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A Fictional Dialogue at the Mall

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Abstract

Quantifying the self is not enough; numbers and statistics must be interpreted, that is, integrated into networks of identity, society, and meaning. The quantified self must become a "qualified" self if body tracking is to have any impact on our lives and society. Data generated by body tracking in all forms are not merely a passive material for interpretation, they do not merely lie around in databases until something from outside makes meaning out of them. Data become information and flow in global networks. Without access to data, individuals must rely on experts and expert systems. Putting body-related data into the hands of those who are directly concerned makes them responsible for doing something with the data, for interpreting and making use of the data. Interpreting the data of body tracking occurs as networking. It breaks out of the constraints of modern subjectivity as well as paternalistic health care structures and occurs by participation, communication, and transparency, that is, by following "network norms." Personal informatics and body tracking is a performative enactment of the informational self. The informational self is neither the product of technologies of power (Foucault), but of an "ethical" technology of the self. The self becomes a hub and an agent in the digital network society. Body tracking transforms the opaque and passive body of the pre-digital age into the informational self. Networking is the way in which order – personal, social, and ontological – is constructed in the digital age.

When Socrates took up the maxim of the Delphic oracle, "know thyself" in order to lead his disciples on the road to wisdom, he could not have known how "personal informatics" would understand this aphorism today. According to the movement's official Website, personal informatics "is a class of tools that help people collect personally relevant information for the purpose of self-reflection and self-monitoring. These tools help people gain self-knowledge about one's behaviour, habits, and thoughts."[1] As this broad definition suggests, personal informatics is concerned with any and all digital information that pertains to one's activities, work, hobbies, finances, family situation, and of course,

1 Cf. http://www.personalinformatics.org/.

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health, both physical and mental. A more narrow definition focuses primarily on physical and mental health. For this reason, personal informatics are often referred to as "body tracking," "self-tracking," "life logging," and "quantified self." If Socrates lived today, would he encourage the young men of Athens to wear smart watches that continuously monitor their blood pressure, blood glucose levels, nutrition, temperature, movements, heart rate, sleep rhythms, stress, emotional state, posture, surrounding air quality, and much more? This question is not merely rhetorical. If one accepts the claim of the Quantified Self Movement of "self-knowledge through self-tracking with technology,"[2] the road to wisdom leads through a newly accessible land of numbers, charts, graphs, projections, sensors, apps and algorithms. If Socrates met the two "founders" of the Quantified Self Movement, Gary Wolf and Kevin Kelly at the mall, we might suppose he would raise some critical questions about this new form of self-knowledge and attempt to convince his interlocutors that numbers are not enough and that a "quantified" self must go on to become a "qualified" self.

Questioning the validity, objectivity, and usefulness of quantification in any area of human life, and above all in the area of medicine and health, is not easy. We Moderns have come to associate knowledge and truth with scientific methods and hard, empirical facts. Modern medicine is based on accurate measurements of many different bodily processes and functions. Health is defined as "the level of functional and/or metabolic efficiency of an organism."[3] This is usually understood to mean a state of well-being free from illness and disease.[4] Levels of metabolic efficiency are numerical values obtained by technologies of quantification, technologies that in the past were located in specialised laboratories, hospitals, and doctor's offices. Advances in sensorics and wearable computing have brought the laboratory to the patient. Measuring metabolic efficiency no longer requires large expensive machines and perhaps weeks to complete. Everybody today can have inexpensive access to accurate medical- and health-related data continuously and everywhere. We know what the results of the laboratory tests are, before we enter the doctor's office. However, we still go to the doctor. We do this because the meaning of the data depends on understanding medical research and medical science, that is, being a medical expert.

Whatever Gary Wolf and Kevin Kelly might say to Socrates, if a doctor walked by and joined in the discussion, he would certainly say that self-knowledge is a matter of science and not philosophy and that the only oracle worth listening to are laboratory results. These are objective facts. Being able to say this with justification, pride, and perhaps a little complacency, is itself the result of a long history of transformations in what "knowledge" means, and in what it means to know one's self. Just so that Socrates gets it right, and seizing the opportunity to tell Wolf and Kelly what he thinks about so-called e-patients and self-trackers, our doctor might go on to say that not just anybody is qualified for knowledge of the self. He himself went through four hard years of medical school and six

2 Cf. Wikipedia https://en.wikipedia.org/wiki/Quantified_Self.

3 Wikipedia https://en.wikipedia.org/wiki/Health_(disambiguation).

4 Cf. Miriam Webster Dictionary http://www.merriam-webster.com/dictionary/health.

years internship. Knowledge of the self requires a self that is properly *qualified* and not just properly quantified. Only those who have undergone rigorous training in the scientific method are qualified for self-knowledge. Finally, he might indignantly add, "You, Socrates, you of all people should know this, for it is you who attempted to lead the young men of your time away from mere opinion to rationality and truth!"

Foucault has pointed out that the idea of a scientific qualification for self-knowledge is the result of a long and changing history. In the ancient world, knowledge of self was always accompanied, if not preceded, by an "ethical" relation to the self. Together with knowing the self, the ancient tradition recognized also the "care" for oneself, *epimelesthai sautou*, 'to take care of yourself,' or 'the concern with self.'

> "In Greek and Roman texts, the injunction of having to know yourself was always associated with the other principle of having to take care of yourself, and it was that need to care for oneself that brought the Delphic maxim into operation." (Foucault 1997: 226)

The nearness, if not inseparability, of these two ways of relating to the self highlights at least two important ideas that have gone under in the course of Western history. First, there is the insight that knowing oneself and taking care of oneself are inseparable. This means that there is no value free, objective, impartial, and uninvolved knowledge of the self. Knowledge is always guided, structured, conditioned, and entangled in practices that are "ethical" in some way. Second and closely related to the first insight, there is the ancient view of knowing and caring as essentially *practical activities of relating to the self*. Both self-knowledge and care of the self are that which the ancient Greeks would call *techné*. Foucault speaks of "technologies of the self" in order to emphasize that it is a matter of practices

> "which permit individuals to effect by their own means, or with the help of others, a certain number of operations on their own bodies and souls, thought, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality." (ibid: 225)

This explains why the Delphic maxim did not refer to a purely objective knowledge in the modern scientific sense, but linked knowledge of the self to a process of self-qualification and preparedness for the truth. For Plato, caring for the self meant preparing oneself to serve the community in the *polis*. The ideals of the "good" *(kalos)* and the "beautiful" *(kagathos)* were deeply inscribed in what knowing and caring for the self were all about. Only a self that is ethically and practically *qualified* can achieve self-knowledge.

In the course of Western history both the idea that knowing is an "ethical" endeavour and the idea that all such endeavours are practices of self-construction, that is "technologies", have undergone transformations. Heidegger (1977) pointed out that the original Greek idea of technology *(techné)* cannot be equated

with what we Moderns understand by technology.[5] The original meaning of *techné* was a way of knowing by which something is brought into being not only with regard to how it functions, but also with regard to values such as beauty and goodness. Modern technology on the contrary is defined by functionality alone. A technological artefact today does not have to be beautiful or ethically good. It has to function efficiently, reliably, and quickly. Originally, *techné* was a making or constructing *(poiesis)* that was not distinguishable from what artists, poets, philosophers, and politicians do. On the basis of the ancient texts, Foucault, at least in his later work, attempts to revive the ideal of a "technology" of the self that is more than pure functionality, but includes "ethical" and "aesthetic" aspects. A technology of the self only concerned with functionality, efficiency, precision, and quantification are what Foucault (1997) calls "technologies of power, which determine the conduct of individuals and submit them to certain ends or domination, an objectivizing of the subject" (Foucault 1997: 225). A technology of the self that returns to the primacy of "caring for the self" and to an original form of *techné* would be more of an "ethics" than a technology. With regard to practices of self-quantification and body tracking, an ethics of the self would not primarily be directed toward the goals of freedom from illness or enhancement of performance and productivity. Instead, coming to know the self would be directed to the self as a work of art and an ethical achievement.

For both Heidegger and Foucault it is clear that modern technologies, including medical technologies, are inherently technologies of power. Foucault emphasizes that technologies of power and technologies of self are always entangled with each other, and also with technologies of production and technologies of language. Nonetheless, it can be shown that specific forms of these entanglements are historical, changeable, and contingent. This is also true for the specific constellation of knowledge, technology, and power characteristic of the modern world. Perhaps the Platonic dialogue in the mall with self-trackers, doctors, and a philosopher might offer an occasion to witness a turning point in our historical constellation of self-knowledge.

Let us suppose that Gary Wolf and Kevin Kelly, our two self-trackers, claim that body tracking provides us with objective, reliable, and accurate knowledge of our bodies, our feelings, and our activities. We may suppose that the doctor who is also participating in the discussion acknowledges this, but claims that people who are not scientifically trained are not qualified to understand or act upon quantified knowledge of the self. The quantified self without the properly

5 We base our understanding of Modernity on Latour's description in *We Have Never Been Modern* (1993). Heidegger (1977) emphasized the functional character of the modern view of technology. For Luhmann technology can be considered an evolutionary advance because its functionality reduces the complexity of social order, or as Luhmann (2012: 313) puts it, it supports consensus: "If technical arrangements are preferred in societal evolution, this appears mainly to be because, although they involve artificial objects, they save consensus. What works, works. What proves its worth has proved its worth. Agreement does not have to be reached."

qualified self is a mere hobby, a form of digital recreation with no serious consequences or significance. What would Socrates say about this? If we assume that Socrates did not pass through two thousand years of history to arrive at the mall, the present day Agora, without noticing what was going on, he would probably point out that the rise of Christianity radically changed the original Greek idea of self-knowledge. Christianity led to focusing on self-knowledge as a means of reconciliation with God. This meant closely examining all the temptations to sin associated with the body and earthly life.[6] The true self is therefore the self that heeds the Word of God and renounces sinfulness as well as attachment to the body. The idea of "taking care of oneself" as an ethically guided *techné* is lost under the dominance of spiritual techniques that were aimed to separate the true self from the sinful body. The ethical dimension became thereby merely "moral," that is, a question of *compliance* to God's laws. Foucault distinguishes between the ethical and the moral. Morality is directed toward compliance to given rules, whereas the ethical is a project of self-realisation guided by aesthetic norms and the creativity of *techné*. During the Middle Ages, ethics became morality and the aesthetic dimension was lost entirely, and the gap between technologies of production, technologies of power, and technologies of self widened.

When Christianity became secularised at the beginning of the Modern period, the self had to come to know itself without God's help. "Know thyself" became for Descartes a method to attain certainty by clearly and distinctly separating the self that is transparent to itself in thought from the opaque and extended body. The self appeared to itself as a *res cogitans*, a purely thinking thing in opposition to the physical body and the world in which it was extended. The body, for its part, became an object, a machine, an organism that could be known by means of the physical and biological sciences. After the demise of the transcendental ego of the Cartesian tradition, the conscious subject also became an object of science, the sciences of psychology and sociology. Introspection or simply attempting to turn one's gaze within did not lead to any objective, reliable knowledge at all. At the end of the Modern period, there remains only one kind of knowledge: objective, empirical, quantifiable scientific knowledge. However, as our doctor rightly claims, not just anybody is a scientist. Not just anyone understands what the objective, quantified data of science mean. Even after the subject of modern philosophy disappeared into the data of the psychology, sociology, and medicine, there remained the "qualified" subject of scientific knowing itself. Being a scientist means having attained a position in which knowing is observation untainted by desires, ideologies, historical and cultural limitations.[7] The scientific observer is universal, impartial, disembodied, and only because of this, able to discover the facts. These two, the quantified self that is an object of science and the scientifically qualified self who is capable of making sense of the data now stand opposed in a fictive dialogue with Socrates

6 Here we follow Foucault's (1997) history of the ideas of self-knowledge.

7 This is the traditional self-understanding of science in Modernity as is apparent in the debate between "understanding" and "explanation" (cf. Apel 1988).

at the mall. We ask again, what Socrates would say in order to lead his interlocutors on the path to wisdom.

If Heidegger and Foucault are right about the original meaning of self-knowledge as intimately associated with "caring for the self" and thus as an ethical practice, and if self-knowledge is much rather a *techné* in the sense of aiming at aesthetic as well as functional values, we must assume that Socrates would be appalled at the schizophrenic division of human beings into subjects and objects. The cold, quantified data on the one side, and the objective, value-free, disembodied scientific observer on the other. He would also be appalled at the thought that he has nothing to say without a PhD and a long internship. He finds himself in a *polis* made up of objectivized bodies on the one side and a small class of experts on the other, and as bridge between them, a complex state apparatus called Health Care and Public Health, suspiciously exemplifying all the characteristics of tyranny.[8] It is the experts, after all, who set the standard values and norms by means of which data is evaluated. Who says our blood pressure is "too high" or that we have to take ten thousand steps per day? Based on what authority, or sanctions, are we told to change our lives?

At this point, two bystanders who have been listening attentively to the discussion finally decide to join in. Humberto Maturana and Francisco Varela, who are biologists, hasten to assure everyone that there are neither subjects nor objects, but only complex adaptive systems. These systems are self-organising, autopoietic, self-referential, and informationally closed. Maturana and Varela (1987) argue that cognition is a biological function. Self-knowledge is nothing other than the way that a central nervous system processes information in order to maintain its autopoiesis, that is, "self-production." Organisms do not take in information from outside, but construct information according to their own organisation out of undifferentiated perturbations coming from the environment. Body tracking exemplifies this perfectly because it demonstrates how the self relates to itself on the basis of measurements so as to maintain certain values with regard to vital processes. The self is a cybernetic, that is, self-steering system. They explain this in the following way:

> "What occurs in a living system is analogous to what occurs in an instrumental flight where the pilot does not have access to the outside world and must function only as a controller of the values shown in his flight instruments. His task is to secure a path of variations in the readings of his instruments, either according to a prescribed plan, or to one that becomes specified by these readings. When the pilot steps out of the plane he is bewildered by the congratulations of his friends on account of the perfect flight and landing that he performed in absolute darkness. He is perplexed because to his knowledge all that he did at any moment was to maintain the readings of his instruments within certain specified limits, a task which is in no way represented by the description that his friends (observers) make of his conduct." (Maturana/Varela 1987: 51)

8 Cf. Lupton (1995) for an historical and sociological description of Public Health on the basis of Foucault's analysis of power.

Wolf and Kelly may be assumed to approve of this, because this is exactly what their tracking devices do. They provide real-time measurements of all the important vital functions so that the self can quickly and efficiently respond, just as the pilot responds to the continuous measurements of altitude, speed, wind velocity, and so on shown by the instruments. Self-trackers are confident that when they "live by numbers," that is, follow their instruments, they will fly safely through life and arrive at well-being.[9] Maturana and Varela agree with Socrates that knowing is doing and that self-knowing amounts to constructing the self, much in the original sense of *techné*. Knowledge and truth are forms of adaptation, that is, insofar as they serve to maintain the operations of the system within a specific environment. If they do not do this, the system disintegrates. Maturana and Varela must admit, however, that this reduces the ethical aspect of "caring for the self" to a question of life or death. Truth is viability. Anything short of death is good and beautiful. If there is a problem with the instruments, or the pilot makes an error in judgement, the plane crashes. Maybe others can learn from this, but it is too late for him.

Socrates is at once relieved and troubled by these ideas. We no longer have quantified selves on the one side and qualified, expert selves on the other with nothing to regulate their relations but technologies of power. Instead, we have self-constructing systems using quantitative data in order to monitor and maintain their operations. Nonetheless, Socrates has some questions for Maturana and Varela. If we take the theory of autopoiesis and the biology of cognition as an example of a "technology of the self" in Foucault's sense of ethics, and also in Heidegger's understanding of *techné*, this raises two questions:

1. Where do the parameters of the instruments come from? How does the pilot know that actions he or she undertakes to correct the readings on the instruments have a beneficial effect? Maintaining autopoiesis alone, mere viability amounts to just getting by and not necessarily attaining a state of ethical and aesthetic perfection. Just because natural selection has spared us for the moment, does not mean we are "better" people for that.
2. What effect do the actions of the pilot have on the parameters themselves and not merely on the compliance to the values they dictate? Can the actions of the pilot change the parameters? Or do they merely amount to a kind of "morality," that is, a question of compliance to established standards? What chance of creativity and innovation does the pilot have, when he or she can only react to parameters inscribed in the instruments?

Having heard enough of these strange theories, our doctor re-enters the discussion. He makes it clear that as far as the parameters are concerned, they come from scientific knowledge of the body concerning sickness. Health is nothing other than the absence of sickness and disease. Medical science has decided

9 For Lupton (2013: 9) the self-tracker is "a truly cybernetic organism in its attempts to create a closed regulatory system, in which data are produced which then affect behaviours that then create further data and so on."

how high our blood pressure can be, if we are to avoid serious consequences. In addition to this, medical experts, such as the ACSM (American College of Sport Medicine) have established clear "exercise prescriptions" or fitness activities based on research into the relation between physical exercises and certain diseases such as cardiovascular diseases, and body composition diseases (for example, obesity).[10] Objective knowledge of the body sets a norm for health, such as BMI (Body Mass Index), to which one should comply by means of exercises, diet, etc. Body tracking and self-quantification is a means to quickly, easily, and continuously measure the difference between the norm and one's present state. The goal is to attain to the norm or the target value of the cybernetic system. The doctor admits that this is not unlike Maturana's and Varela's description the activities of the pilot who follows instruments in order to maintain the proper altitude and speed of the airplane. However, it is clear that medical experts need to interpret the readings on the instruments and advise the pilot on what to do. Furthermore, he hastens to remind the group, sport medicine, as the name suggests, offers a second meaning of "fitness," namely, that which is necessary for improved performance and skill. Competitive sports are concerned not with absence of disease, but with extraordinary bodily skills, endurance, and abilities that are revealed in competition. Enhancing the body with extraordinary skills and abilities is the goal of fitness and exercises in this second sense. Here one can speak of optimizing, extending, and enhancing the body and the self. Fitness in this sense of the word need not be directly correlated to disease. On the contrary, health takes on the meaning of a certain kind of excellence. Socrates should know this. Was it not the culture of ancient Greece that gave us the Olympics?

Wolf and Kelly probably feel themselves misunderstood at this point and attempt to explain what quantified self really means. Personal informatics should not be subsumed under the traditional meanings of fitness. It is a combination of both and also much more. Personal informatics is not merely "personal" in the sense of being related only to one individual person. It is a kind of self-knowledge that goes beyond the self and involves the environment and the community. As Gary Wolf points out "there is a strong tendency among self-trackers to share data and collaborate on new ways of using it."[11] All the tools and technologies of digitalisation transform the body and the self into information that flows into databases, online platforms, patient communities, social networking sites, etc. Personal informatics encompasses much more than merely body related information. The many different kinds of information that are created, collected, collated, correlated, communicated, and commented become big data, that is, data gathered not merely from body tracking, but from all areas of life, and not exclusively health related. At its best, personal informatics uses big data analytics and social media to discover correlations

10 See the discussion of sport medicine from the perspective of Foucault in Markula/Pringle (2006).

11 http://archive.wired.com/medtech/health/magazine/17-07/lbnp_knowthyself?currentPage=all.

and meaning in information that heretofore were hidden from view. Before the advent of the many tracking tools and technologies we have today, the self was informationally opaque and underdetermined. The technologies of personal informatics succeed in turning the self into information so that it becomes transparent and understandable. There is nothing that cannot be digitalised and transformed into information. The self is no longer either an object of scientific knowledge or a trained scientific observer, but is transported onto the plane of information in which every bit counts and everyone is an expert that has something to contribute. It is the "informational self" or the "networked self" that self-tracking reveals.[12] The informational self is not the neo-liberal individual caught within the tensions and contradictions of freedom and self-determination on the one side and macro-social structures such as big government and big industry on the other.[13] As Foucault might put it, the informational self is a product of a specific historical form of "technology of the self," that is, a specific way of relating to the self which constitutes the self in a certain way. The informational self cannot be modelled as an autopoietic system that knows itself self-referentially by means of distinguishing itself from an environment. The many different kinds of information that appear on the screens of self-trackers do not fit into any one system, but link to many other kinds of information throughout the World Wide Web. The Web is non-hierarchical, inclusive, connected, complex, and public.[14] Knowledge, including self-knowledge, is no longer subject to an economy of scarcity as it was in the age of print media. It is more like a cloud than a pyramid. This means that knowledge can best be modelled as a network in which all participate.

Wolf and Kelly go on to point out that what distinguishes the informational self from the neo-liberal, individualistic self that is based on cybernetic models are the affordances of the technologies of self-tracking. Personal informatics supports and encourages connectivity, communication, and flow of information of all kinds. The affordances of self-tracking technologies are socially oriented. Not privacy, but "publicy" (Boyd 2010) is the default. We may still be reading instruments, but the instruments lead us beyond the isolated individual. Once the self has become information, it begins to flow in unforeseeable ways through the myriad connections of global networks. These networks have no clear boundaries. In this "space of flows" (Castells 1996) everything is connected to everything else. The informational self cannot be "informationally closed" as an autopoietic system must be. Instead, it is informationally open to everything else flowing through global networks. Reading the instruments of personal informatics does not show how an organism must maintain certain levels in order to adapt to perturbations in the environment. On the contrary, personal

12 Cf. Belliger/Krieger (2015).

13 Cf. Lupton's (2014b) typology of self-trackers, which stretches from "private" and voluntary on one end to collective and "imposed" and "exploited" on the other, is derived from this traditional sociological model.

14 Cf. Weinberger (2012) for a discussion of the nature of knowledge in the age of the Internet.

informatics disclose an "ecology" of information that extends beyond any individual body.[15] The infrastructure of connectivity and flow that makes up the Web hinders any kind of clear boundaries between system and environment. These boundaries, however, as Maturana and Varela admit, are constitutive for autopoietic systems. In their theory, if an organism cannot distinguish itself from its environment, it cannot direct its operations to itself and cannot act to maintain its autopoiesis. It disintegrates into the environment and disappears. Personal informatics, on the other hand, transforms systemic disintegration into forms of network integration. This opens up the possibility of redefining the meaning of "health" and reformulating Foucault's ideal of an ethics as *techné* of the self on the basis of the norms that guide the activity of "networking."[16]

At this moment, the group becomes aware of a tall man standing in the corner who seems to be observing them and writing down everything they say in a small notebook. Out of curiosity, they approach the man and ask him what he is doing. He introduces himself as Bruno Latour and explains that he is a French ethnologist working on the project of an "anthropology of the Moderns."[17] He is very interested in what Wolf and Kelly are saying about networks, since he himself developed a way of seeing the world called "actor-network theory." Since he claims to be an expert on networks, Socrates asks him to explain in plane words the meaning of what Wolf and Kelly are talking about. Latour apologises for not knowing much about personal informatics, but he has studied networks for decades and has discovered that what we call science, technology, and society are forms of associations between human and non-human actors. Nothing can exist alone, all by itself. Everything that comes to be and takes its place in our world does so by means of linking up to other things, forming alliances, delegating actions, entering into hybrid and heterogeneous assemblages that can be described as "actor-networks." Actor-networks are everywhere. Indeed, actors are themselves networks made up of many different associations. Even so-called "cognition" is a network effect, as the recent discussions of "distributed cognition" and "extended mind" show.[18] The self is not a closed system, as Maturana and Varela suppose. It cannot know itself by sharply distinguishing between its own operations and the surrounding environment. Instead, the self is a network and self-knowledge is a process of building, maintaining, dismantling, and transforming networks that extend in all directions and include many different kinds of actors. Ecology is a case in point. Has not the ecological crisis and the advent of the "Anthropocene" shown that there are no boundaries between organisms and environment. The whole planet, Gaia, is one immense ecological network in which every actor is connected in many different ways

15 After insisting on the importance of private and individual self-tracking, Lupton (2015: 4) admits that the technologies themselves have social, participatory, and "prosumptive" affordances.

16 In the following, we rely on our discussion of networking in Krieger/Belliger (2014).

17 Cf. Latour (2013).

18 Cf. Rowlands (2010) for a discussion of non-Cartesian cognitive science.

to every other.[19] When Wolf and Kelly talk about the big data of personal informatics, they are talking about networks that include information not just about the blood pressure, heart rate, etc. of individuals, but about the quality of water and air, the effects of urbanisation, climate change, and many other factors that demonstrate exactly the interconnectedness of all things. If there is any pilot flying blindly by instruments than it is not an individual organism, but the human species that is steering Gaia either toward a safe landing or disaster.

Latour insists that if personal informatics are about networking, then they are not merely "personal" or "private." What he has heard about body tracking is mostly complaints and fears about loss of privacy. However, if he is right about actor-networks, then there never was such a thing as privacy anyway.[20] In addition, quite apart from these worries, networking has a positive side. It enables an ethical dimension of responsibility toward the "health" and well-being of the planet. If we have learned anything from ecology, it is the impossibility of drawing sharp boundaries between organisms and environments and the inescapably ethical dimension of self-knowledge. Self-knowledge and care of self cannot be understood as the self-reference of an informationally closed system flying blindly in an environment over which it has no control, an environment which either "selects" it to survive or not. Instead, what networks show us is that "caring for self" and caring for Gaia are the same. He admits that it is not easy to talk about these things and that the chances of being misunderstood are high. Even two thousand years ago, Socrates was considered by many to be a dangerous troublemaker leading the youth of Athens astray. Foucault, at the end of his life, could only formulate a weak hope that the technology of the self could become truly "ethical." The usual understanding of the goals of the quantified self movement does not extend the meaning of health and fitness beyond the individual. How shall we talk about what networking could mean in today's world? Latour tells the group that he has long stopped using the usual vocabulary and concepts of Modernity and has tried to find new words to express our present day situation. He himself has recently attempted to find a name for the activity of networking, an activity that seems so basic and essential for what social order and self-knowledge in the "Anthropocene" are all about. He hesitates a moment, because he is obviously uncertain about telling this distinguished group about the name he would like to propose for what Socrates (along with Foucault) has referred to as "care for the self," and what could be considered a "technology of the self" in an ethical and aesthetic sense. After Socrates urges him to go on, Latour begins to speak about "design."

Design discourse is admittedly mostly technical in the sense of focusing on product development, marketing, and business planning. Nonetheless there is a deeper and, for the social scientist, more interesting background for questions relating to design. At stake is fundamentally a *techné* of the self in the sense of Foucault's ethics. In a well-known book entitled *Sciences of the Artificial*, Herbert

19 Cf. https://en.wikipedia.org/wiki/Gaia_hypothesis.

20 Cf. Latour (1993) for an explanation of why we have never been "Modern" and Krieger/Belliger (2014: 151-160) for a discussion of privacy in a global network society.

Simon developed a concept of design that can be traced from Greek *techné* and applied to Foucault's technology of self as ethics. For Simon (1996)

> "Engineers are not the only professional designers. Everyone designs who devises courses of action aimed at changing existing situations into preferred ones. The intellectual activity that produces material artifacts is no different fundamentally from the one that prescribes remedies for a sick patient or the one that devises a new sales plan for a company or a social welfare policy for a state. Design, so construed, is the core of all professional training [...] Schools of engineering, as well as schools of architecture, business, education, law, and medicine, are all centrally concerned with the process of design." (ibid: 111)

Latour would agree to this and add that the concept of design today "has been extended from the details of daily objects to cities, landscapes, nations, cultures, bodies, genes, and [...] to nature itself" (Latour 2008: 2). Furthermore, this extension of the idea of design to all aspects of reality means that the concept of "design" has become "a clear substitute for revolution and modernization" (ibid: 5); those two ideals that have led Modernity into an inescapable responsibility for planetary ecology. Finally, for Latour "the decisive advantage of the concept of design is that it necessarily involves an ethical dimension which is tied into the obvious question of *good versus bad design*" (ibid: 5). The ethical dimension that Latour finds at the heart of design joins Foucault's idea of an ethical technology of self for "humans have to be artificially made and remade" (ibid: 10). Understanding self-knowledge as an ethical and technical (in the sense of *techné*) task of design should not lead us into post-humanist speculations and the discussion of cyborgs. Instead, that which makes design both ethically good and aesthetically beautiful is its ability to take many different aspects of what something is and can become into account, to respect all the different claims that can be made on someone or something, to insure that nothing important is overlooked, and to allow for surprises and the unexpected. To design something well, including oneself, in the functional, ethical, and aesthetic dimensions, is to take account of as much information as one can in the process of constructing. Latour proposes that networking, that is, the *techné* of constructing actor-networks, should be understood as *design*. This means that design is a "means for drawing *things* together – gods, non-humans, and mortals included" (ibid: 13).

It is interesting to note that much of the research being done in the area of wearables and personal informatics systems can be classified as design.[21] The well-known five phases model of Li et al. (2010) is used primarily for design research. The central question asked by this research is what motivates, enables, and binds users to a particular constellation of hardware and software? How can automated systems help users set goals and monitor success? This research clearly demonstrates that the information being gathered, aggregated, and interpreted by body tracking technologies also change the parameters of what

21 Cf. for example Barua et al. (2012); Epstein et al. (2015a; 2015b).

health and well-being are considered to be. Developers and designers are much more responsive to users' needs and interests than the medical establishment and public health administration. Self-tracking is indifferent to boundaries between primary, secondary, and tertiary health care. This becomes apparent the moment we consider that information aggregated, shared, and evaluated in large quantities can yield new and unforeseen knowledge about health. Health is not a given, but a goal that is to be discovered by practice of gathering data, aggregating, and sharing the data so that further research can discover new and unforeseen correlations. The influential President's Report on Big Data (2014) claims that "Big data can identify diet, exercise, preventive care, and other lifestyle factors that help keep people from having to seek care from a doctor" (ibid: 22). Big Data analytics can "help identify clinical treatments, prescription drugs, and public health interventions that may not appear to be effective in smaller samples, across broad populations, or using traditional methods" (ibid: 23). Big Data enable "predictive medicine" which "peers deeply into a person's health status and genetic information, allowing doctor's to predict whether individuals will develop a disease and how they might respond to specific therapies" (ibid: 23). These possibilities raise important questions with regard to privacy. For example, predictive medicine "extends beyond a single individual's risks to include others with similar genes [...]". The Report acknowledges that current legal and cultural notions of privacy "may not be well suited to address these developments" (ibid: 23), and concludes that "Using big data to improve health requires advanced analytical models to ingest multiple kinds of lifestyle, genomic, medical, and financial data" (ibid: 23) all of which are needed to develop personalised health services. Despite the concerns for privacy, many patient community platforms are becoming major contributors to medical research and it is on the basis of this research that the parameters for data selection and evaluation are being adjusted and built into wearables and body tracking tools. It is from this research that the values of what counts as healthy with regard to vital data are set, that is, are fed back into the instruments as goals and markers of health. Not simply gathering more and more data from more and more sensors is the defining characteristic of personal informatics as a technology of self, but the sharing of this data in communities of research, consultation, support, and care. Only when personal informatics and body tracking are not confined to mere compliance to fixed parameters, but guided by network values of connectivity, flow, communication, transparency, participation, and authenticity and only when users are actively and constructively engaged in creating parameters and defining health does the "quantified" self become a "qualified" self. The qualified self is no longer subject to the *morality of compliance*, but is guided by the *ethics of design*.

The goal of design is not to pilot the "machine" successfully on the basis of certain very limited instruments and within given parameters – which is the typical meaning of morality as compliance with given standards – but also to question and change the parameters of functionality and the standards themselves. This practice corresponds with Foucault's notion of ethics. Ethics are not morality. They are much more a *techné* in the sense of design as proposed

by Latour. The ethical life is lived with regard to designing the self as functional (healthy) as well as good and beautiful, that is, by taking account of all the available information and striking the right balance. The many tools and technologies of personal informatics make this possible in that they transform everything into information and draw this information together so that it can be compared, evaluated, correlated, and allowed to flow through networks in unforeseeable ways. Algorithms and technologies should be designed to be ethical partners and not moral authorities. Health and beauty are not objectively given, either by God or by medicine, psychology, and sociology, but are constantly being formed, tested, revised, and (re)negotiated in the process of networking. Networking is a socio-technical concept that means not only connectivity and flow of information, but also communication, participation, transparency, flexibility, and authenticity.[22]

The interlocutors in our fictive conversation become silent. New perspectives for understanding self-knowledge in the age of networking have appeared on the horizon. But the day is drawing to a close. Socrates must return to Athens. He carries not only the Fitbit that Wolf and Kelly have given him as a souvenir, but also the conviction that his struggles for an ethical form of self-knowledge and well-being that go beyond the individual and the body are not in vain. Maturana and Varela go back to their laboratory in order to investigate how complex adaptive systems might be theoretically redesigned as networks. Gary Wolf and Kevin Kelly promise to set the program for the next QS conference with a view to the broader issues involved in personal informatics. Our doctor now knows that patients are also experts and can contribution to medicine.[23] He promises to join an online patient community and finally digitalise his medical records. And Bruno Latour returns to Paris with the *aime* of considering how personal informatics can help bring together the many "modes of existence" he has discovered in his anthropological fieldwork among the Moderns.[24]

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22 Cf. Krieger/Belliger (2014) for a discussion of network norms.

23 Cf. Belliger/Krieger (2014) for an overview of the e-patient movement and its implications for health care.

24 We wish to express our gratitude to Socrates, Gary Wolf, Kevin Klein, Humberto Maturana, Francisco Varela, and Bruno Latour for allowing us to (mis)use them as figures in this fictive dialogue and to offer apologies if they feel misrepresented.

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