

## Regulating Wellbeing in the Brave New Quantified Workplace

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### Abstract

*Purpose:* The purpose of the paper is to lay out the conceptual issues arising alongside the rise of sensory technologies in workplaces designed to improve wellness and productivity.

*Design/methodology/approach:* This is a text based conceptual paper. Our approach is to throw light on some of the emerging issues with the introduction of wearable self-tracking technologies in workplaces.

*Findings:* The paper indicates that scholars will need to put ethical issues at the heart of research on sensory tracking technologies in workplaces that aim to regulate employee behaviour via wellness initiatives.

*Originality/value:* This is an original article. Since there is very little scholarly research in this area, it is important to begin to consider the implications of sensory technology in workplaces linked to wellness initiatives, given the probable impact it will have on work design and appraisal systems.

*Keywords:* quantified self, wearable technologies, regulation, sensory technology, wellness

*Paper type:* Conceptual paper

### Introduction

Envision a case when every employee working for a company is wearing a small, attractively looking, comfortable and computationally powerful device that consists of a range of sensors capable of tracking movement, heart rate, proximity to other employees, body temperature and skin conductance. Simultaneously, every work-computer-based activity is also tracked in par with the wearable device. Data from both wearable devices and work computers is wirelessly uploaded to a central system. The system provides detailed personal analytics for each employee: levels and suggestions for physical activity, indicators of stress, productive and sedentary periods at work,

work-based social interaction patterns and general health diagnostics. All this data is synchronised with individual calendars and planners, with e-mail systems and individually tailored virtual encouragement and performance dashboards.

A computer dashboard in the business context is defined as 'an easy to read, often single page, real-time user interface, showing a graphical presentation of the current status (snapshot) and historical trends of an organization's key performance indicators to enable instantaneous and informed decisions to be made at a glance' (Alexander and Walkenbach, 2012: 5). This description looks at a company's version, but a new entrant to this rapidly growing market is the personalised performance dashboard. In the context of performance dashboards used by employees the principle is similar to the definition by Alexander and Walkenbach (2012) but focuses more personally on the delivery of summary of individual performance indicators presented graphically in the time-series format (e.g. date, day of the week, daytime). Such examples of performance dashboards in the financial business context could include data about time spent by employees on the task and financial performance data, if money is used as an outcome productivity measure. More intimate performance dashboards incorporate contextual information obtained from tracking devices such as levels of physical activity, level of stress, or presence/absence scores. Reports that can be automatically generated and uploaded then provide employees with a mixture of physiological and quantified performance feedback and direct albeit polite suggestions, or 'nudges' to regulate subsequent behaviour. So-called nudges encourage employees about specific actions that are seen to be able to improve activity, productivity and overall well-being. As employees follow suggestions, gradually improving behaviour and performance, the system awards them with virtual points that can later be cashed in for material rewards. The power of social facilitation and social motivation is enabled by showcasing high performing employees' achievements, encouraging people to work together on goals, and displaying the leaderboards in various work areas. Each employee's virtual profile in the system is the representation of their performance and as such may play a key role in appraisals and promotions. The system is mostly invisible, yet omnipresent.

Such a vision may seem like an excerpt from an Aldous Huxley novel but it is in fact very close to what may very soon become a reality. The technological components are already in place, complemented by an emerging 'wellness syndrome' (Cederstrom and Spicer, 2015) whereby wellness at work is increasingly recognised as vital for the economic health of an organisation. As many as 580,000 U.S. companies implemented wellness programmes in 2015 that involve wearable fitness tracking devices (Hamblen, 2015). This concurs with a 'digital revolution' where body-worn and personal technology such as smartphones and digital wearables are becoming a part of daily work systems (Swan, 2012). Furthermore, metrics, indices, intensified measuring methods and performance indicators are all part of the trend toward quantification in behavioural regulation techniques and worker discipline in the era of workplace computerisation. The near ubiquity of smart digital workplace devices makes it easy for organisations to provide targeted initiatives and incentives to help employees stay well, but it also

results in large quantities of detailed personal data being gathered about employees that was once impossible. Wearable devices can be used to record levels and type of physical activity, heart rate variability as well as emotional and mood variances and stress levels. In this context the emergence of workplace wearable devices and self-tracking technologies (WSTT) in wellness initiatives are widely perceived as cutting edge methods to improve employees' health and well-being and improve aggregate firm productivity (Wilson, 2013b; Nield, 2014).

In order to begin to think about how to begin to research the phenomenon of WSTT in workplaces, an area that has significant implications for job design and employment relations research, this article approaches a range of ethical dilemmas that arise as workplace behaviour begins to become regulated through data driven wellness initiatives. Research must take the issues we identify into account as questions toward 'who and what counts' in the neoliberal workplace become increasingly relevant (author citation). WSTT are as yet largely unregulated and the impact of such projects on employees is largely unknown. Therefore it is important to initiate an in-depth discussion about the possible role of WSTT in future workplaces.

### ***The Quantified Wellness Syndrome***

A report in 2013 written by Jonathan Collins for Allied Business Intelligence (ABI) Research, entitled 'Wearable Wireless Devices in Enterprise Wellness Programs' predicts that more than 13 million self-tracking devices will be incorporated into employee wellness programs between 2014 and 2019 (ABI, 2013). Author Collins indicates that:

While some device vendors are hoping that strong consumer awareness will drive corporate wellness adoption for their products, they also need to understand and focus on the most influential parts of the healthcare value chain. (*Ibid.*)

This may signify a widespread shift from management oversight of health which was not common in the traditional workplace but where management could once physically see and speak to employees; to an increasingly quantified workplace where digital data-driven communication and information about employees' health and wellbeing substitutes face-to-face contact. Wellbeing is increasingly linked to productivity and is increasingly seen as trackable, which introduced a range of ethical questions we introduce below.

Why has 'wellness' become popular for workplace initiatives anyway? In February 2015 the Office for National Statistics announced that output per hour in the UK was 17 per cent points below the average for the rest of the major G7 advanced economies in 2013 which is the widest productivity gap since 1992 (ONS, 2015). The number of days lost due to stress, depression, anxiety, and headaches rose between 2012 and 2013, whilst all other sick leave reasons such as heart and gastrointestinal problems dropped (ONS,

2014). Latest Labour Force Survey estimates show that ‘the total number of cases of work related stress, depression or anxiety in 2014/15 was 440,000 cases, a prevalence rate of 1380 per 100,000 workers’. The number of new cases was 234,000 which is an incident rate of 740 per 100,000 workers. The number of working days lost due to the conditions listed above in 2014-15 was 9.9 million days, an average of 23 days lost per case. Indeed, in 2014-15 stress was the given reason for 35 per cent of all work related ill health cases. 43 per cent of all working days lost due to ill health were due to stress likewise (HSE, 2015: 2).

So an organisational ‘wellness syndrome’ (Cederström and Spicer, 2015) is arguably a powerful trend in response to these falling health and productivity statistics. However, quantified wellness workplace initiatives add to the ‘syndrome’ in a way that may distract from more fundamental causes of the rise in workplace stress such as increases in flexibilised working conditions and threats of redundancies. The main reasons stated for workplace stress were workload pressures, tight deadlines, too much responsibility and low levels of managerial support (HSE, 2015: 2). But WSTT-driven wellness programmes are predicted to increase productivity, happiness, level of physical activity which should lead to reduction of company insurance costs and personal insurance costs (Hamblen, 2015): particularly relevant where state-provided health services are not available. In 2013, BP America was amongst the early adopters, offering step-tracking armbands as part of a voluntary, company-wide initiative in health and well-being. BP’s health and welfare benefits consultant Chris Phalen indicated that more than 90% of employees participated in the initiative and noted that:

...the program has improved morale, contributed to the corporate culture, improved the health of employees, and lowered insurance rates for both the company as well as individuals. (Lindzon, 2014)

BP is not alone in noticing the benefits of WSTT solutions. The state of Kentucky operates a LivingWell wellness program used by more than 137,000 employees who agree to undergo a health assessment or biometric screening, with the data kept confidential with a third party. Participants in LivingWell earn points which can then be redeemed for prizes (Hamblen, 2015). Autodesk, another early adopter, started offering FitBits to employees in 2011. More than half the US workforce took up the offer at its inception, and their spokesperson indicated that ‘the move has had a real impact on the company’s employees as data prompted changes in their behaviour’ (Nield 2014).

When using WSTT, a single employee can create more than 30 gigabytes (GB) of data per week while using three devices as (Rackspace, 2014). Scaled across organisations, this is a significant amount of data that could be stored and analysed. WSTT manifest in the form of a range of body-worn devices including pins, rings, badges and smartwatches. The technologies used in workplaces measure track arousal and performance both mental and physical via accelerometers, Bluetooth, triangulation algorithms and infrared sensors, allowing self-monitoring beyond the enclosure of a

specific workplace and beyond the standard hours logged allowed by human resources software tools such as Patriot Pay and Kronos. Technologies can also be simply a specific app utilising powerful sensors available on each smartphone.

WSTT provide personal analytics that allow people to explore various aspects of 'autonomic selves' or selves that would not otherwise be knowable except through such intimate data generation techniques. Personalised data can provide workers with individual insights into how to manage time and identify productive periods of the day by looking at detailed activity reports. So WSTT collects and displays data that is seen to help individuals improve work habits but 'newer devices will soon be able to provide vital business information as well' (Lindzon, 2014). Data can also be used to make comparisons over corporate changes and employees' activities or across employees' well-being. WSTT data could be used for intensified performance management and monitoring: a significant step beyond other familiar workplace well-being initiatives like exercise classes or yoga provision. Tracking for workplace wellbeing could prove to be problematic if it does not capture other impacts of specific management approaches in the workplace, such as depression or anxiety and precarity (Moore and Robinson, 2015), that have been depicted by a range of epidemiologists and work psychologists to emerge in environments with what could be seen as overly invasive surveillance (see Aiello, 1993).

Indeed, WSTT can enable management to investigate aspects of workers' bodies which is a somewhat unnerving revelation. Research in the health sector has shown that self-monitoring solutions can facilitate positive behaviour change such as weight loss (Womble *et al.*, 2004) and help people manage chronic illnesses such as diabetes (Williams *et al.*, 2007), asthma (Shegog *et al.*, 2001) or depression (Christensen *et al.*, 2004). However, it is important to stress that there is currently no evidence in the scientific literature on the impact of WSTT use on employees in workplaces. There is a strong optimism, if not to say 'hype', around the use of sensory technologies to promote wellness as outlined, but it is mostly limited by the subjective nature of self-reports gathered by enthusiasts using such solutions, and methodologically limited white-papers produced by commercial companies on this topic. In order to begin research that provides firm evidence in this area, the following issues must be taken into account as its dark side is unavoidable.

### ***Emerging ethical issues***

*Rationalisation, work intensification and displacement of accountability.* In workplaces where wellness initiatives are famously not prevalent such as Tesco and Amazon warehouses, Motorola armbands for stock shifting are used in to determine speed and efficiency. WSTT has led to rationalisation of workforces such as in the case of Tesco, where wearable badges tracking working speed in warehouses were demonstrated to reduce the need for full time employees by 18% (Wilson, 2013a). Employee tracking in Amazon warehouses has resulted in reports of heightened stress and physical burnout.

Indeed, employee health and safety usually comes secondary to lean logistics and speed of work in depot work (Mulholland and Stewart, 2013). In offices, Sociometric Solutions are being used to capture employees' physical movements and interactions across desk spaces. RFID and Bluetooth systems determine where communication occurs and data is used to link this to productivity. The potential for displacing management accountability for workers' stress levels and the support for decisionmaking on redundancy on the basis of data is very real in this context. Automisation solutions are seen as efficient and reliable and neutralise production relations while employees may not be fully aware of the extent of ways that management can use seemingly neutral data gathered as part of WSTT initiatives. As Ben Bradley says in 'I am Pilgrim': "computers don't lie" (Hayes, 2013).

*Elusive digital productivity and workplace discipline.* Measuring productivity has always been a challenge in a dynamic working environment (Karasek and Theorell, 1992) and linking it to health makes sense on paper, but quantification of the same is a complex pursuit. Productivity and performance indicators are easier to evaluate in physical work settings such as factories or warehouses due to the automatic, procedural and to some extent predictable nature of such physical work. However, in knowledge based work, measuring productivity is a major challenge because the same performance results can be frequently achieved using different routes. In short, what is a good indicator of productivity in case of one employee may fail in the case of another. Psychological factors such as motivation (Shepperd, 1993), cognitive style (Proudfoot *et al.*, 2009) and personality profile (Tett and Burnett, 2003) may strongly influence not only performance outcomes but also the patterns of engagement while performing specific tasks. In terms of productivity indicators, the power of WSTT is in 'big data'. Almost everyone in office-based settings use computers as work tools, and WSTT can be used to track most activity on monitors with detailed second-by-second frequency. WSTT makes an assumption that the type of activity and the length of time spent on activities are plausible indicators of productivity. Such notions dehumanise employees who are reduced to a collection of activity timestamps and this may potentially result in biased performance evaluations. As a result, employees may worry about the possibilities for workplace control on the basis of new surveillance methods (Rosenblat *et al.*, 2014).

*Stigma and shame for opt-outs.* Given the negative workplace experiences and challenges to the employment relationship that could result from intensified WSTT monitoring and thus regulation, described above, workers may not feel comfortable being involved in such initiatives. Companies do not usually explicitly require employees to use WSTT in professional settings where they are used for wellness initiatives. As incorporation becomes normalised, employees risk feeling excluded from programmes if they choose to opt out. Opt-outs from wellness initiatives risk being seen as those who do not want to be well! Anyone living as anything but a 'happy person' may be in danger of becoming stigmatised. J. P. Gownder, an analyst at research firm Forrester, notes that there will be instances where people actually experience feelings of being ostracized for not participating in WSTT integrated corporate wellness programmes

(Hamblen, 2015). The standardisation of wellness individualises lived experiences and if people cannot achieve happiness, then they may feel inadequate. The disciplined, monitored employee in a neoliberal panopticon is seen to retain her autonomy but the reality is that the process of perfecting the healthy self may never in fact, finish. Complete happiness and well-being may never be achieved. In the film 'Hector and The Search for Happiness', Hector, an unfulfilled psychiatrist, muses as part of his search for what makes people happy: 'many people only see happiness, only in their future'. It is increasingly seen as our fault if we as workers have not taken advantage of available wellness offerings. Opting-out employees are seen as abnormal. In the film 'The Bothered Man', Andreas becomes painfully aware that happiness is the only actuality he will be permitted to experience. Any attempt he makes to experience normal life where pain and imperfections may occur lead to confused responses from associates and his partner. This is a dystopian world where perfect productivity, supreme health and impeccable aesthetics are idealised. Biometric surveillance facilitates a process of identity transformation under specific expectations (Ajana, 2010) and intensified reputation regulation as employers continue to profile employees with the use of new technologies (Pasquale, 2010; Gandini, 2016).

Beyond the 'wellness syndrome' and employee stigmatisation, we have to ask questions about whether 'opting in' or 'out' is *ever* possible in the employment relationship. The current authors have also been researching one company's Quantified Workplace study as part of a BA/Leverhulme project entitled 'Agility, Work and the Quantified Self', where employers provided FitBits, RescueTime and gamified activities to employees as part of a wellness initiative. The national Personal Data Protection Agency in the country in question, put forward a series of queries to the data analyst working on the company's study. The Agency asked in a quite incisive manner: 'Is the relationship between an employee and employer, ever actually consensual?'. Employers have significant leeway to gather information about employees, but new technologies available for human resource management have unprecedented possibilities for what employers can know about us, inviting questions on regulation, privacy and data protection. The legal questions surrounding, are covered in the next section.

*Lack of legal responses.* There have been very slow legal responses to personal privacy in corporate data collection, and corporate data reservoirs are largely unregulated (Cohen, 2015). Data collection of more invasive information about the health of workers is a new area of employer interest and 'as a rule, law has been loath to get too involved in intimate domains' (Levy, 2015: 679). In June 2015, the US Equal Employment Opportunity Commission (EEOC) issued a proposed rule amending aspects of the 1990 Americans with Disabilities Act (ADA) with regard to how corporations collect data relating to workplace wellness programmes. The questions raised in response to the proposal were around data that companies are gathering from employees' wearable technologies relating to what exactly qualifies as simple health data and what may violate privacy concerns around more intensive medical data. Employees' steps may be defined as simple health information, but data on heart rate, a medical measure, would

be considered too invasive according to this ruling. Public comments were invited at the EEOC's proposals to curb the use of employer surveillance over wearable data in wellness programmes (Mingis, 2015).

EEOC spokesman James Ryan indicated that:

If the information the employer is obtaining is considered 'medical information' (e.g., a person's heart rate over a period of time), then the information would be subject to the ADA's confidentiality requirements regardless of how the employer obtains this information. By contrast, information that would not be deemed medical information (e.g., how many steps a person takes per day, number of active minutes or calories burned) is not subject to the ADA's restrictions on disclosure. (Hamblen, 2015)

Timothy Collins, an employment lawyer for Duane Morris LLP states that:

...employers are up in arms about this proposed rule (...) wearables would be subject to the rule, especially if employers are handing them out for free and using them to gather data on the habits of workers. (Mingis, 2015)

Workers often use mobile devices on the consumer market for work, which puts these items into the category of BYOD, which stands for 'bring your own device'. Often, such personally owned devices do not meet PCI Data Security Standard compliance requirements. Bob Russo, general manager of PCI SSC (Payment Card Industry Security Standards Council) states that:

Productivity trumps security (...); consider the salesperson in the field who has a better chance of closing business if they have immediate access to important data. Think he or she wouldn't do it? The likely thought process would be, closing business is in the best interest of the firm, and a security breach will never happen to me. (Armerding, 2013)

## **Conclusion**

The 'future normal' involves more and more tracking devices (Ramirez, 2013) and this movement is accelerating rapidly in workplace behaviour regulation experiments. But who is responsible for creating the 'ethical body' in a world where data privacy is increasingly tenuous (Morrison, 2015)? Time will tell. For now, however, this article has introduced a range of issues that will need to be addressed as the trend for WSTT in workplaces continues and academic researchers will need to take these into account. Whether these technologies are simply part of a lineage of worker control methods (Upchurch, 2016) or something specifically different because of their increasing accessibility to physiological data (Moore and Piwek, 2015) is to be determined. Nonetheless, further issues will include the exacerbation of workplace surveillance (Otis



and Zhao, 2016: 151; Ball, 2010) paired with new ‘freedoms’ to work wherever and whenever you want such as those recently provided by Netflix, where workers have been given the go ahead to take a holiday at any point for any length of time, paired with unlimited paternity and maternity leave (Olanoff, 2015). Furthermore, as employees generate increasing amounts of health and productivity data in most cases without any extra pay for the activities that generate data (Till, 2014), companies providing the means to do so may be increasingly investigated to avoid data protection violations and what may be considered ethically questionable activities. But if that happens, questions will emerge around the extent to which legal regulation could lead to obstacles to innovation of work design.

At a micro-level, there are specific features of contemporary everyday life that have led to a drive toward personalised health care, self-management and self-monitoring including the reduction of public money for health care. This is badly timed as people are finding work increasingly stressful and are feeling forced to take time off in response. People may feel that their opportunities for making intentional choices around self-disclosure and privacy in ever-shifting boundaries of workplaces are becoming increasingly rare as ‘fine print’ and conditions for workplace behavioural initiatives become ever more opaque. Research is needed that operates at the interface between social and natural scientific disciplines and can navigate a range of theoretical approaches, looking critically at the consequences and the dark side of the use of WSTT in workplaces for behaviour regulation within the ‘brave new’ quantified workplace.

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