OPINION PIECE

ARE BIG DATA JUDGEMENTS ABOUT HEALTH OR PERSONALITY MORE ACCURATE THAN THOSE MADE BY HUMANS?

An anthropological critique in relation to the Quantified Self Movement.

Abhishek Mohanty
Social Anthropology
MA graduate

ABSTRACT

The paper presents a critical anthropological gaze at the difference in accuracy between human and big data judgements on health or personality, where the latter are engendered by wearables and self-trackers. Referencing journalistic and ethnographic literature, particularly on the Quantified Self movement, it argues for a resituating of this debate in the negotiations of big data by users in the everyday. The calibrations of health and personality are lived and phenomenologically experienced, and therefore continuously constructed by as also constructing the self in the cultural. At the same time, the paper cautions that an overt focus on individual interpretation and therefore individual agency distracts at once from big data's social and political considerations, the temporality of the question of its accuracy, as well as the separate valence it commands depending upon the level of abstraction or aggregation of the judgement. The debate then warrants a repositioning as not between human or computer-based judgments, but between the potentialities of *becoming*-human of big-data and *becoming*-big data of the user.

ABOUT THE AUTHOR

Abhishek Mohanty's professional experience includes design-research, impact entrepreneurship, and management consulting, with a focus on South Asia and the Middle East. He is the co-founder of LagomWorks, a human-centred design and service innovation firm. He is also currently working on an impact idea on sustainable consumption in the UK. He has an MA in Social Anthropology from SOAS, an MBA from XIM Bhubaneswar, and a BA (Honours) in Economics from Hindu College, University of Delhi. His research interests lie at the intersection of society and technology studies, as well as the anthropology of design and media.

INTRODUCTION

Through their analysis of the 'connections between data, bodies and self-improvement' resident in weight scales and wearable self-trackers, Crawford, Lingel and Karppi surmise that such discourses around 'physical quantification ... external measurement and self-knowledge' are not particularly new. [467] Leveraging the genealogical method, Foucault demonstrated how the modern sciences employed 'techniques of verbalization' in the project of understanding the subject to 'constitute a new self'. [468] Furthermore, and drawing upon the chalice as his instrument of exposition, Heidegger advanced that need precedes the technology which realises it. [469] In other words, while self-tracking technologies rooted in big data have come to define our zeitgeist, they are but contemporary manifestations of our inherent desire for the validation of health, personality, and selfhood.

In this opinion piece, I reference journalistic and ethnographic literature, particularly on the *Quantified Self* (hereinafter *QS*) movement, to argue that the debate around accuracy between human and big data judgements about health or personality, needs to be read instead as a need for 'situated objectivity' with a 'focus on the everyday' [470] which incorporates at once the data, the individual, as well as the Latouresque social. Through the processual gaze proffered by the 'plasticity'[471] undergirding how *QS* movement members negotiate big data, I gesture at how the 'power of the Norm'[472] of the healthy individual is continuously constructed by and also constructs the self in the cultural. I, therefore, conclude that data, and by inference, the question of its accuracy, commands a different valence, at variegated levels of abstraction and aggregation, for each of its many actors.

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[467] Kate Crawford, Jessa Lingel and Tero Karppi, "Our Metrics, Ourselves: A Hundred Years Of Selftracking From The Weight Scale To The Wrist Wearable Device", *European Journal Of Cultural Studies* 18, no. 4–5 (2015): 480.

[468] Luther Martin, Huck Gutman and Patrick Hutton, *Technologies Of The Self: A Seminar With Michel Foucault* (London: Tavistock Publications, 1988).

[469] Martin Heidegger, *The Question Concerning Technology And Other Essays* (London: Harper Perennial, 1977).

[470] Mika Pantzar and Minna Ruckenstein, "Living The Metrics: Self-Tracking And Situated Objectivity", *Digital Health* 3 (2017): 9.

[471] Dawn Nafus and Jamie Sherman, "This One Does Not Go Up To 11: The Quantified Self Movement As An Alternative Big Data Practice", *International Journal Of Communication* 8 (2014): 1785.

[472] Michel Foucault, *Discipline And Punish: The Birth Of The Prison* (New York: Vintage Books, 1995).

DATA, JUDGMENT, AND THE DIALECTIC SELF

Comparing self-assessments by tens and thousands of volunteers using a personality traits questionnaire, assessments by the participants' 'close others or acquaintances' on a subset of the questionnaire's parameters, and computer-based personality judgments using the volunteers' Facebook likes as an account of their digital footprint, Youyou, Kosinski and Stillwell[473] show how computer or big data-based personality judgments are more accurate and consistent, even at times 'outpacing' human assessments. As they themselves report, the study suggests 'that people's personalities can be predicted automatically and without involving human social-cognitive skills'.[474]

Harari cautions that the coming together of big data and neuroscience means that we are all that much closer 'to the point where an external system can understand … [our] … feelings better than' us.[475] In conversation with this alarmingly prescient warning is Lupton's[476] positing of the 'data double' as 'representing aspects of the body and self' in the form of data, in the manner of a Strathernian dividual. She cites the example of a self-tracker who privileged a digital construct of himself in the sense that he felt weak because and when his app indicated a lower than calibrated share of protein in his dietary intake for the day.[477] Through the self-tracker's realisation that he had in fact begun to 'trust the digital data over his own physical sensations, and that the data also began to shape how he felt', Lupton indicates how the endemic 'recursive and reflexive' nature of the data double begins to dictate life.[478] Here, we are also reminded of Haraway's 'cyborg ontology' and its concomitant 'tradition of reproduction of the self from the reflections of the other'.[479] In other words, by fulfilling our voyeuristic desire to be validated, big data and its enabling

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[473] Wu Youyou, Michal Kosinski and David Stillwell, "Computer-Based Personality Judgments Are More Accurate Than Those Made By Humans", *PNAS* 112, no. 4 (2015): 1036.

[474] Youyou, "Computer-Based Personality Judgements," 1036.

[475] Yuval Harari, "The Idea Of Free Information Is Extremely Dangerous", *The Guardian*, 2018, https://www.theguardian.com/culture/2018/aug/05/yuval-noah-harari-free-information-extremely-dangerous-interview-21-lessons.

[476] Deborah Lupton, "Self-Tracking Cultures: Towards A Sociology Of Personal Informatics", *Ozchi '14: Proceedings Of The 26Th Australian Computer-Human Interaction Conference On Designing Futures: The Future Of Design*, 2014, 82, doi:10.1145/2686612.2686623.

[477] Lupton, "Self-Tracking Cultures," 83.

[478] Lupton, "Self-Tracking Cultures," 82–83.

[479] Donna Haraway, *Simians, Cyborgs And Women: The Reinvention Of Nature* (New York: Routledge, 1991).

battery of self-tracking wearables and apps reproduce the self in the form of an analytically derived Bourdieusque 'habitus', with 'dispositions' around health and personalities which complete the circle by nudging us to 'think, feel, and act in determinate ways'.[480]

Pantzar and Ruckenstein[481] consider the abovementioned argument and highlight that such health and personality judgements based on big data advocate a 'mechanical objectivity' which denies individual users the everyday encounters they have with their personal data, and comes to ignore their 'expectations' and 'social setting'. This precludes 'human agency' in the sense that 'the heart rate or the number of steps taken per day proposes a seemingly mechanical and objective way to capture aspects of … [the] … self'.[482] Instead, they suggest a 'situated objectivity', as one that combines self-tracking or device-generated data along with human contextualisation in the everyday social, with its different actors.[483] And it is this implicit notion of data as having a different meaning for each individual that serves as a point of departure for the *QS* movement, which describes itself as an 'international community of users and makers of self-tracking tools who share an interest in "self-knowledge through numbers"'. [484] As Nafus & Sherman ethnographically show, *QS* members contest the subjectivities which big data engenders by avoiding and repurposing 'normative understandings of what is and isn't "healthy"' or right, moving between tracking tools and devices, and opting for those through which they can differentiate 'between what might be "good for you" as a general principle and what works'.[485]

The phenomenological interpretation of data and attendant judgments by *QS* members, in the form of lived and embodied experiences, thus resituates the debate on accuracy between human and big data judgments of health and personality, to an idiosyncratic dialectic. The movement's co-founder, Gary Wolf, alludes to this higher-order synthesis as he blogs that self-tracking is a project in garnering 'another perspective on yourself, one

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[480] Loïc Wacquant, "A Concise Genealogy And Anatomy Of Habitus", *The Sociological Review* 64, no. 1 (2016): 64–72.
[481] Pantzar, "Living The Metrics," 2.
[482] Pantzar, "Living The Metrics," 2.
[483] Pantzar, "Living The Metrics," 9.
[484] "What Is Quantified Self?", *Quantified Self*, 2020, https://quantifiedself.com/about/what-is-quantified-self/.
[485] Nafus, "This One Does Not Go Up To 11," 1789.

that isn't available from unaided thinking'.[486] *QS* members turn to self-tracking as a means of 'purposefulness and intention' in the everyday, where tracking is less teleological and more of a 'technology of noticing', as 'one learns how to feel one's body through the data'.[487] In fact, for members of the *QS* community, it is not so much the data in and of itself, but the processual act of tracking which holds valence, as 'tracking transcends utility … [since] … the process itself lends meaning'.[488]

However, an overt focus on individual interpretation and therefore, individual agency, like that espoused by the *QS* movement, can 'steer the discussion away from social and political aspects of health'.[489] As we are being made all too aware through the Covid-19 pandemic, underway as I write this essay, 'health, considered from the standpoint of insights generated through self-tracking, is both a societal and an individual issue, with political and existential implications'.[490]

There have been instances by the State, for example, to coerce citizens to download apps which detect and record various data, including but not limited to health alone. In an ongoing piece of research where I am pursuing an ethnographic inquiry of State-mandated contact-tracing apps, one of my interlocutors in India tabled how it was the status on the app, in the sense of his Covid-19-free data double, that now determines whether he can enter a bank branch or the neighbourhood mall. And for another conversationalist, a non-State actor in the form of his employer has mandated the use of a second track-and-trace app, developed by the employing organization itself, which also folds in his medical history as recorded in his personnel file. The data double is thus rendered a necessity and no longer a choice. As Deleuze has suggested, 'the numerical language of control is made of codes that mark access to information or reject it' and 'individuals have become *dividuals*, and

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[486] "The Unreasonable Effectiveness Of The QS Show & Tell", *Quantified Self*, 2020, https://quantifiedself.com/blog/the-unreasonable-effectiveness-of-the-qs-showtell/.
[487] Nafus, "This One Does Not Go Up To 11," 1789.
[488] "The Quantified Self: The Psychology Of Self-Tracking", *Quartz*, 2019, https://qz.com/quartzy/1644006/the-psychology-of-self-tracking/.
[489] Pantzar, "Living The Metrics," 9.
[490] Pantzar, "Living The Metrics," 9.

masses, samples, data, markets or *banks*'.[491] In short, if control is the definitive trait of the pandemic's zeitgeist, then the data double has emerged as its determinate manifestation.

Thus, relying on atomized trends and nuances at the level of the individual, as the *QS* movement has shown, 'can be illusory and the new rules based on them premature', evinced by the example of a self-tracker who 'believed that eating half a stick a butter a day made him smarter' at the risk of cardiac complications.[492] Our original debate on accuracy between humans and big data therefore merits a look at the starting discourses of health and personality as preceding the individual judgement itself, whether human or big data-driven. This is now where I turn.

DISCOURSES AS POTENTIALITIES

Discourses are viewed with suspicion by the *QS* community, as they also present the possibilities of Foucauldian panopticism and biopolitics, with the former imposing disciplinary relations of 'docility and utility'[493] and the latter engendering a 'system of social control'.[494] Although *QS* members contest them, such 'constructs of healthiness ... [are nonetheless] ... embodied in the devices that they use',[495] thereby defining the frames of negotiation. In this sense, the frames themselves are agentive and limiting, since the categories, content, and standards they present to *QS* members as spaces of negotiation are but material realisations of the biases and predispositions of the algorithm designers themselves.

However, the constructs and the frames they give birth to are never static, whether at the level of the individual or in aggregate. On the one hand, the *QS* members can be seen as prosumers of self-tracking devices and wearables. Their 'data doubles' are constantly constituted and configured with newly logged data. As *QS* members reflect upon and contextually interpret their own data, their data doubles reconstitute and reconfigure the

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[491] Gilles Deleuze, " Postscript on the Societies of Control ", *October* 59, Winter (1992): 3–7.

[492] "The Quantified Self: The Psychology Of Self-Tracking"

[493] Foucault, "Discipline and Punish," 137.

[494] Jen Pylypa, " Power And Bodily Practice: Applying The Work Of Foucault To An Anthropology Of The Body ", Arizona Anthropologist 13 (1998): 24.

[495] Nafus, " This One Does Not Go Up To 11, " 1793.

self.[496] And on the other hand, at the macro level, big data constructs change as individuals log in more data, in effect continuously evolving and shifting the norm or standard of the healthy individual or the appropriate personality.

I offer the auto-ethnographic example of using a mobile app which I use to track my physical workouts or runs. Falling within the realm of wearable self-tracking devices, it orders me as a user into data categories lying at the intersection of locality, demographics like age and gender, and personal statistics such as weight and previous running records, thus highlighting the app's agency, presuppositions, and omissions. [497] It advances standards of running competence, accompanied by testimonials of users at corresponding levels, thus constructing a norm where 'health is equated with fitness'.[498] Whilst on a run, an automated voice assistant alerts me about my pace, heart rate, and lap-times, peppering each such update with suggestions on gait, breathing technique, and even mental fortitude, thus effecting a 'sense of a human-device hybrid'.[499] At the end of my run, statistics and celebratory badges to complement my endorphin-induced stupor are displayed, including gains I have made with respect to my previous workouts and how I now compare with a cohort of other runners in a project of reordering. To complete the reconfiguration, I am given a personalized plan, videos of supplemental workouts, a dietary guide, and a monthly workout summary, showing the points I have earned and the levels I have moved up, or slid down, in the sense of an 'arithmetical economy'.[500] And finally, advertisements on running gear, health supplements, and health insurance schemes are regularly emailed across to me, with discounts as rewards depending on my current running statistics, thereby bringing into sharp relief my utility as a prosumer of data.

What this gestures at then, is that accuracy, when silhouetted against the starting discourses of health and personality, is at once temporal, as well as contingent upon the level of abstraction or aggregation of the judgement. There is no permanence, but only a constant 'crossover' in a manner that 'everything is always crossing over into something

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[496] Lupton, "Self-Tracking Cultures," 82–83.
[497] Crawford, "Our Metrics, Ourselves," 484–485.
[498] Pylypa, "Power And Bodily Practice," 26.
[499] Crawford, "Our Metrics, Ourselves," 487.
[500] Foucault, "Discipline and Punish," 180.

else, decomposing and recomposing itself'.[501] In the interplays and interactions between the user, the data double, the app or self-tracker, and abstracted or aggregated constructs, there is a continual reconfiguring. Thus, I borrow from Deleuze and Guattari,[502] to argue that the debate on accuracy warrants a repositioning as not between human or computer-based judgments, but between the potentialities of *becoming*-human of big-data and *becoming*-big data of the user.

CONCLUSION

Even though their study showcases the significantly greater accuracy of computer-based assessments, Youyou, Kosinski and Stillwell[503] table the caveat that 'human perceptions have the advantage of being flexible and able to capture many subconscious cues unavailable to machines'. Thus, as I have shown earlier in reference to the *QS* movement, a judgement on health or personality which combines the human context of the person's everyday social with big data readouts, is more accurate to the extent that it is more meaningful for the individual user. Yet as criticisms of insular interpretations by *QS* members indicate, a judgement's relevance nee accuracy lands on its potentialities in the manner of *who* it is meant for, at *what* level of abstraction or aggregation, and *when*. And I, therefore, conclude that as users, big data corporations, institutions, and governments traverse the embodiments and understandings of such health and personality judgements, the debate around their accuracy will gravitate towards the ends towards which they are the means, in the form of marketing and advertising campaigns, public policies, and surveillance. For as McLuhan reminds us, 'the medium is the message'.[504]

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[501] Nick Mansfield, *Subjectivity: Theories Of The Self From Freud To Haraway* (New York: New York University Press, 2000), 144–145.
[502] Mansfield, "Subjectivity: Theories Of The Self," 144–145.
[503] Youyou, "Computer-Based Personality Judgements," 1039.
[504] Marshall McLuhan, Understanding Media: The Extensions Of Man (New York: McGraw-Hill, 1964).

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