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ORIGINAL ARTICLES

The Quantified Self and the Evolution of Neoliberal Self-Government: An Exploratory Qualitative Study

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This article examines the "citizen side" of the performance and audit revolution through an exploration of individuals engaged in a "data-driven life." Through an exploratory qualitative study of individuals' video logs taken from the "Quantified Self" Web site, we examine how individuals are using information technology and Web 2.0 interfaces to generate data about themselves for themselves. We explore the questions, "Who are the subjects of governing today?" and "How do subjects care for and govern themselves, and how are data put to use?" We analyze the different kinds of self-government, expertise, and practices of the self that are involved in self-quantifying practices. The article concludes by examining the implications of these practices for our larger understanding of governance and the subject of governance in an emerging "info-liberal age."

In today's information society, ever-greater amounts of data are generated, and advances in computing power and information technology promise improved ways to utilize that data to enhance the processes of governance. From one vantage point, the burgeoning interest in "big data" and mobile, wearable data collection and usage is perhaps one chapter in a more familiar story about fundamental transformations in governance since the 1980s—if not modernity's own centuries-long "enchantment with numbers" (Hummel, 2006, p. 59). The "audit explosion" (Power, 1997) and the performance management movement in the public sector inaugurated a focus on the generation of information, ostensibly to track, evaluate, and enhance the "performance" of public policies and programs. Scholars from both Marxist (Harvey, 2004; Peck & Tickell, 2006) and governmentality (Dean, 2010) perspectives argue

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that these new techniques and approaches to governing are *neoliberalizing* in their logic by deploying a market-based calculus.

Recent scholarship (Catlaw & Sandberg, 2014; Henman, 2013) on neoliberal governmentality observes a possible mutation or modulation in this governmentality, however. Dubbed "info-liberalism" (Catlaw & Sandberg, 2014), these governing practices and technologies retain the neoliberal focus on information and individual choice, but at the same time appear to "democratize" the data collection process. Citizens are viewed as worthy producers and users of data, and democratic processes are regarded as effective means for both generating and distributing information. This marks a distinction from neoliberalism's general ambivalence toward democracy as well as its customary managerial focus.

This article extends this critical line of research to examine the "citizen side" of the performance, information, and audit revolution through an exploration of individuals engaged in a "data-driven life." We seek to explore the questions: "Who are the subjects of governing today?" and "How do subjects care for and govern themselves, and how is data put to use?" To these ends, we conduct an exploratory qualitative study of individuals' video logs gleaned from the "Quantified Self" Web site to examine how individuals are using information technology and Web 2.0 interfaces to generate data about themselves for themselves. We consider the kinds of self-government, expertise, and sense of self that are involved in these quantifying practices, as well as the implications this might hold for our larger understanding of governance and the subject of governance in an "info-liberal age."

GOVERNMENT OF SELF AND OTHERS

Our analysis draws from Michel Foucault's conception of government as the "conduct of conduct" (Gordon, 1991, p. 2); an extensive literature in public administration draws from this perspective (for a review, see Catlaw, 2014 in this journal). This broader understanding of government includes "not only … legitimately constituted forms of political or economic subjection, but also modes of action … which were destined to act upon the possibilities of action of other people" (Foucault, 1983, p. 221). Thus, we understand government as a form of power by which action, behavior, or thought is purposefully guided. It follows that government can also be understood as a force that aims to render the actions, behaviors, and thoughts of a diverse set of individuals regularized and ordered so that they become calculable and predictable (Dean, 2010). A governmentality, then, is a way of "thinking about the practice of government (who can govern; what governing is; what or who is governed), capable of making some form of that activity thinkable and predictable" (Gordon, 1991, p. 3). In short, a governmentality equips one with the ability to understand the modalities by which government is exercised in order to constrain and enable our own and others' actions, behaviors, and thoughts.

These conceptions of government and governmentality imply that there are various types of government that can be employed. Indeed, government can involve relations between self and self, interpersonal relations, relations with social institutions and communities, and those concerned with political sovereignty (Gordon, 1991), all of which may be interconnected. The form of government that concerns us here is the one Foucault calls the *practices of the self,* which constitute the modalities by which the self acts on the self. Specifically, the practices of the self involve "the way in which individuals are urged to constitute themselves as subjects of

moral conduct" (Foucault, 1984/1985, p. 29), as well as the methods by which other governmental forms influence these practices. Moral action, in other words, is not simply conformity with a rule or code—the mode of subjection or subjectification—but more broadly concerns the manner in which one *ought* to conduct oneself in carrying out the rule. There are, then, "different ways to 'conduct oneself' morally, different ways for the acting individual to operate, not just as an agent, but an ethical subject of action" (p. 26). Foucault gives the example of marital fidelity: While strict conjugal fidelity may be the rule, there may be many ways in which "being faithful" is practiced (p. 28). It follows, then, that these practices of the self—modes of subjectivation or ascetics—by which one forms oneself as an "ethical subject" are not born entirely of the self; rather, they are produced by certain accepted "truths" regarding the range of acceptable ways of conducting oneself.

A closely related set of ideas in Foucault's work that bears on our interest in the quantified self is the practice of *care of the self* (Foucault 1984/1986, 2001/2005, 2008/2010). In his examination of ancient Hellenic and Christian cultures, Foucault observes a distinction among practices that generate and employ an understanding of the self. The Western relationship of self-to-self typically begins with the Socratic injunction "know thyself" (*gnōthi seauton*), but there was, in fact, a prior notion upon which "know thyself" rested. This is "care of the self" (*epimeleia heautou*). Whereas "know thyself" aims at achieving *wisdom,* "care of the self" concerns establishing a relationship to oneself grounded both in *knowledge* and *work* on oneself to the ends of changing one's life (*askēsis*) (Catlaw et al., 2014). Care of the self ultimately entails risk, for it is through caring for oneself that we come to see our limitations and faults to transcend them. It involves close interrogation of how one lives such that our very way of being in the world becomes at stake. The Western practices of know thyself do not exact such a price: "nothing else is demanded of [the subject]; there is no requirement of self-work or expectation of change or of altering the subject's 'being as subject'" (Foucault, 2001/2005, p. 17).

Three additional features of self-care bear mentioning. First, self-care work is initiated to cultivate wisdom in order to establish a basis for sound *action* in the world. Self-care also was viewed classically as ethical preparation for elites governing the *polis.* Thus, in simple terms, learning to take care of or govern oneself is viewed as a necessary precondition for governing others. Second, self-care is held to be a social or *relational* undertaking. It is practiced in relation with another, a guide or master, and is not an isolated, self-reflective practice. Finally, self-care provides an interesting historical vantage from which to analyze the entrepreneurial and neoliberal practices of self-government outlined below.

GOVERNMENT OF SELF AND OTHERS IN THE INFORMATION SOCIETY

A central component of our analysis is the thesis that we may be witnessing a shift from a "hard" neoliberal governmentality to something of a mutated form of it, called "info-liberalism." As the name implies, the role that information plays in this regime's governing rationalities is central. In order to understand the subtleties of this shift and the implications it holds for the government of self and others, it is helpful to discuss and juxtapose the relations between government, governance, and information in a neoliberal age with those we seek to explore in an "info-liberal age."

Information and Government in a Neoliberal Age

Transformations in governmental practices over the last thirty years have shifted from a social-welfarist to a neoliberal governmentality and a reorientation of the governing of others. In breaking from social-welfarist efforts to govern social processes through expertise, neoliberal government emphasizes individual choice, autonomy, responsibility, and the logic of the market. Further, the market is viewed as both an efficient mode for resource allocation and a normatively preferred moral order (Dean, 2010). While the market is posited as the optimal domain for enabling individual freedom, it is also conceived as the instrument for inculcating individuals with the moral capacity to responsibly practice their freedom to choose (Lakoff, 2002). Thus, unlike traditional liberalism, which maintained the functional and normative distinctions between the state and civil society, neoliberalism seeks to construct market-type relations where none previously existed (Triantafillou, 2017). The role of formal local, provincial/state, or national governments is reworked to enable conditions for market practices to flourish and to reconfigure social-welfarist government according to the logic of neoclassically rooted economics (see Bröckling, 2016 for a discussion of European labor markets; and Soss, Fording, & Schram, 2011, for a discussion of U.S. social welfare policy).

Central to neoliberal governmentality are what Dean (2010, p. 197) calls "technologies of performance." These aim to alter the government of others by changing the conduct of administrative personnel and technical experts by transforming the fields in which they work to break the monopoly of expertise and authority. They are challenged by subjecting the activities of those domains to (what are claimed to be) more objective and transparent assessments than that of "professional judgment." An area in which this is particularly evident is contemporary public administration, where the "performance management movement" has been a powerful influence (Moynihan, 2008).

Information and data production/usage are the central aspects of the technologies of performance and their attendant forms of audit (Power, 1997) and performance management. Yet, interestingly, the role of information *per se* is not explicitly theorized within the governmentality approach's theorizing of neoliberalism nor is information generally theorized within governance and public administrative studies. Governmentality studies focus primarily on the ways in which performance compromises the autonomy of traditional expert authority while being folded into the familiar neoliberal tropes of individual sovereignty and the normative privilege of the market model. Yet, information is integral to contemporary neoliberal government and warrants specific attention. For example, in his foundational critique of neoliberalism, Harvey (2004) argues, "[a]ll agents acting in the market are generally presumed to have access to the same information. There are presumed to be no asymmetries of power or of information that interfere with the capacity of individuals to make rational economic decisions in their own interests" (p. 68). This core assumption about information in rational decision-making drives the creation and circulation of information and makes information technologies the "privileged technology of neoliberalism" (p. 159). Indeed, as Hayek (1974) suggests, integral to the case for the market is its ability to process and circulate information. Viewed as a communication system, the market "turns out to be a more efficient mechanism for digesting dispersed information than any that man has deliberately designed" (p. 55).[1]

In governance and public administration, information tends to be viewed in narrow instrumental terms—as a resource for improving efficiency or effectiveness and decision-making.

Of particular interest is how information is generated, whether it is used (Moynihan, 2008) and how it circulates (Hale, 2011). An exception is Bang and Esmark (2009), who astutely theorize good governance and information technologies in the context of advanced liberalism and the network society. As well, Henman (2013) offers a subtle analysis of the ways in which information technologies restructure the field of governmental action and constitute a "conditional" mode of citizenship.

Taking Bang and Esmark's lead, we turn to sociologist Manuel Castells (2000), who is helpful in theorizing information. He argues that information is at the core of contemporary social, political, and economic relationships and institutions (see also Lash, 2002): information technology is central to a new social formation he calls the "network society." Information "is its raw material: these are technologies to act on information" (p. 70). This constitutes a reversal of the historical relationship between information and technology, one in which information was brought to bear on technology. Today, "information itself … become[s] the product of the production process. To be more precise, the products of new information technologies are information-processing devises or information processing itself" (p. 78). As Castells sees it, informational capitalism supersedes industrial capitalism as the dominant mode of economic production. The generation, manipulation, and distribution of information are fundamental: information is the driver of innovation, enhanced productivity, and economic growth. However, it is not merely that information both drives the economy and is a major product of the economy; the whole of social relationships are reconstituted to enable the production and flow of information through socio-technical networks. Thus, we should see information in a broad and pervasive way—as not only staking a critical position concerning expert authority that reworks the inside of organizations, but also as "an integral part of all human activity, all processes of our individual and collective existence are directly shaped (although certainly not determined) by the new technologies medium" (Castells, 2000, p. 70).

Information and Government in an "Info-Liberal Age"

Integrating the governmentality studies' conceptualization of neoliberalism with Castells' emphasis on informationalism, Catlaw and Sandberg (2014) explore the Obama Administration's Open Government Directive. They postulate a mutation in neoliberal government they call "info-liberalism," which has the following characteristics:

1. Active citizenship is conceived in terms of ongoing, effective production and generation of data, while formal government plays the role of information circulator.
2. The primary vehicles for data generation and circulation are Web 2.0 technologies and mobile, wearable information technologies.
3. The ongoing, reciprocal data generation and sharing relationship between citizens and government signals a reworking of "social" government such that "social government [now] means 'connected' government" (p. 244).
4. An ambivalence about the implications and scope of the democratization of data. While it seeks to activate the citizen-data producer, there is also a persistent instrumentalization of the data itself to ends that may be inconsistent with those of individuals, such as system legitimation (Bevir, 2006)

These findings are echoed in the work of Henman (2013) who, in studies of the discourses of what he has calls “Gov 2.0,” has found similarly constituted governmentalities the world over. Specifically, while there are similarities to earlier forms of e-government, the discourses of Gov 2.0 emphasize openness and interaction in an effort to re-establish a link between the state and the citizen. He cautions, however, that the Gov 2.0 governmentality being asserted by governments has yet to fully operationalize the notion that Web 2.0 capabilities enable citizens not only to engage with government, but also to actively create new things with the data that the government provides, with or without government consent (p. 1414).

Government of the Self for “Ultra-Subjectivation”

Along these lines, we can identify a shift not only in the general neoliberalizing processes of governing others, but also in the discourse and practices connected with governing the *self* as it pertains to the generation and use of information and self-development.

It is well-established that neoliberalism seeks to infuse society with the enterprise model so that individuals must engage with it in a variety of capacities and begin to think of themselves and all their relationships through the framework of the enterprise (Foucault, 2004/2008). Furthermore, the individual becomes conceptualized *as an enterprise,* such that one is “to be the entrepreneur of his [*sic*] existence [doing what is required] … to become as ‘enterprising’ as possible” (Dardot & Laval, 2013, p. 116). For this transformation to successfully occur, the individual must engage in particular practices of the self—those that help one learn to contend with the risks that accompany competition in the marketplace. In the prudentialism (O’Malley, 1997) that underpins the neoliberal marketplace, one assumes responsibility for managing risk by making more prudent choices. This involves, in part, behavior modification to augment self-monitoring and self-management. One, for example, indemnifies the self against potential dangers by behaving so as not to invite the specters of unemployment, ill health, violence, and crime. Privatizing risk as such is more efficient, “for individuals will be driven to greater execution and enterprise by the need to insure against adverse circumstances—and the more enterprising they are, the better safety net they construct” (O’Malley, 1996, p. 197).

As Dardot and Laval (2013) argue, however, remaking oneself into what they call “entrepreneurial man” (sic) via self-formation through risk management no longer suffices. Now the “self-entrepreneur is being made … to ‘win’” (p. 281). As such, the social norm engendered is no longer about equilibrium or even conformity, but rather “surpassing” the limits of oneself, of achieving “boundless self-transcendence” (p. 284). They call this development “ultra-subjectivation,” the goal of which is an ability to move “beyond the self that is always receding, and which is constitutionally aligned in its very regime with the logic of the enterprise and, over and above that, with the ‘cosmos’ of the world market” (p. 284).

Similarly, Rose (2007) describes an emerging process of *social optimization* in which the molding practices of disciplinary power become more refined and focused, enabling more personalized work on individuals and their bodies, as in, for example, personalized or molecularized medicine (Catlaw & Treisman, 2014) and, as we will describe here, personalized data generation.

We are careful to note that neoliberal and info-liberal governing rationalities and their implications for self-government do not occur in isolation. Rather, they co-exist with, mediate, and, in some instances, reinforce discourses that seek to enact a self (and concomitant forms of

self-government) that is ostensibly freely chosen and reflects an advanced (Giddens, 1990), liquid (Bauman, 2005), or reflexive post-traditional society (Beck, 1992; Beck & Beck-Gernsheim, 2001). Indeed, Dardot and Laval's analysis reinforces a subtle point previously made by Beck (1992), who argues that the individualization and related erosion of the communal and collective remnants of traditional society wrought by the processes of modernization leads to a growing dependency of individuals on the labor market and the consumer marketplace. This dependency is the result of the decline of the political, social, and religious institutions, which previously provided authorized signposts of stable meaning for the project-oriented self. Now, there are no institutions to provide authoritative *limits* on the individual; rather, institutions and traditions are *boundaries* to be transcended (Catlaw & Marshall, Forthcoming). What remains is a market that has become precisely the venue for enacting one's project and for self-transcendence; the market is where the personal "brand" can be bought and sold. And, "with that, [one becomes] dependent on education, consumption, regulations and support from social laws, traffic planning, product offers, possibilities and fashions in medical, psychological and pedagogical counseling and care" (Beck, 1992, p. 90). This entails, paradoxically, the increasing "institutionalization and standardization of ways of life" (p. 90) within specific institutional settings and new, limiting forms of control and government. These induce new dilemmas for the "self-transcending" entrepreneurial subject and, as a consequence, may enable conditions within which to articulate distinctive practices of self-care and self-government.

THE QUANTIFIED SELF

The area of contemporary life through which we analyze the intersection of these matters is the burgeoning practice of self-quantification. This arena provides fertile ground to explore what appear to be contemporary practices of self-care and optimization and to engage in a critical examination of the border between the ultra-subjectivation of a neoliberalizing governmentality and the practices that may enable a different relationship of self-to-self. It is, furthermore, a domain in which the use and generation of information via various Web 2.0 and mobile information technologies are integral.

The Quantified Self (QS) and the concomitant conception of the "data-driven life" are terms popularized by Gary Wolf and Kevin Kelly of *Wired* magazine (Wolf, 2009, 2010). At a conceptual level, the data-driven life refers to the contemporary practice of self-tracking, through the use, for example, of personal informatics. Particularly prevalent in the heath-related domains, personal informatics allow people to track behavioral information and so-called mHealth (m for mobile) systems. These are facilitated by smart-phone apps and online programs that promise "greater transparency of … personal biomechanics in the quest for vitality, mental clarity, sleep quality, pain management, smoother operation, enhanced productivity, [and] Zen tranquility" (Wolcott, 2013, p. 2).[2] The logic goes that by living a life of "self-knowledge through numbers" (Wolf, 2009) (the motto of the QS movement), one can "optimize" oneself and thus reach personal and social enlightenment. At a practical level, the QS is both a Web site which facilitates interaction between individuals, who are interested in self-tracking, and a *movement,* which facilitates the data-driven life (Wolcott, 2013). Members participate in "meet-ups" in cities across the world and engage in "Show&Tells," during which

they demonstrate what they have learned about themselves through research they conduct on themselves. This reporting is facilitated by the QS's primary questions: "What did you do? How did you do it? What did you learn?" (p. 2).

Akin to the ways in which audit and performance technologies may reshape power relations in social-welfarist government, proponents of the data-driven life and the QS movement argue that there is self-empowerment in self-tracking. As Gary Wolf (2010) argues, individuals can reclaim some power from "the cloud," which stores their personal data, by "taking back" some of these data for their own use. It also provides individuals with the ability to engender change in the arena that perhaps matters most—ourselves. Data through self-tracking provide one with "beautifully relevant" (p. 7) knowledge to enable localized change, whereas one previously relied on improvisation, guesswork, and inconsistency to do so. In addition, the self-knowledge afforded one through self-tracking can defend one "against the imposed generalities of official knowledge" and provide one with the ability to become repositioned as an individual and not a "standard case" (p. 11).

A primary area of research in this area is QS's relationship with health. Some of this research (Swan, 2009, 2012a, 2012b, 2013) views the mobile devices associated with mHealth initiatives as having the potential to improve the health care system by giving patients more information about their health and, thus, more control over both their health and their patient experience. Other scholars have taken a more cautious stance, asserting that this development is not unproblematic. For example, French and Smith (2013) write that while mHealth can serve progressive objectives, it can also be enlisted as a tool for discrimination and marginalization.

The practices of self-quantification have also been considered in the context of the neoliberalizing workplace. For instance, O'Neill (2016) examines the digital sensor management technologies VoloMetrix and Humanyze and wearable terminals like WT41N0. He argues that these tools "seek to incorporate 'bottom-up' analysis of workers' physiological and social rhythms in order to more closely mold workers' productive capacity to the structure of the workplace and the working day" (p. 18). This reflects the duality of control and empowerment evident in info-liberalism. Other critics see the emergence of QS as part of the growing precarity and vulnerability of workers in a hyper-competitive global marketplace that reasserts a mind-body dualism and imperative to be productive (Moore & Robinson, 2015).

In the most multi-faceted survey of the topic, Lupton (2016) echoes many of these concerns, cautioning that the use of mobile devices to track and enhance personal health is not a neutral undertaking. It represents a fundamental shift in how individuals perceive and form their identity, particularly in relation to their bodies, such that they begin to see themselves as *perfectible.* As our analysis and discussion will demonstrate, these cautions hold significant merit.

FOUCAULT, WEBER, AND THE ECONOMIC SUBJECT

Before moving into the analysis of these QS practices, we make brief mention of one additional theoretical point of reference: Weber's (1930/1998) studies of the relationship of asceticism and the development of capitalism in the West. Weber contended that the "spirit of capitalism" had religious origins in an ethical conduct of life (*Lebensführung*) oriented toward divine salvation. Protestantism provided moral sanction for worldly labor and rational accumulation of material

goods while at the same time condemned as sinful idleness and irrational accumulation and enjoyment that did not serve the glory of god. In time, "the religious roots died out slowly, giving way to utilitarian worldliness" (p. 176). Thus, Weber concludes, "One of the fundamental elements of the spirit of modern capitalism, and not only of that but of all modern culture: rational conduct on the basis of the idea of the calling [of labor], was born … from the spirit of Christian asceticism" (p. 180).[3]

While it is largely the origins of capitalism and the *belief* system that accompanies it that animate Weber's analysis, commentators like Dean (1994) suggest that "one perspective of [Weber's] sociology of capitalism is concerned with the way in which *discipline* and *government* of the body unleashes a process of self-formation with an elective affinity to capitalist social relations" (p. 66; cf. Gordon, 1987). Thus, in one sense, Weber's account of Protestant ascetics and the spirit of capitalism could be read as an opening chapter in the genealogy of the economic subject (Steiner, 2008): An examination of these practices of the self through which we discipline and ready ourselves for the market.[4] Relatedly, while Foucault's studies of practices of the self are grounded in earlier Greek, Hellenistic, and Christian sources, in *The Birth of Biopolitics* Foucault (2004/2008) too considers an allied question when he examines the history of *homo economicus* and the development of the notion of self-interest.

There is, then, a thematic affinity between our examination of QS within the context of the contemporary "info-liberalism" and certain reading of Foucault and Weber as it pertains to the development of "ascetic" practices of the self broadly linked to conditions of the capitalist political economy.[5] We do, though, suggest caution in viewing QS narrowly in terms of ascetics or in terms of preparation for "the market." As our analysis suggests, QS has a complicated relationship to the regulation of pleasure, and it is not always clear that QS self-discipline and self-improvement simply accommodates the ends of the market.

DATA AND METHODS

The data for this study was generated from a selection of 65 of 258 video logs posted to the Quantified Self Web site (http://quantifiedself.com) through February 2014. Fifty of these video logs were randomly sampled while the remaining fifteen were purposefully drawn from an earlier phase of this project. These video logs all feature individuals who have been active in self-quantification (either as practitioners or as purveyors of germane ideas or technologies). These videos were recorded and then posted on the QS Web site between 2009 and 2013 as a part of either "Show&Tell" gatherings of local QS groups or annual international QS conferences.[6] Their content roughly hews to the "Show&Tell" directive, which asks participants to explain what they did, how they did it, and what they learned. We also note that all the videos appear to reflect individuals' *choices* to engage in practices of self-quantification and not ones imposed on them, say, as workers in organizations.

Analysis of the data from these video logs was guided by Foucault's writings on the practices of the self to delineate the methods and means by which information is being both utilized and produced by the self for the self to construct a particular morality[7] for the self. We conceptualized the "moral code" that the QS is enacting by examining and coding the data along the four interrelated facets that constitute the mode of self-government: (1) the determination of an

ethical substance, (2) the mode of subjection/subjectification, (3) the elaboration of ethical work, and (4) the *telos* of the ethical subject (Foucault 1984/1985, pp. 26–28).

The determination of the ethical substance involves understanding *what* it is that one seeks to act upon or govern (Dean, 2010, p. 26). This can be the body, the soul, individual pleasure, and so on. Second are the methods by which one governs this substance—the *how* of governing (p. 26). This might include surveillance, spiritual exercises, processes of memorization, and more. Third, one locates *who* one is or who it is one becomes when governing oneself in such a manner (p. 26). When governed through particular means, one might become the active citizen or the weak individual in the face of worldly temptation. Finally, the *telos* of the ethical subject involves *why* one is governing oneself in such a manner (p. 27). What is the goal to be achieved through these processes of self-governance? This might be salvation, creating a beautiful life, a culture of enterprise, or an active citizenry.

This study is exploratory in nature (Babbie, 2013), as it has been undertaken primarily to probe whether aspects of info-liberalism are expressed in contemporary practices of self-quantification. This is, potentially, one aspect of contemporary practices of self-care and self-government. Additionally, while deeply informed by the theoretical discourses outlined above, our methodological approach has been a more informal one (Peräkylä, 2005). Specifically, there was no reliance on a predefined protocol in executing the analysis. Such an informal approach is not uncommon with qualitative researchers working exclusively with texts (in this study, we view the video logs as textual data). The analytic approach consisted of repeated viewings of the videos to identify key themes to “draw a picture of the presuppositions and meanings that constitute the … world of which the textual material is a specimen” (p. 1992). Greater emphasis was thus placed on the theoretical underpinnings that concern the world from which the texts are collected rather than on predefined procedures.

THE QS MORAL CODE

In order to understand the moral code that the individuals engaged in the Quantified Self movement are creating in relation to their practices of self-quantification, we first note that there appear to be two relatively distinct groups of individuals engaged in this project, which are fairly even in their distribution among the 65 video logs viewed. First are individuals who seem to be engaged in something of dilettantism, as contrasted to “true believers.” For them, engagement in the practices of self-quantification seems nothing more than a fun exercise that stretches their technological skills or their powers of engagement and observation. They did not seem to be striving to achieve optimization or boundless transcendence, which defines ultra-subjectivation; for these individuals oftentimes admitted difficulty in maintaining their focus on their QS project. This *does* seem to be the objective of the second group, however, in that their practices of self-quantification actively seek to gain some measure of control in their lives or, more precisely, over themselves, with the broad purpose of enhancing the quality of some aspect of how they live. For these individuals, self-quantification is work, but work with a higher purpose. Nonetheless, as will be demonstrated below, although the motivations for undertaking a self-quantification project might differ between the two groups, we suggest that they are not altogether unrelated with regard to our understanding of the forms of subjectivity and self-government being enacted today.

Of course, from a certain vantage, virtually all practices of self-quantification could be seen as familiar efforts to "know thyself," to gain an understanding of oneself, and then to use that understanding as a fulcrum for changing one's regime of self-government and engagement with the world. No doubt, QS practices enable self-reflection and, in the current authors' own explorations of leading data-driven lives, there are moments of genuine insight and learning that help to define paths for personal change. We, however, think it inappropriate to reduce QS practices to simple self-discovery or self-help. This impulse, while understandable, de-historicizes the movement and preempts understanding the QS as a political and social phenomenon, one that is not reducible to the idiosyncratic life stories the video logs portray. As we discuss below, our analysis suggests that there are potentially larger implications for contemporary governance as well as illuminating insights about the dilemmas of self-transcendence.

First, we provide an overview of what we see to be the moral code that is being enacted by these groups of individuals, along the interrelated facets described above. Table 1 provides an overview of the elements of the QS Moral Code, as discussed in detail below.

The Telos of the QS Ethical Subject

It is perhaps easiest to elucidate the moral code of the QS by discussing its *telos,* or the why, first, because individuals engaged in the QS movement are open, even overt, in the reasoning behind their engagement. In short, these videos tell us that individuals appear to begin self-quantification for one of these two reasons: problems or challenges.

First, *problem-initiated self-quantification* is animated by a pressing issue or problem in a person's life. A prominent area in which problem-initiated self-quantification figures is health. William, for example, began testing his levels of blood coagulation weekly to determine when he deviates from target ranges and then tests how dietary changes affect those levels. As a result, he feels more active in the management of his healthcare and better enabled to keep his blood within target ranges. Similarly, Brian uses technology and data to cope with

TABLE 1
Elements of the Quantified Self Moral Code Across Subject Groups

Mode of self-government	Dilettantes	True believers
Ethical substance	Control of the mind-object	Control of the mind-object Control of the mind-object vis-à-vis monitoring of bodily symptoms
Mode of subjection/ subjectification	Comfortable, adept in self-monitoring Competent in data generation Competent in transforming data into actionable wisdom Views data generation as pleasurable	Comfortable, adept in self-monitoring Competent in data generation Competent in transforming data into actionable wisdom Views data generation as self-empowering Views data generation as self-care
Ethical work and methods	Data generation and data usage Personal technology devices and Web 2.0 interfaces	
Telos of the ethical subject	Challenge-initiated	Problem-initiated

Parkinson's disease and, in particular, to track sleep disturbance, as well as a range of activities and biometrics. He wanted to collect these data to enable him to experiment with his therapies and, in the end, so that he could hold his grandchildren. Brian comments that tracking is not easy work: It requires *discipline* and the establishment and maintenance of routines.

Notwithstanding obvious medical conditions, the broader "problem" is the perception of some kind of *personal deficit that is detracting from a person's well-being or the feeling that one is not getting everything out of life that one should or could.* Often, stress or the inability to control one's thoughts or feelings is perceived to be the source of this. Indeed, this is a common refrain. Kumar, for instance, used the app Sprout to measure and understand stress and to become more mindful of these aspects of his life—in particular, ruminating on the future—that seems to cause his stress levels to rise. He pressed a sensor on a wristband when discovering he was "mindlessly" in the past or the future, rather than fully engaged in the present. These data were uploaded and then connected with other data on certain "bio-markers" that were measuring his levels of stress at the same time. He found that he was more stressed when mindlessly in the future. Consequently, he was able to apply mindfulness strategies and, as such, his stress levels decreased significantly.

Roger was frustrated by his inability to be present or, as he describes it, "relaxed" and to regulate the complex movement of thoughts "in" and "out of" his mind. He felt that negative thoughts would enter his mind and distract him from enjoyable tasks; that his mind would race on to the next thing and divert him from enjoying what he had done; and that when he was enjoying something, he could be distracted by even positive thoughts, as, for instance, thinking about an interesting project while at the theater. This left him feeling depleted and low on energy. Roger monitored his heart rate variability (HRV) closely to discern when his mind went into these distracted states. To return himself to the present and thus return his HRV to a rhythmic, consistent rate, he focused on regulating his breathing. Over time, awareness of his HRV allowed him to increase his relaxation at work as well as increase the frequency of his mediation practice. In a similar story, Jacob, who interestingly did not think he was a much stressed person before he began monitoring his HRV, recounts a near identical experience. The process of generating data helped to cultivate an awareness of his stress such that he actually began to know when he was stressed before his device told him.

In contrast, *challenge-initiated self-quantification* seems animated by the question "I wonder if I can … " and seems to be largely the domain of our so-called dilettantes. Pursuit of the goal generates information about a person's everyday life related to that goal, but often also produces unexpected learning at the same time. A particularly interesting example of the challenge-initiated QS is Cailan, who set a goal of walking all the streets of his city. He began by tracking routes manually and then developed an app to help him do so. He has not covered all of his city's 500-plus miles of streets. However, mapping his routes helped him realize not only where he had been and what he really considered to be his neighborhood, but also where he had not visited—where he should explore. His app tells him how much he walks, where, and how often, and this motivates him to walk and explore more. Here, we see how a person may begin with a goal but, through the process of pursuing it, ends up generating not only new ways of monitoring and collecting data, but also a deeper understanding of his relationship to his physical environment.

A second illustrative example of this challenge-initiated self-quantification (albeit one with a disruptive dimension) is Kelsey, who set a goal of reading five books per week. Her stated

motivation for setting the goal was to reignite her love of reading, which had waned (the problem dimension). She also set the sub-goal that 50 percent of the books she read would be by women and 30 percent would be by persons of color. She tracked her reading and blogged reviews of the books that she read. Though Kelsey was largely able to adhere to her goal, her close monitoring and recording of her reading habits revealed that she was actually reading books mostly by white men. Upon self-reflection, she concluded that her social network was reinforcing certain reading habits and that she lived in a "media bubble." To check this, she desisted from asking people in her network what they were reading and began alternative search strategies, including simple ones like googling "book people of color." She also found her attentiveness to reading prompted her to talk with people in different ways: she began conversations by asking people what they were reading. Kelsey reported that she became both an active reader once again and a more aware one.

The Ethical Substance of the QS

Whether one initiates self-quantification practices to address a specific problem or challenge, it appears that what one ultimately chooses to work on—the substance that becomes the object of one's practice[8]—is the mind. We assert this viewpoint despite the fact that many individuals, on the face of it, focus on aspects of the body as well the strong emphasis on QS in relationship to the body in the extant literature (Beck, 1992, p. 90). In these particular cases, individuals seek to refine the mind *in relation to* the symptomology of the body (e.g., disease, heart rate, breathing, etc.). Even in the case of those battling a disease with very real bodily symptoms, the *telos* appears to be a more metaphysical awareness of their bodily reality. In this sense, they participate in a kind of objectification of the body through the production of digital data (Wolf, 2009, 2010). However, this occurs at a very personal, concrete level, reflecting what, following Hummel (Hummel, 2006), we could call "involved measurement."

We can demonstrate the work being done on the *mind-object* with a number of more direct illustrations. For instance, Sarah's QS project involved trying to become more creative by seeking to quantify how the new ideas that she conceived became integrated with herself, who she is, and who she will become. Sarah began her practice of self-quantification by e-mailing herself when she came across something (e.g., an article, video, etc.) that inspired her or made her think differently in some way. She then compiled these data from the e-mails into a spreadsheet and rated them on their level of "interestingness" to her. She then developed the data into a chart of which topics were most important and interesting to her, and when. Ultimately, this process enabled her to see connections between her activities by date, and how those new activities might have been inspired or came about through the acquisition of knowledge from particular sources. In other words, she has been able to quantify where her ideas come from.

Similarly, David sought to enhance his memory by actively keeping track of his thoughts over time. Since 1984, David has been keeping a list of his ideas as they occur to him, using DOS software. This list now has more than one million entries. By recording his thoughts as they arise, he is not only able to continuously track them, but he is also able to search for and reflect on what he calls "cross-connections" between these ideas over time (there are more

than 7 million of these cross-connections). As a result, he has become more self-reflective and able to pinpoint patterns between his thoughts and, thus, better enabling action.

In many ways, those who are clearly working on the mind-object are seeking self-optimization; they are trying to enhance what already seems to be working, at least as it should, and thus tend to be more challenge-initiated. By contrast, those who work on the mind-object by way of the body's symptomology generally seem to be trying to solve a problem—a problem that has manifested itself as a deficit in the functioning of the body. So, what they monitor, track, and record generally occurs at the bodily level. For example, Brian tracks his sleep, activities, and general biometrics as a result of trying to solve the lack of control over the body that Parkinson's disease, by definition, manifests. Similarly, William tracks and tests the very life force of his body, his blood, on a weekly basis so that he might make changes in his diet in order to combat the effects of a blood disorder.

What becomes clear in viewing these particular video logs is the direct connection between using data collected on the functioning of the body to assert some sort of control over one's behavior, which involves learning to control or discipline some aspect of the mind. In the case of William, for example, he cannot cure or solve his blood disorder, but what he can do is minimize its effects, both on his body and on his life. This involves first understanding what is happening with his body, then using the data to *reform* his behavior through changing his diet so that he can better control his body. Doing so necessitates a change in *will*: he must exert mind over matter, or mind over body. In this way, William is able to provide himself with some semblance of order and control in the chaos that disease can manifest. By working on the body, then, he affords himself some peace of mind.

The Ethical Work and Methods of the QS

On the whole, for the individuals who are engaged in the processes of self-quantification, the ethical work in which they are engaged, or how the body or mind is being self-governed according to the moral code presented by the QS, involves the surveillance and management of the body or mind-via-the body, conducted through the vehicle of various personal information-technology devices and Web 2.0 interfaces. As has been discussed, for those engaged in problem-initiated self-quantification, their practices of self-quantification centrally concern efforts to gain a measure of *control* over their lives for the express purpose of enhancing some deficient aspect of them. Thus, enhancement and personal control are linked, and, as a result, highly personalized data generation is a central dimension of this ethical work.

This prompts discussion of the two interrelated components of the QS: data generation and data usage. First, the generation of the data itself obviously is integral to the self-discipline of the QS. QS practitioners frequently comment on the difficulty of "sticking to" the regimen of data collection, which requires a daily, focused commitment both to data collection and to the ongoing monitoring of the outputs it produces. Mobile apps—whether existing or created by the users—can mitigate the onerousness of this commitment by providing prompts, nudges, and explicit reminders and thus enhance one's motivation to continue on with their project. This aspect of QS most closely resembles the self-regulation and self-discipline of other ascetic practices. Second, there is the challenge of transforming data into useful knowledge.

For instance, Brian notes that his data is scattered and hard to correlate—it is hard to know how to take good data and transform it into what he calls "actionable wisdom." As noted above, this sometimes encourages "double-loop" learning by which insight gleaned from self-quantification is fed back into the QS process to enhance and refine the data generation and usage. It seems fair to say that even for those engaged primarily in challenge-initiated self-quantification, personal learning occurs as they seek greater levels of self-control through self-knowledge.

QS AND INFO-LIBERALISM

QS practitioners do seem to embody the savvy, active data generating and using citizen that info-liberalism theorizes. Though these highly personalized practices do not (yet) purposefully crowd-source data back into the cloud for state-driven big-data analytics, we see subjects who are beginning the process of self-governing suitable for precisely such governmental practice. (In some respects, many of us already do this unintentionally through digital and electronic footprints.) The QS is a subject becoming comfortable and adept in self-monitoring and, by extension, more competent not only in data generation, but also in the process of transforming data into actionable wisdom; that is, as a basis for sound action in the world. The dilettantism that defines some of the individuals engaged in practices of self-quantification adds another wrinkle. They see the process of data generation as not only self-enlightening, but also (and perhaps primarily) pleasurable and enlivening. The "gamification" of personal data collection likely helps to lubricate the networks and flows of information that are integral to contemporary capitalism. Simply put, if it seems fun, individuals will be more inclined to do it. But this may also nudge people into vulnerable positions, as illustrated in Uber's practices of using games and noncash rewards to induce drivers into working longer hours (Scheiber & Huang, 2017).

This broaches the relationship of QS and the "dangerous" and ambivalent aspect of info-liberalism. In the videos we analyzed, personalized data generation seems to encourage people to become experts of themselves in a way that could unsettle relationships with authority and expertise, at least for some social groups. Indeed, some individuals seem motivated by the very failure of these authorities to help them or at least satisfy their needs. This is especially evident in the health-related examples in which individuals are capable of producing evidence that contests medical opinion. This evokes the image of Bang and Sorensen's (1999) "everyday maker," a subject who, they argue, represents the coordination and empowerment of political authority through the practices and expertise of everyday citizens. They characterize the relationship between government officials and everyday makers as "qualified adversaries" Given their political and social capitals, everyday makers are both the ideal citizen and "worst nightmare" for state officials.

What self-quantification points toward is a somewhat different form of expertise and, as such, the cultivation of *a different kind of everyday making* in which the "moral code" of QS is practiced differently in varied contexts and to different ends. Rather than policy-related expertise, self-quantification involves developing knowledge of and expertise about one's daily life, body, and world. QS's personalized data generation promises to surface an understanding of one's self that is, by definition, *not* visible or accessible to traditional expertise. This is reflective of the tension suggested by Beck between the self-as-project (and, in the QS, the growing

capacities for self-creation) and the localized and standardizing domains of control in the face of a competitive labor market. Of course not all practices of QS are so freely chosen; in many cases they are imposed or indirectly ‘nudged’ upon us (Lupton, 2016, pp. 121–124).

How then do we understand the modes of self-care and self-governance at play in QS practices in light of the complex dynamics of ultra-subjectivation and optimization? Again, this is an issue marked by ambivalence. On the one hand, these practices seem to incite a subject capable of operating within an info-liberal age and for developing the inclination to seek boundless self-transcendence. In all the cases we observe, individuals isolate and identify limits (posed as problems or challenges) and seek to overcome them; the generation of data is integral to that transcendence. It is, moreover, striking that participants do not seek to account for their problems in other than individual terms. This is evident especially in the examples of individuals who seek to gain mental equilibrium and relaxation. Stressful workplaces themselves do not come into question. Rather, coping or dealing with workplace stress, and becoming relaxed and productive within stressful environs are entirely individual undertakings. This echoes Lupton’s conclusion: “Even when a communal approach to self-tracking is adopted, forums that discuss reflexive self-monitoring often show little recognition or interest in the fact that the self is always inevitably sited within social, cultural, and political contexts … ” (2016, p. 140). Self-work (*askēsis)* is a solitary affair, not requiring a relationship with a teacher or guide. Furthermore, we see an intensification of faith in quantification (Hummel, 2006) and the potential of rendering the world *legible* (Scott, 1998); and thus changeable through objectification and quantification of the self. In the contemporary setting, this is called “datafication” (van Dijck, 2014).

Accordingly, while we could theorize QS as preparation for the neoliberal market and the fabrication of the entrepreneurial self (Bröckling, 2016), we could also interpret the efforts of self-quantification as the individual, conscious assertion of limits in the face of commands for limitlessness and, in that regard, a contemporary ascetic practice of *self-care* (*epimeleia heautou*). In many instances, we observe individuals imposing boundaries on themselves—limiting what they eat, what they think, what they experience—to act more soundly and to enhance their well-being. It is not easy; there is an ongoing struggle to discipline minds and bodies in the face of the pressures and temptations that accompany the neoliberal work- and marketplaces. We can see these efforts to forge a personal space—a space within which living becomes a phenomenon to be experienced and, in a sense, savored rather than merely a sequence of one anonymous, ephemeral moment after another. While this is most vivid in the cases of the problem-based searches for equilibrium and self-presence, an aspect of this is evident in some of the challenge-driven self-quantification where there is a recurring theme of documentation of one’s thoughts and encounters.

These efforts can seem absurd, as in the case of David who claims to have documented his every single thought since 1984. Or the young software developers who built an app to take a picture of what is in front of them every 30 seconds so as to create a “digital subconscious.” But set against the backdrop of a world in which collectivity and, thus, collective and shared memory, is disintegrating, these efforts to quantify and to document take on a kind of poignancy and force. Documentation, not optimization, helps to generate *self-recognition* by producing a record of an individual, mundane, everyday existence—one distinct from celebrity and from myriad “social” personas (of work, Facebook, and Twitter) that belong to the realm of the neoliberalizing market.

CONCLUSION

To be sure, as an academic field, public administration must probe more deeply into the dynamic practices of self-quantification and their interactions with traditional, institutional forms of public administration. Our study here offers some tentative conclusions that could inform such future inquiries and expand the domain of research on matters like performance management and public engagement to inquiry into contemporary forms and practices of subjectivity. Generally speaking, the practices of the QS we observed express the ambiguity written into the moral code and practices of info-liberal government. These practices support and enable subjectivities that generate and use data about themselves for the purposes of self-enhancement and optimization. On the one hand, the subject develops both the capacities and dispositions for enterprising ultra-subjectivation and thus for being deployed for organizational or political ends. On the other hand, we may also read QS plausibly as instigating opportunities for enriched *self-subjectification* and self-care that allow for a reconfiguration of one's relationship to one's self such that it offers a modicum of distance, counter-practice, and autonomy from the demands of neoliberalization. Nevertheless, it seems a solitary affair.

Our explorations, finally, prompt questions about the nature and domain of politics today. Arendt (1998) claimed that politics, historically, is the domain in which the individual gained distinction and immortality, and overcame the confines of everyday life. The situation may be different now. While self-care once prepared individuals for the public realm of governing, today, standardization as datafication, the "triumph of numbers" (Hummel, 2006), and marketization serve as the gateways to public recognition.

Is a life of distinction and transcendence available to us now by wresting our own mundane, biological beings from the relentlessness of the neoliberal market through simple recognition of the self? The answer to this question will shape how we theorize demands made upon public administration and the role of government in public life.

NOTES

1. Harvey, (2004, p. 68) suggests that "perfect information" is also an assumption of neoliberalism. While some intellectual sources of neoliberalism may hold such an assumption, this really cannot be said of Hayek, who has a much more sanguine view of human prospects on this score. He writes: "If man [*sic*] is not to do more harm than good in his efforts to improve the social order, he will have to learn that in this, as in all other fields where essential complexity of an organized kind prevails, he cannot acquire the full knowledge which would make mastery of the events possible. He will therefore have to use what knowledge he can achieve, not to shape the results as the craftsman shapes his handiwork, but rather to cultivate a growth by providing the appropriate environment, in the manner in which the gardener does this for his plants" (Hayek, 1974, p. 55).
2. See Lupton, (2016, Chap. 5) for a discussion of how wearable, digital technologies differ from previous self-monitoring practices.
3. For comparative discussions of Foucault and Weber, see Dean (1994), Dreyfus and Rabinow (1983), and Steiner (2008).
4. However, surprisingly, this is not a topic of extensive commentary in the secondary literature on Weber's work. See Colliot-Thélène (2010) and Gordon (1987) for commentaries on this point.
5. See Sloterdijk's (2009/2013) *You Must Change Your Life* for a different genealogy of ascetic practices or what he calls "anthrotechnics."
6. Each of the individuals whose "stories" we tell below has been provided a pseudonym. While the video logs have been freely posted by the individuals on a publicly accessible site and are thus open for "harvesting," protecting their

anonymity is considered ethical practice in conducting qualitative research using online sources (see Rodham and Gavin, 2006).

7. By *morality,* we mean the "set of values and rules of action that are recommended to individuals through the intermediary of various prescriptive agencies" as well as "the real behavior of individuals in relation to the rules and values that are recommended to them" (Foucault, 1984/1990, p. 25).

8. It is worth noting that there exists an interesting subset of individuals engaged in the practices of quantification who collect data on other individuals and not themselves. Typically, this involves tracking the data of their children. It is beyond the scope of this article to discuss the implications of this practice, but it holds interesting implications for understanding the connections between the practices of quantification, self-governance, and the government of others. See Lupton, (2016, Chap. 5).

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