

Resolving the Incommensurability of Eugenics & the Quantified Self

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The “quantified self,” a cultural phenomenon which emerged just before the 2010s, embodies one critical underlying tenet: self-tracking for the purpose of self-improvement through the identification of behavioral and environmental variables critical to one’s physical and psychological makeup. Of course, another project aimed at systematically improving persons through changes to the greater population is eugenics. Importantly, both cultural phenomena are built on the predictive power of correlation and regression—statistical technologies that classify and normalize. Still, a closer look at the late-nineteenth and early-twentieth century eugenic projects and the early-twenty-first century proliferation of quantified self devices reveals an inherent incommensurability between the fundamental tenets underlying each movement. Eugenics, with its emphasis on hereditary physical and psychological traits, precludes the possibility that outside influences may lead to changes in an individual’s bodily or mental makeup. The quantified self, on the other hand, is predicated on the belief that, by tracking the variables associated with one’s activities or environment, one might be able to make adjustments to achieve physical or psychological health. By understanding how the technologies of the two movements work in the context of the predominant form of Foucauldian governmentality and biopower of their respective times, however, the incommensurability between these two movements might in fact be resolved.

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Since 2015, three new long-form works have been published on “self-tracking” and the “quantified self” (interchangeably, QS)¹: Deborah Lupton’s *The Quantified Self: A Sociology of Self-Tracking* (2016), Gina Neff and Dawn Nafus’s *SelfTracking* (2016), and the Nafus-edited *Quantified: Biosensing Technologies in Everyday Life* (2016). These aptly named volumes provide a range of theoretical and ethnographic explorations into this relatively young industry-driven cultural phenomenon which encompasses the use of technology to track one’s daily activity or environment. To date, however, there has not been much work published on the history of the quantified self.² Attempting to understand QS as cultural phenomenon in that regard could entail reading the development of this movement through the history of eugenics and its manifestation as a broad cultural form. Through a stronger understanding of the history of eugenics, the emergence of the quantified self—heavily reliant on the technologies of statistical thinking—becomes more clear. Thus, by outlining the history of the quantified self as it relates to the emergence of statistics, the underlying connections to the early eugenic projects of Victorian statistician Francis Galton and his turn-of-the-twentieth-century cohort become apparent.

Both eugenics and the quantified self embody the normalizing power of large data-set anthropometric statistics in hopes of improving the human body and mind. Their relationship is complicated, however, when considering that eugenics was, at its root, a project of purely Darwinian evolution,

whereas the quantified self relies on a neo-Lamarckian³ understanding of how we, as humans, change over time; that is, that environmental factors have an influence on our behavior and health (Hasian 1996, 20). In what follows, a brief history of eugenics and its critical ties to statistical thinking sets the stage for tracing the quantified self backward, through its roots in self-experimentation and behaviorism, and then forward, from eugenics through its influence on psychometrics and personality testing. Throughout, eugenics reveals itself to be an important predecessor through which we can better understand the quantified self in a cultural context.

A Brief History of Eugenics

Francis Galton had been interested in heredity and statistics long before he read *On the Origin of the Species*, written by his half cousin Charles Darwin, upon its publication in 1859. The work was a major inspiration for Galton’s assertion that genius is passed through generations—so much so, that Galton spent the remainder of his life working on a theory of hereditary intelligence. His first publication on the topic, “Hereditary Talent and Character” (1865), traced the genealogy of nearly 1,700 men whom he deemed worthy of accolades—a small sample of “the chief men of genius whom the world is known to have produced” (Bulmer 2003, 159)—eventually concluding that “[e]verywhere is the enormous power of hereditary influence forced on our attention” (Galton 1865, 163). Four years later, the essay spawned a full volume, *Hereditary Genius*, in which Galton

¹ The use of the lowercase “quantified self”, as opposed to “Quantified Self”, delineates between a broad cultural phenomenon and a branding effort on the part of its progenitors and device manufacturers.

² This article was published before the release of Jacqueline Wernimont’s *Numbered Lives: Life and Death in Quantum Media* (MIT Press, forthcoming), which promises a more historical take on QS.

³ In 1800, zoologist Jean-Baptiste Lamarck argued that species evolved due to environmental factors—for instance, that giraffes developed long necks in order to reach the food high up in trees (Burkhardt 2013, 800). While Darwin’s theories eventually proved Lamarckian evolution as incorrect (those giraffes that were always tall enough to reach the food are the ones that survive), the term is still useful when describing situations in which one’s environment is heavily influential.

utilized Adolphe Quetelet's statistical law to detail a predictive uniformity in deviation from a normally distributed set of data points: the law of errors (Galton 1869).

Much like Darwin's seminal work, Quetelet's advancements in statistics played a critical role in the development of Galton's theories on the hereditary nature of human greatness. Quetelet, a Belgian astronomer, was obsessed with his predecessors' attempts to normalize the variation in error that occurred when the position of celestial bodies was measured multiple times. During the first half of the nineteenth century, French intellectuals and bureaucrats alike had taken a cue from Marquis de Condorcet, who proposed a way to treat moral and social inquiries in a similar manner to the way in which physical sciences were approached. Quetelet, combining these "moral sciences"⁴ with normal distributions, began to apply statistical laws of error in distribution to the results of anthropometric measurements across large groups of people: e.g., the chest size of soldiers, the height of school boys. The result, which effectively treated the variation between individual subjects' measurements in the same manner as a variation in a set of measurements of a single astronomical object, was *homme type*—the typical man (Hacking 1990, 111–12).

Inspired by Quetelet's work, Galton wrote in 1889: "I know of scarcely anything so apt to impress the imagination as the wonderful form of cosmic order expressed by the 'Law of Frequency of Error'" (66). Six years earlier, in *Inquiries Into Human Faculty*, he declared that he was interested in topics "more or less connected with that of the cultivation of race" (17, emphasis added)—

that is, eugenics—rather than simply the observation of it. Galton's argument was rather simple, albeit vague: society should encourage the early marriage and reproduction of men of high stature (Bulmer 2003, 82). As stated by Michael Bulmer: "He suggested that a scheme of marks for family merit should be devised, so that ancestral qualities as well as personal qualities could be taken into account" (Ibid.). Once these scores were evaluated, the individuals with top marks would be encouraged to breed, and rewarded for doing so; at one point, he recommended a £5,000 "wedding gift" for the top ten couples in Britain each year, accompanied by a ceremony in Westminster Abbey officiated by the Queen of England (Ibid.). This type of selective breeding would eventually be referred to as "positive eugenics."⁵

Galton utilized the statistical technologies developed by Quetelet and the like for means other than just evaluating individual qualifications for reproduction. They also allowed for the prediction of how improvements could permeate through a population. Specifically, he argued that if a normally distributed population (being measured upon whichever metric—or combination of which—he had chosen) reproduced, it would result in another normally distributed population. In other words, the bulk of the population would be average or mediocre (Hacking 1990, 183). He called this "the law of regression" and considered it an extreme detriment to the improvement of a race towards the ideal. However, if one could guarantee that those individuals at the opposite end of the bell curve—that is, the morally, physically, or psychologically deficient—

⁴ Per Hacking (1990, 38), Condorcet understands this term to mean "all those sciences that have as their object either the human mind itself, or the relations of men one to another."

⁵ In 1910, in *The British Journal of Inebriety*, the British physician and eugenicist Carl W. Saleeby takes credit for this term, noting Galton's approval: "Following my classification of eugenics, as accepted by Sir Francis Galton, into positive eugenics...and negative eugenics..." (65-6).

were not reproducing, then an accelerated reproduction of the exceptional population could take place (Bulmer 2003, 83). Thus was born the concept of “negative eugenics.”⁶

The eugenic movement was eventually abandoned by scientists and the general public alike as the world emerged from World War II. For obvious reasons, the rise and fall of the Third Reich and its party platform, built primarily on eugenic policies, had a direct effect on the decline of eugenics around the midway point of the twentieth century. Previously enacted (and confidently defended) state policies regarding forced sterilization were eventually struck down and exist today simply as shameful marks on national histories⁷ (Hasian 1996, 140). However, the bell curve and the statistical thinking embedded within the justification of these policies—both critical to the proliferation of eugenic thought—did not disappear. In fact, over a century after the publication of Galton’s first full manuscript on eugenics, the quantified self would utilize the same technologies to seek meaning in sets of biometric and environmental data.

Tracing the Path of the Quantified Self: From Eugenics & Back

Multiple accounts of the history of the quantified self credit Kevin Kelly and Gary Wolf, both editors for *Wired Magazine*, with coining the term and organizing what is now considered the QS movement—a community of individuals who identify as “self-trackers” (see Neff & Nafus 2016, 30; Lupton 2016, 12; Wolf 2011). These individuals, often through the use of technologically enabled processes, track daily details about their lives that are both quantitative and

qualitative: calories consumed, steps taken, activities accomplished, moods felt, hours slept, etc. (Swan 2013, 86). Kelly and Wolf have continued to speak and write about the formalization and professionalization of this self-tracking process over the past decade—an evolution that has occurred through the development of both amateur and corporate-backed tracking devices. For instance, the most popular self-tracking device on the market, the FitBit (currently at 22% share in a highly fractured market (Rogerson 2017)), can count the number of steps an individual takes, as well as (depending on the model) record heart rates and sleeping patterns (“Fitbit Official Site”).

Anecdotally, the history of self-tracking can be traced further back than the past hundred years. Sanctorius of Padua was said to have used measurements of his own weight against food intake and elimination when researching the expenditure of bodily energy (Swan 2013, 85). Neff and Nafus note that “Benjamin Franklin...kept accounts of how he spent his time and whether he lived up to the virtues he set forth for himself” (2016, 15). Today, FitBit declares that wearing one of its devices will help users “Find [their] fit” (“FitBit Official Site”). The marketing language used by Jawbone and Garmin, both manufacturers of wrist-worn activity trackers encourages users to compete with themselves: “Competing with myself really inspires me” (UP by Jawbone) and “Meet the wearables that help you beat yesterday” (“Garmin | vivo-fitness”).

In a study published in 2014, a group of researchers from both the University of Washington and the Microsoft Corporation suggest that those using quantified self devices

⁶ See previous footnote for clarification on the origin of this term.

⁷ In the United States, prison programs in which inmates deemed unsuitable for reproduction were forced into surgical or pharmaceutical sterilization were not outlawed until the 1970s, when both Indiana (1974) and California (1979) finally made them illegal (Stern 2011, 111).

“wanted to draw definitive conclusions from their QS practice—such as identifying correlation...or even causation” (Choe et al. 2014, 1149). Although not performed with “scientific rigor,” this experimentation was about finding meaningful, individualized information with which to take further action (Ibid.). Looking back at the history of self-experimentation in the sciences—in particular, experimental and behavioral psychology—leads to a 1981 paper by Reed College professor and psychologist, Allen Neuringer, entitled, “Self-Experimentation: A Call for Change.” In it, Neuringer argues for a closer emphasis on the self by behaviorists:

If experimental psychologists applied the scientific method to their own lives, they would learn more of importance to everyone, and assist more in the solution of problems, than if they continue to relegate science exclusively to the study of others. The area of inquiry would be relevant to the experimenter's ongoing life, the subject would be the experimenter, and the dependent variable some aspect of the experimenter's behavior, overt or covert (79).

Neuringer goes on to suggest that poets and novelists could use the scientific method to discover what causes love and that “all members of society” will “view their lives as important” thanks to their contributions to scientific progress (93). Of course, his suggestion that self-worth might be found through experimentation and tracking is not unlike the marketing language noted above—that one can “Find [their] fit” or become inspired through the use of a QS device.

Neuringer’s argument is heavily influenced by the work of B. F. Skinner, the father of radical behaviorism. Radical behaviorism is a subset of psychology in which the behavior of a subject (be it human or otherwise) can

be “explained through the conditioning,” or in other words, “...in response to the receipt of rewards or punishments for its actions” (Gillette 2011, 114). We can see, then, a lineage of both behavioral and experimental psychologies in the quantified self: not only do QS devices track, but many of the interfaces built into and around them embrace “gamification.” That is, the watch face or pedometer display, the dashboards displaying results, emails, and alerts to subjects, the “competition” features, etc., all embrace what Deborah Lupton calls “the rendering of aspects of using...self-tracking as games...an important dimension of new approaches to self-tracking as part of motivation strategies” (2016, 23).

Continuing backwards from the quantified self along the history of behavioral psychology leads to experimental psychology, when, in 1913, John B. Watson wrote “Psychology as the Behaviorist Views It.” According to Francis Galton’s protégé and biographer, Karl Pearson, “a leading psychologist” notes in 1911 that “Galton deserves to be called the first Englishman to publish work that was strictly what is now called Experimental Psychology, but the development of the movement academically has, I believe, in no way been influenced by him” (1924, 213). Pearson, who included this quote in the 1924 second volume of *The Life, Letters and Labours of Francis Galton*, continues by arguing that American and English psychological papers are far superior to their continental counterparts, thanks directly to Galton’s work on correlation in statistical datasets, though Pearson later notes that correlation laws may have been identified “much earlier in the Gaussian [or Normal] tradition” (Ibid., 187). Pearson’s argument, however, indicates that Galton’s influence on experimental psychology was, largely, a technological one.

In an oft-cited paper from 2013, researcher Marie Swan argues that “the idea of aggregated data from multiple... self-trackers, [who] share and work collaboratively with their data” will help make that data more valuable—be it to the individual tracking, the physician working with them, the corporation selling the device worn, or to other stakeholders (86). No doubt, then, the value of these trackers lies in the predictive power of correlation and regression. Harvey Goldstein, in a paper tracing Galton’s contributions to psychometrics, notes that Galton was not the only late nineteenth century scientist to believe that genius was passed hereditarily. He was, however, one of the few to take up the task of designing a study to show genealogical causality regarding character, thanks once again to his correlation coefficient and resultant laws of regression (Goldstein 2012, 151).

Galton’s contributions to psychometrics go beyond the statistical; however, expanding into methods of data collection. In what is also an example of the scientist’s support for self-experimentation, Galton’s 1879 “Psychometric Facts” features the results of a word association test performed on himself:

The plan I adopted was to suddenly display a printed word, to allow about a couple of ideas to successively present themselves, and then, by a violent mental revulsion and sudden awakening of attention, to seize upon those ideas before they had faded, and to record them exactly as they were at the moment when they were surprised and grappled with (426).

This word association test was famously used by Carl Jung to develop methods to classify his subjects into his various psychological types (Paul 2004, 82). Later,

this tool pioneered by Galton would be used to build the Myers-Briggs Type Indicator (MBTI), a 93-question test that plots a test-taker’s personality along multiple axes. Interestingly, the MBTI works against what journalist and academic Nicholas Lemann calls “the first principle of psychometrics... that all distributions bunch up in the middle, in the familiar form of a bell curve” (2007, 91). Because of the MBTI’s assumption that individuals are *either* introverts *or* extroverts, and so on, resultant data would look like an inverse bell curve, with data bunched up on either end of the axes. Though Katherine Briggs and Isabel Briggs Myers conceived of the test decades prior, they did not finalize the MBTI matrices until 1943. According to its creators, the test was intended to help people understand one another—a concern inspired by the onset of World War II, which also provided a more practical reason for its development: helping women who were replacing men in the industrial workplace to find the right “fit” in their new jobs (Myers 2010, 208).

Beyond influence in managerial-type personality tests, a Galtonian lineage can be found in the development of the Minnesota Multiphasic Personality Inventory (MMPI). This 567-item questionnaire was built using a system derived from the nosological methodology of Emil Kraepelin, a German psychologist who, in 1921, published a paper arguing for “inner colonization”⁸—what one translator suggests “as being rightly associated with the eugenics movement” (Engstrom & Weber 2010, 341). While the MMPI is now perhaps the most widely used psychological personality test, it is closely followed by the Sixteen Personality Factor Questionnaire (16PFQ), a 187-item test developed by Raymond Cattell in the 1940s (Paul 2004, xii, xiv). The eccentric researcher

⁸ This term refers to a set of policies that encourage strong family ties, including connections to family-owned land, early marriage and child rearing, and restrictions on child labor and alcohol consumption (Engstrom & Weber 2010, 350).

developed his own language (with words like “Autia”, “Harria”, “Parmia”, and “Zeppia” all referring to different character traits) in order to describe subjects in a novel manner. Cattell’s quiriness is perhaps less surprising when considering his academic pedigree: he was recruited into psychology by the eugenicist Cyril Burt (Ibid., 179), who was eventually revealed to have falsified most of his data in studies meant to support Galtonian conceptualizations of heredity (Hattie 1991, 259). Charles Spearman, Cattell’s academic mentor, was another eugenicist who argued that “An accurate measurement of everyone’s intelligence would seem to herald the feasibility of selecting better endowed persons for admission into citizenship—and even for the right of having offspring” (Paul 2004, 179).

The history of Galton and eugenics, then, can be traced back through the history of personality tests—though primarily via methods of data collection. Certainly, shades of Galtonian psychometrics show themselves to be present in QS technologies—that is, the treatment of statistical datasets for the purpose of correlation and prediction. Galton’s word association tests strongly influenced the MBTI, a test that, much like projects on the quantified self, seeks to help a subject make the right decisions in his or her life, though not through traditional Galtonian statistical tools. The MMPI and 16PFQ, by contrast, are designed for psychological evaluative purposes. And while some work has been done to suggest that “mental wellness” can be improved through self-tracking (see Kelley et al. 2017; Wolf 2009), much of the self-tracking ethos is based on factors that can be adjusted in order to see a correlative change in the subject (Wolf 2009). That is, by tracking happiness on a daily basis against the amount of coffee one drinks

or the places one goes, one acknowledges an environmental approach, declaring that one’s current psychological state is not set by one’s genealogy. This highlights a potential gap that exists between Galtonian personality tests and QS.

Turning Towards Biopower

The previous section helps to show that the relationship between eugenics and the quantified self is homologous, not simply analogous. Eugenics, however, with its emphasis on physical and psychological hereditary traits, precludes the possibility that outside influences may lead to changes in an individual’s bodily or mental makeup. The quantified self, on the other hand, is predicated on the belief that, by tracking the variables associated with one’s activities or environment, one might be able to make adjustments to achieve physical or psychological health. On the surface, then, there is incommensurability between the two fields. But by understanding how the technologies of the two movements work in the context of the predominant form of Foucauldian governmentality and biopower of their respective times, it may be possible to resolve this chasm.

During the eighteenth century, nation states under sovereign power began to shift away from a model wherein a populous belonged to a constituency by simply living on a leader’s land. Now, governments oversee populations that lived not only in their land, but also those who might, travel to, trade with, and war with neighboring lands. In a 1978 talk to the Collège de France, Michel Foucault outlined this shift in governance, arguing that it ushered in the birth of economies: collections of goods, people, and money that all fell under the sovereignty of a state (Foucault 1991, 81-92). Critical to the management of these

economies were technologies of counting and tracking—statistics, anthropometrics, and the like. Majia Nadesan, reading Foucault, notes that governmentality addresses some key concepts surrounding the organization of society’s technologies, problems, and authorities; it recognizes, too, that individuals are both turned into “self-regulating agents” and/or marginalized as invisible or dangerous (2001, 1). In order to explain how hegemonies develop and deploy technologies to control the life of populations, Foucault developed the concept of biopower, “arguably the most pervasive form of power engendering the homologies and systemic regularities across the diverse fields of social life” (Nadesan 2011, 3).

Without question, the technologies enabling eugenics and their legislative implementation are prime examples of governmentality and biopower at work—the combination of which can be understood through Foucault’s “biopolitics.” In the biopolitical realm, knowledge of man—at once global, quantitative (concerning the population), and analytical (concerning the individual)—is exploited by loci of power to divide, categorize, and act “upon populations in order to securitize the nation” (Ibid., 25). As the nineteenth century came to a close, the negative effects of *laissez-faire* policies—the expansion of the Poor Law in Britain, for instance—turned the tide towards a more active liberal state, one that enabled citizens to maximize their liberties by supporting their efforts for market-based prosperity through labor laws and similar efforts. Nadesan effectively isolates the point at which welfare-state sponsored eugenics arises: “the modern liberal-welfare state utilized biopolitical knowledge and expert authorities to expand its power at the level of the population...while simultaneously these forms of knowledge operated to individualize and subjectify citizens as

particular kinds of subjects” (Ibid., 26). This occurred at the expense of some individuals’ liberties, of course, as conceptualizations of the normal and pathological—both concepts strongly governed by the laws of statistics—became widely dispersed throughout the population (Ibid.).

Another area that became closely intertwined with the eugenics movement was the development of the welfare state of early-twentieth century Europe and the United States. In the conclusion to *Eugenics and the Welfare State*, Nils Roll-Hansen notes that in the first decade of the 1900s, a classical concept of genetics was formed in which an individual’s phenotype could be influenced by not only their genetic makeup, but by a combination of genotype and environmental and social factors. After being pioneered by conservative evolutionists such as Galton and his cohort of protégés, the “reform” eugenics of the 1920s and 1930s was led by scientists looking to jettison the racist reputation of their predecessors through a “renewal of the ‘social contract’ of the movement” (Roll-Hansen 2005, 260). In Scandinavia, Britain, and elsewhere in Europe, newly elected Labour governments used legislation to enact the forced sterilization of the “feebleminded” and weak in the name of the protection of both that marginalized group and the population as a whole. In England in particular, liberals used “eugenical arguments to disseminate information to the working classes on how they should behave biologically for their own benefit and that of the English ‘race’” (Hasian 1996, 115). American liberals used neo-Lamarckian ideas concerning the social influences on human traits to emphasize the importance of “race poison” studies (Ibid., 128)—research that “proved,” for example, cigarettes and alcohol had negative downstream effects on the human race (Ibid., 28).

As the twentieth century progressed through two world wars and the biomedical and technological revolutions that accompanied them, the fields of psychology, anthropology, and sociology underwent a major shift towards the social experiences of the individual in shaping psychologies and behaviors—as is exemplified in the two brief histories above. Alongside these new visions of what it means to be human, new technologies of the self (e.g., the self-help personality test, the self-experiment, psychotropics) engendered an empowered, self-governing subject of liberal democracy (Nadesan 2011, 149). These “technologies of the self” (see Foucault et al. 1988, 16-49) ushered in a neoliberal mode of governance—one in which welfare states jettisoned responsibility for the individual. As Nadesan notes, “By stressing ‘self-care,’ the neoliberal state divulges paternalistic responsibility for its subjects but simultaneously holds its subjects responsible for self-government” (2011, 33). Enter the Quantified Self: a movement predicated on the use of technologies which enable individuals not only to self-track, but to make changes in their lives—based on the data collected—towards a normative conceptualization of a good, healthy citizen. And while certainly not a prerequisite, sharing that data with others adds “value” to it by enabling comparison and competition, though at the risk of being utilized by surveillance apparatus.

Eugenics, then, was seemingly predicated on wholesale changes to the collective while the Quantified Self is based on an individual’s efforts to play their responsible part in society—arguably for the sake of that same collective. Both utilize technologies of governmentality that depend on statistical mechanisms invented and/or made mainstream by Francis Galton. But this relationship is more than just

analogous. By tracking the development of technologies of experimentation, behaviorism, psychometrics, and personality classification, we see a complex progression from a welfare-style “one for all” approach to the neoliberal state’s reliance on self-governance. A number of social-welfare focused programs offered by “reform” eugenicists have already been noted. In hardliner, “positive” eugenics, those deemed worthy are incentivized to reproduce—see, for example, Galton’s £5,000 wedding gift proposal, as well as Henry Fairfield Osborn’s speech to the Third International Congress on Eugenics, in which he argued for “not more but better Americans” (1932, 41). To a eugenicist—even a hardliner—these types of programs might be considered what William Epstein calls “moral behaviorism—the use of material incentives to promote socially acceptable behavior” (2017, 183-4); in this case, reproduction for the sake of the race.

The development of behaviorism into self-experimentation and incentivized self-tracking makes a great deal of sense, then, as the neoliberal emphasis on self-care no longer warranted social welfare programs. Nadesan, once again citing Rose, notes that “political authorities sought to ‘act at a distance’ upon the desires and social practices of citizens primarily through the promulgation of biopolitical knowledge, experts, and institutions that promised individual empowerment and self-actualization” (2011, 27). The classificatory power of psychometric testing under the early twentieth century welfare state served to exclude and erase those individuals deemed worthy of institutionalization or, worse, deemed unworthy of reproduction. The same technology that enabled these tests drives the self-informing power of the daily happiness meters and mood surveys of the quantified self. Nadesan,

this time citing Mitchell Dean, points out neoliberalism's heavy emphasis on normalization of our social and cultural condition—a normalization centered around containment and extrication of risk; “concerns for ‘responsibility’ and ‘obligation’ outweigh freedom and rehabilitation” (2011, 35). Participating in the quantified self, one is under the impression that their freedom to excel will be enhanced by the adjustments made thanks to the data they have collected. Welfare states sought to normalize towards compliance through aggregate data—a generally healthy populous is made of generally healthy individuals, thus each individual must conform to a widely accepted definition of “healthy.” The neoliberal state inspires normality through surveillance apparatuses for the sake of risk management. Galton's psychometrically driven tests classified those worthy of breeding and those not. Tracing the progression of these tests along with the shift from social-welfare to neoliberal biopolitic, it is easy to recognize and understand the shift into a market based on products heavily reliant on the collection and analysis of personal data.

Conclusion

What comprises the history of the quantified self? One could point to technological advances in circuitry miniaturization or in so-called “big data” collection and processing. The proprietary and patented nature of the majority of QS devices precludes certain types of inquiry into their invention and proliferation. But it is not difficult to identify one of QS's most critical underlying tenets: self-tracking for the purpose of self-improvement through the identification of behavioral and environmental variables critical to one's physical and psychological makeup. Recognizing the importance of this premise to QS allows one to explore, from the standpoint of both a consumer

and producer, the scientific fields that have strongly influenced the QS movement. Doing so, however, reveals a seeming incommensurability between an otherwise analogous pair: QS and eugenics. The eugenic emphasis on heredity sits in direct conflict with a self-tracker's belief that a focus on environmental factors could change one's life for the better—even while both are predicated on statistical analysis, purport to improve the human stock, and, as argued by Dale Carrico (2008), make assertions towards what is a “normal” human.

An understanding of both as deeply reliant on statistical technology is revealed through this attempt to trace the histories of both eugenics and the quantified self. What has been outlined above is only the beginning of such a project. Furthermore, it is not a rhetorical analysis of the visual and textual language of efficiency, which can be found in both the work of eugenicists and in the marketing language of QS devices. Nor is it an exhaustive bibliographic lineage. This project does, however, seek to use the strong sense of self-experimentation in QS to work backwards towards the presence of behaviorism in early-twentieth century eugenicist rhetoric. Then, moving in the opposite direction, it tracks the proliferation of Galtonian psychometrics into mid-century personality test development and eventually into the risk-management goals of the neoliberal surveillance state. Ideally, what has been argued here will lead to a more in-depth investigation into each step along this homological relationship. In the grander scheme, this project is intended to become part of a critical interrogation into the quantified self. By throwing into sharp relief the linkages between eugenics and QS, this project intends to encourage resistance to fetishizing the latter's technologies and their output, as well as the potential for meaningful change via those technologies.

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