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This is the peer reviewed (post-print) version of the following article:

Original
Digital technologies and power dynamics in the organization: A conceptual review of remote working and wearable technologies at work / Miele, F., Tirabeni, L.. - In: SOCIOLOGY COMPASS. - ISSN 1751-9020. - 14:6(2020), pp. e12795.1-e12795.13. [10.1111/soc4.12795]

Availability:
This version is available at: 11368/3034044 since: 2022-11-14T12:56:52Z

Publisher:

Published
DOI:10.1111/soc4.12795

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19 October 2026

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Archivio della ricerca – postprint

Digital technologies and power dynamics in the organization: A conceptual review of remote working and wearable technologies at work

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Abstract

In this article, we examine the kinds of control practices that emerge with the introduction of digital technologies, and how these technologies are employed to shape power within workplaces. We present a comparative conceptual review of work practices by contrasting remote work and the use of workplace wearables. We trace forms of power and control that have been enacted with the adoption of these work-related technologies and associated practices. We find that the prevailing literature focuses on the practices enacted by management in order to control workers and exert power over them, and we propose that a more comprehensive approach be taken. In support of this view, we show how the concept of appropriation emerges from science and technology studies, and we argue that such a concept would be useful for exploring how workers use and incorporate digital technologies into their daily lives, thus reshaping power in organizations.

1 | INTRODUCTION

Digital technologies have become common in workplaces, and a significant strand of studies has focused on how such technologies may support and/or change organizational processes (Orlikowski, 1992; Suchman, 1987). As emphasized by Lyon (2003), the development of electronics-based surveillance systems, which rely on large databases that enable a panoply of practices, may hint at new conduits of power and modes of control. Power and control are fundamental concepts when it comes to understanding the "how" and "why" of any effect arising from

This article is a result of a common undertaking. Sections 1, 5, and 7 can be directly attributed to Francesco Miele, while sections 2, 3, 4 and 6 can be directly attributed to Lia Tirabeni.

workers' uses of digital technologies (Rose, 2014). These observations have prompted scholars to (once again) reflect on the relationship between power and technology in organizations and to explore how power and control take shape in today's digitally enabled workplaces.

Some scholars have observed that the debate about the consequences that introducing digital technologies may have on power relations in organizations—that has been emerged at the intersection between computer science, organizational and science and technology studies (STS)—can be classified, in broad terms, into two recurrent and polarized positions (Meyer, 2019; Nielsen, Andersen, & Danziger, 2016). Such observations have emerged at the intersection between computer science, organization, and STS. Those who adhere to the first position, the so-called "power reinforcement framework" (Norris & Reddick, 2013), argue that technologies support the existing distribution of power, as individuals, groups, and organizations that are already advantaged in the political process are able to shape the diffusion, design, and use of new technologies in ways that support their established interests. Accordingly, the introduction of digital technologies in organizations may produce opportunities for administrators and managers to strengthen the way they control workers and citizens (Gray, 2001; Kling & Iacono, 1984; Kraemer & King, 2006; Nielsen et al., 2016). Such shifts in perspective may also arise since these technologies provide new data collection and analytic tools for uncovering patterns of behavior related to individuals and aggregating performance outcomes (Stanton & Stam, 2003).

The discipline of STS has recently investigated how designers and managers choose, adopt, and represent technologies to shape relations within organizations. For instance, Till (2018) highlights that companies adopt and employ a certain rhetoric with the aim of demonstrating a "philanthropic" interest in well-being that is in actuality strictly linked to profit. Till further suggests that one aim of corporate wellness digital self-tracking initiatives is the "instantiation of a productive ethic through the encouragement of practices of self-assessment and management" (p. 235). Accordingly, workers are prompt to identify with an ideal worker that is simultaneously happy and productive. In order to achieve this ideal, workers are encouraged to employ digital technology for discipline and self-control. Analogously, Till (2014) and Whitson (2014) show how gamification is used to encourage people to govern themselves, in terms of taking more responsibility for their health and workplace productivity. In line with such a view, some flexible digitally-enabled practices that tend to be sought by employees and usually referred to as employee friendly (Fleetwood, 2007), such as remote work, can be seen as "flexploitation" practices (Gray, 2004, p. 3) reinforcing managerial control over the employees. According to this first perspective, technology and data streams may be used to govern and impose control over workers.

A second strand of research focuses on the transformational capacity of digital technologies in changing prior power relations (Dunleavy, Margetts, Bastow, & Tinkler, 2006). This approach initially emerged in the 1950s, drawing on the idea that information and communication technologies (ICTs) would change management, as the traditional organizational hierarchy would be replaced by a leaner, flatter structure, and productivity would soar with a reduction in the number of middle managers (Leavitt & Whisler, 1958). In subsequent years, various organizational and information systems scholars, harking back to the structuration theory (Giddens, 1984), began paying attention to the processes by which social orders and technologies configure or adjust to each other through emergent patterns of use. For these researchers, technology can change organizations and power dynamics, thus affecting employment relations (Bala & Venkatesh, 2017; Zuboff, 1988), the culture and authority structure of an occupation (Barley, 1986; Edmondson, Bohmer, & Pisano, 2001), the balance of power in a market (Schultze & Orlikowski, 2004), or the structure of a work system (Black, Carlile, & Repenning, 2004; Davidson & Chismar, 2007; Robey & Sahay, 1996). According to such a view, organizational relations are shaped through new technologies, and, in turn, they can reshape technology's use. For example, Majchrzak, Rice, Malhotra, King, and Ba (2000) have explored how a collaborative technology designed for sharing knowledge can be unexpectedly used by team members to communicate directly to each other, thus bypassing the formal leader.

Other authors have shed light on the tensions between the transformative processes emerging around new technology and the strategies enacted by professional groups for defending prior power arrangements (Mørk, Hoholm, Maaninen-Olsson, & Aanestad, 2012; Nicolini, 2007). For instance, Nicolini (2007) shows how telemedicine

expands medical practices, affecting power relations in unusual ways and redistributing the work among both non-human and human subjects. Telemedicine technologies advance the cultivation of skills; enrich nurses' responsibilities; establish a direct relationship between patients and specialized centers; and endanger the role of general practitioners in the caring process. At the same time, physicians carry on with various strategies for defending their power over patients and other professionals.

As argued by Meyer (2019), p. 2), in the considered debate, "many contributions take either an alarmist or a techno-optimist stance towards digitalization in industries (…). What these polarizing characterizations miss, however, is the more intricate, and often ambiguous, dynamics that happen between total domination and total emancipation." Within this framework, only few contributions (e.g., Nicolini, 2007) show that emancipatory and conservative dynamics can be interwoven.

With our work, we contribute to the analysis and development of the debate by advancing a conceptual review of the empirical and theoretical research on this subject. Within the parameters of a comparative logic, we focus on two practices enabled by digital technologies: working from a remote place due to the availability of smart devices (remote working) and working while wearing smart devices (wearables at work). We investigate the dynamics of power and control by examining how scholars have presented these issues with respect to these practices. Ultimately, our research questions are structured to investigate (a) what kind of control practices emerge along with the introduction of digital technologies, and (b) how ubiquitous digital technologies are used to shape power within workplaces.

2 | POWER AND CONTROL IN THE ORGANIZATION

According to Clegg, Courpasson, and Phillips (2006), "power is to organization as oxygen is to breathing" (p. 3). Indeed, power represents an endemic part of organizational life (Fleming & Spicer, 2014). An earlier definition of power can be found in the work of Dahl (1957), where it is stated that "the base of an actor's power consists of all the resources […] that he can exploit in order to effect the behaviour of another" (p. 203). For other authors, the concept of power has implied a relation between people, and as Follett (1924) had already suggested long ago, there is a "power with" perspective that continuously emerges out of the actions of people working together. According to Foucault (1979), power is relational and generative. Foucault (1980) stressed that there is a shift from the concepts of surveillance and control to those of *self*-surveillance and *self*-control due to the mechanisms of individual internalization.

Power is often conceived in dualistic terms, as something only available to the few in order to control the many. For example, managers (the few) exert power over the employees (the many) within organizations mainly through the mechanisms of rewards and sanctions (Stanton & Stam, 2003). In line with Giddens's structuration theory, Brocklehurst (2001) further suggests that within an institution, a structure of domination is always precarious, and this consequently requires its continuous reproduction through action. This means that those actors in subordinate positions are never without resources: they will constantly try to put the reproduction of the dominant conditions under control. In this vein, managers are not the only actors that can exert power within organizations.

Control mechanisms play a significant role in the ways power is exerted. According to Hill and Jones (1992), within organizations, managerial control can be understood as the practice of developing standards; observing and assessing performance; judging outcomes; acknowledging accomplishments; and taking necessary action to improve the work performed. In line with the analysis of Sihag and Rijsdijk (2019), organizational control can be either formal or informal (Kreutzer, Cardinal, Walter, & Lechner, 2016). Some forms of control focus on the specification and evaluation of desired task outcomes and behaviors, while others involve socialization as well as selection and training mechanisms for influencing behavior (clan control) through unwritten and unofficial values, norms, and beliefs. Power and control strictly relate (Clegg, 1981; Reed, 1996), and they frequently tend to coincide since power often expresses itself in the form of control (Hatch, 2018).

Drawing from Foucault, Whitson (2014) elaborates on the concept of governance. She underlines that "governance is about knowing subjects and their motivations and desires well enough to determine how to get them freely and willingly to enroll in the governor's projects, and thus govern more effectively," and accordingly, "power is a relationship between people in which one affects another's actions. It is productive, rather than violent or repressive. It involves making a free subject do something he or she would not have done otherwise" (p. 527).

In this article, we understand power as generative, relational, and productive; it is a relationship through which the individuals involved exploit their own resources to influence another's actions (Whitson, 2014); more specifically, they may control and affect the behavior of others, or even themselves (Foucault, 1980), within a given organization.

3 | COMPARING REMOTE WORK AND THE USE OF WEARABLES AT WORK

To examine the role of digital technologies in shaping power within workplaces, we adopt a conceptual review approach (Dirik, Barrett, Bennison, Collinson, & Sandhu, 2018; Webster & Watson, 2002). In so doing, we investigate and compare two distinct work practices: working from a remote place (hereinafter referred to as remote working) and working while wearing a smart device (hereinafter referred to as wearables at work).

Remote working, labeled also as telecommuting or telework (Bailey & Kurland, 2002), is defined by the International Eurofound and the International Labour Office (2017) as "the use of information and communications technologies (…) for work that is performed outside the employer's premises." This technology is often adopted by organizations to allow for good work-life balance and reduce the waste of time due to commuting (e.g., Harpaz, 2002). On the other hand, much research has demonstrated the controversial effects of remote work on working hours (e.g., Tipping, Chanfreau, Perry, & Tait, 2012) and working time organization (e.g., Genin, 2016), particularly since it undermines the separation between the public and private spheres.

In contrast, wearables allow for digital self-tracking, defined by Oxford Dictionaries (2015) as "the practice of systematically recording information about one's diet, health, or activities, typically by means of a smartphone, so as to discover behavioral patterns that may be adjusted to help improve one's physical or mental well-being." It is crucial to note that this definition does not take into account that self-tracking can also be "pushed" by providers, such as employers, for collecting information about users' performance (Lupton, 2016a) and enhancing surveillance processes (Till, 2014).

We selected these practices according to a comparative logic known as the "most different systems design" (Teune & Przeworski, 1970) that is mainly applied in case studies. The strategy involves choosing units of research which are as different as possible with regard to extraneous variables within the basic logic that differences cannot explain similarities (Anckar, 2008). In other words, comparing the most different systems (the two practices) gives particularly robustness to those traits that are however common (recurrences in the results) to the considered systems.

In accordance with Zuboff's (1988) earlier considerations, the chosen practices cannot necessarily be seen as new or distinct. Thus, remote working and wearables at work are similar insofar as they are both enabled by digital technology. Both practices are often proposed in a rhetorical fashion by top management within workplaces in order to improve wellness at work (Albano, Curzi, Parisi, & Tirabeni, 2018; Giddens, Gonzalez, & Leidner, 2016; Mettler & Wulf, 2019). However, working remotely implies the separation of working activities from the physical constraints imposed by offices and factories, while in the case of wearables, employees still work in traditional workplaces. In remote working, employees are completely "out of sight" of managers and peers, thus enabling only virtual or remote control (Sewell & Taskin, 2015). On the contrary, in the case of wearables, employees are both physically and virtually monitored by their employers, leading to ubiquitous control and enabling more fine-grained visibility. In fact, as underlined by Ruckenstein (2014), the theme of visibility links personal analytics to notions of control and governmentality; it implies the idea that with a huge amount of data, one's body can be controlled by reason and improved for achieving excellence.

Since our review is concept-centric, we sought to identify published papers that clearly conceptualized the power and control mechanisms enabled by remote working and the wearables at work.

We searched for articles published in academic journals during the last 20 years. We did not consider conference papers because of a lack of consolidation. As a first step, we made two distinct searches: one concerning the practice of remote working, and the other about wearables at work. We employed Google Scholar, Scopus, and JSTOR as search engines. Following the work of Hercheui (2011), each electronic search employed combinations of keywords in search of the defined domain (remote working, telecommuting, teleworking, distributed work, agile work, in the case of remote working; wearable, personal informatics, self-tracking, in the case of wearables at work) and words related to power and control (power, control, or surveillance). The selection of publications was based on theory-saturation principles (Glaser & Strauss, 1967). The final sample consisted of 28 papers: 18 for remote work, and 10 for the use of wearables at work.

4 | REMOTE WORKING AND POWER DYNAMICS

4.1 | Power, isolation, and self-control

Scholars have investigated the link between remote working, control, and power from different perspectives. A first group of studies connects remote work to the emergence of control dynamics that influence socialization processes within an organization (i.e., relations with colleagues and supervisors) and the construction of the self (i.e., in terms of how the individuals increase their self-control under remote working conditions). This group encompasses issues of organizational justice (Fogarty, Scott, & Williams, 2011; Kurland & Egan, 1999); remote workers' identity and isolation (Brocklehurst, 2001; Kurland & Cooper, 2002); and remote workers' self-control and perceived autonomy (Gajendran & Harrison, 2007; Sewell & Taskin, 2015; Valsecchi, 2006; Wood, Graham, Lehdonvirta, & Hjorth, 2019). For example, Kurland and Cooper (2002) analyze the process by which remote work evokes managerial control and employee isolation challenges by using a grounded theory approach. They found that managerial control and employee isolation were inextricably linked; remote workers seem more likely to be concerned about professional isolation when their performance is not linked primarily to measurable outputs.

Concerning remote workers' self-control, Sewell and Taskin (2015) have shown how working remotely gives employees a greater sense of autonomy. However, at the same time, they observed an increase in organizational control in the form of extended supervision over matters normally left to the employees' discretion. A great sense of autonomy was also experienced by the remote gig economy workers in another study (Wood et al., 2019). In this case, it was found that a specific kind of control, the so-called algorithmic management, was central to the operation of online labor platforms. Algorithmic management is an extension of “customer management” strategies in the sense that it entails positioning customers as agents in the management circuit such that they finally appear to dictate how work is performed (Fuller & Smith, 1991 cited in Wood et al. (2019)). By adopting an employee's perspective, Wood et al. (2019) finally suggest that this form of control differs from the Taylorist control often attributed to the extensive use of informational management tools because “algorithmic management techniques enabled by platform-based rating and ranking systems facilitate high levels of autonomy, task variety and complexity, as well as potential spatial and temporal flexibility” (p. 70).

4.2 | Power and hierarchy

A second group of studies connects remote working to the emergence of control dynamics in terms of its effect on hierarchical systems. These works focus on hierarchies (Dambrin, 2004; Wicks, 2002; Raghuram & Fang, 2014) as well as supervisory approaches (Baruch, 2001; Lautsch, Kossek, & Eaton, 2009). For example, Wicks (2002)

underlines how technological change may reduce the hierarchical separation between supervisors and subordinates in the remote work environment.

In another study (Lautsch et al., 2009), control even assumes the positive meaning of “supportive supervision.” This study addresses the question of which are the most effective ways for supervisors to maintain contact with and monitor the schedules of remote workers and the other employees. It explores varying approaches to the supervision of remote work and shows how “supportive supervisory” increases contacts between remote workers and their supervisors with respect to the information sharing. Analogously, Dambrin (2004) identifies the emergence of new forms of top-down control. Focusing on the case of salespeople, the author analyzes the impact of remote work on the manager–employee relationship in terms of its effect on four related dimensions: coordination, division of labor, evaluation, and adjustment. Dambrin found that remote working increases the autonomy of salespeople and leads them to better self-management while managers may have difficulty in representing authority for them. Indeed, if remote working is enacted due to concerns about potential control over one's work, its implementation may lead to adjustments on the parts of both remote workers and their superiors. As a counterpart of this statement, remote workers' managers need to redefine their role toward subordinates: if managers stick to controlling the remote worker, they are assured of failure.

4.3 | Power and performance

A last group of studies connects remote working to the emergence of control dynamics in terms of the impacts on overall organizational performance and individual job performance. Such studies also address the issues of job suitability or satisfaction (Bailey & Kurland, 2002; Virick, DaSilva, & Arrington, 2010); outcome-based problems (Mayo, Pastor, Gomez-Mejia, & Cruz, 2009) and transaction costs (Brice, Nelson, & Gunby, 2011); and new barometers for comparative performance assessment (Levy, 2015). For example, Mayo et al. (2009) have investigated the conditions under which firms are most likely to adopt remote working policies. The basic idea is that since remote working is accompanied by greater employee autonomy and lower organizational behavioral control, managers' willingness to reward subordinates based on their performance (rather than on their physical presence) can be a critical factor in the adoption of such policies. The authors connect control to outcome-based incentive systems, and thus propose a kind of “fit” model that combines leadership with organizational and employee factors to predict the outcomes of remote working practices (e.g., it is a better fit to compensate employees for results rather than time).

In considering the worker's point of view, Levy (2015) uses a U.S. trucking industry case to investigate how remote monitoring reorients information flows in a spatially diffuse work context. Levy shows that truckers are subjected to remote performance monitoring data about their locations and behaviors that are transmitted in real time. The study shows that aggregated data streams allow managers to quantitatively evaluate truckers' performances across new metrics, and that this challenges truckers' own accounts of local and biophysical conditions. Furthermore, it also shows that organizations enact control by resocializing the gathered information and strategically deploying it into truckers' social lives to pressure them into compliance with organizational aims.

5 | WEARABLES AT WORK AND POWER DYNAMICS

5.1 | Power and self-discipline

When scholars analyze power and wearable devices at work, they mainly aim at improving the following: worker safety, job performance, and/or worker lifestyle. Some papers compare different devices and their consequences on various dimensions of workers' lives, such as privacy, safety, well-being, or psychosocial conditions (Akhtar & Moore, 2016; Kaupins & Coco, 2017; Li, Wu, Gao, & Shi, 2016; Moore & Piwek, 2017; Moore & Robinson, 2016;

O'Neill, 2017; Schall, Sesek, & Cavuoto, 2018); others focus on specific wearables and their consequences for individuals and organizations (Abbas, Michael, Michael, & Aloudat, 2011; Gorm & Shklovski, 2016; Jones, Marshall, & Denison, 2016; Weston, 2015).

Drawing on neo-Marxist and poststructuralist frameworks, a first group of studies presents wearables as technologies for controlling workers' behaviors, bodies, and desires. In this case, wearables are seen as instruments for modifying workers' conduct; producing continuous data about their bodies and habits; and giving them feedback about their performance and exposing their conduct to employers' gaze. These contributions often focus on health issues connected with the use of wearables, such as the rise of anxiety, stress and psychological breakdowns and physical burnout. Jones et al. (2016), for example, by considering football players, show how through wearables athletes are continuously observed by coaches, such that every movement they perform is recorded and used to punish those who fall short of the prescribed expectations. The consequences were reported here as a long-term decrease in players' performance levels. Along similar lines, to highlight the harmfulness of wearables at work, Akhtar and Moore (2016) use Galtung's theoretical concept of structural violence to argue that wearables can impose structural violence on workers, pushing them toward overwork and negatively impacting their autonomy, privacy, and quality of life. Akhtar and Moore provide a set of guidelines for supporting the trade unions' strategies for limiting the diffusion of these technologies.

Among this group of contributions, some describe the adoption of wearables in the workplace as a neo-Taylorist trend where working bodies are increasingly regulated through the imposition of productivity standards; time-motion measurement; transmission and analysis of data; and systems of punishment and reward (Akhtar & Moore, 2016; Moore & Robinson, 2016). Others have distanced themselves from this position. In particular, O'Neill (2017) claims that wearables often gather data about the psychophysical conditions of workers and their daily habits, and consequently, they support companies in the creation of organizational rules and standards of productivity more aligned with the “natural” rhythms of workers' biological temporalities.

5.2 | Power and acceptance limits

From a more managerial perspective, a second group of studies depicts wearables as technologies that are potentially useful for both employers and employees. For these studies, mainly emerging out of the computer science field, wearables can have a strong positive effect on both organizations, by increasing productivity and supporting superiors in the supervision of subordinates, and workers, by giving them feedback on their work and improving their well-being.

These studies support developments in the diffusion of wearables by defining real and potential misuses (Abbas et al., 2011); ethical guidelines for employers (Weston, 2015); acceptance limits from the point of view of employees (Li et al., 2016) and managers (Kaupins & Coco, 2017); and the expectations of occupational safety and health professionals (Schall et al., 2018). In these works, the control over the workers' behaviors is not depicted as negative in itself; rather, there is more of a concern with drawing a dividing line between acceptable versus unacceptable kinds of control. For example, Schall et al. (2018) explore the advantages in injury and illness prevention connected with these devices. Although the majority of the surveyed experts had positive expectations of the wearables, they were still frequently concerned about the negative reactions of workers due to privacy issues. Similarly, Kaupins and Coco (2017) explore the acceptance limits for human resource managers. They found that the general surveillance of workers is always considered acceptable, even when it is intrusive (e.g., analyzing the websites the employees visit, or their speed while driving corporate vehicles); in contrast, monitoring employees' physical activity (daily walking or running steps) or their health conditions (heart rate or body temperature) is always considered unacceptable. Interestingly, according to Abbas et al. (2011) and Weston (2015), to reduce the negative effects on employer–employee relationships and prevent forms of resistance, employers should follow some guidelines for the management of data produced by wearables, such as recording only data produced during working hours or ensuring that employees understand how data are used and stored.

6 | DISCUSSION: DIGITAL TECHNOLOGIES AND POWER DYNAMICS IN THE ORGANIZATION

In trying to discern what kinds of control practices emerge with the introduction of digital technologies, we found that both of the considered practices are connected with top-down control procedures, extending managerial supervision to matters normally left to the employee's discretion. Further, both practices seem to support "the shaping of the private self" (Rose, 1990) as they favor the self-regulation of employees toward managerial expectations and desires, taking with them social representations about how a "good" worker should be (e.g., autonomous but reachable and with a high commitment toward organizational goals; productive and careful toward their health and well-being).

However, some of the literature about wearables claims that these technologies carry the risk of becoming highly intrusive, and their implementation may be met with workforce resistance. Consequently, contributions aimed at supporting the diffusion of wearables suggest that managers should introduce these technologies by involving workers and limiting the use of employees' data. A similar consideration applies to remote work too, as scholars endorse more supportive supervisory approaches for monitoring remote workers.

In such a frame, how are digital technologies used to support, reinforce, or even change power dynamics within workplaces?

In the debate on digital technologies and their relationship with power, some authors have observed that digital technologies support power asymmetries, while others argue that such technologies enable those in lower hierarchical levels to own more information and knowledge, thus leading to a shift in prior power relationships (Nielsen et al., 2016).

The processes of introducing both wearables and remote work technologies are close to what Kraemer and King (2006) refer to as functioning within the *power reinforcement framework*. In such circumstances, "decisions about IT use are made by top managers and their subordinates. They use IT in the broad interests of the organization, but those broad interests usually intersect with their own interests." (p. 5). In contrast, the analyzed literature also shows that the opportunity to exercise a more ubiquitous, pervasive, and continuous form of control over the workforce does not automatically translate into a reinforcement of preexistent power asymmetries.

As our study shows, control, when pushed over certain limits, can force workers to either *voluntary* or even *involuntary* escape from it, thus compromising the reach of organizational objectives and also the capacity of management to exercise power. In fact, control can produce significant levels of stress and anxiety (Jones et al., 2016) or social isolation (Wicks, 2002), leading workers to involuntary perform far below management's idealized standards. This last case calls into question the actual achievement of the organization's goals.

7 | CONCLUSIONS: THE NEED TO EXPLORE APPROPRIATION DYNAMICS

With few exceptions (i.e., Wood et al., 2019), the literature on the two practices seems to be mainly dominated by managerial or rather critical approaches (with particular reference to neo-Marxist and poststructuralist theories). These approaches emerge from different theoretical backgrounds, but both focus on the attempts enacted by management to control workers and exert power on them. Furthermore, both frame the workforce's reactions to technologies in terms of acceptance or resistance. Within this framework, technology's intrinsic properties and functionalities are seen as drivers of sociocultural changes in the workplace, and workers only have space for deciding whether to accept or refuse them. This idea is in line with the more recent conception that technologies represent opportunities for changing individual behaviors in different domains (Rapp, Tirassa, & Tirabeni, 2019) and, in particular, within the workplace (Whittaker, Kalnikaite, Hollis, & Guydish, 2016).

If we look at research on the relationships between ICTs and power in other contexts, with a particular focus on STS and the related literature, we find stimuli for overcoming the juxtaposition between acceptance and refusal. For example, Barta and Neff (2016) argue that people may increase their data awareness and protect themselves within

quantified-self communities. More specifically, they may engage in soft resistance to the transformation of their data into monetizable assets without renouncing the use of self-tracking technologies. Other research suggests that although individuals cannot completely escape being the subjects of dataveillance, they can make choices about the tracking practices and devices used through which means they can challenge the dominant norms while configuring new norms of selfhood and embodiment (Lupton, 2016b). These studies also overcome the polarization between domination and emancipation (see Meyer, 2019); people can use ICTs in unexpected ways, contributing to the realization of some interests of powerful actors while finding creative ways to affirm and reaffirm their own identity and freedom at the same time.

In the attempt to explore how workers may incorporate digital technologies into their daily lives by adapting them to their interests, desires, and cultural backgrounds, future research may employ the concept of *appropriation*. This concept emerged from STS (see Mackay & Gillespie, 1992; De Laet & Mol, 2000; Hirsch & Silverstone, 2003; Storni, 2010) and has sometimes been employed in organization studies (see DeSanctis & Poole, 1994; Masino & Zamarian, 2003; Orlikowski, 1992). The concept of appropriation overcomes the traditional understanding of individuals as rather passive agents, instead focusing on how they use new technologies and make original shifts from the technology providers' first intents; it could be useful for the analysis of power and control dynamics emerging around digital technologies in the workplace for two reasons.

First, exploring appropriation dynamics is relevant to furthering our understanding of how people use technologies in unexpected ways, thus reducing the possibility that these devices could become tools for controlling the lives of workers in pervasive ways while at the same time ensuring that the advantages connected with them are protected (e.g., Mort, Roberts, & Callén, 2013; Piras & Miele, 2017). As shown in the work of Wood et al. (2019), workers can find original ways to escape top-down control. For instance, they can purposely delay responding to their managers requests by enacting some kind of resistance or bypassing the top-down control by setting up a second monitor where doing everything that is totally nonrelated to work.

Second, people can appropriate digital technologies to subvert prior organizational power dynamics (e.g., Nicolini, 2007; Wood et al., 2019). For example, research in the field of personal informatics in healthcare suggests that people may use technology to tinker with their bodies through codes or algorithms. This may lead to the experience of data as a means of exploration whereby new relationships and obligations emerge (Kaziunas, Ackerman, Lindtner, & Lee, 2017; Mol, 2008).

To sum up, we argue that the notion of appropriation may offer fresh insights and a more multifaceted representation of the possible relationships within power-control dynamics and the introduction or implementation of digital technology in the workplace. This concept may help scholars to move beyond the simplistic way of representing digital technologies and their relationship with power in organizations.

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