The Potentialities of Data
Self-Tracking as Liminal Narrative

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Abstract:
Self-tracking practices, such as monitoring and quantifying the self through the measurement of biometric data, can be understood as a specific form of life writing, one that relies on and feeds into the logic of self-optimization and data capitalism. This essay argues that the datafication of the self is intricately connected with narrative. In the practice of self-tracking, data and narrative converge in a liminal space in which these two modes of meaning-making engage in conflicting, complementary, and mutually influential relationships. The focus of this essay is to trace the 'potential narrative' of a Heads Up Health self-tracking visualization in order to demonstrate how narrative is instrumental in reinforcing the conceptualization of the quantified self as a measurable and manageable project of self-governance within a larger tendency of corporate storytelling.

In her 2020 memoir *Uncanny Valley*, Anna Wiener reports her experiences of working in various tech companies in Silicon Valley. Having started a new job at an open-source startup, she describes how the company had given her a step-count wristband as an onboarding gift, pondering that "fit workers were happy workers, and probably cheaper to insure. I wore the wristband for a week, tracking my steps and calibrating my caloric intake, until I realized I was on the brink of an eating disorder" (165). She writes about "the ecosystem's fetish for optimization culture and productivity hacking," more specifically about new trends in biohacking that include the monitoring and engineering of sleep cycles, cognitive performance, and productivity. She admits to have had ambivalent feelings about this self-enhancement culture, noting that "there was something a little bit sad about body optimization" and how "quantification was a vector of control" (166), while also confessing that "self-improvement appealed to me, too. […] I wanted to better understand my own desires, what I wanted; to find a purpose." She concludes, though, that "nonmedical monitoring of heart rate variability, sleep latency, glucose levels, ketones—none of this was self-knowledge. It was just metadata" (167).

Apart from informing the reader about current fashions of self-engineering, the passage contextualizes self-tracking practices within a larger narrative of self-actualization. Employing the typical features of self-narration, the memoir provides a retrospective account of the narrator's real-life experiences, emplotted in temporal sequence with causal suppositions and a substantial amount of self-reflection and self-evaluation. The narrator's focus on her search for identity, her desires, and her (lack of) self-understanding firmly places this narrative within the introspective mode of autobiographical writing. Obviously, the narrative mode of this explicitly subjective self-description is strikingly dissimilar to the theme that she describes, the seemingly 'objective' mode of numerical self-tracking. Narratologically speaking, on the level of 'story,' the text portrays how individuals 'count' biometric data, while on the level of 'discourse,' it 'recounts' these data collection practices within a narrative framework. *Uncanny Valley* occupies the liminal space between data and narrative mainly through its descriptive and factual aesthetic, although in its narrative mode it unequivocally distances itself from the data collection practices it depicts—with the subtitle "A Memoir" suggesting that it presents the form of self-knowledge lacking in self-tracking practices.

Data and Narrative: Functions and Potentialities

Uncanny Valley critically assesses a socioeconomic framework of "data capitalism," defined by Sarah West as a set of "business models that support the commoditization of data" and which "places primacy on the power of networks by creating value out of the digital traces produced within them" (21). Apart from introducing the effects of data capitalism on the conception of the self, the memoir also serves to illustrate one central function of narrative in relation to data, namely to provide a counter model to numerical data, to critically reflect on and give a personal face to the abstractions that data produce. Yet, this is not the only function of narrative in the context of self-quantification. While the datafication of the self has acquired a privileged space of self-knowledge in the digital age, narrative is often instrumental in perpetuating the logic of data capitalism, namely when it is implicit in the very self-tracking data itself.

In our neoliberal economy, quantified data has gained importance over qualitative modes of knowledge, and descriptions of the self have increasingly moved away from traditional forms of narrative to statistical renderings of the numerical self. Self-tracking practices have come to dominate conceptualizations of the self as measurable and manageable. Although by no means a new phenomenon, self-tracking has been spurred by recent developments of wearable sensor technologies and radically increased storage capacities. Self-tracking technologies are designed to collect biometric data in order to record, understand, and modify sleep

patterns, caloric intake, physical activity, and much more. Often engaging gamification features, these practices are geared toward enhancing self-knowledge and self-monitoring. As the data-driven practice of self-tracking is shaped by and feeds into a neoliberal culture of self-optimization and self-governance, the narratives of self-quantification can be both corrective *and* complicit of such a culture. They can both reveal the blind spots, biases, and paradoxes of data-driven knowledge *and* substantiate the power of data through its contextual legitimization. Narrative emerges from the 'potentiality of data' because of data's affordances to produce narrative via causal links, to proliferate into networks of signification, and to yield imaginative processes that render abstract experiences concrete.

The Narrative of Self-Tracking Data

In this essay, I aim to examine how the quantified self can be situated within a larger tradition of self-writing or, in other words, in which ways these practices constitute junctions between numerical data and the narrativization of the self. As a mediated externalization of the self, self-tracking substantially relies on the presentation of data, usually in visual form, making statistical data graspable and therefore controllable. While the self becomes a project to be constantly worked on, these data maps also rely on and produce a specific narrative of the self. In this essay, I am particularly interested in what kind of narratives are generated by self-tracking practices, which functions narrative have as paratexts or framing devices, how we can describe the transition from numbers to narrative (or narrative to numbers), and what biopolitical, cultural, and aesthetic assumptions emerge in these conflicting knowledge spaces.

While the quantified self as a cultural practice and a model of subjectivity as well as literary negotiations of the quantified self, as is the case, for example, in *Uncanny Valley*, have already received critical attention (cf. Danter et al.; Reichardt and Schober), self-tracking data itself has not yet been examined with respect to the category of 'narrative liminality.' So, rather than looking at narratives of the quantified self, this essay will proceed from the reverse perspective and scrutinize the intersections of narrative and data in the self-tracking records both as diverging and complementary forms of self-knowledge. I will also examine when and under which circumstances numbers become readable and what 'reading' means when it is more and more performed by machines. In asking which stories the numbers in these charts tell us about ourselves *and* which stories they obscure, a specific liminal space between narrative and data reveals itself that pertains to the very question of who we are and how we conceptualize ourselves in the twenty-first century. Furthermore, the liminal space exposes socioeconomic privileges attached to both the capacity to write the self in data *and* in narrative. The forms of control

the symbolic forms of data and narrative exert over one another *and* over the writing subject raise questions pertaining to the politics and ethics of self-tracking in consideration of the affordances of the liminal space between data and narrative.

The Quantified Self as a Form of Knowledge

The term 'quantified self' describes self-tracking practices, mostly through digital technology. The term has become popular since its promotion in the context of the Quantified Self Movement. One of its cofounders, tech journalist Gary Wolf, introduced the term in an article for the magazine *Wired* in 2009, entitled "Know Thyself: Tracking Every Facet of Life, from Sleep to Mood to Pain, 24/7/365." In a TED talk from 2010, Wolf describes the functions of self-tracking as to "reflect, learn, remember, improve." Self-knowledge, according to the dominant narrative of the self-tracking community, becomes equivalent with self-optimization, self-management, and self-engineering. Personal data is regarded as a utility, a resource, and an asset in a neoliberal culture that promotes health and well-being as markers of productivity. Self-tracking becomes a useful tool to register, collect, and capitalize on biometric data. The quantified self turns into what Deborah Lupton calls "an ethos and apparatus of practices that has gathered momentum in this era of mobile and wearable digital devices and of increasingly sensor-saturated physical environments" (3). Self-tracking, in this view, is not only a technological practice but largely expresses a set of beliefs, values (such as honesty, transparency, improvement/productivity, sharing/public persona), as well as a biopolitical formation of discourses, institutions, and rules that exert power over the individual. The quantified self entails a normative concept of the body that needs to be continuously optimized. Furthermore, the body is turned into a commodity for data monetization as well as a biopolitical tool that can be monitored within the neoliberal efficiency logic: Although often presented as a voluntary form of self-improvement, the quantified self is a core component of data capitalism in that it increasingly becomes a form of self-surveillance and a valuable database—not only for companies that sell and make profit of our data but also for political parties, employers, health insurances, etc.

In order to understand the cultural implications of the quantified self, however, such sociological diagnoses need to be supplemented by discussions of its status as a specific form of knowledge, one that resides between data and narrative. Minna Ruckenstein and Mika Pantzar explore the epistemology of the quantified self. Challenging the widely held assumption that self-tracking produces 'objective' results, they argue that

> [g]iven the move away from the mechanical objectivity that we describe as characteristic of confrontations with personal data, the data valences of discovery, emphasising the possibility of finding unknown patterns in the data, and connection, defining the data as providing space for conversation, are particularly interesting. As previous empirical studies of self-tracking have argued, personal data encounters produce material that self-trackers use for self-discovery and to construct stories for themselves and others. In this shift towards narration and sense-making, the truthiness and accuracy of data are evaluated in light of the relevance of the measured data in a specific context. [...] By using the concept of situated objectivity we acknowledge that the self-trackers' way to approach life is not methodical and systematic (it might not even be logical) but, rather, combines knowledge in a selective manner that follows a different course of knowledge formation. Framed this way, self-tracking practices are less occupied with 'facts of life' than with translating and transforming life based on earlier experiences, cultural understandings and shared expectations. (2-3)

Ruckenstein and Pantzar use the term "situated objectivity" to describe a dynamic, context-dependent, and relational form of knowledge produced by self-tracking. Intriguingly, they talk about the "stories" that are constructed by quantified selves, placing the practice of biometric data collection within the tradition of experiential and explorational self-narration rather than within a positivistic framework that assigns data absolute truth value, as is often witnessed in discourses around the quantified self.

To read the quantified self as a practice of meaning-making places it somewhere in between the empirical tradition of statistical self-recording and the hermeneutic mode of narrative self-exploration. Although some proponents of the QS movement claim that they produce 'objective' access to the self, data is, of course, as Lisa Gitelman and Virginia Jackson have reminded us, never 'raw' but always bound to mediation: "Data need to be imagined as data to exist and function as such, and the imagination of data entails an interpretive base" (3). This is true for self-tracking data just as it is for any other data and, yet, the data sets generated by sensory devices are particularly vulnerable to the myths of objectivity, as they are framed as a counter model to what is perceived as more subjective forms of writing the self. At the same time, the centrality of narrative in the formation of Western subjectivity often gives dominance to unilinear, experiential, and causal conceptions of the self that do not take into account the fragmented, recursive, and embodied nature of being human. To read self-tracking accounts as inhabiting the liminal space between narrative and data therefore allows us to extend definitions of life-writing beyond narrative as well as to rethink the value that numerical knowledge plays in the conceptualization of the self. This involves both the liminal forms that data and narrative afford as well as the values,

expectations, affects, and politics that emerge in the spaces between them. The quantified self emerges as a particularly exemplary liminal space between data and narrative, I argue, because it challenges widely held notions of the non-quantifiability of subjective experience and because it raises pertinent questions about the contingencies and privileges of different modes of self-knowledge.

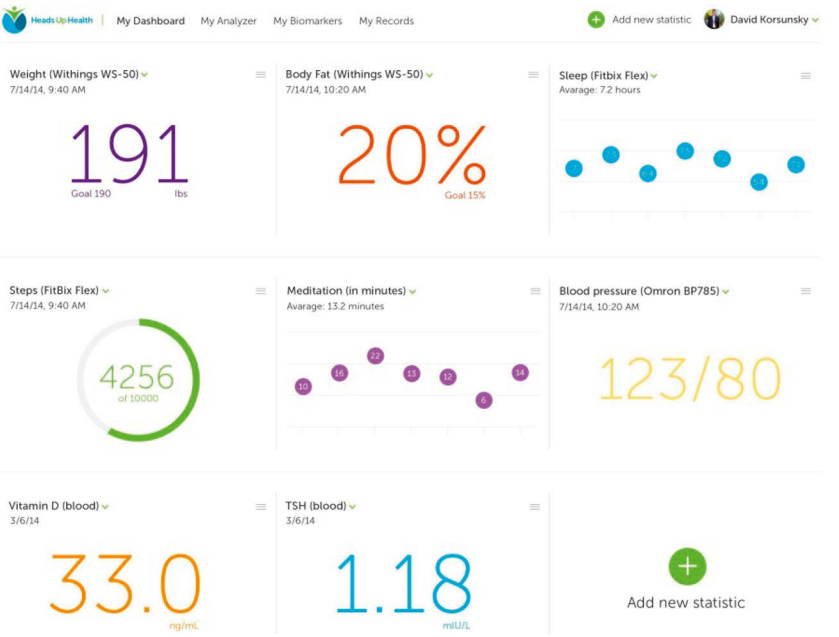
Morphologically, 'counting' and 'recounting' (or, in German, '*zählen*' and '*erzählen*') are closely related. This proximity between data-based and narrative knowledge suggests that both are codependent or, at least, that transitions and combinations between these two forms of knowledge frequently occur. It may be difficult to make sense of data without contextualization, emplotment, and sequentiality. Likewise, narrative requires the substance of factual data to acquire a level of referentiality to external reality. Assuming a mutually influential relationship between data and narrative, specific questions become central that relate data practices to cultural practices of storytelling, reading, and knowing—questions that will play a key role in the subsequent analysis of self-tracking data: When and under which circumstances does biometric data become readable? Which stories do numbers tell us about ourselves *and* which stories do they obscure? How can we describe the transition from numbers to narrative (or narrative to numbers)? Which functions do narratives have as paratexts or as framing devices? Where do these forms of self-knowledge blend into one another and where do they differ? What cultural, biopolitical, and aesthetic assumptions emerge in these conflicting knowledge spaces?

Heads Up Health: Data Visualization as Potential Narrative

Let me illustrate the relevance of these questions by examining a data visualization chart by David Korsunsky, creator and CEO of Heads Up Health, a visualization app used to generate this table (Ramirez; Fig. 1). The diagram displays a set of biometric data and statistics from weight, heart rate, blood pressure, and steps to meditation time. The underlying assumption is that different levels of human experience can be datafied, or, in other words, translated into data. Digitization of personal experience primarily aims at machine readability, a feature necessary to process, analyze, and manage large quantities of (big) data in a short amount of time. Yet, the data chart's multimodal arrangement, its aesthetic design, and its interactive features also presuppose the existence of a human reader. The visualization itself is already an interpretation of the aggregated data, a readable version of machine-readable code.

The modular arrangement of data makes the data both visually accessible and flexible—the "add new statistic" button suggests an open database format rather than a sense of closure commonly associated with narrative. The spatial arrange-

Fig. 1: Data Visualization Korsunsky



ment of the data maps rather than narrates data, emphasizing relations, correlations, and patterns within large sets of data. Patterns help us make data sets understandable, 'readable,' in short: They translate data into a visual mode of knowledge. They allow us to take a distanced view of ourselves through abstracting into the 'universal' language of numbers. As Alfred Crosby has demonstrated, statistical renderings of the self since the Renaissance have contributed to the measurability and manageability of the self. The "quantitative representation of your subject […] is, however simplified, even in its errors and omissions, precise […]. It possesses a sort of independence from you," allowing for more rigorous introspection (229). Korsunsky's bodily data thus arguably provide an opportunity for a detached, 'objective' mode of self-observation. Both reducing complexity and structuring data, the visualization functions as a heuristic tool to gain abstract knowledge about oneself. At the same time, the reduction of complexity fragments the self into seemingly disconnected units, supported by the modular aesthetic of the chart and disregarding the recursive interactions between properties such as 'weight,' 'body fat,' 'blood pressure,' 'steps,' and even 'meditation.' To separate these features into distinct categories means to treat bodily functions as isolated from each other rather than integrating them within a holistic narrative of the self.

Most obviously, this data chart is not a narrative. It does not even contain paratextual elements that display narrative features, as some other self-tracking charts do (for example, by explaining and commenting on the data). The chart contains no plot, no sequence of causally related events, and no fictional world. At most, one could discern a sense of character with goals (such as to walk 10,000 steps per day) who undergoes a development (visualized in the progressive data chart). However, if we follow a definition of narrative that does not center on plot but rather on what Marie-Laure Ryan calls "a particular mode of thinking," that, in reference to Jerome Bruner, "relates to the concrete and particular as opposed to the abstract and general" and if it, according to psychological definitions of narrative, engages a "continuous act of self-creation" (345), we could indeed consider self-tracking and their visualizations forms of self-narrativization. Such a broad definition of narrative would allow us to place digital self-quantification in the tradition of life writing. Individual self-construction is definitely at the center of both self-quantification and self-narrativization. However, even the most extensive conception of narrative fails to account for the lack of cohesion and emplotment that this data chart offers.

To read the data *as* narrative would probably be beside the point, anyway. A more productive way to read the data is as what Nick Montfort, for the case of interactive fiction, has called "potential narrative" (14). Although such self-tracking data does not explicitly invite user interaction like the text riddles that Montfort describes, a similar process occurs in the interaction between the 'reader' of this data and the emergent narrative. Data patterns quickly materialize as latent narrative links. This, for example, pertains to the goals of the 'protagonist.' His desire to reach a certain body weight of 190 lbs, for example, is almost achieved, while the body fat percentage of 15% has been missed by 15%. Yet, drawing on the contextual knowledge that 15% body fat is a very ambitious, if not improbable, goal, the character reveals himself as an overly determined, weight-obsessed individual. At 9:40 am in the morning, he has almost walked half of the 'required' 10,000 steps and his blood pressure is at a healthy 123/80. Given his interest to keep in check his Vitamin D and TSH blood levels, it is likely that he is careful to monitor his immune system as well as his thyroid function to ensure a high level of productivity.

His interest in his body extends to his sleep and meditation patterns as well. It potentially reflects the value that recreation and mind enhancement has been put on by the logic of a pervasive efficiency paradigm. That sleep and meditation duration exhibit a correlative pattern is not surprising, as meditation has often been said to be instrumental in improving sleep and vice versa. All of these links can yield narrative unfolding, depending on the sequence, perspective, and context with which they are interlinked. They can, for example, narrate a typical day in the life of a self-tracker, they can tell the story of a medical recovery, or they can provide the backdrop to a successful coming-of-age narrative. Many possible narrative trajectories can be imagined from this data set, reuniting the numbers

within a more holistic idea of a self. Narrativizing self-tracking data sheds light on narrative potentiality by making visible the blanks that data necessarily leave.

While self-tracking is often understood as providing 'objective' data about the self, such imagined narratives bring into sharp focus that numbers are by no means 'universal' and of course do *not* speak for themselves. Rather, these charts are based on arbitrary assumptions (that 10,000 steps per day are a marker for a healthy lifestyle, for example) and subjective selection processes (for instance, what time span of sleep measurement is considered representative and significant?). Yet, the narratives that these data seem to suggest are neither static nor uniform. In keeping with the modular logic of databases, self-tracking data provide dynamic, modular, and evolving forms of self-knowledge, as they are continuously updated by the data gathered in the process of monitoring, analyzing, and assessing the self as a project. The quantified self as an evolving self corresponds with early conceptions of the digital self as "fluid," an observation prominently made by Sherry Turkle in the early days of online culture, one that emphasizes the potentials of continuous (re)constructions of postmodern identities as "multiple yet coherent" (259). The empowering politics of self-renewal tie in with Paul Eakin's perspective on autobiography as writing the self "less as an entity and more as a kind of awareness in process" (x). James Dyer speaks of "the meritocratic success narratives of self-tracking, whereby all can change and nothing is fixed, and autonomy is exercised as a will towards change—the individual has the ability to become something other: something better" (358). Drawing on process philosophy and posthumanism, Dyer reads the quantified self as "a critical unsettling and disruption of the human (as substance) to exaggerate its historical contingency, incompleteness, and uneasy composition (as process)" (366). Is the self-tracking data, seen in a posthumanist sense, a more accurate representation of the postmodernist subject as deeply fragmented? Does the data chart, in its narrative potentiality, restrain from full narrativization of its subject in order to avoid essentializing the self and thus accounting for the fact that the subject is more atomistic than Western self-narratives have continuously suggested?

To read self-tracking data as a liberating move in this sense appears tempting, yet problematic, as it neglects the totalizing narrative that is implicit in the data logic itself. The data implicitly suggest an internalized narrative of the neoliberal self according to which the body-as-project is externalized (via data) to increase control of the mind over the body. The mechanistic concept of the body reflects a mind-body dualism that is, in fact, far removed from a posthumanist critique of such dualistic conceptions. Rather than being able to modify the self in ever-changing narrative actualizations of the self, the quantified self seems to rather conform with the internalized hyperindividualization of a data capitalist consumer society. As Lupton notes, self-tracking complies with an "increasing focus in neoliberal politics on emphasizing the personal behavior and self-responsibility of citizens"

(19). The 'corporization' of the self through a seemingly universal comparability of numbers, paired with indicators of normative productivity (including set goals and social media components that encourage competition), as well as bodily categories that emphasize efficiency as the core marker of individualism, appear to be the cornerstones of the predominant success story that these data tell us. The mission statement of Heads Up Health—an implicit narrative behind these data—is revealing in its normative conception of the body:

> Heads Up Health was founded by a team of health-conscious technology experts on the simple concept that being healthy doesn't have to be complicated. We saw a world of disjointed medical records, underutilized health tracking technologies and abundant, but poorly managed, health data. We felt that intelligent software could provide the perfect solution.
>
> Based on our belief that well-organized data holds the key to optimal health, we have created a central space where you can manage and explore your own. We are constantly looking for feedback from our customers. We would love to talk more about your health goals and discuss how Heads Up can be a part of your solution. Please feel free to contact us at any time. ("Our Story")

Centering words like "perfect solution" and "optimal health" effectively installs a normative problem-solving approach to what is considered a dysfunctional body by default, one that regards the body first and foremost as a vessel to ensure functional productivity. Health is framed primarily as an engineering challenge and a goal that can be translated into numbers—numbers that suggest easy applicability in individual self-care. That the website entitles the company's mission statement as "Our Story" integrates it with a growing tendency of 'corporate storytelling,' the aim of which is primarily to increase brand identity and emotional customer engagement through affirmative company PR. The narrative that accompanies the data, in this case, is a simple and straightforward success narrative of a neoliberal economy that links individual self-monitoring, control, and financial success (for the company) with each other in direct causal relation. By focusing so selectively on individual success, the narrative ignores the structural circumstances that enable or disable such individual success as well as the privilege of being able to engage in such self-tracking practices, a privilege that can be directly linked to economic status, gender, health, age, education etc. A persistent blind spot of self-improvement narratives such as these is that being a young, white, tech-savvy male not only increases your chances of reaching numerical goals dictated by the normative framework of these data systems but also that it increases your chances of controlling the narrative you create from individual data. That the agency to turn data into narrative is proportionally related to the level of social power also shows on a different scale: At the end of the day, it might not be individuals at all who hold

the privilege of narrativizing data but the corporations that (often unnoticed by the customer) collect and monetize large amounts of personal data.

Data's Return to Narrative

Not only the data chart presented by Heads Up Health but also the protagonist of *Uncanny Valley* finally returns to narrative. Having worked with, in, and around data for several years, she decides to give up her job writing customer support emails in the tech industry and return to writing narrative nonfiction. Disillusioned by tech's alliances with neoliberal capitalism, the narrator states that one of the main reasons for her resignation is that she "was always looking for the emotional narrative, the psychological explanation, the personal history" (262), yet decidedly *not* the simplistic tales of corporate storytelling (261). Narrative, in *Uncanny Valley*, is the happy ending, the humanizing closure to the dehumanizing logic of data. The memoir's conclusion seems to correspond with what Steven Shaviro notes, namely "what's missing [in the network society] is what is more than information: the qualitative dimension of experience or the continuum of analog space in between all those ones and zeroes" (249). Both Shaviro and Wiener propose a transcendental concept of narrative, according to which narrative can complete and reunify the subject in the atomistic world of data.

This is one way of conceptualizing narrative liminality, certainly, to privilege and recenter narrative in a teleological manner: Eventually, data will prove to be insufficient and will need to be 'completed' by narrative. Will not every dataset ultimately resolve in narrative? In keeping with this volume's project to decenter narrative, this would be a naïve and problematic conclusion. Another, perhaps more productive way to regard narrative liminality is to take seriously the potential of the liminal space itself as an unstable yet potentially dynamic and rewarding space in between. If we consider Korsunsky's data chart as a database (which, in the strictest sense, it is not but for the purpose of this argument can be treated as such), it may be helpful to follow a definition by N. Katherine Hayles, who argues in rebuking Lev Manovich's thesis that narratives were "natural enemies" (225) of new media:

> Rather than natural enemies, narrative and database are more appropriately seen as natural symbionts. […] Because database can construct relational juxtapositions but is helpless to interpret or explain them, it needs narrative to make its results meaningful. Narrative, for its part, needs database in the computationally intensive culture of the new millennium to enhance its cultural authority and test the generality of its insights. (1603)

The liminal space between data and narrative, to employ Hayles's conception of a symbiotic relationship, *is* a space of potentiality that permits us to think beyond

the boundaries of narrative closure and causality as well as data positivism and precision. To consider the data records of self-tracking practices as inhabiting this liminal space may mean to embrace the openness and indeterminacy of databases, allowing for numerable and potentially endless narratives to emerge from numerical charts, while simultaneously acknowledging the liberating politics of nonnarrativized self-knowledge. This does not mean to reduce the definition of narrative to the customizable, simplistic notion of narrative that is increasingly circulating in corporate contexts. Neither does it mean to reduce data to empty, 'lifeless' signifiers, but rather to acknowledge the plurality of potentialities that emerge from the complex interactions between these two modes of self-knowledge.

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