argue that, as objectivity has come to be understood as the practice of limiting personal bias in observation and experimentation, the act of reducing biases inherently reduces individual self-expression in the practice. In essence, it is a "will to willessness" (Daston and Galison, 2007, 38), an intentional removal of influences of the self in scientific practice. Thus in practicing objectivity in cases of alterations of the self, there appears to be a paradox: the attempt to remove the self from the practice of studying the self. Quantification of the self, akin to quantification in science, is an attempt to control for variables inherent in subjective practices.

"Self knowledge through numbers" is the motto of QS Labs, and the rallying cry of many self-trackers. Yet given that the subject of study is necessarily subjective, it seems strange that knowledge of the self would need to be acquired through the medium of numbers so as to render tracking practices as objective as possible. However, as discussed in the previous chapter, self-tracking is not gathering knowledge for the sake of knowledge—it is acquiring knowledge for the sake of self-improvement, knowledge for the sake of change. To intentionally change something, one must have the power to exert a degree of control over the object of change, and self-trackers use quantification in order

to create a system in which they can control for alterations in the self. They do this through altering behaviors in ways they know will likewise alter the numbers; when numerical patterns shift, it signals that a significant change in behavior has occurred.

Numbers Enable Control: Should we be Concerned?

If quantification can provide the means for self-trackers to exert control over themselves, perhaps there is cause to believe that the quantification of individuals can likewise enable others to control those who are quantified. This topic is often approached within discussions concerning "big data." Big data refers to large companies who buy and sell individuals' quantified analytics largely for the sake of advertising. Facebook, Amazon, and Google tend to be discussed as the forerunners of the pack of personal data brokers feared by individuals because of their seemingly omnipresent access to personal information. In one sense, quantified-self practices could serve as the solution to big data company information control and ownership. Jennifer Lyn Monrone, now Jennifer Lyn Monrone ^{TM} Inc, is an example of this type of resistance.

In 2014, Monrone decided to take a stand against large, corporate data collection by becoming a corporation herself. She and her allies are in the process of developing a set of wearable self-monitoring technologies (that they call "Database of Me" or DOME) to store all of the trackable data she generates on her own servers. Her eventual goal is to "create a software 'platform' for personal-data management; companies and other entities would be able to purchase data from DOME via the platform, but how they could use it would be limited by encryption or data-tagging" (P.H., 2014, The Incorporated Woman). Essentially, she will categorize and evaluate the value of every bit of data she creates for the sake of taking back control over the vending of her personal data. In the process of

this project, she will sell not only her data but also "biological and mental services" such as blood plasma, bone marrow, eggs, problem solving, and physical labor, giving a whole new meaning to understanding the "value of an individual in a data-driven economy" (P.H., 2014The Incorporated Woman). However, a resistance to big data does not appear to be a motivating factor for the Mood forum self-trackers examined thus far. Instead, these self-trackers seem to be motivated by something more intrinsic, the desire to improve the self through controlling "what you focus on and what you do" (Alexandra Carmichael, "why we track," Mood forum, QuantifiedSelf.com). The Quantified Self movement seems, in this sense, to be both a response to the conditions of society and a means to reshape it. If self-trackers are the individual constituents making up a society, the entire society (from grassroots to the elite) will be driven by quantification.

Where Quantification May Lead

While self-tracking in particular has yet to become a universal phenomenon, many believe that Western culture has already began to approach the human condition in a "technologized" way. Today's society has engaged in *"the translation of the world into a problem of coding*, a search for a common language in which all resistance to instrumental control disappears and all heterogeneity can be submitted to disassembly, reassembly, investment, and exchange" (Haraway, 1985, 130), says Donna Haraway in her essay entitled "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late 20th Century." Her work explores the implication of understanding modern humanity as hybrids of machine and organism. "The cyborg does not dream of community on the model of the organic family," she claims, "it is not made of mud and cannot dream of returning to dust" (Haraway, 1985, 119). In short, she believes that the

model of community has been changed; views of the self have changed in turn. The cyborg is "the ultimate self united at last from all dependency" (Haraway, 1985, 118). The generation of the cyborgs is not celebrated as a positive moment in human history; it is individually isolating and "a final imposition of a grid of control on the planet" (Haraway, 1985, 122). Others arrive at similarly bleak projections from different angles.

In his essay "Technology: the Opiate of Intellectuals," John McDermott describes the technological impulse of America as "institutions which monopolize and profit from advanced technology" and "social classes which find in the free exploitation of *their* technology the most likely guarantee of their power, status, and wealth" (McDermott, 1997, 102). As a whole, his essay discusses the trajectory of modern technological innovation as he perceives it, inevitably creating a strictly classed system in which those controlling the technological systems dominate and exclude those societally forced to engage with them. Inserting data into his equation where now is found the broader term "technology," the picture that forms seems to mirror the fear that Ms. Monrone and her colleagues face: a system in which the masses are obliged to provide companies with their data in order to participate in the sphere of modern life. Intentionally data-collecting or not, institutions can essentially own individuals' data bodies as much as manufacturing company owners of the burgeoning Industrial Revolution owned the physical bodies of their laborers. McDermott directly draws the comparison, claiming that "the rapid spread of technical rationality in organizational and economic life and, hence, into social life is more aptly described as a second and much more intensive phase of the industrial revolution. One might reasonably suspect that it will create analogous social problems" (McDermott, 1997, 103). Essentially, McDermott's essay emphasizes socio-political

concerns, while Haraway's emphasizes concern more broadly for how humanity begins to view itself algorithmically. Heidegger brings yet another approach to the table. He sees the transition to understanding the self technologically, or as Haraway phrases it, "organisms ceas[ing] to exist as objects of knowledge, giving way to biotic components, i.e., special kinds of information-processing devices" (Haraway, 1985, 131), as a new understanding of being.

From appearances alone, an outsider to modern society might believe that we must be attached by invisible filaments to our phones or must access our laptops periodically so that we do not run out of charge. Essentially, it is easy to see how we might appear to be some form of cyborg species—rarely without an object that connects us to another space. This would suggest that we function within an individuated society—driven by the improvement of the unique individual and distinct from community social influence prescribing "place" in society. However, Heidegger does not believe that this is the necessary outcome of a society functioning under a technological understanding of being. Rather, he believes that community will always be necessary to us, and we will be freed and connected through recognizing how we have come to understand ourselves (Dreyfus, 1995, 51).

Community seems to have shifted within a matter of decades; people pass each other by without acknowledgement, glued to the hand-held glowing screens in their palms or conversing with a distant friend through a barely-visible earpiece. "Talking" with someone no longer implies that face-to-face contact was ever made, but rather communication may have been held over email, text, or Facebook. Gone seem to be the days of the church-centered community or the local park square. But Heidegger thinks

that every community "still needs its local god—its particular incarnation of what the community is up to" (Dreyfus, 1995, 52). Perhaps the quantified self holds the key to discovering our "local god," which will restructure our community, not in the hierarchical vision McDermott fears, but in a way heretofore unknown.

Many apps are already designed with "social" components, through which the user can compare their personal statistics to those of their friends, share them on social media, or use them to build online communities with distant strangers. Forum poster, mrjake, pitched his new app on QuantifiedSelf.com as "a large community of people, who all share their problems and share in each other's happiness" (mrjake, Apps & Tools, "Mood Tracking/Happiness Tracking – With a Large Supportive Community – Mood Panda," QuantifiedSelf.com). Self-tracking does not have to be an isolating experience—the mere existence of the Quantified Self community attests to that. With expansive opportunities for creating a variety of QS Labs backed Meetup groups, data production is being utilized as a community building activity. Maybe the translation of ourselves into numbers will be a path towards greater intimacy. Self-tracking has the potential to connect people based on shared interests, habits, and lifestyle patterns who might not have interacted in yesterday's communal spaces.

In this technological world, the self—as understood by the individual—is everything: the systems rely on people understanding themselves in technological ways and depending on data creation for how they build and maintain relationships. To return to Heidegger's relative optimism, perhaps the answer to maintaining ideals of intimate human connection in a generation of cyborgs lies in our awareness of our present state. "We can recognize and thereby overcome our restricted, willful modern clearing [our

technological understanding of being], precisely by recognizing our essential receptivity to it" (Dreyfus, 1995, 47). We can engage with our technologies critically rather than in a somnambulistic fashion, and delve deeper into how we conceive of ourselves and how our practices come to determine who we are. Just as quantified selfers consciously shape who they are, data-driven communities can consciously shape what they are.

Conclusion

"I felt like all the boxes were checked but it didn't add up to anything meaningful. I felt kind of betrayed." –self-tracker on the disappointment of practicing tracking without achieving the desired results

This thesis described the reflexive project as it pertains to understanding the self as an entity with the capacity of introspective analysis with the potential for revision. QuantifiedSelf.com was introduced as a useful primary source of self-trackers developing innovative methods for creating "self-knowledge through numbers" and discussing their results. The forum posts of these quantified selfers were used to explore the application of the reflexive project to the Quantified Self movement, and understand the assumptions that are essential to believing in the efficacy of self-tracking for self-improvement. The conceptualization of self exhibited by these self-trackers was considered in terms of a "scientific self," followed by a consideration of the possible repercussions of this understanding. This discussion of the self was concluded by introducing Heidegger's solution to a disconnected and disillusioned society shaped by a technological understanding of being: critically engage with where we are.

This is precisely what this work has aimed to accomplish—to consider of how modern technology is informing how we understand ourselves, and what that means for where we are situated. Evidently, the scope of this thesis can only hope to illuminate the tip of that iceberg. Many questions still remain regarding what a statistical image of self means for our cultural value systems; how highly do we prioritize the value of efficiency and productivity relative to other values? How might the integration of data into our understanding of relationships impact how we interact with one another? Furthermore, if we are to fully understand the degree to which we view ourselves akin to optmizable

technologies, it will also be important to explore other ways in which modern technology is shaping self-conception in new ways. For example, communication has changed dramatically in the past few decades with the advent of social media and the rise of popularity of the smart phone. In order to comprehend how today's society is informing the shape of communities, or as Heidegger phrases it, what our "local god" is, it will be crucial to understand how communication differs—and becomes increasingly different—from prior modes of interaction.

Perhaps the Quantified Self movement is on the right path towards maximizing human potential. Perhaps a cyborg-like existence is a future that should be embraced, and a technological state of being will lead to heightened personal and global happiness. But we must be careful not to conflate self-improvement with numerical optimization. It will likely always be challenging to quantify every ephemeral thought, every fleeting emotion in a manner that will encompass all of the nuances of the original. Though quantified selfers seem enthusiastic and optimistic about the potential for this reality, this might an uphill battle better left un-fought. At best, a number is a translation of the idea of an entity, a sketchy reflection of experiential reality. Quantification and self-tracking can be incredibly useful in many facets of life; of this, QuantifiedSelf.com users are particularly cognizant. We cannot go backwards. A new understanding of self is already underway and there are certainly many benefits to be gained from those who embrace it. However, as Haraway, McDermott, and Heidegger illustrate, it would be unwise to blindly trample down this path of "self-improvement." Therefore, as we enter the digitized world of the Information Age, let us critically examine how we chose to manipulate ourselves, and what we are sacrificing by translating into data.

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