Move, eat, sleep, repeat

Living by rhythm with proactive self-tracking technologies

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Abstract
Proactive self-tracking is a proliferating digital media practice that involves gathering data about the body and the self outside a clinical healthcare setting. Various studies have noted that self-tracking technologies affect people's everyday modes of thought and action and stick to their lifeworlds because these technologies seek to promote "improved" modes of behaviour. We investigate how the specific devices and interfaces involved in self-tracking attract and prescribe rhythmicity into everyday lives and elaborate on how human bodies and technical systems of self-tracking interact rhythmically. We draw from new materialist ontology, combining it with Henri Lefebvre's method of rhythmanalysis and his notion of dressage. We employ a collaborative autoethnographical approach and engage with both of our personal fieldwork experiences in living with self-tracking devices. We argue that rhythmicity and dressage are fruitful analytical tools to use in understanding human–technology attachments as well as a variety of everyday struggles inherent in self-tracking practices.

Keywords: self-tracking, digital media, rhythmanalysis, collaborative autoethnography, dressage

Introduction

Proactive self-tracking is a proliferating digital media practice that involves gathering data about the body and the self outside the context of clinical healthcare. Common consumer-grade self-tracking gadgets track, for example, steps, heart rate, calorie consumption, and various biomarkers related to the quality of one's sleep (Lupton, 2016b; Schüll, 2016a). The popularity and growth of the self-tracking industry has been interpreted as a reflection of a "measuring mania", in which knowledge of one's body and health "is produced through seemingly objective, universal, and quantifiable representations" (Cifor & Garcia, 2019: 2132).

Sales figures show that in recent years, self-tracking technologies have become part and parcel of everyday health behaviour. These devices can be seen as a consumer practice that involves buying and employing trendy gadgets and then abandoning them after a while (see, e.g., Kristensen & Ruckenstein, 2018; Lazar et al., 2015). That being

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said, studies have also acknowledged self-tracking devices' power to affect people's behaviour and stick to their lifeworlds (Fotopoulou & O'Riordan, 2017; Kristensen & Ruckenstein, 2018; Lomborg et al., 2018), because people may become attached to their devices or miss certain data practices that they have seemingly abandoned. Thus, it seems reasonable to treat self-tracking devices and the data they produce not merely as passive tools for human use and interpretation, but as active agents in their own right (see also Lupton, 2016a); they are agents that introduce alterations and new kinds of challenges into one's self-relations.

In this article, we draw from a new materialist understanding of media technologies such as self-tracking devices as partaking in the active shaping of human beings and human lifeworlds. Specifically, we consider everyday self-tracking practices through the prism of Henri Lefebvre's (1992/2004) method of rhythmanalysis, because self-tracking practices are characterised by the entanglement and transformation of the sociomaterial rhythms of life and the technological rhythms of self-tracking media. In our view, rhythmicity presents an analytically forceful perspective on both the affective and persuasive power of self-tracking technologies, as well as on the ways in which self-tracking devices present challenges in and to everyday lives. We ask, first, how self-tracking can be understood as a rhythmic media practice and, second, what kind of struggles the rhythmicity of self-tracking practices prescribes.

As an approach, we utilise rhythm-focused collaborative autoethnography. We have intersected personal observations that focus on technology-in-practice, dialogue, and reflexivity on the softwarisation of daily lives. Based on our personal experiences of living with fitness-tracking wristbands – namely the Fitbit Charge HR, the Garmin VivoSmart HR+, and, later, the Apple Watch S3 – we present findings that illustrate the multiplicity of rhythms and rhythmic struggles related to these technologies. We first consider self-tracking as (health) education and relate it to the idea of rhythmic dressage (Lefebvre, 2004). We then lay out in more detail the methodology of collaborative autoethnography and its ties to rhythmanalysis. This is followed by analytical sections on living in rhythms, and falling in and out of rhythms. Finally, we provide brief conclusions.

From (health) education towards dressage in self-tracking research

From the moment one activates a fitness-tracking wristband, it becomes obvious that self-tracking devices seek to direct or educate a person, helping one to adopt a more active, healthier lifestyle. Such education can lead to a struggle of pondering to which extent we should submit ourselves to repetitive encouragements or haptic "idle alerts" that govern our everyday modes of acting and relating to ourselves. This was a struggle that we both faced long before we began writing this article. Our backgrounds in studying people's proactive and therapeutic self-tracking practices (Harley's PhD research, 2015–2019) and people's everyday experiences and meaning-making practices related to connective media (Minna's PhD case studies, 2015–2018) with qualitative methods intersected in this study to reflect both the questions of power related to digital media, as well as the methodological challenges of studying such power. As critical social scientists, it was common for us to direct a critical gaze towards self-tracking. At the same time, both of us identified being grasped and changed by the very activity of self-tracking because our devices somehow carved a space in our everyday lifeworlds.

Due to its educational character, self-tracking has sometimes been analysed as a form of algorithmic biopolitics, normalisation, and control-oriented biopedagogy (see, e.g., Ajana, 2017; Fotopoulou & O'Riordan, 2017; Lupton, 2013; Reigeluth, 2014; Sanders, 2017), through which people are educated on seemingly better and healthier – in other words, "proper" – ways of living. Anthropological accounts note that self-tracking may lead to empowerment, because people can interpret the data on step counts, heart rates, and other aspects of their lives against algorithmic guidelines, as well as potentially educate one another and learn in collaboration. Examples of such practices have been studied in the context of the Quantified Self movement and that movement's alternative ways of working with such data (e.g., Nafus & Sherman, 2014; Sharon & Zandbergen, 2016). What is common in such approaches is that although it is noted that technology is a crucial medium in biopolitical governance and potential resistance, self-tracking devices' active capabilities as media technologies may be undermined by the implication that by rejecting or accepting certain forms of imposed education, humans are in charge of their relationship with technology. In this view, the human being is subject to technological mediation while remaining essentially "unbent".

However, modern philosophies of technology and new materialist accounts of social phenomena have, in many ways, brought up the idea that technology always "bends" those who use it. If technology is understood as a mode of action – in the sense that human beings perform actions *with* and *through* technology, such as tracking oneself – it is then also the case that technology and its functionalities and affordances set some kind of frames for actions, although users have a degree of liberty within these frames. In material semiotic understandings, which highlight material agencies (e.g., Bennett, 2010; Latour, 1992), using technology involves making choices as well as being bent within the framework of technological practice.

Drawing from our own experiences and reading them through the prism of new materialism, we wish to suggest an alternative mode of inquiry into how self-tracking bends human beings and what kind of struggles this bending incites. We do this by drawing from Lefebvrian rhythmanalysis. While rhythmanalysis and the idea of intertwining social and embodied rhythms have been brought up before in relation to self-tracking (see, e.g., Lomborg et al., 2018; Pantzar et al., 2018), a systematic inquiry into self-tracking practices based on rhythmanalytical principles and an analysis that appropriates the wider theoretical and methodological underpinnings of rhythmanalysis remain scarce.

For Lefebvre, rhythms are about repetition and reprise; rhythms concern "movements and differences within repetition" (Lefebvre & Régulier, 1992/2004: 90). Furthermore, Lefebvre sees there being different sorts of repetitions, with cyclical repetitions forming the basis for "routines" and linear repetitions forming the basis for "flows". Lefebvre developed his framework of rhythmanalysis while observing how the seemingly chaotic noises and flows of Parisian urban life formed patterns and cycles and sometimes aligned with or differed from beats and pulses that were already part of our embodied being-in-the-world. In his vision, rhythmanalysis was to become more than an analytical tool; it was to become a paradigm for understanding society and human life, a paradigm sensitive to the symbolic, material, embodied, and technological aspects of human reality. Humans, after all, are rhythmic beings; we are brought to life by a pulse, and we develop repetitive patterns of behaviour, which we also occasionally break out from, only to eventually reprise them once again. We improvise rhythmically in some

ways while remaining obedient to patterns and beats in others. We usually rest, eat, and work in rhythms, almost as if the general condition of being human is to live by rhythm.

The musical influence on Lefebvre's work led him to consider the rhythmicity of life further, for example, in terms of compositional techniques, such as eurhythmia (harmony or the coexistence of rhythms), arrhythmia (discordance), polyrhythmia (various overlapping rhythms), and isorhythmia (equality of rhythms) (Lefebvre, 1992/2004). This thematisation has sensitised us to the multifaceted character of rhythmicity in self-tracking practices. Self-tracking data are produced through the rhythmic design and coding of self-tracking interfaces, social rhythms (such as work–leisure or exercise–recovery), and the material rhythms of the body, but the data are also conditioned and framed by technological rhythms and the materiality of technology. There is always a multiplicity of rhythms at work in self-tracking practices. Thus, the focus on rhythmicity – especially on how various rhythms change, harmonise, clash, and organise hierarchically – can deepen our understanding of how self-tracking "works" in everyday life and how it may lead to practical struggles or challenges in one's life when these various rhythms of life intertwine.

In addition, we feel that the focus on rhythmicity helps to look beneath the surface of technological practices in the sense that rhythmicity taps into the (often subconscious) ways that technology frames human behaviour. This is where rhythmanalysis begins to, in a sense, diverge from many previous media-oriented studies of self-tracking. Studies concerned with the proliferation and allure of self-tracking often rightly draw attention to the central aspects of self-tracking media, such as gamification (Lupton, 2016b; Maturo & Moretti, 2018), which refers to the way in which game-like elements, such as virtual rewards and trophies, motivate engagement in self-tracking. Alternatively, studies have brought up nudges (Schüll, 2016a), referring to the ways in which devices push their message of self-optimisation and self-care through onscreen encouragements, haptic vibrations, or e-mail messages, for example, and thus gently encourage the user into the "right" direction. Nudges also help rearrange the temporality of one's life. Additionally, studies have drawn attention to how self-tracking often involves the production of a time-series understanding of the self, which may also evoke negotiations regarding how one uses one's time (Pantzar & Ruckenstein, 2017; Schüll, 2016b).

We thus stand informed by various studies that have discussed how self-tracking technologies invite rhythmic order into people's personal lives and how such technologies can rearrange (one's experience of) time. In addition to the educational or biopedagogical aspects of the rhythms of self-tracking (see also Fotopoulou & O'Riordan, 2017), we feel it is important to dive into the question of how the rhythmicity of self-tracking conditions people's self-relations, beyond the question of whether we accept or reject the rhythms suggested by the hardware or software. Users can be quite aware of self-tracking devices attempting to educate them, and they may become amused or irritated by the virtual rewards or feel annoyance if the devices push their message of self-observation or self-optimisation too strongly. Thus, if and when users of self-tracking technologies become hooked on the rhythms of self-tracking, it may be, in some sense, different from the ways in which the technology developers have intended (Lomborg et al., 2018). The extent to which self-tracking technologies succeed in "educating" us remains open for debate, because, often, these devices merely push the types of behavioural, rhythmic patterns that we are already quite familiar with as the "right" modes of being.

The idea of rhythms as a framework for analysing the work of self-tracking assemblages enables us to suggest that studies of the everyday effects of self-tracking technologies, especially those interested in new media-related modes of *power*, would do well to lean on Lefebvre's idea of dressage. Originally, the concept of dressage refers to a form of highly skilled horse training. According to Lefebvre (1992/2004), dressage must be separated from mere learning or education because it involves a "degree of automatism", which, in our view, takes it *beyond* the question of discipline and resistance. As a concept, dressage has clear links to Foucauldian ideas of discipline in the sense that it relates to how bodies are bent into distinct forms of behaviour. Foucault related the term to how bodies are trained in gestures and movements in disciplinary institutions such as the army (see Foucault, 2015). However, in our view, dressage also closely relates to ideas of data-driven control societies (Deleuze, 1992), because it explains something crucial about how human bodies (or body–minds) are trained into persistent cycles of data consumption and production during everyday health behaviours – or, how human–technology assemblages of self-tracking work to bend human beings into repetitive patterns of checking on the datafied parameters of one's life. As pointed out elsewhere, dressage brings with it both conformity and extensive possibilities for improvisation, propagating "modes of behaviour that can be easily slipped into with relatively little thought" (Jones & Warren, 2016: 288; see also Edensor, 2012: 5).

For us, the crucial difference between disciplinary education and the dressage of the control society in self-tracking is that while self-related education renders the self an object for knowledge-based governance (i.e., the person is told what is "right", and they then accept or resist this knowledge in practice), dressage establishes the self as an actionable regime in which knowledge-based governance is subordinate to embodied feedback loops and repetitive acts of checking back. Importantly, for us, self-tracking–related dressage does *not* mean that one would be schooled into specific forms of activity, for example, that an activity-tracking wristband would automatise specific types of activity (e.g., walking a sufficient amount each day). While this may or may not occur for a short or a long period of time, what self-tracking does prescribe more efficiently is repetition in connecting with oneself and, sometimes, others (through connected media, for example). This checking back may manifest in the form of both bodily movement (e.g., actually checking one's wristband or related software) and mental imagery (e.g., thinking about oneself through specific datafied parameters). Thus, dressage in self-tracking promotes rhythmicity that is both negotiable and restrictive.

In reading our self-tracking practices through Lefebvrian rhythmanalysis, we draw inspiration from various studies on self-tracking that have focused on the themes of flows, repetitions, rhythms, and "choreographies" of action in self-tracking practices (e.g., Lomborg et al., 2018; Pantzar et al. 2018; Parviainen, 2016; Schüll, 2016a, 2016b). In fact, a parallel to the performative arts is quite helpful in summarising the difference between discipline and dressage that we have sketched above. In self-tracking, we are not so much educated into (health) knowledge, but bent into a choreography – into embodied and cognitive routines of repetition and reprise in the role of a self-observer.

Collaborative autoethnography with a focus on technology

To trace the rhythmicity created in and with activity trackers, we employed collaborative autoethnography. We engaged both of our personal and situated fieldwork experiences of wearing self-tracking devices, while also cross-analysing, comparing, and contrasting our experiences and our visual-textual research materials. We both used activity trackers (the Fitbit Charge HR for Harley, and the Garmin VivoSmart HR+ and, later, the Apple Watch S3 for Minna) for a total of 25 months between April 2015 and December 2019. During our autoethnographies, we collected field notes and took screenshots and photos of the apps as well as their notifications on the devices. We also shared observations, stories, and images of our activity-tracker use to find commonalities and differences, as well as discussing our experiences regularly, both face-to-face and via instant messaging. Notes from our meetings and online discussions constitute a central part of the research data.

Collaborative autoethnography is a qualitative research method that is simultaneously collaborative, autobiographical, and ethnographic (Chang et al., 2012). It relates closely to similar research practices such as duoethnography (e.g., Breault, 2016; Cifor & Garcia, 2019; Lund & Nabavi, 2008; Norris & Sawyer, 2012), collective autoethnography (Cann & DeMeulenaere, 2010), and co/autoethnography (Coia & Taylor, 2009). The common feature of all these approaches is that two or more people interrogate their own experiences and meaning-making practices together in an iterative mode in order to gain insight into a chosen topic or phenomenon.

Our collaborative autoethnographic process can be summarised with the four facets Cifor and Garcia (2019) identify in their duoethnographic exploration. First, "relationality" captures how the method brings together the multiple and complex connections between individual researchers, previous research, future readers, and technologies. Second, "difference" describes how the method provides space for various perspectives and ways of knowing. Third, the "dialogic process", the most distinctive feature of the method, points to the shared and interactional probing of the core question, theme, or problem. Fourth, "critical subjectivity" describes the process through which individual and collective experiences, values, and perspectives are interrogated and brought to the research process. After all, understanding and navigating the sociomaterial context of life is always a collaborative process.

Cifor and Garcia (2019) have applied this method in their feminist study on activity trackers' unintended consequences. In contrast to most collaborative autoethnographic studies, and in line with Cifor and Garcia, we have not selected the self or identity categories as the primary site of research. Instead, our focus has been on technology in practice. In our application and for the purposes of this article, our emphasis is on the culture (ethno) understood in terms of technology, instead of digging deeper into the process (graphy) or the self (auto) (see Chang et al., 2012; Ellis & Bochner, 2000).

One clear benefit of the method is that it challenges the artificial distancing of the self from the research subjects (Chang et al., 2012). This has been highlighted in recent feminist and new materialist studies that have approached self-tracking through autoethnographic methods. For instance, Salmela and colleagues (2019) have reflected on the affective and intimate research relationship one can develop with the ŌURA self-tracking ring. Clark and Thorpe (2020), in turn, experimented with diffractive methodology to explore the empirical possibilities of new materialism in the context of maternity and the use of Fitbit.

We believe that an autoethnographical approach is fruitful in capturing everyday rhythms, which can become elusive as they become habitual. The naturalness of rhythms, in our view, also prescribes or suggests autoethnographical exploration. In his outlining of rhythmanalysis, Lefebvre (1992/2004) states that people live in rhythms and that simultaneously, as bodily creatures, they are part of this rhythmicity. According to Lefebvre, in order to grasp a rhythm, it is necessary to have been grasped by it.

Living in rhythms with self-tracking technologies

In the first analytical section, we lay out our idea concerning how self-tracking can be analysed as a rhythmic practice, or how this activity produces and reproduces rhythmicity in everyday lives. This involves paying attention to the visual-linguistic rhythmics (cyclical and linear) of self-tracking software and interfaces, the importance of the social rhythms stemming from personal lives, and researcher positionality, as well as the rhythms stemming from the materiality of self-tracking practices.

"I confess that I have become completely committed and hooked to the idea of these daily cycles in the Apple Watch", Minna wrote to Harley on WhatsApp after a few months of using her device at the end of 2019, referring to a visual animation of rings on the screen of the device. The rings fill up during the day in response to the accumulation of active calories burned (red), brisk activity (green), and times per day when one stands for at least one minute per hour (blue) (see Figure 1). Each day, the cycle begins anew, suggesting that one fills them up again. There is, in some ways, a similar cyclical design for the software interface of the Fitbit worn by Harley, who replied that he "screwed up" as soon as he returned home from a holiday abroad, meaning that after he returned to the "normal" social rhythm of working life, his activity levels plummeted, and the almost perfect harmony was interrupted.

Figure 1 *Daily fitness cycles, November 2019*

Comments: The figure shows a screenshot from Minna's Apple Watch S3 fitness app. The colours of the rings indicate active calories burned (red), brisk activity (green), and times per day when one stands for at least one minute per hour (blue).

Our focus on rhythms and rhythmicity stems from observing and discussing how self-tracking *prescribes* repetition. While human life is already repetitive in many ways, self-tracking brings the repetition of an act (of looking at, and negotiating with, oneself-as-data) to the fore as essential for the production of self-understanding. Repetition begins with the idea, often evident in marketing, that a person is not supposed to acquire a self-tracking device to measure oneself *once* or every now and then, but on a frequent basis and, thus, to produce a time-series understanding of oneself (Pantzar & Ruckenstein, 2017; Schüll, 2016b).

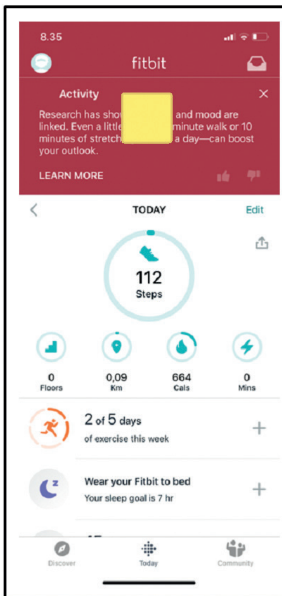
Additionally, there are many ways in which self-tracking devices encourage repetition in practice, for example, hourly haptic vibrations (get up and move!), daily goals (hit 10,000 steps every day!), explicit and implicit reminders to move or sleep enough, as well as weekly comparisons and challenges (How many times per week can you reach the daily goals? How does it compare to your friends?). Devices can also encourage paying attention to repetitive embodied processes, such as menstrual cycles, which can be tracked via the Garmin Vivosmart HR+.

This visually directed rhythmicity is captured in Figure 2, showing Harley's Fitbit Charge HR, where the cycle showing 112 steps represents the daily cumulative step count, which begins anew the next day. The orange cycle represents a weekly cycle of exercise, which sets up a goal for exercising on at least five days within a week (it seems that the device automatically recognises high-intensity movement as exercise). We also see an encouragement to track the quality of one's sleep, which implies that self-tracking may be used to set up and govern one's rhythms of being active and resting (sleep at least 7 hours every night!). In the upper section of the screen, there is a notification regarding how even a small amount of activity, such as stretching or walking three times a day, is good for oneself. This demonstrates both the visual and textual cues involved in setting up various forms of repetitive behaviour, but importantly, the human being is free to negotiate and produce difference within repetition. Every day or week is, in fact, different in terms of activity. One can engage in activity whenever one pleases, and sometimes, goals are not met. Thus, self-tracking does not seem to impose specific forms of repetitive or automatic behaviour as much as it prescribes thinking about the self and one's being in terms of repetition and reprise, or a choreography of checking back (see also Parviainen, 2016). Although there is a strong focus on repetition, self-tracking technologies also encourage the human being to develop personal, varied modes of repetition and become aware of unwanted habits, such as sitting for long periods in front of the computer.

Coming from quite different positions, we often discussed the mixing and matching of the algorithmic guidelines of our devices and the social, established rhythms of our personal lives. These include rhythms of work and leisure as well as personal relationships and family life, which we discuss below through reflections on the fieldnotes.

For example, in his field diary, Harley noted how he wanted to take the wristband off when going out on the weekend because it "did not fit" with his idea of enjoying festive leisure time. On the other hand, he still took the wristband with him on a two-week holiday in Japan. In his work as a researcher, Harley has struggled to draw a line between work and leisure. During a holiday in a foreign country, he noticed how self-tracking can in some ways actualise such social rhythms, for example, by contributing to an understanding of how leisure time allows for better chances or hot streaks in terms

Figure 2 *Visually directed rhythmicity*



Comments: The figure shows a screenshot from Harley's Fitbit Charge HR and visualises the various rhythmicities displayed to the user, including activity, exercise, and sleep.

of meeting the daily or weekly fitness goals. For Harley, an amateur football player and runner who does not have children, it was not only holiday-related leisure hours but also after-work leisure hours (or, in general, time away from work) that became related to the idea of activity in a new way.

Then again, Minna could not observe a clear distinction between work and leisure in her 24-7 use of the devices. For her, the rhythms of self-tracking intertwined with the rhythms of family members, both human and animal. To meet the suggested activity goals, which were based on the previous day's step count tabulated by Garmin, and contrary to established family routines, she volunteered to take the dog for an evening walk to meet her daily goal. The metrics suggested by the device did not only train her to count the distances between places in steps and repeatedly observe the amount and quality of her daily activity, but also prompted her to observe the mundane sensations of stress and hurry through rhythms. This occurred, for example, in the mornings, when other members of the family seemed to be enjoying their morning rituals in peace, but she could not find any time to sit down and have coffee in peace.

In addition to social rhythms, self-tracking also introduces and establishes material rhythms in everyday life – rhythms stemming from the hardware of self-tracking or rhythms that intertwine with the material reality of the embodied human being. The hardware-related rhythms include, for example, the rhythms of charging the battery and of devices wearing out or breaking down, but also rhythms stemming from how our bodies react to and change with the presence of the devices. For example, during the autoethnography, we both noticed how our wristband devices caused irritation to the skin. Accumulating sweat and dirt and rubbing movements on the part of the device on one's body sometimes caused the skin to break, resulting in somewhat repetitive patterns of taking a break from active self-tracking in order to let the skin heal. However, in relation to dressage, here, the automation of repetitive self-observation also became, in

a sense, concrete, because there was a forced separation from the device through which the self was constantly observed.

Self-tracking interfaces also intertwine with the non-negotiable, material rhythms of the body, such as heartbeats, which, in Lefebvrian terms, represent more of a flow than a routine and, thus, a linear pattern of repetition. In devices that measure heart rates 24-7, heart rate is a repetitive yet lively beat or pulse, which is typically represented as a linear trajectory of measurements within a day or on a daily basis in the form of daily averages on self-tracking apps. Through exercise, we may be able to affect and change this pulse (exercise may help lower one's resting heart rate, for example), but at least for most people, heart rates are more-or-less beyond conscious control; they are an autonomous system responding to the context of our lives. However, the Fitbit software easily transforms this lively pulse into a cycle of sorts by calculating a daily-average resting heart rate. One can then compare daily averages across longer time frames as measurements accumulate.

Falling in and out of rhythms

For us, rhythmanalysis is especially interesting and relevant because of the frictions and *struggles* involved in living in – and keeping up with – rhythmic regimes of self-tracking. Additionally, dressage helps us understand how self-tracking technologies both repeatedly bring up these struggles as objects of concern and make them sometimes inconveniently "sticky". For us, perhaps, the most notable struggles in self-tracking emerged in the processes of navigating the multiplicity of existing and suggested, or actual and ideal(ised), rhythms; the choices involved in negotiating what rhythms to succumb to in what situations; and how to cope with the various collisions of rhythms. We discuss these struggles through the idea of falling in and out of rhythms.

Being trained in repetitive observation of one's life is not, in itself, necessarily a negative thing, but various values, norms, and other influences within personal self-tracking assemblages may give rise to difficulties in following specific rhythms. While the concept of struggle may give rise to connotations that seem too strong in relation to challenges encountered in living with self-tracking technology, we stayed with this term in order to underline the affective power of such technology in everyday life (see also Salmela et al., 2019). Struggles emerge in various forms when eurhythmic human–technology coexistence gives way to overlapping and desynced rhythms and pulses that may begin to add complexity and frustration to everyday life.

As previously mentioned, one of the most notable struggles involves the health-related values and expectations that often accompany the use of self-tracking devices. This relates to the discordance between ideal rhythms and actual rhythms in one's life; discordance and desychronisation between the two may easily result in feelings of disappointment and even shame. It is easy to fall in with the rhythms and repetition that activity-based self-tracking devices suggest if one is already familiar with and, to some degree, compliant with, the now-popular discourses of personalised and preventive medicine, for example. These discourses include suggestions for constant self-care and active lifestyles that adhere to official recommendations for sufficient activity and sleep. As critical researchers, these ideal rhythms were of little importance for us in principle, but *in practice*, we noticed we could not escape them. For example, Minna observed

that she somewhat instinctively stopped active self-tracking when her activity levels dropped due to health issues. She returned to the autoethnography only after having recovered from a surgery. The encouragement and motivational cues from the device seemed inappropriate, wrongly timed, and even depressing when one's corporeality was forced to adapt an entirely new, less active rhythm of life for several weeks. However, at the same time, the activity of self-tracking never actually fully stopped, because the routinised pattern of repetitive self-observation (in terms of self-tracking data) was still functional even without the concrete device, which made it easier to return to the activity after the health issues had passed.

Inactivity during the day may be labelled "arrhythmia" (Lefebvre, 1992/2004) between ideal and actual rhythms of self-tracking. Initially, Minna welcomed the vibration and a simple order to "Move!" during work days. These notifications soon became important for her in managing the bodily burden of working at a computer. However, the same notifications also caused obtrusive interruptions: exercise in a yoga class was not considered activity by the device, and during the final relaxation of the class, the device vibrated in the wrist to notify the wearer of the need to move. These notes vividly illustrate how automated disruptions are experienced as necessary and desirable for certain situations, but they can also be negative and irritating in others. Leaning on Lefebvre (1992/2004: 44), these disruptions can perhaps be thought of as "crises" that have "origins in and effects on rhythms". They represent chances to reflect the dysfunctionalities of self-tracking technology and renegotiate one's personal rhythms of checking back on oneself. However, despite the negative disruptions in the moment of yoga, these disruptions also emphasise a need to maintain order in most of one's everyday life and thus come to reflect technological dressage.

Harley noted that although his wristband device did not have a similar haptic idle alert function, the Fitbit did have a functionality that counts active hours (+250 steps per hour counts as active) based on one's choice of consecutive hours. For example, workdays can thus be divided into sections of 60 minutes, within each of which sufficient activity should occur. When working, Harley often fell out of this ideal rhythm of hourly walking breaks because he spent extended amounts of work time being seated. Nevertheless, even without a concrete haptic alert, the knowledge of such a measurement functionality working on the background sometimes seemed to interfere with the ability to forget oneself and move into the "flow" of work (such as when working on a research article), because the fact that one *should* take breaks was being acknowledged in some ways. Thus, it seems as if work can sometimes be more productive if one can simply "unlearn" such algorithmic encouragements of activity.

Likewise, whereas the idealistic activity cues were on some occasions welcomed, the ideal of wellness in Garmin Vivosmart HR+ radically conflicted with Minna's own idea of wellness, which includes the idea of *not* being attached to digital networks at all times. The first and most intrusive experience for her was realising that, in addition to activity tracking, the device served as an extension of her smartphone. The wristband alerted with a vibration for every notification from the smartphone, including calls, text messages, and each and every other notification, from social media to newspaper headlines. In her fieldnotes, Minna reflected on how she had learned to control the disruptions on the smartphone, but the haptic feedback on the wrist received her immediate attention. She felt anxious and irritated when the rhythms of the everyday digital life were no longer

controllable, but instead, a continuous flow of vibrations on the wrist. Thus, everyday life fell into the hectic mediascape of contemporary new media networks.

Struggles related to falling out of the rhythms of self-tracking also crucially relate to the materiality of technology. For example, established rhythms and repetition in terms of observing oneself may become unpredictable as the devices begin to wear out. We both encountered the inevitable ageing of the devices. Harley struggled with it – expressing notable frustration and irritation – because his endeavours with the Fitbit device in 2019 involved running out of battery quickly and without warning, as well as failures to effortlessly sync with the mobile application. While the battery lasted around 4 to 5 days when the device was acquired in 2015, it now seemed to last for considerably less time. Moreover, the device started occasionally shutting down unexpectedly, sometimes without any low-battery warning. As a result, Harley had to learn to live with the accelerated and increasingly erratic rhythms of a worn-out gadget. The frustration stemmed partly from an acknowledgement that a device with an empty battery does not collect any data and the fact that the device cannot be worn during charging. Carrying a dead device around was a nuisance, and the process of charging the battery also affected the wearer's rhythms of life. For example, a walk or a jog may be postponed while waiting for the battery to charge (but it is a chance to sit down to do some work!), or the route home may be chosen based on whether the device is producing data or not.

Minna, for her part, had to cope with the failures of the Garmin Vivosmart HR+'s Bluetooth connection. The device alerted constantly when she moved too far from the smartphone, resulting in either having to learn to tolerate constant "false" vibrations on her wrist or carrying the smartphone everywhere. One concrete material struggle concerned the broken wristband mechanism, which eventually caused the device to fall off and get lost on 14 October 2019 at 20:04, as the app's last recorded data point shows.

When considering the critical Marxist undercurrents in Lefebvre's work, we can also relate the dressage of self-tracking new media technology to the macroscale. The material rhythms mentioned above and the problems encountered with ageing devices also drove us to relate self-tracking gadgets to accelerating rhythms and cycles of consumption-driven capitalism. Falling into the repetitive behaviour patterns and repetitive routine of self-tracking is a powerful mechanism for establishing such technologies as part of everyday health behaviour; simultaneously, updated and new versions of the same devices (perhaps with a couple of new or improved functionalities) appear on health-related retail markets at regular intervals. Once accustomed to the rhythms of self-tracking, one is well-equipped to fall into self-tracking with new devices, in new ways. Technology users who have adopted a repetition-based relationship to the self through self-tracking can and may be quite eager to move on to buying new devices and reprising the role of the self-tracker, who is an active producer of datafied (health) information.

Discussion

The findings of our autoethnographical endeavour indicate that rhythmicity is a viable analytical tool to use in understanding how self-tracking technologies arrange and affect everyday lives. Self-tracking involves encountering new rhythms, adapting to rhythms, negotiating rhythms, and struggling with rhythms. Most of all, self-tracking technologies establish a repetition-based relationship to the self. In some ways, one is quite free

to negotiate and arrange one's behaviour within the frames of repetition, which is why we suggest focusing on repetition itself when considering the effects of self-tracking on conditioning action and experience.

While self-tracking devices educate us on our own well-being and self-care, they also ritualise self-relations by seeking to establish a degree of automatism in the form of repetitive self-observation, albeit in collaboration with the human being. For us, this means that, first of all, self-tracking as a practice does not merely educate people but bends them into new modes of being and living in terms of negotiable, but also unrelenting, repetition, and reprise. While the concept of dressage may be intuitively thought to be best suited, for example, to studies within professional or institutional contexts within which bodies are trained in specific forms of behaviour, we feel that it is also well suited to analysing the "persuasive" and "sticky" character of new media technologies more generally. Rhythmic dressage in self-tracking works to produce bodies that check back on themselves and often think (about themselves) in terms of a data-driven logic.

For us, the routinisation of self-tracking was also revealed in our notes on human–technology attachment in self-tracking practices. Despite or perhaps because of the nuisances involved in the everyday use of self-tracking devices, we both reflected on how the self-tracking technologies had become a part of our lives, even when they were not in active use (see also Salmela et al., 2019). After living with self-tracking technologies on and off during the last few years, Harley found himself thinking about activity levels and other bodily functions through things that would be trackable via the Fitbit or another similar device. This can also be interpreted as an indication of rhythmic dressage in the sense that once the human being has grown accustomed to the repetitive rhythmicity of self-tracking and checking back on oneself, it feels natural to fall back in and reprise the role of a self-tracker with other self-tracking devices in the future.

Minna's field notes demonstrate this as well. In late 2019, after months of fieldwork with a Garmin activity tracker, she had a chance to try the Apple Watch S3. She originally had strong doubts and resentment toward the idea of having a device intended to provide constant connectivity on her wrist. Although Minna had not worn a traditional watch in more than a decade, the Garmin made her more aware of the time and date, to the extent that not wearing the device made her feel as if something was missing. However, the reflections in the field notes reveal that this feeling was not only a question of an awareness of time. It was strange, surprising, and somewhat shameful to realise that despite her initial disgust and critical researcher's position with regard to the interpellations and hooking practices of software design, she had ultimately become habituated to having a smartphone extension on her wrist. Nevertheless, and in line with observations from Harley, as well as Salmela and colleagues (2019), Minna's feelings of "enchantment" and "harassment" kept moving in circles, reflected in continuous loops of use and non-use.

Conclusion

In this article, we have discussed the multifarious rhythmicity of proactive self-tracking. We have used rhythmanalysis as a lens with which to better understand our attachments to and struggles with technology. Our collaborative autoethnography led us to reflect upon various rhythmic processes specifically in and through activity tracking, such as

falling in and out of rhythms and an (un)willingness to adhere to specific rhythms. The rhythmicity of self-tracking has its basis in negotiable, yet also unrelenting, repetition, which ultimately seems to suggest that rhythmanalysis is a potent analytical tool for studies interested in questions of power, persuasion, and attachment that take place in and with new media technologies and often lead to struggles with technology. Furthermore, we propose that the Lefebvrian idea of dressage can offer a fruitful conceptual tool with which to discuss the ways in which mobile media technologies and the related "training-in-repetition" occupy a sometimes welcomed, and at other times intrusive, place in people's everyday lives. We suggest that a rhythmanalytical framework opens up fruitful avenues for future (auto)ethnographical and qualitative work on self-tracking in varied and, perhaps more specific, contexts.

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