



"Out of sight, out of mind in a new world of work? Autonomy, control and spatiotemporal scaling in telework"

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Abstract

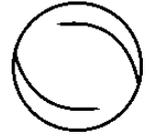
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Out of Sight, Out of Mind in a New World of Work? Autonomy, Control, and Spatiotemporal Scaling in Telework

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Abstract

We draw on the geographical concepts of *social space*, *territoriality*, and *distantiation* to examine an apparent tension inherent in telework: i.e., using information and communication technologies to work away from traditional workplaces can give employees a greater sense of autonomy while simultaneously placing new constraints on the way they conduct themselves in settings that were previously beyond the reach of managerial control. We draw on a longitudinal case study of a Belgian biopharmaceutical company to show how technical and professional teleworkers developed broadly similar strategies of *spatiotemporal scaling* to cope with this tension. We conclude by considering how these scaling strategies allowed employees to cope with the demands of ‘hybrid’ work that is conducted both at home and in traditional settings.

Keywords

organization control, sociology of work, space, distance, telework

Introduction

Using information and communication technologies (ICTs) to undertake work while on the move, at home, or at other sites away from the traditional workplace has impacted many professional, technical, and clerical occupations (Brocklehurst, 2001; Tietze & Musson, 2005; Wilson, O’Leary, Metiu, & Jett, 2008). This now well-established development is commonly known as ‘telework’ and involves a qualitative shift away from traditional forms of centralized social organization and toward a more diffused, fragmented, and emergent set of social relations. We argue that the social

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relations of telework are indeed extra-organizational but they are not extra-territorial (cf. Kallinikos, 2003) and can thus be understood using geographical concepts.

A number of factors driving the growth in telework over recent decades have been identified, including the development of enabling technologies (Baruch & Nicholson, 1997), the increased economic importance of service industries (particularly ‘knowledge work’; Olson & Primps, 1984), a greater awareness of sustainability and mobility issues (Salomon & Salomon, 1984; Pérez, Sánchez, de Luis Carnicer, & Jiménez, 2004), increased cost and space pressures (Baruch & Nicholson, 1997; Jackson & van der Wielen, 1998; Neufeld & Fang, 2005), and employees’ preferences (Baines & Gender, 2003; Chapman, Sheeney, Heywood, Dooley, & Collins, 1995; Hill, Miller, Weiner, & Colihan, 1998; Manoochehri & Pinkerton, 2003; Mokhtarian, Bagley, & Salomon, 1998; Stanworth, 1997). Early on, telework was presented as a way of transforming traditional ways of working, mainly through its capacity to decouple work activity from the physical constraints imposed by offices and factories where employees are physically present in the workplace and where the co-location of managers and peers exerts a disciplinary force on workers’ conduct (Sewell, 2012). Optimistic predictions were made that such disciplinary forces would fade as co-location no longer became necessary under conditions of telework, thus leading to a loosening of the reins of both managerial and peer control and a commensurate increase in the opportunities for employees to exercise autonomy. Detailed studies of telework (e.g., Brocklehurst, 2001) quickly disabused us of such a simplistic view by showing the very ICTs that enabled teleworking also incorporated features that allowed managers to control employees through previously unseen forms of remote surveillance. Our article explores this tension between the experience of being physically absent from the workplace while being simultaneously under close managerial and peer scrutiny—usually in the intimate surrounding of the home—through the application of the concepts of *social space* (Lefebvre, 1974), *territoriality* (Raffestin, 2012), and *distantiation* (Taskin, 2010). These geographical concepts allow us to build on existing studies of the impact of ICT on telework (see, for example, Dambrin, 2004; Dimitrova, 2003; Fairweather, 1999; Mello, 2007; Valsecchi, 2006; Wicks, 2002) by focusing on the localized strategy of *spatiotemporal scaling* as teleworkers dealt with organizational intrusions into their domestic lives. Importantly, our empirical component involves two contrasting occupational groups: professionals (who might reasonably be expected to exercise a good deal of autonomy even before they took advantage of telework) and technicians (for whom the prospect of combining working from home via telework with time in the office ostensibly held out the prospect of greater autonomy).

Combining conceptual developments in geography with the experiences of distinct occupational groups in this way enables us to make two main contributions to our understanding of telework as an important aspect of a more diffused, fragmented, and emergent world of work: (1) it provides a new theoretical approach that allows organization scholars to reconsider the control of home-based telework for employees whose experiences span what Halford (2005) calls the ‘hybrid’ space of the traditional and domestic workplaces; and, (2) by contrasting the experience of technicians with those of the more extensively studied experiences of professionals, it brings the empirical base of the telework literature closer to the actual profile of telework in Europe which is mainly associated with moderately skilled employees (see ECaTT, 2000; EWCS, 2007; SIBIS, 2003).

Is Out of Sight Really Out of Mind? The Nature of Control Under Conditions of Telework

In terms of the changing nature of managerial control under conditions of telework it would appear then that the major consideration would be the fact that supervisors and peers are no longer proximate (Halford, 2005; Sewell, 2012). Yet empirical studies of the phenomenon paint an uneven

picture of the experiences of teleworkers who are not in the presence of line managers and co-workers. Some have pointed out that technological change across a wide range of occupations has indeed dissolved the hierarchical differentiation between superiors and subordinates in telework (e.g., Fairweather, 1999; Kurland & Cooper, 2002; Wicks, 2002; Wiesenfeld, Raghuram, & Garud, 2001) while others have noted the rise of novel forms of supervisory relationships. For example, Deffayet (2002) noted new forms of performance monitoring of engineers working for an auditing and technical advice company while Valsecchi's (2006) study of home-based Italian telecommunications workers observed novel methods of managerial control, including collective performance monitoring and a reliance on customers to report problems in a situation where remote audiovisual monitoring of employees was legally prohibited. Similarly, Dambrin (2004) noted new disciplinary uses of the electronic monitoring of telesales workers in an electronics company that were ostensibly intended to support what managers were calling a looser 'coaching-based' approach. Finally, Lautsch, Kossek, and Eaton (2009) compared telework with more traditional modes of working in the financial services industry. They found that, although superiors did indeed wish to stay in close contact with their teleworking subordinates, they also adopted a more facilitative and less directive approach that was not reliant on a traditional monitoring of conduct.

Set against the view that developments in ICTs have enabled qualitatively new working arrangements that offer more opportunities for teleworkers to exercise greater autonomy *and* managers to monitor their employees in novel ways, there is still support for Webster and Robins' (1986) 'neo-Luddite' argument that the technology may change but the employment relationship is not substantially altered. In other words, whether supervisors are physically present or not, teleworkers are still bound up in a necessarily exploitative employment relationship. For example, Dimitrova (2003) studied full-time teleworking in a large Canadian telecommunications company and did not observe major changes in the nature of managerial control. She argued that line managers were using technology to direct employees remotely in much the same way as they had when the same employees were present in the workplace (see also Brocklehurst, 2001; Lee, McDermid, Williams, Beck, & Leiba-O'Sullivan, 2002).

Despite this lack of consensus on the nature of managerial control under conditions of telework we can still make some straightforward observations about some general factors that need to be taken into consideration. The most obvious of these is that key variables influencing the intensity of managerial scrutiny—e.g., the occupation in question, the nature of the work being undertaken, the level of discretion that must be exercised by employees during the normal course of their duties, etc.—still matter. In this respect, telework is indeed no different to traditional factory or office work (cf. Wilks & Billsberry, 2007). Nevertheless, the one thing that unites all forms of telework is the spatial and temporal separation of line managers and subordinates along with the spatial and temporal separation of peers (Sewell, 2012; Wilson et al., 2008) and, in this sense, it shares characteristics with other recent organizational developments (for instance, the rise of collaborative network structures) that are worth considering through a fine-grained analysis. Thus, from this simple observation about the impact of the physical proximity or distance of supervisors and peers we were prompted to look to geography as a source of thinking about social relations in space and time; a perspective that has been relatively underdeveloped in organization studies (for exceptions see Clegg & Kornberger, 2006: *passim*; Lauriol, Perret, & Tannery, 2008; Spicer, 2006; Taskin, 2010). This move allows us to consider the effects of physical isolation associated with telework (see Halford, 2005; Hislop & Axtell, 2007; Taskin & Edwards, 2007) alongside more obviously temporal matters such as the overlapping of paid employment and domestic work (see Marston, 2000; Kaufman-Scarborough, 2006) or the rise of 'triangular' work arrangements where individuals may be accountable to more than one employer at the same time (see Grimshaw, Rubery, & Marchington, 2010).

Organizing Space, Organizational Spaces

Telework and rescaling

We have long recognized that changes in the organization of work impinge on workers' perceptions of space and time (e.g., Glennie & Thrift, 1996; Roy, 1959; Starkey, 1988; Thompson, 1962, 1967); a theme taken up by researchers interested in the impact of ICT on work organization (e.g., Kallinikos, 2003; Kaufman-Scarborough, 2006; Lee & Sawyer, 2010; Tsatsou, 2009; Wilson et al., 2008). This material reflects Lefebvre's (1974) earlier contention that once-stable notions of how to conduct ourselves in familiar social settings such as industrial factories can no longer be taken for granted as the line separating work from other aspects of human experience—especially domestic life—has become blurred. Smith (2004) calls this requirement to create new meaningful spaces in the face of widespread social, economic, and technological change 'rescaling'. We argue that such a rescaling has been especially evident in the world of telework and we propose an approach to studying it by thinking about the home as a particular type of social space that is not only a site of production but also a site of social reproduction and consumption (see Marston, 2000; Kaufman-Scarborough, 2006). It is our contention that teleworkers whose duties are divided between home and the office or factory are likely to experience a tension between the singular, regularized, and policed notions of space and time commonly found in the traditional workplace and the (figuratively and literally) messier circumstances of home life. This position is consistent with Swyngedouw's (1996, p. 169) contention that our principal focus when understanding scaled spaces should be the ways they impact 'social relations of empowerment and disempowerment'. Our way into this is to combine Lefebvre's (1974) notion of social space (see Spicer 2006) with Raffestin's (2012) more recent writings in English on 'territorialization'. This latter consideration is useful for our purposes because it explicitly introduces the problem of labour into a theorization of teleworkers' experiences of social space through his concept of *territoriality*.

Social space, territory, and territoriality

The geographical notion of territoriality is 'best understood as a spatial strategy to affect, influence, or control resources and people, by controlling an area ... In geographical terms, it is a form of spatial behavior' (Sack, 1986, pp. 1–2). Massey (1993) is even more explicit in emphasizing the essentially social nature of territoriality and she proposes that we think of scaling as establishing 'places' that are more than physical areas with boundaries around them; they are 'imagined and articulated moments in networks of social relations and understandings' (Massey, 1991, p. 28). Raffestin (2012) takes up this point to argue that it is the nature of the relationships themselves, rather than the physical space in which they take place or the media through which they are conducted, that is of primary importance when considering territoriality. This obliges us to focus first and foremost on how teleworkers respond to their changing relationships with superiors and peers in drawing up the spatial and temporal map they use to navigate their way through their working lives (Zerubavel, 1982; Zucchermaglio & Talamo, 2000). In other words, the territories of telework are not dictated by ICT but are developed in response to a combination of social, psychological, and physical considerations. This is not to say that the specific technical features of the ICTs involved do not matter but, in Raffestin's (2012, p. 126) terms, they are but one mediator among many in the work done to create territory as part of the 'projection of labor—energy and information—by a community into a given space'. From this, territoriality thus can be considered as the

... ensemble of relations that societies, and consequently the humans that belong to them, maintain, with the assistance of mediators, the physical and human environment for the satisfaction of their needs towards the end of attaining the greatest possible autonomy allowed by the resources of the system. (Raffestin, 2012, p. 129)

Territories are thus in a constant state of flux as they are subjected to a process of territorialization, deterritorialization, and reterritorialization (Raffestin, 2012; cf. Deleuze & Guattari, 1987). This is not only because the mediators (including, of course, ICTs) change but also because of changes in the meaning of autonomy in the context of employment relationship. This is where the empirical usefulness of Lefebvre's (1974) concept of social space for our enterprise becomes evident: we can consider the level at which teleworkers strive for a particular kind of autonomy by observing how they respond to different spatial scales through territoriality. Thus, when we are considering telework taking place (at least partially) in the home, we are dealing with an intimate scale that is imbued with pre-existing understandings of the social and psychological significance of space and time (Nansen, Arnold, Gibbs, & Davis, 2009) that are in conflict with the kinds of expectations we associate with people operating at the scale of the industrial workplace (cf. Glennie & Thrift, 1996). It is the tension between different meanings we attach to space and time at these scales—what we shall call the 'domestic' and the 'workplace' scale—that serves as the focus for our discussion of our empirical material.

Toward a concept of spatiotemporal scaling in telework

Our way of thinking about scale and territory inside and outside organizations begins with a consideration of the concepts of space and time as they are experienced through *distantiation*—that is, the subjective experience of distance around work (Taskin, 2010).² For example, Gergen (2002) has showed that, even when physically in the presence of co-workers, it is possible to feel absent by withdrawing into an imaginary world that is not easily accessible to others. This suggests that a highly localized scale can be created even in a busy social setting—an act of territorialization that establishes a psychological distance from others even when they are physically proximate. In a similar act of territorialization, Wilson et al. (2008) showed how communication and social identification processes were altered in virtual work to reduce perceptions of proximity between co-workers and increase feelings of relative isolation. Although such studies do not directly address the issue of organizational control they do show how we experience scales that contribute to what it means to be an autonomous actor in a non-traditional work setting (cf. Raffestin, 2012). This form of territorialization dealing with the tension between the workplace scale and the domestic scale is a specific example of what we call *spatiotemporal scaling*. This includes a physical component (e.g., my home may be 150 km from my employer's location and my co-workers may be absent but my spouse or children may be close by, etc.), an experiential component (e.g., I feel cut off from my co-workers but I feel crowded by others at home), and a temporal component (e.g., the working day is more elastic than traditional 'factory' time but interacts with other time cycles such as the children coming home or clients coming online from other time zones). These components are at the heart of the scaling enacted by teleworkers when working remotely (see Allen, Renn, & Griffith, 2003; Cooper & Kurland, 2002; Feldman & Gainey, 1997) but they do not necessarily contribute to a greater sense of autonomy, *either* in the orthodox organizational sense of being liberated from the direction of line managers *or* in a more domestic sense that they can avoid attending to the needs of others. Indeed, the persistence of managerial control while being isolated from peers (see Kurland & Cooper, 2002) combines with the rhythms of domestic life (Kurland & Bailey, 1999; Nansen et al., 2009) to create new expectations of employee conduct and pressure to

exercise self-control (Taskin, 2010). Spatiotemporal scaling, therefore, can be seen as a localized strategy enacted by teleworkers in response to the *re-regulation* of work (Edwards, Geary, & Sisson, 2002; Taskin & Edwards, 2007)—that is, a reorganization of the conduct of work that challenges existing assumptions about the nature of the employment relationship (cf. Harris, 2003). Working through the implications of such a re-regulation in the form of telework brings us to our general research question: How do employees use spatiotemporal scaling as a strategy to cope with the tensions of a working life split between the traditional workplace and the home?³ In particular, we are concerned with the more specific and locally contingent research questions: How do workers who are normally subject to close supervision under bureaucratic conditions when in their usual workplace respond when the introduction of an element of telework creates the expectation of greater autonomy; and how do workers who already have autonomy in their usual workplace experience telework? Since the strategy of spatiotemporal scaling is likely to unfold as the competing rhythms of work and domestic life interact, these research questions lend themselves to longitudinal study (cf. Edwards, Collinson, & Rees, 1998; Geary, 2003; Edwards et al., 2002) and we adopt this approach in our empirical investigation.

Methods

Research context

Our study organization—BioPharma—was founded in 1928. It grew through merger and acquisition and in 2005 it decided to focus on manufacturing pharmaceuticals, selling its other chemical and plastics facilities. In this smaller form the company today still has more than 8,500 employees and its headquarters are located in Brussels. Our study site was BioPharma's main production facility. It has a workforce of 2,000 employees and is located close to the headquarters. The organization approximates a professional bureaucracy (Walton, 2005) in that, due to the technical nature of the work, there is a marked horizontal division of labour. It is also a relatively flat organization (but still with a strong and centralized management structure) and it has a long tradition of using formal performance management systems.

Due to steady growth in demand for its products, BioPharma expanded its production facilities and had talked for some time about increasing its use of home-based teleworkers across a range of administrative activities. With the internationalization of its business, the organization of work has also increasingly become more dispersed, with senior managers often finding themselves working from another country and interacting with their departments remotely. Teleworking itself first came about after an executive committee initiative in 2004 and a pilot project was proposed by the HR department, with the first participants to be recruited from the company's *cadres*.⁴ The opportunity to select a guineapig department for the pilot came about in May 2005 when the head of the information technology back office (IT-BO) reported an urgent problem of space restriction and proposed teleworking as a solution. This was the starting point for the official launch in 2006 of a telework project open exclusively to volunteer teleworkers from IT-BO and a second department—Research and Development (R&D)—that did not have any space problems but whose members were highly skilled professionals thought to be receptive to such working arrangements. As such it represents something of a 'natural experiment' for comparative purposes in that we conjectured that professionals would already have a well-developed sense of self-determination in the traditional workplace and would, therefore, be less inclined to see telework as a source of greater autonomy. In contrast, the technicians were more closely controlled in the traditional workplace and we conjectured that they would thus see telework as a potential source of greater autonomy. Ultimately, 31 individuals from across IT-BO and R&D—17 men and 14 women—were selected

for the pilot. Of these, five chose to telework two days per week from home while the others opted for one single day per week.

Data collection

In order to study the impact of telework on control and autonomy in the specific context of the spatiotemporal scaling we present here, we opted for a longitudinal case study research design. This approach is known for allowing researchers to observe dynamic relational processes, along with the emergence of intended and unintended organizational consequences resulting from organizational change, and associated complex political processes (Miller & Friesen, 1982; Yin, 1990). Thus, authors like Edwards (1992), Burawoy (1998), and Flyvbjerg (2001) have demonstrated the usefulness of case studies of work settings, primarily for identifying causal processes or observing change in real time; especially when the distinction between the phenomenon in question and its wider context are not clear and where multiple sources of information are available. Since the spatiotemporal scaling that emerged in BioPharma refers to an act of territorialization involving the transformation of the meanings of space and time, such a research design is highly appropriate.

The research was conducted in three phases and comprised: (1) semi-structured in-depth interviews with key informants (the HR director, the project leader, and the management team of the two business units involved in the project) prior to the roll-out; (2) further interviews with teleworkers and managers combined with participant observation in office settings, including attending meetings related to the roll-out of the teleworking project; (3) follow-up with participants after the pilot project had concluded. The first phase of research took place when the project was in its planning stages and had yet to be announced to the wider workforce. During the second phase we met 17 of the program's volunteers while they were still working under the pre-existing conditions. The final phase of interviews with all 17 volunteers took place between eight and twelve months after it started (see Table 1) and respondents were reminded of their earlier responses before re-questioning commenced with a focus on how teleworking had (or had not) impacted on their experience of autonomy, control, and socio-spatial isolation.

Our interviews used a mixture of descriptive and contrast questions (see Spradley, 1979) that allowed us to determine: (1) how work had been organized in the two business units (taking in matters of work flow, the nature of the job performed, the relationship between the unit and the rest of the company, etc.); (2) how the organization of work changed for volunteers when outside the traditional workplace; and (3) how teleworking was embraced (including how perceptions of the possible advantages and disadvantages of telework developed and how the volunteers' expectations about working at home were or were not met).

The study was part of broader project aimed at analysing the impact of teleworking on human resource management policies and practices in the European Union. It was funded from non-commercial sources and we acted independently of BioPharma under the guidance of university ethics protocols and with no financial interest in the outcome of the research. Nevertheless, we received full cooperation from the company and no restrictions were placed on our access or the topics to be covered in the interviews. The anonymity of the company and the respondents has been maintained at all times.

Data analysis

The duration of interviews ranged from 40 minutes to two hours and 30 minutes (68 minutes on average). They were tape-recorded and fully transcribed. Interviews were conducted in French and the excerpts reported here have been translated into English by the authors. When the

Table 1. Longitudinal research design (schedule of data collection).

Research phase	Interviews	Observations
<ul style="list-style-type: none"> Phase 1 (T0) August to October 2005 	<ul style="list-style-type: none"> HR Director, Project leader (two times), Hierarchy IT-BO, Hierarchy R&D 	<ul style="list-style-type: none"> Preparatory phasis of the pilot project
<ul style="list-style-type: none"> Phase 2 (T1) November 2005 to January 2006 	<ul style="list-style-type: none"> 7 volunteers for teleworking from R&D 7 volunteers for teleworking from IT-BO 2 managers from IT-BO 1 manager from R&D 	<ul style="list-style-type: none"> Kick-off meeting in November
<ul style="list-style-type: none"> Phase 3 (T2) August to December 2006 	<ul style="list-style-type: none"> 6 teleworkers from R&D 5 teleworkers from IT-BO 1 manager from IT-BO 1 manager from R&D Project leader (two times) 	<ul style="list-style-type: none"> The attrition rate, characteristic of longitudinal surveys, is due to the dismissal of one employee at RD (Data manager 3) and the withdrawal of two computer scientists from the experiment since they gain additional workspace (Cadres IT-BO 3 and 6). One manager was on sick leave during this period of time

second phase of data collection ended and the interviews were transcribed, we selected some key themes and adapted the interview guide in order to deepen those themes during final follow-up interviews.

When analysing the entire material, we distinguished two levels of coding: a descriptive one, composed of themes mentioning facts and biographical information; and, a conceptualizing one, referring to more complex processes and composed of emergent 'categories'. The category is an analytical tool 'referring to a phenomenon and is derived from the assignment of meaning produced by the researcher, thus bringing discourse to a synthetic level of overall understanding' (Paillé & Mucchielli, 2005, p. 150). This development of themes and subsequent categories facilitated our theory building and informed our data analysis. NVivo software assisted us in this by allowing the grouping of the situations observed and by systematizing the coding process. The resulting themes and categories are showed in Table 2.

Discussion and Conclusion

BioPharma's telework program: The volunteers

The HR department established a telework policy that formalized the teleworking arrangements and their implementation at BioPharma. This policy defined basic responsibilities like the scope of telework and who was responsible for its quality assurance. It also included potentially more contestable items like who was eligible (e.g., volunteers had to have obtained at least a median rating in their most recent performance review, needed at least one year's service, and were assigned to a work role whose output could be measured) and the number of day(s) on which it could be undertaken. Volunteers then completed an application in discussion with their line managers prior to selection. Finally, a third formalized document was prepared as an addendum to the existing contract of employment making the home addresses and contact details of the successful volunteers public as well as setting out specific times when they were contactable by colleagues.⁵ Hence, a

Table 2. Themes and categories of the analysis.

<i>Label</i>	<i>Definition</i>
THEMES	
<ul style="list-style-type: none"> • Work and job • Organizational structure • Telework project • Culture and change • Desire to telework • Teleworking day • Cons • Pros • Technocratic controls at the workplace scale • Technocratic controls at the domestic scale 	<ul style="list-style-type: none"> • Evidence of work organization and job characteristics • Evidence of the organizational structure • Evidence of BioPharma’s motivations on the implementation of teleworking • Evidence of corporate culture and the way recent changes affected workers • Evidence of personal desire for teleworking • Evidence of teleworking day choice and rationale • Evidence of cons related to telework practice, at the end of the experiment • Evidence of pros related to telework practice, at the end of the experiment • Evidence of technocratic controls • Evidence of technocratic controls settled when teleworking
CATEGORIES	
<ul style="list-style-type: none"> • Perception of telework’s effects • Organizing and feeling distance • Remote communication • Consideration about telework • Meaning of control • Control in the spatiotemporal scaling • —Time • —Space • Autonomy in the spatiotemporal scaling 	<ul style="list-style-type: none"> • Evidence from the workers’ perceptions of the effects telework may have on work organization • Evidence of the extent to which workers feel isolation due to spatiotemporal scaling, and of the initiatives they take in order to organize their ‘remoteness’ • Evidence of the way communication adapts to distantiation • Evidence of colleagues’ and line managers’ consideration about teleworking • Evidence of how interviewees represent control • Evidence of control internalization in the tension between the workplace scale and the domestic scale • Evidence of the social construction of a workplace temporal norm at domestic scale • Evidence of the adoption of workplace-related controls in the domestic scale • Evidence of workers’ ability to fix their work organization in the tension between the workplace scale and the domestic scale

level of formalization was introduced that seemed to reinforce the traditional control features of standard employment practice. From these factual observations we now go on to compare the experience of telework across these two departments at the workplace and domestic scales.

Telework at IT-BO: From responsiveness to availability

The workplace scale. The IT-BO department is responsible for the implementation, maintenance, and management of servers, networks, and communication infrastructure. These all require a

very high degree of responsiveness and the work is undertaken by moderately skilled specialist technicians under the close supervision of professional line managers. In this way IT-BO employees see themselves as fire fighters who have to be able to resolve problems at a moment's notice anywhere across the whole organization. When speaking about the imposition of direction on their activities most of our respondents interpreted this notion in terms of the need for quality assurance and data security or integrity. Indeed, the ability of line managers to monitor their activities at all times was taken for granted in an online environment where it had always been easy to trace people's activities. In fact it was not seen as control at all but as a basic by-product of the mode of working. 'Honestly, there is no control. Moreover, we are running all the day in every direction and we can easily see if someone does not do anything' (Cadre IT-BO 1)!

Nevertheless, as this excerpt shows, they did recognize the importance of peer influence on their conduct and several other forms of monitoring could be observed operating in combination at the workplace scale. First of all, direct visual surveillance was enacted in an open plan workspace. Weekly informal team meetings were also common which opened up the possibility for peer surveillance about work performance and other norms of conduct. Second, control was also evident in the form of a 'service level agreement' described below by one of the respondents.

The most reliable indicator today is the amount of open incidents exceeding the service level agreement. Once we exceed 75% of the timing planned for the resolution, we receive a first alert from the system. This alert is also sent to the direct management. If the time exceeds what was allowed (100%), then I receive the alert. This only happens in 5–6% of the cases. This system also produces reports mentioning the amount of incidents, the amount of solved problems by team and by person and, once a month, we can have a complete report on the workload and on the efficacy of a corresponding team. (Manager IT-BO)

This system constituted the most formal tool of control and was complemented by procedures like the 'Project Framework Methodology.' This required obtaining multiple agreements and documents before implementing certain technical changes (say, a software upgrade). In terms of traceability, other tools were available but were only used in cases of necessity like access restrictions, logging-in, and the verification of planned absences.

In an exception to this high degree of managerial control, IT-BO employees could sometimes determine themselves whether a request for assistance was urgent enough for them to drop everything and tend to what they deemed to be an emergency. In a job where a lot of activity was highly regulated and tightly scheduled this ability to react was seen as a hallmark of their occupational competence. We see this as norm of conduct we style the 'responsiveness principle'. Not only did it provide the ideological basis for peer-based social control (if you didn't respond sufficiently quickly then colleagues would certainly pass judgement on you) but it also formed an important part of IT-BO employees' sense of autonomy in role where other outlets for discretion were restricted. Because interactions with other parts of the organization were frequent but largely unpredictable, IT-BO had to react to unexpected events like hardware and software failures; something that made terms like 'readiness' and 'reactivity' central elements of identity for its computer technicians.

We work as a large, technical, virtual team with continuously new and urging priorities in order to deliver in an international context where we act as projects' sub-contractors. We are accountable for the other departments of BioPharma. Like delivering a server or bandwidth ... it is always up time, problems, troubleshooting, problem management, this is the day-to-day life of our department. (Manager IT-BO)

In terms of social space, IT-BO employees' territorialization of the workplace scale thus involved developing an accommodation with orthodox methods of control that was tempered by a sense that their jurisdiction extended beyond the physical boundaries of the department itself. This

contributed to a sense of freedom to roam throughout the organization as they responded to IT 'spot fires' and emergencies. Thus, and perhaps counter-intuitively, working in the organization afforded IT-BO technicians a sense of spatiotemporal distance from their nominal workstations that actually increased their sense of autonomy.

The domestic scale. The attractions that telework held for IT-BO's computer technicians who opted into teleworking were multiple. Common motivations mentioned were avoiding spending time and money commuting and improving their work/life balance. Other motivations were more directed at the desire to escape what were seen as some unattractive features of the workplace scale (for example, distractions like noise and constant trivial interruptions by colleagues). Importantly, the opportunity to work from home was seen as a respite from the reactive nature of the work in that technicians felt they would be able to better plan their activities without being taken away from their workstation at short notice—although the ability to be responsive was important for IT-BO employees, in the longer term the attendant uncertainty also made for stressful working conditions. Nevertheless, there were also some reservations about the attractiveness of telework in that some IT-BO volunteers were worried their non-teleworking colleagues would suspect them of not contributing their full work effort when away from the office. Take the two following observations.

I proposed Thursday [for my home day] because most of my colleagues spoke about Monday or Friday. This also avoids the perception you were having a longer weekend! (Manager IT-BO)

At the office, when taking a call, we can directly discuss the problem with the colleagues. The team directly knows about it. With telework, this is different, we lose this...It may create some problems. I cannot imagine how to communicate easily with my colleagues from home. (Cadre IT-BO 1)

While the team meetings were previously informal, the arrival of teleworking called for more formal planning to coordinate activities. Thus, telework introduced a kind of rigidity to the team members' interactions that was, paradoxically, not present when they were co-located. Similarly, the use of electronic monitoring gradually increased to compensate for the invisibility of workers. For example, the teleworking day started with a new ritual of connecting to the mailbox that was mainly to signal the teleworker's presence to others. Nevertheless, even when working from home only one day per week teleworkers still had expressed concern that they had been 'excluded' from the team when they were back in the office, thereby contributing to a sense of social isolation that they had not experienced prior to the telework project.

We send more e-mails among colleagues. When it is too long [to be dealt with in an email], we call them. In a sense, we replaced the voice through the e-mail. (Cadre IT-BO 4)

The problem with the distance is that they will maybe meet here, on site, to discuss the problem. ... Even sometimes, since we are not physically there, they forget we are at home and we are not informed. (Cadre IT-BO 2)

Now it's true that sometimes, when we are on leave, and this is the same when teleworking, there are some meetings and things are said that we are not aware of. We learned it later, occasionally. It's true that, at the team level, there are some informal things we miss. Not at the level of BioPharma, but at the closer level of the team. (Cadre IT-BO 4)

This last excerpt illustrates the dynamic of the feeling of social isolation: teleworking is not widely accepted in the IT-BO community (it is seen as being tantamount to being on leave) and

the teleworker can consequently feel 'apart' and invisible when working from home. This is noteworthy because quiet and freedom from intrusions were two of the very reasons commonly mentioned by participants in volunteering for the telework project in the first place. This led to acts of spatiotemporal scaling that actually attempted to reduce the sense of isolation, such as sending more and more messages with the intent of signalling availability; something akin to a 'virtual presence'. In this respect there was a genuine concern that 'out of sight' really was 'out of mind' but not in a way that increased feelings of self-determination and autonomy. On the contrary, teleworkers sought to place themselves back in the workplace scale (at least in a virtual sense) to overcome the fear that they were being excluded from decision-making and being overlooked in terms of the allocation of meaningful work. This accounts for their acceptance of an even more stringent service level agreement that was transformed into a means of tracing people working remotely. We also observed something similar with electronic communication: emails and the telephone were not only used to exchange information but also to signal the presence of workers at their home workstations. Despite this increased scrutiny at the domestic scale (much more intensive, in fact, than when in the office), the teleworkers themselves expressed their satisfaction with this situation because it actually made them feel more integrated with the social practices of the workplace scale. Here the notion of availability beyond standard working hours became an increasingly important norm of self-control and a demonstration to managers and co-workers alike of commitment.

I don't feel I have to work between 8 and 4:30pm. This frees me from this constraint that requires that I have to be there during this period. Practically, one expects I have to be available during an extended period of time. (Cadre IT-BO 2)

We style these aspects of teleworking from home the emergence of an 'availability principle' as a replacement for the responsiveness principle. The latter was an important contributor to a sense of autonomy at the workplace scale via the technicians' ability to drop everything and attend to an emergency regardless of when and where it occurred. In contrast, the former was an attempt to reterritorialize a remote location as part of the normal work environment where IT-BO employees felt they were able to participate in established patterns of work (at least to some extent). The startling thing is that this act of spatiotemporal (re)scaling requires the operation of intensive managerial monitoring of the teleworkers outside the workplace so that they could feel more active participants in the traditional workplace. Thus, in the availability principle we see the emergence of a new norm of conduct that augmented technocratic managerial control by forming the basis of peer-based social control.

Working between the two scales at IT-BO. Having identified this shift from the responsiveness principle to the availability principle we can now summarize how the two main modes of managerial control—technocratic control aimed at behaviour and socio-ideological control aimed at belief (Kärreman & Alvesson, 2004)—were in flux as IT-BO employees moved between the workplace and home (see Table 3). Thus, the operation of simple visual surveillance and less obtrusive control in the form of fairly loose service level agreements and workload scheduling that were taken-for-granted at the workplace scale were no longer appropriate at the domestic scale. Here they gave way to much more familiar and obtrusive technocratic controls (such as remote log-in and more stringent service level agreements) that teleworkers then used to signal their presence to colleagues and also reduce their sense of social isolation. Importantly, in place of a peer-enforced socio-ideological control based on a sense of mutual dependency associated with the norms of conduct inherent in the responsiveness principle, employees were now relying on the presence of

Table 3. Technocratic and socio-ideological control at BioPharma IT-BO.

Technocratic Control	Normative Basis of Socio-Ideological Control	Spatiotemporal Setting for Socio-Ideological Control
<ul style="list-style-type: none"> • FROM: A combination of simple direct surveillance (due to physical proximity) and relatively unobtrusive complex direct surveillance (via job scheduling systems, remote log-in, planned absence, etc.) • TO: An obvious focus on complex direct surveillance (via an intensified use of ICT-based techniques, regular team meetings; etc.) 	<ul style="list-style-type: none"> • FROM: A sense of mutual dependency based on the 'Responsiveness Principle' • TO: A sense of mutual dependency based on the 'Availability Principle' 	<ul style="list-style-type: none"> • FROM: Intermittent face-to-face interactions in different workplace locations; a 'licence to roam' • TO: Formalized team meetings; continuous on-line presence; an obligation to be at the home workstation at all times

technocratic controls to reinforce norms of conduct associated with the emergent availability principle. This led to an apparent paradoxical experience of social space in that employees who felt they had licence to roam around the traditional workplace (so long as they were available at a moment's notice) now felt shackled to their workstations when at home.

Telework at R&D: A matter of trust

The workplace scale. Unlike IT-BO, the R&D personnel who volunteered for telework were not from one homogenous work group with similar skills and qualifications. Indeed, they had nominally higher qualifications obtained across a range of disciplines and our respondents included four chemistry PhD graduates from the Global Chemistry unit, one toxicologist from the Non-Clinical Development unit, and three others from the Global Development unit who provided statistical and intellectual property advice. In this sense there was little difference between them and their nominal line managers in their respective departments in terms of basic skills and qualifications. Because each person was individually responsible for specialized aspects of a particular work project they had few direct interactions with immediate colleagues in their departments, but they did have strong relationships with the project heads and other team members located across the organization. Project timelines could range from a few weeks to several months so it was not unusual to be dedicated to a single project for some time (cf. Yli-Kauhaluoma, 2009) and, in this way, R&D workers did feel highly autonomous in setting their own work patterns. Formal meetings on the planning and distribution of work were undertaken only on an ad hoc basis such as when a specialist's skills were required for a new project. In this respect the R&D workers approximated to the classic notion of the professional in that any technocratic control of their activities was directed at ensuring the satisfactory completion of project outcomes rather than at how the work itself was executed (over which they had a good deal of discretion). Nevertheless, at the workplace scale being present on time at 8:00am and remaining until 4:30pm was a well-established norm, even though there was no obvious need for this given how the R&D workers actually did their jobs. In fact, all members of our sample felt comfortable with this formalized time-keeping despite there being no explicit contractual obligation for them to keep any specific hours at all (unlike the technicians of IT-BO): 'With my colleagues, we share the same office. So, automatically, presence is checked. But there is no formal control on the working hours' (Chemist 3). In this way scheduling systems such as time sheets specifying the time to be spent on projects (but not what actually was

done during that time) enabled managers to exercise a degree of technocratic control over relatively autonomous professionals. Beyond this, we observed some peer-enforced socio-ideological control centred on attempts by R&D workers to territorialize their interactions—both face-to-face and electronic—with other project team members at a more localized scale that would allow personal relations of mutual trust and dependency to develop.

Basically, it requires mutual trust between colleagues. *But* with the tools we have today, control is implicit in the sense that when a colleague sends me an e-mail, the colleague knows if I have read it. (Data manager 1)

Regarding the keeping of time, as I said, control takes place informally and is based on trust ... *But*, if there are some repeated delays, we will note it and notify to the person if s/he does not stay later at the office. (Chemist 3)

Trust therefore appeared as a historically constructed value among team members, played out across a social space that intergrated widely dispersed departments.

The Domestic Scale. When telework was implemented in R&D it was initially accompanied by the same kind of formalization process that we saw in IT-BO. Thus, regular project meetings were scheduled because it was feared that teleworkers would not be able to coordinate with their non-teleworking colleagues. A consequence of this was that their jobs actually became more formalized, thereby intruding into their sense of professional autonomy. Second, like their colleagues in IT-BO, R&D teleworkers felt the need to respond immediately to emails as a signal of their availability. This desire to be seen as being permanently ‘on-call’ was supported by sticking strictly to the workplace time schedule. In fact, some of the ostensible advantages of telework were sacrificed to the extent that it was not uncommon to seek a line manager’s approval to interact with family members in nominal work time when at home.

I asked my manager if I could have lunch with one of my children on one of the two days of telework. I asked her so that she would not try to call me without success at noon. The HR manager told us we could have some arrangements like this, that is why I took a longer lunch time, but I worked later in the afternoon. (Chemist 1)

This is indicative of the tension between the experience of the workplace and domestic scales. Indeed, the apparent strengthening of a hierarchical control relationship between the teleworker and his/her project leader (something that was actually weaker when work was solely conducted at the office) can be seen as an attempt to reterritorialize the domestic scale so that it was more like a traditional workplace where close managerial monitoring was present. This illustrates that the balancing of work and private life generates more confusion than clarity, as noted elsewhere (see e.g., Halford, 2005; Tietze & Musson, 2005), and moved the R&D teleworkers to give up some of their sense of autonomy to feel more connected to the very workplace they sought to leave. Interestingly, because the impetus to move toward telework in R&D was not driven by space constraints, volunteers were treated with even more suspicion by their co-workers than their counterparts in IT-BO. For example, telework was perceived as cushy option by other workers who felt that the volunteers had to adapt to the requirements of teamwork as determined by those members who remained at the workplace full-time:

The opinion people have about telework is maybe not positive. I will give an example. Sometimes, people say ‘I’ve got a child at home, so, I will telework today’. I feel that people think those who telework are those who are not willing to work. (Chemist 4)

At the beginning, I received some kind jokes, movies showing a person working at the swimming pool... But I think this comes from the jealousy some people may have! (Chemist 3)

I think my manager appreciated that I did not consider my teleworking day as prior to meetings she considered important for the unit. (Chemist 3)

Lacking social legitimacy in this way, telework contributed to feelings of isolation and reduced relevance. The nature of the interactions between the volunteers and their co-workers also changed when they were back at the office to such an extent that direct and informal communication decreased in proximal conditions. Even though such results are frequently reported in the parts of the teleworking literature that have studied permanent arrangements, the hybrid situation of a combination of telework and traditional working in the same job is less well understood (for a notable exception see Halford, 2005). For example, some of the R&D teleworkers reported the feeling of becoming less committed to the organization and were more worried about how their positions in the project teams were potentially in jeopardy.

The relationships between my colleague and my manager benefitted from my absence: they are closer now. It feels like the team has disowned me. (Chemist 3)⁶

The other main strategy of spatiotemporal scaling adopted by the volunteers in R&D centred on their attempts to maintain their relationship with project leaders. Although this was nominally a superior/subordinate relationship, teleworkers became more aware of this asymmetry. This is because, even though project managers still used the rhetoric of trust established before each project started, they were more likely to call formal meetings with teleworkers and monitor their time sheets than they were for the other colleague who had not volunteered for telework; trust was often invoked as a reason why leaders were comfortable with volunteers' requests to be considered for telework in the first place but it soon became evident that this trust was very quickly strained once the actual arrangements were put in place. This is important because it was reported that, if the fundamental trust relationship was genuinely at risk, then one of the main rationales for teleworking would disappear. Thus, the value of 'trust', like that of availability with IT-BO volunteers, became a powerful ideological means of control because R&D teleworkers were under pressure to demonstrate their heightened commitment to the project teams.⁷ This is because the relationship of trust had historically been built on the principles of visibility and presence; not simply *ex ante* through the development of mutual expectations but also *ex post* through the ability to evaluate responses to those expectations. In other words, trust was still supposed to be founded on a proximal relationship that could no longer be sustained. Thus, distantiating seemed to affect the trust relationship at its foundations in R&D; not only by reconfiguring power relationships but also by removing the opportunity to undertake the everyday checks and balances associated with face-to-face peer scrutiny (Cascio, 1999; Mann & Holdsworth, 2003).

Working between the two scales at R&D. From the previous section we can see that, unlike IT-BO, the normative basis of socio-ideological control did not substantially shift as teleworkers moved between the two spatial scales at R&D: in both instances it centred on the matter of trust (see Table 4). R&D teleworkers were, however, anxious to signal their availability and commitment to others—particularly project leaders—to try and reinstate a sense of mutual trust that they felt was jeopardized with the arrival of telework. In these circumstances they also felt obliged to embrace intensified technocratic controls at the domestic scale, much like their colleagues in IT-BO. Again, R&D teleworkers were, somewhat paradoxically, willing to give up a degree of autonomy in order

Table 4. Technocratic and socio-ideological control at BioPharma R&D.

Technocratic Control	Normative Basis of Socio-Ideological Control	Spatiotemporal Setting for Socio-Ideological Control
<ul style="list-style-type: none"> • FROM: A combination of simple direct surveillance (due to physical proximity) and relatively unobtrusive complex direct surveillance (via formalized timekeeping, planned absence, etc.) • TO: An obvious focus on complex direct surveillance (via log-in, a consolidation of the superior/subordinate relationship, regular meetings, etc.) 	<ul style="list-style-type: none"> • FROM: A well-developed sense of mutual trust built on physical presence and the responsible exercise of autonomy • TO: Attempts to reinstate a sense of trust by signalling availability and commitment 	<ul style="list-style-type: none"> • FROM: Intermittent face-to-face and interactions with other project team members • TO: Formalized team meetings; continuous on-line presence; an obligation to be at the home workstation at all times

to maintain good relations with co-workers who were unable or unwilling to work from home. Unlike their counterparts in IT-BO, however, the R&D telework volunteers previously had the discretion to direct a good deal of their own the work activities based on their professional status and, in this sense, their attempts at spatiotemporal scaling seem to indicate that more was lost than gained in the shift to telework. Although they were physically more remote, through their own desire to be seen and heard, the R&D volunteers actually responded to telework by accepting that their activities would become more constrained and bureaucratically ordered. Moreover, all the technocratic controls we observed in the domestic setting (e.g., signalling strategies, increased communication with the project manager, feedback, etc.) were aimed at consolidating existing norms of conduct through the values of trust and availability. Thus, we see this as a reinforcing of socio-ideological control through their embracing of telework at the domestic scale.

Telework at BioPharma: For better or worse?

The main aim of this contribution has been to show how employees use spatiotemporal scaling as a strategy to cope with the tensions of a working life split between the traditional workplace and the home. In particular we can see that, through a process of distantiation, both sets of teleworkers at BioPharma came to reterritorialize their domestic scale in largely similar ways. For the technicians of IT-BO this meant that they experienced home-based work in a way that was close to their experiences in the traditional workplace while, for the professionals of R&D, working from home appeared to actually reduce their autonomy. In light of this, two major lessons can be learned from our research. First, although ICT did indeed enable BioPharma's teleworkers to be monitored when working from home (as predicted by previous studies), simultaneously there was a perceived lack of other more normative and ideological forms of control associated with social interactions between peers that we usually observe in the traditional workplace (cf. Kärreman & Alvesson, 2004). Second, and more generally, the concepts of autonomy, control, and trust that developed around home working appeared to be indexed to particular scales of social interaction in and around traditional forms of working. From these general observations we now go on to develop some more general claims about telework that derive from our geographically inspired notions of distantiation, reterritorialization, and scale.

Distantiation, re-regulation, and the notion of spatiotemporal scaling. The experiences of teleworkers in both of the departments of the BioPharma case we have set out above—IT-BO and R&D—illustrate

how spatiotemporal scaling developed as a response to changes in managerial control after the introduction of telework. After Taskin and Edwards (2007), we refer to these changes as a regime of *re-regulation* where distantiation led to a shift in the 'rules of the game' that were associated with a formalization of technocratic processes *and* the extension of the hierarchical relationship, along with the development of stronger social and normative pressures to conform. Three elements of this re-regulation are of particular interest to us.

First, the volunteers' willingness to go further than even BioPharma's own HR department around matters of individual responsibility in the domestic setting such as fixing in advance the days on which telework was to be performed, setting the hours when they were supposed to be available, and letting others specify the exact nature of the tasks that were to be performed at home actually conspired against features that made teleworking attractive at the outset.⁸

Second, and at the level of workplace group interactions, there was a further undermining of perceptions of autonomy for both groups through the replacement of ad hoc and informal coordination with formalized team meetings along with the gradual transformation of those meetings into what were effectively line management sessions used for checking what had been done and by whom.

Third, there was an intensification of hierarchical authority as supervision extended to matters that would have been left to the discretion of the volunteers had they been working in the office. This is at odds with other studies that have predicted a weakening of traditional hierarchical control under conditions of telework (e.g., Illegems & Verbeke, 2004; Lautsch et al., 2009; Mello, 2007).

It was in response to these three aspects of re-regulation that teleworkers attempted to reterritorialize their experience of home-based work as something approaching a heightened analogue of the traditional workplace. In short, by recasting the domestic scale as little more than a dispersed version of the workplace scale, both sets of teleworkers were developing a pragmatic response that was intended to make them feel more integrated into the social relations of work than ever before. This was done by establishing their visibility and presence in a remote setting in a manner that was, counter-intuitively, more obvious to others at BioPharma than if they had not been teleworking. In other words, distantiation through teleworking began to challenge existing and largely internalized collective norms by creating a tension between expectations of discretion and autonomy and the acceptable separation of work and family life. In turn, this led volunteers to develop concerns about being cut off from office-bound colleagues while simultaneously denying themselves the opportunity to interact with their family at home. Finally, there was a tension between the desire to take advantage of flexible work arrangements and the need to be permanently available to colleagues. It was through this combination of spatial, experiential, and temporal factors that teleworkers may have been out of sight but they were very much trying to put themselves into the minds of others. But why would the volunteers act in such a manner rather than use the domestic scale as a refuge from managerial intrusion (cf. Edwards et al., 1998)? After all, another version of 'Out of sight, out of mind' could just as easily be the proverb 'When the cat's away, the mice will play'. Our answer to this question is that distantiation increased the likelihood that volunteers would begin to reflect on taken-for-granted values such as commitment and trustworthiness in a manner that led them to worry about how they would be perceived by line managers and peers alike. As such, the lack of social legitimacy of telework in BioPharma served as the impetus for self-control that augmented the operation of complex surveillance (Sewell, 2012) and other forms of socio-ideological control (Kärreman & Alvesson, 2004).

Concluding Remarks

This article has focused on the transformation of control as a critical consideration in the study of telework. This is not in itself novel as many studies have developed a similar focus. Neither is

telework in and of itself a particularly new phenomenon. By combining an interest in telework with the insights provided by concepts of distantiation, territoriality, and spatiotemporal scaling, however, we can begin to think about a hybrid form of work—i.e., the combination of work conducted across domestic settings and traditional workplaces—where many of the taken-for-granted assumptions about autonomy or the desirability of balancing work and home life are subject to reconsideration. In this respect, the novelty of our contribution lies in the possibility of using the concept of spatiotemporal scaling to answer the appeal of Whipp, Adam and Sabelis (2002) and take space and time seriously when thinking about some of the other main themes in this special issue—for example, how control as a social accomplishment is enacted in temporary agencies, networked structures, informally organized spaces, etc. Importantly, it allows us to explore the demands placed on employees who are neither exclusively tied to traditional working arrangements nor exclusively ‘home anchored’ (Wilks & Billsberry, 2007) but find themselves split between the domestic and workplace scales. We contend that such hybrid working arrangements are likely to become more common in the future. Thus, by way of conclusion, we can legitimately speculate about what a spatiotemporal research program might look like in the New World of Work envisaged by this special issue. Take, for example, work arranged through temporary employment agencies where employees must adapt quickly to the rhythms and spaces of a variety of workplaces. For example, temporary security guards can often find themselves in a highly supervised situation during the day such as a busy retail outlet and then completely isolated in an empty factory later that night (Gahan, Harley, & Sewell, 2013). Likewise, call-centre employees often have to straddle time zones and are sometimes even obliged to appear as natives of a country several thousand kilometres from their actual location (Russell & Thite, 2008). Finally, we know that research on networked employment arrangements and informally organized spaces can be hampered by relying on established models of work and conservative theorizing (Symon, 2000). Thus, the power of our theoretical approach stems from the fact that, although our focus is telework, we concentrate on empirically observable features also displayed by these other types of work—especially the disruption of taken-for-granted supervisory arrangements that result from the spatial and temporal dislocation of employees. This leads to a speculative knowledge claim that managerial control in the New World of Work is more likely to be about the achievement of a negotiated social order (Boltanski & Chiapello, 1999) under new arrangement of space and time, rather than a wilful attempt by one group to subordinate another. In short, spatiotemporal scaling provides insights into how such an order is negotiated by employers who may be well-intentioned when they introduce telework and employees who willingly enter into such arrangements, anticipating greater autonomy. Indeed, given our regulationist perspective (Taskin & Edwards, 2007) we would expect that the order in question is not merely imposed by management, but is built by all the organizational actors who decide to conform (or, for that matter, not to conform). In terms of our specific empirical focus, traditional workplace norms featured heavily in the rules of the game developed around new working arrangements, thus creating a negotiated order that we were able to observe unfolding. Importantly, there appeared to be few significant differences between technicians or professionals in terms of their broad experiences of telework at the domestic scale, even though we had expected that the former would be more enthusiastic about the prospects for greater autonomy it would bring. But our engagement with the concepts of social space and territoriality also led us to consider how the rules of the game extend over particular domains that distort established boundaries of space and time. To pursue this line of thinking we have operationalized control as a process of the production of rules at different scales. This is a reflection of what Dale (2005) calls social materiality but it is a social materiality that is played out quite differently at the domestic scale than at the workplace scale, to use the simple dichotomy we developed in this article. Of course, the objective of deploying scale in human geography is to grasp the complexity of social interactions

rather than reading them off against one's nominal positioning in an organizational hierarchy as a worker or a manager, superior or subordinate, professional worker, or unskilled worker, etc. (McMaster & Sheppard, 2004). In this respect we must be aware that some complexity may have been lost in our discussion of spatiotemporal scaling but much has also been revealed. This is in the spirit of Halford's (2005, p. 31) call for 'a new approach to the perennial question raised in various guises in the study of homeworking: does homeworking represent a new form of organisational control operating through discursive power and subjectivity, or does homeworking offer workers' new forms of autonomy and flexibility?'. In contrast to the many optimistic predictions about the liberating possibilities of telework, our study illustrates that it did not lead to the emergence of a truly autonomous and self-determining worker (if, indeed, such a subject position was ever possible). Rather, we observed a reordering of control that constrained both professional and technical teleworkers, through the reshaping of norms that were normally associated with the traditional workplace—for example, visibility, presence, trust, and availability. In this sense, the emancipatory potential of telework seems to have been overstated to say the least and we suspect a study of other similarly trumpeted new ways of working would yield similar conclusions. In light of this we would call for other intensive and longitudinal case studies such as the one we conducted at BioPharma during the introduction of telework that use notions such as distantiation, territoriality, and scale to appreciate the social complexities of the New World of Work.

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Notes

1. Important exceptions include Allen and Wolkowitz (1987), Felstead, Jewson, and Walters (2003), and Halford (2005).
2. Taskin's concept of distantiation is different from Giddens' (1981) homonym.
3. Taskin (2010) demonstrated that the extent to which a wide range of management practices (including control) were potentially recast depended on how often an employee engaged in teleworking across the course of their normal duties and also on the degree of social isolation such working conditions brought about.
4. The French notion of a *cadre* refers to both a social category and a recognized occupation that corresponds in English to 'middle manager', although it includes people with a specialized technical background as well as those who see themselves as 'professional' managers.
5. A European collective agreement on telework was signed on 16 July 2002. Member states integrated this agreement into their respective legislative frameworks. In Belgium, the collective agreement no. 85 of November 2005 governs the implementation of telework.
6. The French term, *desolidarisé*, has no obvious translation in English so we have used *disowned*, although this is probably a little stronger than the respondent intended.
7. Knights, Noble, Vurdubakis, and Willmott (2001) note that there is no contradiction in thinking of trust as a form of normative control.
8. Interestingly, these are among the very things that trade unions and other interested parties have sought to enshrine in legislation.

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