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Digitalization and Datafication: Everyday Management of Menstrual Period

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Digitalization and Datafication: Everyday Management of Menstrual Period[1]

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The range of self-tracking digital technologies is very wide: mobile apps available to download; wearable technologies – Google Glass, Fitbit – that can be worn as bracelets or clipped onto clothes; sensors that can be embedded not only in the device for recording biometrics information (i.e. body temperature, hearth rate, blood glucose, etc.), but also in the smart city in order to monitor air pollution, traffic, energy consumption and so on. Self-tracking technologies allow users to track and transform into data – statistical analysis and graphical representations – daily information, practices and activities: calories intake, workout exercises, weight, mood, cigarettes or drink intake, financial expenses, social interaction, social media activities, sleeping hours, chronic diseases, health of urban environment, sexual and reproductive health, etc. The paper is constructed around two main questions: (1) how do self-tracking technologies intra-act with the embodiment of Self? (2) How does expert medical knowledge, inscribed in self-tracking technologies, perform body and personal bodily knowledge. Therefore, after an overview of theoretical framework, the second section provides an exploratory empirical analysis of the period tracker apps' uses. Thus, the empirical part focuses on the women entanglement in the management of cycle through self-tracking apps that are aimed to map and transform into data daily symptoms and mood in order to visualize correlations and predict fertile windows, PMS and future menstrual periods.

1. INTRODUCTION: THEORETICAL FRAMEWORK AND RESEARCH QUESTIONS

Digital technologies offer new possibilities of monitoring, measuring, visualizing body and everyday wellbeing, encouraging the development of health promoting practices. Health promotion is the key word of the "new" public health movement (Lupton 1995). This term, introduced by Marc Lalonde, Canadian Minister of National Health and Welfare in 1974, is a broad concept that emphasizes the necessity to adopt a holistic vision in order to avoid and prevent curative treatment illness through practices that focus on the health of the city and individuals' lifestyle (Bunton & Macdonald 1992). Lalonde's report has produced a shift in public health activities, which are

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characterized by the effort of avoiding the disease by empathizing the individual responsibilities in the managing of social, individual and environmental wellbeing. In this sense, health promotion is both a neo-liberal approach to the healthcare and a way to promote the health-related learning and produce permanent changes in everyday practices and behaviours.

Visualizing, measuring and monitoring technologies encourage a new insight about concepts' body and patient in medical practices. Indeed, technology is one of the factors that contributes to the social construction of health and illness (Bird et al. 2010). The body is not only an object for medical knowledge (Law & Mol 2004), but also an experience and process. This should be seen as the «*embodying* of the patient […] that denotes a process rather than an a priori condition; it points at the achieved characteristic of 'having a body'» (Berg & Harterink 2004, p. 14): a public object-body and a private subject-body that does and enacts in daily practices (Law & Mol 2004). The body becomes the subject and the object of bottom-up and top-down practices of tracking (Lupton, 2016), controlled and quantified through technology for a constant effort towards self-improvement and prevention of diseases. Indeed, the fast spreading of the Internet of Things introduces new ways of lead our lives, that are always more digital (Lupton, 2015), and a turn in the self-tracking practice about body and daily activities, that are digitised.

The range of self-tracking digital technologies is very wide: mobile apps available to download; wearable technologies like Google Glass, Fitbit, that can be worn as bracelets or clipped onto clothes; sensors that can be embedded not only in the device for recording biometrics information (i.e. body temperature, hearth rate, blood glucose, etc.), but also in the smart city in order to monitor air pollution, traffic, energy consumption and so on. Self-tracking technologies allow users to track and transform into data – statistics and graphs – daily information, practices and activities: calories intake, workout exercises, weight, mood, cigarettes or drink intake, financial expenses, social interaction, social media activities, sleeping hours, chronic diseases, health of urban environment, sexual and reproductive health, and so on.

It is necessary to distinguish the notion of small data from big data. Small-data are produced by individuals, tracking daily practices and activities through digital technologies (Lupton, 2016; Kitchin 2014); while big-data are small-data aggregated in enormous dataset that, according to Kitchin (2014, p. 1) are characterised by nine traits: volume, velocity and variety, exhaustivity, resolution, indexicality, relationality, extensionality and scalability. Therefore, while big data are a mixture of impersonal data, small data are actually distinctive and identifiable.

Datafication (van Dijck 2014) – that is the process by which human behaviours, emotions, social relations are recorded and converted into numbers – allows people to quantify any kind of experience and to create personal analytics. The body can be more visible and manageable through graphs and statistics in order to a constant self-improvement and self-awareness (Ruckenstein 2014). Nevertheless, the datafication of human habits and behaviors can became the contemporary apparatus of biopower and biopolitics (Foucault 1977). The focus is on the unprecedented possibilities of changing habits, behavioral patterns and the population performance by second and third parties (Dodge & Kitchin 2011; Ruppert 2011).

Self-tracking technologies are vast but have a very similar purpose, which is tracking and monitoring everyday practices, activities and bodily functions providing correlations and graphic representations. These technologies are becoming increasingly pervasive also into tracking and quantifying sexual and reproductive personal experiences as they help to monitor owns body though data for health promotion and education relating to reproduction and sexuality (Kratzke & Cox 2012).

These digital technologies can be used for sharing personal experiences with other users, comparing them with medical knowledge and information, or for meeting sexual partners and tracking sexual

health. For our contribution, the interesting aspect is the gender stereotypes inscribed in it. According to Lupton (2014), women are subject of reproduction, and their bodies have to self-managed in an intensive way, with the risk to medicalize bodily functions, symptoms, and mood. On the contrary, the apps projected for men focus on sexual performance and competitiveness, constructing a sexual subject that can incite potential feelings of inadequacy.

This arises important questions about the relations between the datafication and digital medicalization of female body, with particular regard to the tracking of the menstrual cycle trough self-tracking apps. The concept of period is linked to myths, taboos, and gender discriminations justified by medical research focused on hormonal biological changes (Delaney, Lupton & Toth 1988). In health sociological literature, there is an extensive discussion on the medicalization of the mood and symptoms connected with menstruation, which brought to the birth of a new category: "premenstrual syndrome" (PMS) (Conrad 2007).

Medicalization is a complex and multidirectional process «by which nonmedical problems become defined and treated as medical problems, usually in terms of illness and disorders» (Conrad 2007, p. 4). In many societies, for example, PMS does not exist. This means that medical knowledge is socially constructed because a disorder is not «ipso facto a medical problem» (Conrad 2007, p. 146). Moreover, feminist scholars underline «how women's bodies and experiences have been particularly susceptible to medicalization», and one reason is the assumption of male physiology as normative (Bird et al. 2010, p. 151).

The aim of this ongoing research is to analyse digital devices not only as technologies of surveillance or reflexivity, but also as a process of reconfiguration between subjects and objects in their mutual constitution. In particular, the paper is constructed around two questions: (1) how do self-tracking technologies intra-act with the embodiment of Self? (2) How does expert medical knowledge, inscribed in self-tracking technologies, perform body and personal bodily knowledge?

The article is organized as follows. The first section of the paper outlines the theoretical-interpretative framework, drawing on sociology of health (Conrad 2007; Lupton 2016), and Science and Technologies Studies (STS) in order to suggest an analysis of the intra-actions (Barad 2003) between humans and nonhumans (paragraphs 1.1-1.3). The second section (paragraphs 2-4) provides an exploratory empirical analysis of the period tracker apps' uses. Thus, the empirical part focuses on the women engagement with the materiality of the apps directed to track menstrual cycle, that map and transform into data – statistics and graphs – daily symptoms, mood, and bodily indicators, with the purpose of visualizing correlations and predict fertile windows, PMS and future menstrual window. The aim is to explore how humans intra-act with self-tracking technologies, reconfiguring the plurality of expert and lay knowledge.

1. DATA, SURVEILLANCE AND EMBODIMENT TRHOUGH SELF-TRACKING PRACTICES

1.1. DATAVEILLANCE: FROM PRIVATE SURVEILLANCE TO BIG-DATA

Dataveillance is the systematic use of digital data to veillance and monitor practice and activities of people or groups of people (van Dijck 2014). In literature, there are many versions of this concept. Here, we take into account two types of surveillance through digital data: sousveillance, and Big-Data veillance (Dodge & Kitchin 2007; Kitchin 2014).

The term sousveillance refers to the self-monitoring of several aspects of personal life through digital technologies that collect information and record data first-hand (Mann et al. 2003). On this concept, two editors of Wired Kevin Kelly and Gary Wolf, have been created in 2007 "The Quantified Self movement" in order to connect the users of self-tracking technologies, which monitor and record their everyday practice and activities for a constant self-improvement about their self, body and environment through the number (Wolf 2009). The aim is to create a chronology of every experience: a huge personal archive.

Nevertheless, some scholars (Kitchin 2014; Dodge & Kitchin 2007-2011) underline important implications and issues concerning the access and the control of these digital data. The small-data produced – automatically or not – with and through digital technologies are often aggregated in Big-data and become commercially profitable for second and third parties. Indeed, most of the designers and apps' developers are very unsure about how the data are gathered, analysed and employed, becoming a kind of surveillance to generate predictive health scores on users, preferences and choices and shaping human behaviours (Beer & Burrows 2013; Boyd & Crawford 2012; Kitchin 2014).

Thus, for example, smartphone becomes an assemblage of personal information, algorithms, websites, platforms, manufactures and retailers, policy makers, software and hardware developers etc.: a black-box that makes invisible also the process of dataveillance, by which the personal information can be easily collected, analysed and grouped into discrete categories (Lyon 2002).

The analyses on dataveillance often adopt the Foucauldian concept of panopticon (Bossewitch & Sinnreich 2013; Lupton 2016). Foucault uses metaphorically the Bentham's concept of panopticon to emphasize the role of invisible surveillance played by the new form of power combined with individuals' self-management practices (Foucault 1977). In the digital era, also biopower is digital, so the citizens embed self-management techniques and the external power of surveillance (Ajana 2013; Sanders 2016). Therefore, the use of panopticon's Foucauldian concept emphases how individuals internalize the external rationales of surveillance with the emergence of a type of digital self-surveillance.

The political context of neoliberalism generally relies on the ethos of the Self-care, with the emphasis on the ideal citizen, that is, responsible about their happiness, health, and wellbeing, engaged in a constant self-improvement.

1.2. EMBODIMENT AND SELF-TRACKING TECHNOLOGIES

Self-tracking practices are reconfiguring our experience of embodiment, our relationships and our meanings of body through the quantification of the Self. Indeed, it is around self-tracking technologies that the Quantified Self movement (QSm), whose motto is 'self-knowledge through numbers', was born. The QSm is an online community in which self-trackers can voluntarily open discussions in order to share their experience with self-tracking devices, best practices and tips.

According to Gary Wolf the practices of quantified self are revolutionary because the data produced by the use of self-tracking devices act like a mirror (Wolf 2010). Indeed, the important aspect is the production of data that are not a simple window to see inside the self and the body but are a mirror that reflect daily practices, habits, behaviour and actions often taken for granted (Sharon 2016).

The key word is "data-driven lifestyle". Indeed, the data makes visible body functions, activities, practices when they would be otherwise unnoticeable. According to Ruckenstein and Pantzar (2015), the voluntary self-trackers consider the data more credible and objective compared to own feelings or subjective experiences. The self-trackers test their bodies with the emergence of "personal analytics" practices that typically aim to the self-optimization.

Apps can be seen as «technologies of self» (Foucault 1992), whose purpose is to shape the body - visible by stats and graphic representations - in order to be healthy and ideally perfect. However, this 'disciplined' body does not emerge as result of a system of power, but as the performativity of the material-discursive practices (Barad, 2003). In the work of Karen Barad, the notion of performativity takes account of the production of matters bodies in mutual relation with subjects and objects. Barad uses the term «agential intra-action», in contrast with the usual interaction, to underline the mutual constitutions of subjects and objects in the ongoing of discursive-material practices: «"We" are not outside observers of the world. Nor are we simply located at particular places *in* the world; rather, we are part *of* the world in its ongoing intra-activity […] we know because "we" are *of* the world» (p. 29-30).
Barad's notion of performativity takes into account the various critical positions of Judith Butler and Michel Foucault. Here the bodies come to matter in the intra-actions with the world: bodies are material-discursive phenomena, not only «objects with inherent boundaries and properties» (p. 827).

1.3. SELF-TRACKING ACROSS SUBJECTIFICATION AND SUBORDINATION PRACTICES

The self-tracking technologies can be used also for promoting personal health and wellbeing, and healthy environment, contributing at the same time to different scientific research projects and policy-making. Self-trackers can share voluntarily their personal data and evaluations about different aspects of social life and urban environment.
Some scholars underline the increase of participatory democracy trough these technologies (Gabrys 2014). The citizens become data gatherers from below of information about the environment – the quality of air, energy consume, the state of traffic and so on – with the emergence of a data-driven administration. Moreover, some people choose to take part in the scientific research projects, collecting data that become crucial for scientists. These initiatives involve directly the citizens that collect information about urban and domestic space, their own health indicators, or a combination of both. Cities and bodies become expanded laboratories with the emergence of citizen-science (Kitchin 2014; Coletta et al. 2017) and citizen-sensing (Gabrys 2016). The citizen-science are people who collect empirical observations and generate elaborate measurements for free, becoming crucially for some scientists and governmental organisations.
Jennifer Gabrys (2014) underlines the appearance of new practices of subjectification through the uses of digital technologies. Citizens can monitor and evaluate their environment, becoming sensitive to different aspect of the urban life and taking part to the administration of the city across the production of data from below. According to Gabrys, there is a distribution of relational power in the city 2.0 through spaces, environments, technologies, and ways of life. The citizens are not just surveilled but can also control their environment with these new practices of subjectification of contemporary citizenship «and ways of life that emerge across human and more-than-human urban entanglements. […] Subjectification […] is ultimately concerned not with the production of fixed subjects, but rather with the possibility of identifying critiquing, and even creating ways of life» (Deleuze in Gabrys, 2014, p. 40).
Several scholars have been focusing on the concept of subjectification, in which we find the notion of position, that is social roles, and subjectivity, or rather the experience and the creative agency of individuals. The positions of the actors are typically relational: student-teacher, husband-wife etc. Subjectivities are multiple and located: two students can occupy the same position but have

different behaviours and attitudes. The position therefore binds people's behaviour, but each role can be interpreted creatively and individually. Everyone plays a plurality of roles often in conflict, and therefore the subject has to negotiate between the different positions occupied. For example, the roles of digital technology users can include novices, non-users, players, trolls, standard users and admins, experts and amateur designers, self-trackers, hackers, social media followers, and many others. All these positions are the result of a compromise between social and technical roles. The concept of subjectivity lies within these negotiations, accounting the different embodiments of the roles. Thus, if the subject's position can be analysed analytically, subjectivities are only empirically analysed (Bardzell & Bardzell 2015).

In this sense, the user is not only established actor but also a discursive construct, produced both the design and by the users themselves. This has important methodological implications. Indeed, Bardzell and Bardzell (2015) support the need to analyse how the users express themselves as subject through the interaction with such objects, rather than focusing on the preferences of users on technological objects.

In accordance with Judith Butler (1997), the concept of subject is ambivalent. The subject is passionately attached to his or her own subordination and «is not only formed in subordination, but […] this subordination provides the subject's continuing condition of possibility (Butler 1997, p.8). The subjection is also a power assumed by the subject, not only a power exerted on a subject. This is the ambivalence of subject's agency, that can appear as an effect of its subordination: «power not only acts on a subject but, in a transitive sense, enacts the subject into being» (p. 13). Power is not a merely external condition, but is temporal, active in the production of subject's agency.

Considering the above, the practice of self-tracking can be read not only as forms of external power on subject, but also as a power assumed by the subject.

In light of the above, the intensification of digital data flows and management poses important epistemological and methodological questions for health sociology, in terms of analysing how self-tracking technologies are reconfiguring the monitoring and the management of activities relating to health and well-being. The dialogue between sociology of health and STS literature enables to consider the self-tracking practices as a process of knowledge reconfiguration between subjects and technologies.

As mentioned above, menstruation is particularly susceptible to the medicalisation process, and both the medical and non-expert knowledge inscribed in period self-tracking apps recommends constant and daily management of one's body—symptoms and mood—regarding the menstrual cycle. The aim of this ongoing study is to investigate how women are engaged with self-tracking technologies, and how these technologies are embedded into private and intimate everyday routines and relationships.

2. METHODOLOGICAL QUESTIONS

The development of Web 3.0 – the 'intelligent Web' that uses semantics, natural language, data-mining and machine learning in order to provide a more productive and intuitive user experience – is intensifying the production of data on different aspects of everyday life. Some authors refer to this explosion of digital data as a 'data deluge' (Savage and Burrows 2007) that brought the opportunity to rethink everyday practices and routines in a datafication process by which human behaviours, emotions and social relations are recorded and converted into numbers (Roberts et al. 2016).

As mentioned above, apps for managing menstrual cycle transforms into digital data bodily information with the effect that hormonal changes become particularly susceptible to medicalization process. The scope is to question the process of reconfiguration knowledge between subjects and objects in their mutual constitution: how do apps—heterogeneous assemblages of expert and non-expert knowledge—bring about body and personal body knowledge? And how do their users reconfigure the technoscientific knowledge inscribed in the app?

Fifteen semi-structured interviews had been carried out with women who utilize the app to manage menstrual periods in order to question the use of these technologies. The semi-structured interview is a performative research method that can produce knowledge through the relationship between interviewee and interviewer (Law 2009). During the sessions, the interviewee became an ally in the process of questioning and opening the black box of the knowledge inscribed in the app (De Vita et al. 2016, 510; Sciannamblo 2017).

The interviews were conducted with fifteen Italian women, who lives in Rome, aged between 15 and 46 years. The interviews were often held in public places (university classrooms or bars), while three of which were done via Skype. They were selected via a cascade mechanism, beginning with authors' entourage, in order to respect the principles of heterogeneity and exhaustiveness. Lasting between fifty and sixty minutes, they were audio recorded and verbatim transcribed in order to analyse how apps for the menstrual period are embedded in the user's bodily knowledge. The structure of the interviews was intended to examine four principal concerns: (1) the choice of application; (2) the relationship between body and menstrual period; (3) the sharing of personal data with other users, parents, friends, partners; and (4) the sensibility about issues of privacy. The interviews were additionally enriched by using the app in real time in order to join the *story of use* at the *practice of use*.

Following an *abductive* approach, the analysis of the interviews aimed at generating creative, causal links and descriptions of particular empirical instances (cf. Timmermans and Tavory 2012). Adopting an abductive analysis suggests entering the field with a theoretical framework that becomes the basis for developing creative and novel theoretical insights throughout the research process:

> In other words, abduction is the form of reasoning through which we perceive the phenomenon as related to other observations either in the sense that there is a cause and effect hidden from view, in the sense that the phenomenon is seen as similar to other phenomena already experienced and explained in other situations, or in the sense of creating new general descriptions (Timmermans and Tavory 2012, 171).

The analysis of the interviews captures three overlapping experiences of self-tracking practices, that can be seen as a continuum of awareness' acknowledgment.

3. RESEARCH FINDINGS

The interpretation of the interviews brings to light a gradation in the re-appropriation of the expert knowledge inscribed in self-tracking apps that can be seen as a continuum of awareness acquisition. Analysis of the interviews allows us to observe how users construct relationships with digital technologies and reveals three types of user experiences: in the first case, the user views the self-tracking app as an unproblematic, ready-to-use black box; in the second, the user appropriates the expert knowledge inscribed in the device; and in the third, the user tinkers with artefacts that are problematised and then reconfigured.

3.1 *I trust the app to remember when my menstrual cycle should begin*

In the first case, datafication is a way to remember the beginning and the end of the menstrual phase:

> *I have a thousand things on my mind between work and family. It is essential for me to note down things to do. And I found it very easy because I open the phone and tac… I mean, I don't remember when my cycle was last month because I have a super-confused head, but I just open it and I can find the information. I don't use the other functions […] Tracking mood, symptoms, food is really time-consuming… (Barbara)*

In this first user experience, users self-track minimal aspects of their cycle, nevertheless increasing awareness of their body. Indeed, the women interviewed have the perception of a more objective awareness in terms of duration and some correlations. Period self-tracking apps are used to monitor the beginning and end of future cycles. The women use the app like a ready-to-use black box on the one hand, while on the other they do not question the possible use of their data by public and private research centres, companies and researchers.

3.2 *I hardly ever record such information, unless…*

In the second users' experience, we can see an appropriation of the knowledge suggested by apps. In this case, there is a datafication of some aspects that can be linked to PMS. So, users self-track some aspects in order to test correlations.

> *At the beginning, I recorded symptoms, and other things because I wanted to understand. Well, I thought "maybe these symptoms as headache and backaches are regular, maybe they come back in the same way". It's a bit boring. I mean, I forgot to note it down, but I was experiencing the symptom and I checked in which phase of the cycle I was, and I thought 'Ah! It is for that! No, it has nothing to do with it'. (Maia)*

It emerges that women appropriate the medical knowledge presented by the apps for visualising correlations they had previously just taken for granted. Hence, high datafication of the menstrual cycle is linked to low-level interrogation of the app's expert knowledge, which is considered objective. However, seeing graphs, media and colour helps them to remember the various phases of their cycle—menses, fertility and ovulation windows—and allows self-learning about their bodies from a biological point of view:

> *Well, because before I didn't know this… or rather, I didn't have precise control over which days were good for having sex, for instance. There are other ways to know this, of course; WomanLog did not invent this, but it certainly makes it easier to monitor them. (Ofelia)*

Data become a way to visualise and transform mood and body indicators through correlations that can be used to validate PMS. Indeed, the data render invisible the heterogeneous assemblages in which medical and tacit knowledge intra-act with algorithms, taboos, gender discrimination and small data produced by other users.

However, in this category too the women revert to minimal use after being aware of and confirming correlations, because constant self-tracking is very time-consuming and maybe even be a waste of time if «you know your body».

3.3 *My awareness has changed regarding a whole series of things*

In the last case, women reconfigure technoscientific knowledge inscribed in the apps. PMS medicalization is questioning by body's knowledge suggested by personal experience; but at the same time objects perform body in a mutual constitution (Barad 2003; Butler 1997). For example, Chiara says:

> *My awareness has changed regarding a whole series of things! For example, since I was not trying to get pregnant—at this precise moment I don't even have a partner […]—I never even thought about using the Knaus-Ogino method as a contraceptive. The whole story of when I'm ovulating, I mean, awareness of when I was ovulating, I would have preferred not to have this awareness. […] I don't know how to explain… the app doesn't produce any kind of changes. It's not that… It's the fact that displaying certain types of information makes it hard not to think about it. So, for example, since I've been using this app, every time it tells me 'today is a fertile day' I'm thinking, 'another day of my life that hasn't been used'. I don't change my mind or do different things, but… (Chiara)*

It appears that users in this group reconfigure their personal information and tinker with the expert knowledge inscribed in the app. However, the app does not become a detailed repository of reproductive and sexual health information. These women resist the pervasive tracking of daily symptoms and mood suggested by the apps. In contrast, they tend to use them for reflexively monitoring and controlling only certain aspects, as suggested by their own personal knowledge, being aware that the app helps to manage certain, more visible bodily functions linked to concepts of maternity and relationships.

CONLUSIONS

These three users' experiences shed light on how women are engaged in the practice of self-tracking. The aim was to analyse the use of digital devices not only as technologies of surveillance or reflexivity, but also as a process of reconfiguration between subjects and objects in their mutual constitution (Barad 2003).

Moreover, the choice of analysing the use of apps for menstrual cycle tracking tends to pay attention on the PMS medicalisation and, more generally, to the medicalisation of the female body (Bird et al. 2010). In this regard, the interviews - presented through the continuum of three user groups' experiences, purely for practical purposes of analysis - suggest different forms of menstrual datafication.

In the first case, datafication is a way of remembering the beginning and end of the menstrual phase. Here digitalisation is not problematised and the apps work almost by magic, raising various problems of dataveillance (Dodge and Kitchin 2007; Kitchin 2014; van Dijck 2014).

In the second experience, we can see an appropriation of the knowledge presented by the apps. Here, technoscientific knowledge is used to objectify bodily elements that can be transformed into medical symptoms (Conrad 2007).
In the last case, women reconfigure the technoscientific knowledge inscribed in the apps. PMS medicalisation is questioned on the basis of the women's own knowledge of their body as suggested by personal experience; but at the same time, objects and bodies perform in a mutual constitution (Barad 2003; Butler 1997).
This exploratory research aimed to shed light on the complexity surrounding theoretical and methodological analyses of self-tracking technologies. In this respect, the dialogue between STS perspective and the sociology of health allows self-tracking and self-management practices to be investigated as heterogeneous assemblages in which technical, social and conceptual elements are not distinct. Adopting this perspective allows the exploration of new social, cultural and technoscience configurations in which the body is viewed as a repository of biometric information that is becoming ever more digitalised.
Digital technologies produce both a deluge of data and reflexivity, making even thinner the line between micro and macro, subjectification and subjugation, public and private. In this respect, apps for menstrual cycle can produce, on one hand, a deluge of biometric data that can be used for legitimating a surveillance and a genderization of hormonal changes, and, on the other hand, digital practices that can produce different experiences of embodiment and engagement with the materiality of the technologies.
This research opens the way to new questions (for further details, see Zampino, 2019). In particular, even though self-tracking technologies are designed to act in synergy with the body in order to produce reliable data, the women interviewed reveal the mutual translation between what the app suggests monitoring and what the users actually tracks. Finally, research could be set on the constant renegotiation between how the app should be utilised and how it is used in real-life experience.

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