



HAL
open science

Self-tracking, Power, and the Transition from Discipline to Control

Jukka Vuorinen, Harley Bergroth

► **To cite this version:**

Jukka Vuorinen, Harley Bergroth. Self-tracking, Power, and the Transition from Discipline to Control. 14th IFIP International Conference on Human Choice and Computers (HCC), Sep 2020, Tokyo, Japan. pp.351-360, 10.1007/978-3-030-62803-1_28 . hal-03525284

HAL Id: hal-03525284

<https://inria.hal.science/hal-03525284v1>

Submitted on 13 Jan 2022

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution 4.0 International License

Self-tracking, power, and the transition from discipline to control

Jukka Vuorinen¹ and Harley Bergroth²

¹ University of Turku, Information Systems Science, 20014 Turku, Finland
juanvu@utu.fi

² University of Turku, Department of Social Research, 20014 Turku, Finland
harley.bergroth@utu.fi

Abstract. This paper examines self-tracking as illustrative of the transition from Michel Foucault's discipline society to the Gilles Deleuze's control society. These two forms of societies both relate centrally to the organisation and (re)production of power relations, but they organise space and time in different ways. Self-tracking refers to data-driven practices of self-monitoring by digital devices, and the practice is here treated as an individual subjective activity, in which the self subjects itself with the help of a self-tracking device. Importantly, our claim is that this subjectivation takes place in the broader context of the control society and its increasingly data-driven character, in which traditional institutional discipline is being replaced by in principle unbounded regimes of (self-)control.

Keywords: Self-tracking, Data, Power, Control, Discipline, Society

1 Introduction

Personal everyday use of self-tracking technologies such as activity trackers has proliferated in recent years across Euro-American societies. Self-tracking devices come in different forms, the most popular wearable devices being wristbands and rings and self-tracking technologies including applications such as sport trackers for mobile phones (Berg 2017; Crawford, Lingel and Karppi 2015; Lupton 2016). These devices observe different bodily functions, such as movement and heart rate, and use these bodily functions as input data for the device. Data is then algorithmically turned into various forms of continuous information flows that relate to the health, well-being and performance of the user. For example, many wearable self-tracking devices (e.g. Fitbit) allow their user to track the quality of daily activity and sleep based on the level of (non-)movement of the body and display this information in numbers and graphs.

Although self-tracking devices most clearly pertain to the obvious questions of physical condition, health and well-being – which can be seen as self-evidently desirable features of human life in cultural contexts that encourage self-responsibility and e.g. preventive and proactive self-care – it could be questioned whether coupling oneself with such devices ultimately enables “better” lives or increased self-awareness. In any case, self-tracking literally pertains to the socially constructed “self”, and this paper argues that the relation to the self is a phenomenon that always emerges with and in

relation to the interactions and form of the techno-political social context. Furthermore, self-tracking is a practice of power in the sense that a self-tracking device is a technology through which the self is *subjected* to monitoring. In self-tracking, the self becomes the studied object of activity and well-being. In the course of this paper, self-tracking is thus treated as a method of control that implies the presence of power relations. To simplify, an individual action of self-tracking relates to and emerges through the societal and discursive contexts in which it takes place.

This article does not aim to map the current socio-political contexts and discourses that promote and propagate proactive self-tracking but rather focuses on the theoretical question of what kinds of power regimes self-tracking as an everyday data-driven practice of self-monitoring relates to. More specifically, we map the concepts of the “discipline society” (Foucault 1995) and the “control society” (Deleuze 1992) and employ them in order to analyse self-tracking as a regime of power. We pay particular attention to the different concepts of time and space in relation to discipline and control.

First, the Foucauldian idea of power is introduced, as he developed the idea in relation to the concept of discipline. We then highlight the differences between Foucauldian discipline and Deleuze’s (1992) control society and apply these terms to the employment of self-tracking technologies. Lastly, we make the point that self-tracking may be observed as a practice of transition from discipline to control.

2 Discipline Society and Control Society

2.1 Foucault’s Concept of Power

Michel Foucault (1926–1984) was a French philosopher who was interested in the systems of thought that are actualised through discourses. He examined power (explicitly and implicitly) in his many writings (e.g. Foucault 1990; 1995, 2002; 2003). In the early stages of his academic career, Foucault’s concept of power was negative in the sense that Foucault analysed power in restrictive and repressive terms. For example, the confinement of mental patients can be seen as a restrictive act that confines freedom (Foucault 2003). However, later in his career, Foucault (1982; 1990; 1995) started to emphasise the positive and productive aspects of power. In a positive sense, power does not hinder, restrict, repress but rather works in constructive and productive ways: it produces activity, supports and enables its subjects. In other words, for Foucault power suggests, proposes, encourages and praises, rather than restricts, bans or forbids. For example, there is a positive aspect in the power of social media platforms. Social media networks encourage their users to create updates and to upload new content. Many health and well-being related technologies and apps, such as Sports Tracker, likewise provide the possibility of sharing the user’s results on social media networks, and as such work through positive power by connecting users to digital means and spaces for sharing. Sharing in turn re-establishes the position of the social media platform as a social space. Importantly, social media platforms only survive because of their users: without the users and their will to share, social media would no longer thrive (Vuorinen,

Koivula and Koiranen 2020). Although successful tracking applications and social media platforms require users and sharing, the form of power they apply is not based on negative but on positive terms. The platforms need to attract users, which they do through positive means.

Foucault's concept of power has another notable feature. For Foucault (1990), the productivity of power means that power always creates an outcome and activity. For example, when a fitness enthusiast employs a workout programme, the programme suggests specific exercises for the enthusiast, creating a special schedule for training which means the programme suggests what to do and when to exercise. Essentially, the programme executes a form of positive power. In milder terms, there is a power relation between the subject (the exerciser) and the programme, and this relation produces activity. Yet another way to put this is that the fitness enthusiast subjects the self to the programme. In training, the programme is actualised.

The power of a programme stems from a number of different sources. The workout programme is visible and tactile in itself (whether it is an app on a mobile phone or a written notebook) but it is also perceivable in terms of its presence and effects. In gym training, every repetition that the programme requires can be felt as muscle burn when the exercises of the programme are carried out. However, there are more aspects and actors connected to the programme, which are not present in such an obvious way and thus not easily perceivable. For example, workout programmes emerge from expert discourses on health and well-being. A Foucauldian "statement" such as "gym exercise is good for the health" implies power at the level of discourses, in Foucault's (1990; 2013) terminology. In such a case, the workout programme is a messenger of healthy life, an instrument towards a good life. In other words, it emerges from a certain combination of statements (Foucault 2013). However, there are different discourses of what is considered "rational" and desirable and thus what the goal of the programme is. For example, if the programme is designed for a bodybuilder, the programme might be a messenger of how to build body mass and how to reduce body fat. In this case, the programme has become a messenger of aesthetics, as bodybuilding is about being visually impressive. If the workout programme is created for a sumo wrestler, the rationale is presumably different in terms of body fat. The point is that there are different discourses – health, well-being, sumo wrestling, bodybuilding – in relation to which different sets of rules for training can emerge. Nevertheless, the discourse – a formation of statements, in Foucault's (2013) terms – always carries a power dimension that can be actualised in different ways. As emphasised above, Foucauldian power is doing; the relation comes into being as it is enacted. For example, as the programme is carried out, the power dimension is carried out.

Foucault (e.g. 1990; 2013) examines how different types of power actualise as different practices. The training programme is an example of such actualisation. A self-tracking application and device is another. The devices suggest and alert. They produce knowledge about their user (cf. Foucault 1982). Foucault's (2003) initial and implicit power concept resides at the level of institutions and the emergence of their subjects. Certain types of subject emerge under particular discursive formations that, for example, define madness or other forms of abnormality (Foucault, 1995). All the institutions

treat the subjects in a specified way by focusing on specific problematizations but monasteries, schools, military barracks, factories, hospitals, and prisons also have similar ways of organising their subjects (Foucault 1995; also Deleuze 1992). Each of these institutions bases their activity on discipline and they all are establishments for mass populations, which are separated as individual cases and placed in confined spaces for observation (Foucault 1995; also 2002). In each establishment, the subjects have imposed on them the institutional schedules, activity, and flows of time (see Foucault 1980). The internalised individuals become subjected to the practices of the institution; they become subjects of the power system (Foucault 1980; 1995). A student, a soldier, a worker, a patient, a prisoner are all examples of subjects. They are subjected to the system that uses disciplinary methods to obtain the desired outcome. These institutions are also places of transformation in which the subject is corrected, healed, educated – made an obedient body. (Foucault 1995; Deleuze 1992.) More specifically, Foucault (1995) focuses on how measures of correction are used to normalise subjects and how subjects' bodies are made docile.

For Foucault (1995), power is a two-way arrow: in terms of activity, which is a product of power, there is always the possibility of resistance. Moreover, power relations are everywhere. More precisely, power forms a dimension through which the relation is partly carried out (Foucault 1980). Thus, there is no place outside power relations, because practices, suggestions, and proposals are everywhere. At the same time, there is the possibility of resistance. For example, a self-tracking device might give an idle or inactivity alert in order to push the user to become more active. There is the possibility of resistance because the alert and the tracker device can be ignored, or at least its orders can be questioned or disobeyed at specific points in time. Moreover, the device could be jettisoned because of the alerts.

2.2 From the Society of Discipline Towards the Society of Control

In Gilles Deleuze's (1992) interpretation, Michel Foucault's observations and concepts of power pertain mainly to the discipline society, which has its own characteristic features. For Deleuze (1992), the discipline society is a fading form of power which in modern, increasingly data-driven societies is becoming replaced by what he calls the control society. In the control society, power is actualised in a different manner than in the discipline society. One of the essential characteristics of the discipline society, which Deleuze (1992) emphasises, is the analysis of the individual in relation to the mass. A medical check-up is a helpful example of this: in a medical check-up, individual cases are compared. The comparison is carried out through different attributes and markers. For example, what is the normal (healthy) level of diastolic blood pressure? In answering such a question of normalcy, the Gaussian (or normal) curve provides an answer as a means of defining "normal" or "healthy" (Canguilhem 2012, also Foucault 1995). In the discipline society, the individual is invisible when their relation to the mass is within the normal level, close enough to the average. However, when the variance is great, it draws attention. Efforts are made to normalise abnormally high or low blood pressure results. The power of the normal – the power of the mass – prevails.

Deleuze (1992) notes that power in the discipline society works through institutional spaces. As mentioned above, the discipline society organises spaces (e.g. schools, hospitals and factories) and takes the individual under its gaze in such carefully designed facilities (Foucault 1995). Foucault (1980; 1995; 2013) emphasises that individuals become subjects through different sets of knowledge, e.g. medical knowledge. For example, a cancer diagnosis makes the individual a cancer patient that is to be treated in a certain way (e.g. operated on, observed, and medicated). In other words, medical knowledge guides how the subjects should be treated. Thus, power and knowledge are intertwined (Foucault 1995). A power relation requires knowledge. In turn, knowledge creates a power relation with its subject. Foucault is interested in how such subjects emerge through grids of specification (Foucault 2013).

In addition to this subjection, there is another important feature that comes with the spaces of power. Namely, the spaces of the discipline society are finite in scope (Deleuze, 1992). The institutions of the discipline society are places of transformation through which individual transformations can become complete and, in a sense, ready. For example, a hospital releases a patient when they are considered healthy (enough). A student earns a degree in the school system designating that the student is no longer a pupil and has become capable of carrying out a certain task (e.g. that of a medical doctor or a psychologist). Importantly, there is an end point or, if not an end, a point of exit.

In Deleuze's (1992) control society, things unfold in a different way. Essentially, normalcy and the individual's relation to the mass (the main axis of the discipline society) is no longer the first dimension of measurement; the relation to the "code" replaces it. Machines in sites of work are different in the control society. Code-running machines replace the slicing and cutting machines of the factories. Today, Deleuze's vision is apparent in terms of data driven technologies. The power of the algorithm has taken over, as algorithms organise our worlds and experiences (Introna 2016). Algorithms are an inseparable part of the consumer world. In addition, they are a crucial part of politics. The data-driven society nurtures algorithms. However, the power of algorithms is invisible and fluid. Algorithms do suggest, guide, encourage and produce. They generate activity and possess agency (cf. Latour 2005). This kind of power pertains to activity trackers. We live with and on algorithms, and algorithms work with and on individuals.

Algorithms can make guesses about the user. For example, the suggestions of YouTube or Netflix for the next video are guesses about which video would attract the user. Algorithmic power lies in suggestions and proposals, not in forcing. It is as if the user is given a quasi-choice: yes, no, this or that. The "quasi" part in the suggestion is based on exclusion: the suggestion excludes millions of choices and offers a few from which to choose. In this way the algorithm enables and empowers the user. However, the power of the user is very limited. The suggestions are based on big data but the data is not analysed merely in terms of gaussian curve (normal choices and abnormal choice). Rather, there are a number of different profiles constructed. A learning algorithm draws conclusions from the smallest inputs (user activity).

Algorithms work by dividing users into sets and categories. For example, age, sex, location and interest in different topics are obvious attributes. As Deleuze (1992) noted, codes create *dividuals* as they *divide* the individual in a number of dimensions. In other

words, through the algorithms we become slices and pieces which are then examined and put together as *a profile* that is a sellable product, a commodity. A sellable digital profile is capitalism encapsulated. The divisive logic of the dividual relates closely to self-tracking practices, in which human bodies and selves become divided into ever more nuanced bodily functionalities, which are displayed as data points at specific points in time as well as over temporally extended trajectories, and in which a certain type of often health-related profiling pertains to the self (see Bergroth and Helén 2020).

The control society also differs from the discipline society in terms of space. There are no separate and enclosed spaces; spaces overlap and penetrate each other. Of course, data and information always require a material space (Blanchette 2011). A concrete storage space, such as an SSD-drive, is needed for bits. However, mobile accessibility nullifies the meaning of a particular space in terms of user location. For example, a cloud service is invisible beyond its interface (e.g. a mobile application), no matter where the interface is used. Different data spaces and services can be accessed through multiple gateways. Thus, a user can take different roles, and occupy and change different social positions through technology (Carter & Grover 2015). In the control society, users are divided and assembled in virtual spaces through IT artefacts. For example, a person can check their blood test results, deal with work-related emails, and send their partner love-heart emojis, all in a single location though a single machine. Different data spaces and different user roles actualise on a single concrete spot. In the control society the roles of the self are not stable and directional as they were in the discipline society. Generally, Instagram posts and tweets fade away; the roles of subject have to be constantly re-established. There are no single spaces but a multiplicity of places.

The user space of the control society has become complex – or multidimensional – compared to the individual’s life in the discipline society. In the control society, space is not organised in such a way that a user could merely pass through it (Deleuze 1992). The spaces of the control society are virtual, such that a user lingers, jumps, hovers, and disappears in them. For example, with a mobile phone that tracks step count, the user can take a quick look at their step count. However, after the glance, the user can then a switch to a different space, a different mode, such as social media. Importantly, these spaces of the control society – a step counter or social media sites – cannot be passed through; the user is stuck with them. They flow past the user, offering no other exit than completely quitting the service. There is no graduation ahead. The stillness of death would stop the counter, but it would not necessarily stop all social media services (e.g. Facebook), as the profile can become an “in memoriam profile”. The institutions of the discipline society provided a chance for the individual to become ready and complete. In the control society, there is no end in sight. Rather, the algorithms of the control society seem to borrow our attention for a second and let us go (in order to observe us more). But soon they demand the return of the user’s attention. For example, in self-tracking, there is no end in terms of tracking the step count (Bergroth and Vuorinen 2019). The usual step count goal is 10000 *daily* steps. If the user achieves this goal of 10000 steps in a day, the device can send haptic vibrations in order to signal that the goal has been achieved. However, the goal is set for a single day and the counter resets at midnight. The spaces of the control society do not contain direct paths. These spaces

are about transformation, the fluxes of crossing currents pulling the self in multiple directions. They are places for the dividual in the control society.

3 Self-tracking and the Control Society

In self-tracking practices the self is divided by itself. This means that the self monitors itself, examines itself. The self appears simultaneously as subject and object. There is the assessing side of the self, that examines and observes. In addition, there is the other side of the self, that is the object of assessment. (Bergroth and Vuorinen 2019.) Put simply, examination by the self focuses on the self. This process is based on the relation to self (Foucault 2012a). Power is aimed at itself by the self (Deleuze 1988, 103). In this way, the individual has made itself a dividual; the divided individual.

Foucault (2012a) describes the way people form relations to themselves and observe the self as technologies of the self. When an individual – the subject – seeks to obtain a new way of acting, or a correct way of acting, the self has to be subjected to the self. To achieve this subjectivation, technologies of the self are applied. For example, if a consumer wants to get in better shape, a self-tracking device can be acquired. However, there are alternative ways of getting in better shape. The consumer might consider a gym membership, for instance. Furthermore, there are different ways of using self-tracking devices, just as there are a number of ways to exercise at the gym. In each way of exercising, there is a method, which is seen to improve the physical shape. However, there are many ways to carry out the method. In each case, a relation to the self is created.

In ethical terms, this implies the question of a “good life”: how does the self treat itself as it seeks to create a good life? So in addition to the relation to the self, there needs to be a scale or code by which the subjects can subject themselves. In the example above, the code is good/poor shape. However, the meanings of good and poor shape are constituted in multiple ways, as seen above.

In the case of fitness or more generally well-being, self-tracking devices provide such a pre-set code to which an individual can subject themselves, through which they can create a relation to the self. Depending on the tracking device, different traits can be monitored. Each trait, in Deleuze’s (1992) terms, would be a dividual feature. Trackers can examine, for example, the number of steps taken, the number of floors climbed, active hours, and/or time and quality of sleep. In addition, one of the central features in contemporary self-tracking devices is the heart rate monitor. Trackers can also be used to assess diet in terms of calories and macros (i.e. fats, carbs, and protein). Every single one of these monitored features is an example of a division made in the individual. They constitute a divided individual; a whole self sliced into smaller parts. If in the discipline society spaces were sliced and divided in order to create certain subjects, the control society applies the principle of slicing to the individual: one’s bodily functions and life. Eating, sleeping, being awake, the beating of one’s heart all become inputs of life and health for trackers; the noises of life are sent as a message to the tracker device that –

as a space of transformation – returns them as an assessment of and for the self. Furthermore, in the control society, though these inputs are mere indicators of “healthy” or “unhealthy”, they easily become a forceful part of everyday life, as the pre-set, algorithmic code of self-assessment run in the background of everyday actions, providing an in principle endless dataflows on oneself based on which one can modify one's behaviour.

The tracker is a way of creating a relation to the self. It provides an axis by which the self can assess itself. With its alarm features, a tracker device can push the individual to move. Yet there is a side that it cannot touch: the relation between the assessing self and the tracker device. The choice exists. It can be ignored, treated as a nuisance or a gimmick. This is the untouchable part.

4 Discussion

In Ancient Greece, there was the well-known notion of “*gnothi seauton*”: know thyself. These are words of ethical imperative, very familiar in the therapeutic assemblages of today (Salmenniemi et al. 2020), encouraging self-related knowledge production. In order to be a good individual, one should strive to know (more about) oneself. However, there is also another practice that Foucault (2012b) is interested in, namely “*epimeleia heautou*”: care of the self. This too implies an imperative: the instruction to take care of oneself. Without going deeper into Ancient Greek practices (see Foucault 2012a; 2012b), it should be noted that in self-tracking the two concepts come together. The tracker constantly provides information about the self by displaying bodily functions. Heart rate, (in)activity, exercise, sleep, calories burned, and step counts are provided in visual, numeric and sometimes haptic forms. However, in doing this, self-tracking practices are also about slicing the self into small pieces in providing information. Self-tracking is “dividualising”, as it divides individual activity and the seemingly whole self into slices by enabling ever more nuanced monitoring of separate functionalities of the body (see also Bergroth and Helén 2020). Furthermore, this is a feature of the control society because self-tracking enables knowledge about and care for the self via in principle infinite monitoring of the processes of life through data. In this sense, self-tracking is not bound to a certain place or institution and therefore there is no “natural” end to it, no exit point in time. Self-tracking cannot be “completed”. Any goals are mere waymarkers. Tracking may begin but in principle it does not end. Even if the tracking device is abandoned, it can still trouble the ex-user by its haunting presence as an internalised demand or as a mode of relating to oneself (Bergroth and Vuorinen 2019). Thus, it is not a mere device of knowing oneself – it is a demanding collection of imperatives on both knowing and taking care of oneself: sleep; exercise; be active enough; keep going.

Yet neither the imperative to take care of yourself nor that to know yourself are solely internalised by the subject as would be the case in the discipline society. Everyday technologies of the self play a crucial role in how knowing about and caring for the self are partly externalised in the control society. For example, self-tracking devices

provide categories of what to watch for, what to observe, either through algorithmically generated health guidance or by providing data streams of specific functionalities of the body. They provide an accompanying code to one's everyday life, through which the self can constantly be subjected even when one is not making an effort in self-monitoring in the sense of paying constant attention to oneself. Codes of self-tracking still run in the background when the devices are worn. Moreover, self-tracking is unrelenting in the sense that the user never graduates, never becomes "ready". There is no end, just continuous cycles. In this sense, the self-tracking device is not an institution of the discipline society but a materialisation of a code of the control society that follows the subject everywhere and is accessible all the time. The physical or institutional place does not matter the way it does in the discipline society. In the control society, place disappears and the code (in the self-tracking device) is with the user at all times and in all places.

5 Conclusion

In this article we have related contemporary digital self-tracking practices and their data-driven character to Foucauldian and Deleuzian ideas of the functioning of power regimes in society; the discipline society and the control society, respectively. We have argued that, as a practice, self-tracking intertwines the notions of knowing about the self and caring for the self, in the process enacting regimes of (self-)control in which care becomes enabled by continuous data streams on the self. As such, self-tracking practices divert from the principles of the discipline society in which subjectivities are produced within institutional contexts. Self-tracking seems more aligned with the principles of the control society, the key tenets of which are the division of seemingly indivisible individuals into ever more nuanced parameters and functionalities, and the logic of ongoing transformation in which the subject of self-tracking is never complete (see also Bergroth and Helén 2020). In the discipline society, the institutions were the spaces of transformation. In the control society, the space of transformation is within the self and is mediated by the codes of control.

References

1. Berg, M.: Making sense with sensors: Self-tracking and the temporalities of wellbeing. *Digital health* 3, 1-11 (2017).
2. Bergroth, H. and Vuorinen, J.: Towards the Ontology of Becoming in Self-tracking Research. In Kurosu, M. (ed.) *Human-Computer Interaction: Perspectives on Design. HCII 2019. Lecture Notes in Computer Science*. Vol. 11566, pp. 270-287. Springer, Cham (2019).
3. Bergroth, H. and Helén, I.: The datafication of therapeutic life management: assembling the self in control society. In Salmenniemi, S., Nurmi, J., Perheentupa, I. and Bergroth, H. (eds) *Assembling Therapeutics: cultures, politics and materiality*, pp. 107-123 (2020)

4. Blanchette, J.F.: A material history of bits. *Journal of the American Society for Information Science and Technology* 62(6), 1042-1057 (2011).
5. Canguilhem, G.: *On the normal and the pathological* (Vol. 3). Springer Science & Business Media (2012).
6. Carter, M. and Grover, V.: Me, my self, and I(T) conceptualizing information technology identity and its implications. *Mis Quarterly* 39(4), 931-958 (2015).
7. Crawford, K., Lingel, J. and Karppi, T.: Our metrics, ourselves: A hundred years of self-tracking from the weight scale to the wrist wearable device. *European Journal of Cultural Studies* 18(4-5), 479-496 (2015).
8. Deleuze, G.: *Foucault*. University of Minnesota Press, Minneapolis (1988).
9. Deleuze, G.: Postscript on the Societies of Control. *October* 59, 3-7 (1992).
10. Foucault, M.: *Power/Knowledge: Selected interviews and other writings 1972–1977*. Harvester Press, London (1980).
11. Foucault, M.: The subject and power. *Critical inquiry* 8(4), 777-795 (1982).
12. Foucault, M.: *The history of sexuality, vol. 1: An introduction*. Vintage Books, New York (1990).
13. Foucault, M.: *The birth of the clinic*. Routledge, London (2002).
14. Foucault, M.: *Madness and civilization*. Routledge, London (2003).
15. Foucault, M.: *Discipline and punish: The birth of the prison*. Vintage Books, New York (1995).
16. Foucault, M.: *The history of sexuality, vol. 2: The use of pleasure*. Vintage Books, New York (2012a).
17. Foucault, M.: *The history of sexuality, vol. 3: The care of the self*. Vintage Books, New York (2012b).
18. Foucault, M.: *Archaeology of knowledge*. Routledge, London (2013).
19. Introna, L.D.: Algorithms, governance, and governmentality: On governing academic writing. *Science, Technology, & Human Values* 41(1), 17-49 (2016).
20. Latour, B.: *Reassembling the social: an introduction to actor-network-theory*. Oxford University Press, Oxford (2005).
21. Lupton, D. The diverse domains of quantified selves: self-tracking modes and dataveillance. *Economy and Society* 45(1), 101-122 (2016).
22. Salmenniemi, S., Nurmi, J., Perheentupa, I. and Bergroth, H. (eds.): *Assembling Therapeutics: Cultures, Politics and Materiality*. Routledge, London (2020).
23. Vuorinen J., Koivula A., Koironen I. The Confidence in Social Media Platforms and Private Messaging. In: Meiselwitz G. (eds) *Social Computing and Social Media. Design, Ethics, User Behavior, and Social Network Analysis. HCII 2020. Lecture Notes in Computer Science*, vol 12194. Springer, Cham, 669-682, (2020).