Place as a practical concern of mobile workers

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Abstract

This paper examines the spatial practices of mobile workers - how mobile workers manage their use of technology and place. Data from interviews with highly mobile workers and 'hotdeskers' is used to explore the reciprocal relationship between practice and place; how places change work, but also how work changes places. Mobile workers often need to configure their activies to take account of the different places they find themselves. This can involve considerable 'juggling' of their plans, humble office equipment, and their co-workers. In turn mobile workers change places, as they appropriate different sites for their work. Specifically, technology allows for the limited re-appropriation of travel and leisure sites as places for work (such as trains and cafés). Time is also an important practical concern for mobile workers. While mobile work may be seen as relatively flexible, fixed temporal structures allow mobile workers to 'accomplishment synchronicity' with others. Although this paper focuses on the specific practices of mobile workers, it also explores how 'grand social theory' can help us understand the practical details of mobile work, yet how practice cannot be simply reduced to theory.

Introduction

While technology has been a perennial concern for the social sciences, it is perhaps only recently that technology has become a topic of geographical enquiry in itself. The interactions between technology and spatial organisation raise interesting questions, and many recent discussions in geography, and specifically geographical theory, have at their root a concern for how technology is transforming experiences of space and time. While new technologies quickly become old, or move from the eclectic to the mundane, these interactions continue to play out in new ways (Martin, 1988).

In this paper we would like to explore these interactions using data from fieldwork with highly mobile professional workers[1]. Our fieldwork spans two groups of workers. Firstly, we studied workers who travel frequently for their job, yet retain some sort of fixed 'home' location. These workers move between different sites, frequently travelling long distances, mainly to meet up with clients or other staff. These workers retain a traditional office and desk. Secondly, we studied "hotdeskers", office workers who do not have a fixed desk or location. These individuals

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[1] The term professional here hides many sins. 'Blue collar' mobile work has been somewhat neglected in its analysis, although (Orr, 1996, Zuboff, 1988) are important exceptions.

potentially work at a different desk each day, with that desk being both on other organisations' sites, as well as within their own organisations' at potentially numerous locations.

Our aim in studying these people was to understand some of the spatial practices which accompany these forms of work. That is to say, the ways in which spaces are managed and manipulated, using technology, for these people to do work. Rather obviously one of the most important features of this work is *mobility* – the movement of individuals from place to place, usually for the purpose of meeting other individuals. However, mobile workers do not work in some sort of decorporalised hyperspace, as some accounts would seem to suggest. Indeed, as we will discuss, since these workers have much less physical certainty when compared to conventional workers, place becomes a very important *practical* concern. When a mobile worker goes to work, they must decide where that work is going to be, under pressures of task and management.

The analysis here will differ somewhat from technology as it has been traditionally addressed in geography. Technology in geography has been a topic which has been explored in a number of different ways; but mainly in terms of politics, social theory and measurable changes to geographic organisation. What has been much less researched is how technology impacts on how individuals manage places and their activities in space. In many discussions of geography and technology the material practice with technology is held at a distance. There is little concern for how "living, breathing, corporeal human beings arrayed in various creatively improvised networks of relation and affinity still exist as something more than machine fodder" (Thrift, 1996). There are few descriptions of anyone actually using technology – the technology disappears (Button, 1993).

In this paper our interests are more specifically these very details of individual's use of space with technology. These issues have motivated our empirical investigations of work with new technology, and specifically the mobile-mode of work which they, in part, enable (O'Hara et al., 2001, O'Hara and Sellen, 1997, Brown and Perry, 2000). Our interest is in mobility as a lived fact of individual's lives, rather than as a social theoretical concept. In doing so we follow others in technology studies who are increasingly studying mobility, work practice and its interaction with technology (Heath and Luff, 2000).

This is not to argue that there is no utility in 'grander' analysis. Geographical theory motivates many of our empirical considerations in this paper, specifically those regarding mobility (for example, (Urry, 2000)). However, at times it is difficult to bring this together with fieldwork, and we acknowledge that there is no simple connection between (for example) Lefebvre and empirical data. As Gregson puts it, "social theorists are often working at different levels of abstraction and so there can be no cast-iron guarantee that social theory in general will be of use to empirical research". (1989, p236) So while the discussion here uses Lefebvre's notion of the "commoditisation of space", and Castells' notion of "timeless time", in doing so we hope to highlight again some familiar problems, yet some value, in using theoretical work. There are differences in looking at the interconnected features of the social world *en masse* and our own desire to look at individual details. It is not that "micro-sociology" fits inside "social theory", like a Russian doll, but rather that social theory takes a different approach altogether to understanding the social world. While the connections between theory and fieldwork are not straightforward, we still believe that the 'big machines' of social and geographical theory can have some value to fieldworkers in how they make us think about even one irritated interview subject, or the lived experience of a missed train.

After discussing the study methodology, and giving a brief review of some of the literature on the practices of mobile work, the results are discussed in four main sections. We start by considering how *place changes work*, or how the characteristics of different places impact on what work can be done in those places. This is the impact of technology, people, and the meanings that different places have on what work can be done. These effects determine to a large extent where people work, and their need to move between different places to carry out that work. Next, we discuss how *work changes place*, how the needs of work changes different places, rearranging them to be more amenable. Here we use Lefebvre's concepts of abstract space, and specifically the commoditisation of space, to highlight how the characteristics of places are increasingly sold (in the form of mobile technology), and in turn how leisure places (such as cafés) are increasingly transformed into work-places.

The mobility of work also changes its temporal nature; in the next section we discuss how mobile work impacts and makes use of time. Here we use Castell's discussion of timeless time to explore how synchronicity becomes an important aspect of time, over and above the particular local characteristics of time. Mobile work is one which demands increased synchronicity between workers as they need to arrange and co-ordinate activities which are distributed over potentially large distances. Lastly, we consider how mobile work can be considered as 'decorporalised work'. Rather than seeing decorporalisation as a theoretical concern we see it as something which is explicitly managed by mobile workers. Staff need to see, meet, and discuss with each other face-to-face, and to have regular physical visits to particular places. This is part of managing decorporalisation and keeping its effects at bay.

Data and methodology

The empirical material we will discuss here comes from two different research projects where we have explored mobile work and the lives of mobile workers. In this work our interest has been in how technologies are used by these workers so as to organise and make productive their time and location. Specifically, we have used these observations to explore the design of technologies for these workers, as a practical result of our work (this, in part, explains our unusual affiliations). The research area from which this work originates is the hybrid field of computer-supported-collaborative-work (CSCW). This research field has brought together sociologists, psychologists and computer scientists to investigate the practical implications of understanding work (Luff et al., 2001). A strong tradition of ethnographic research has developed within CSCW, and in particular an ethnography which sees its job as one of developing understandings of work to design technology that might change that work in positive ways. Recently this work has gained some discussion in the social sciences more generally (Heath et al., 2000), specifically for the ways in which it has established a sociology of work very different from its traditional manifestation. For "workplace studies", as they have come to be known, have drawn attention to the detailed social organisation of work, something somewhat neglected in the mainstream sociology of work.

For example, even in a relatively progressive text on the subject, such as Grint's review (1991), there is a lack of description of anyone *doing* anything. The topics discussed are race, ethnicity, patriarchy, trade unions, class, industrial conflict, organisational cultures and modern capitalism. There is no room for even a brief discussion on how work as an activity is organised. This criticism of sociology has motivated much of the social research in CSCW. As Orr puts it:

> *This is the main problem with all this literature. It is not well grounded in analysis of work practice, so its presumptions and prescriptions of what is to be done are not based on what is done and what needs to be done, on the reality of the job, the task to be accomplished. (Orr, 1996, p151)*

We would forcefully argue that these issues – the *how* of work – are an important and missing component of the study of work. For the organisation of work is fundamentally social. This is not something which can be reduced to workplace psychology – it is something which must be studied using techniques which are amenable to understanding the social organisation of work.

An obvious criticism of this position, and one which has been made many times, is that such analysis of work often looses a sufficiently critical position on work practice. Certainly, the ethnomethodological position, which has been at the heart of much work studying work practice, has a principle of "ethnomethodological indifference" - it does not assume that the analyst has a privileged position to comment on the views of participants. This is not just a theoretical stance; a concern for the details of practice makes it harder to make simplistic political statements about practice and work. The lack of strong political argumentation in this work thus (in part) comes from this attention to detail over generalisation. As researchers with a commitment to detail over generalisation, we are thus hesitant to do the generalisation necessary to make overtly political arguments and there is surely no shortage of other researchers who do this already. This is a point we return to later.

The data we will discuss in this paper comes from two studies of mobile workers. In both studies we worked from a pool of participants across the UK. The study participants were all highly mobile professionals who worked in a range of different professions, including a variety of management personnel from a range of industries, sales staff, consultants, auditors, medical workers, civil servants, and the media. The relatively small number of participants selected meant that we could afford to explore the rich details of their activities, using in-depth interviews. The studies were not designed to provide a complete survey of mobile behaviour but were intended to be interpretive, rather than statistical. Accordingly, we did not collect statistics but rather examined the artefact use and situated activities of these workers.

In the first study we interviewed 17 mobile workers before and after a specific business trip. The first interview prior to the trip helped inform us about the context surrounding the mobile workers' activities - why they travelled and what preparations they were making for the trip, who they would be seeing and what they would be taking with them. This was conducted as close as possible prior to the departure date for the next upcoming business trip, in the majority of cases, 2 working days or less before the trip. The interview was around an hour long, and its purpose was to build up a general background about the nature of the participant's work and their home life. We explicitly asked questions regarding their position and responsibilities in the workplace, who they worked with and the nature and frequency of this collaboration; we then asked for descriptions of 'typical' days, so that we were aware of the difference between their office and travel-based activities.

The participants were then asked to keep a diary of the events that took place on their trip away in terms of their information use and communications activities. A second interview was carried out as soon as possible after the trip (again, for the majority of interviewees, within 2 days of the trip) and was based around the diary of events that had taken place on the trip. This lasted about an hour and a half on average. The participants were then asked to identify a typical day in the trip to unpack in more detail. This 'typical' day was determined in concert with the interviewee: this allowed the participant themselves to highlight the *everyday* nature of their work, rather than the interviewers picking unusual episodes. The interviews were thus combined with diary techniques, and analysis of the artefacts (technologies and documents) used during specific business trips. Approximately 43 hours of interviews was conducted in all; these were tape recorded and later transcribed.

In the second study, we interviewed 17 hotdeskers about their mobility and also their experiences with their new office environments. These workers were interviewed for between one and one and a half hours about their experiences in their fairly unusual work settings. The participants were questioned about how their work tasks changed, and what effects the places in which they worked had on their work. These interviews also took place in-situ in the hotdeskers' workplaces, and this provided an opportunity to explore how their new “hotdesking” offices were arranged, what technologies were provided in these spaces. We were particularly interested in the nature of these new office environments: how did they feel different from existing offices? Were they busy or empty? Again our focus was on how the environment interacted with the activities of the individual workers, and their interactions with other workers.

Since both sets of workers were highly mobile, they were all mobile professionals, in the sense that they worked out of the office on a regular basis (at least one day a week). For this reason in the discussion when we refer to mobile workers, we will be referring to the results from both the first and the second study. At a few points in the text we will refer explicitly to the hotdeskers by name, although much of the findings we will discuss apply equally to the participants in the first and the second study.

Literature

As we mentioned in the introduction, one interest in this paper is the spatial organisation of work, or more specifically what role the physical environment has in the management and co-ordination of mobile work. While there is some work on the relationship between physical space and the organisation of work organisation, a lot of this, while thought provoking (Duffy, 1997) is more of a high commentary on the goals of specific space designs rather than an analysis of the mechanical details of how specific work is socially organised in relation to place. Becker and colleagues have assembled together a number of informative case studies of non-territorial offices and other workplaces in relation to how they affect work and communication practices (Becker and Steele, 1995). But there analysis is typically focussed around a particular work place, which of course for the mobile worker is but one facet of the mobile worker’s practical concerns with places. In addition their analysis is less concerned with how the details of specific episodes reveal the ways in which mobile workers orient their behaviour in relation to place.

Another vast area of research of relevance to our discussion here is that of Telework which encompasses many aspects of mobile work, such as for example, home working. Much of the work has focussed on issues such as the organisational and social ramifications of telework, such as for example, blurring of organisational boundaries (Harris et al., 1999), management relations (Depickere, 1999), issues of identity (Galpin and Sims, 1999), isolation or the effects on trust relationship between members of a virtual team (Nandhakumar, 1999). Discussions of Telework in relation to space have focussed around themes such as flexibility of time and space through use of computer mediated interaction, reduced sense of the organisation as place, disembodiment and lack of corporeality associated with work (see (Jackson, 1999) for a review) or the more measurable aspects of telework such as who does it, for how long and so on (for a review see (Graham and Marvin, 1996)). This work provides important insights for our understanding of how place impacts on Telework but again does not really focus on how place shapes the nature of work or how work impacts on the nature of place. In particular it does not look at the specific concerns of the mobile work in relation to how activities are maintained and carried out at a distance. It is these issues which are of specific importance when one moves from looking at telework to mobile work more generally. As Vilhelmson and Thulin argue: (when studying mobile work) “it is important to address and investigate empirically questions concerning the extent to which everyday activity patterns are based on different kinds of technologies” (2001). That is to say, a focus on the *activities* involved in mobile work.

This concern for activity has been covered, to an extent, within the CSCW (computer-supported collaborative work) research field where there has been a number of ethnographic studies of mobile work. For example, Luff and Heath's series of studies of mobile work (Luff and Heath, 1998, Heath and Luff, 2000). One specific issue they discuss is the management of peripheral awareness. In there observations of staff and management at the London Underground they observed that staff often needed to leave their desk in the "operations room" to visit other parts of the underground station. However, much of the information and communication resources that were required for their work were located in the operations room. When a member of staff was mobile and away from this room, they lost access to the ongoing changes and they no longer had continuous visual and auditory access to colleagues. The loss of inadvertently overhearing the details of activities in conversations and phone calls meant that much of their background monitoring of activities was lost. So while technologies such as mobile phones provided access to information for staff, this was importantly not the same as being in the Ops room, since they then had to explicitly request information. Luff and Heath's (1998) work also discusses the mobility of artefacts and the way that artefacts are ongoingly configured with regards to the changing activities in which collaborators are involved. In particular, the flexibility of paper over mobile displays or computers is emphasised. When discussing the role of documents in mobile conversations they point to the ecological flexibility of paper – they can be pointed to and manipulated in interaction. Conventional computer systems and laptops are instead "cumbersome and rigid" in terms of how they can be configured during conversation as interactional props.

A number of other aspects of mobile work have been addressed in CSCW, such as (Wiberg and Ljungberg, 1999} study of travelling and time management, (Eldridge and Lamming, 2000) and (O'Hara et al., 2001) on document use and (Churchill and Wakeford, 2001) on rhythms of mobile work. However, there are still many unanswered questions regarding mobile work – in particular surrounding the management of *location*, and the role which place plays for mobile workers. While mobility has gained recent interest as a social theoretical concept (refs), we find little research on the *work* of mobility.

Findings

While there was considerable variety in how the different workers we interviewed arranged their work practices, in presenting the findings we aim to demonstrate the importance of place as a practical concern for mobile workers through examples of how they orientation to space and place. The findings we discuss here are arranged in four parts. We will start by discussing the importance of *places* to mobile workers, and in particular how the mobile professionals we studied had to configure their activities as to make use of the places in which they found themselves. That is to say, the adjustment of working so as to take advantage of the characteristics of specific places - how *places change work*. In the second section we discuss how *work changes places* and in particular how mobile workers configured spaces so as to be suitable for their work activates, extending work out of its traditional settings into new sites where work has not previously been carried out. In a third section we will discuss the importance of *time* to the mobile works, and in particular the problems which the mobile workers had in co-ordinating their activity with others. Lastly, we will bring these points together in discussing the *decorporalisation* of mobile work, and the ways in which mobile work is, and is not, increasingly *disembodied* work – a common theme of geographic analysis of new technology.

Place changing work

We start our discussion by focusing on the interactions our participants had with other workers and in turn with the objects that were important for their work. An important point to make about

this is that mobile workers were very much concerned with the places in which they worked, their detailed organisation, their structure, and the differences between them. Rather than mobile workers working in homogenous standardised work sites, the reality was that these individuals were intimately concerned with the different places in which they could work. These different places gave the workers different possibilities for configuring and reconfiguring their relationships with others, different possibilities for performing actions, and different possibilities for habitual action through which meaning and identity could be attached to place. Most important of all the characteristics of places were the people in them. This is the main reason why mobile workers were mobile; so they could meet people face-to-face. As Boden points out, the face-to-face meeting is still the paramount means of communication in organisations (Boden, 1995).

The affordances which these different places had were crucial for the actions individuals could carry out in those places, and in turn the meaning they endowed to those places. Along with the people in these places, much of this was dependent on the humble office equipment that was available in these places (such as network connections). So, for example, one participant mentioned how he would access his email anywhere using his Palm top and mobile phone. He suggested that he could do his email while he was on the train between Newcastle and London. However, when we actually unpacked this issue further during the interview, it was clear that his actual work practice did not reflect this. As it transpired, this use of the two mobile devices to create a relationship with his email was something that he actually did extremely rarely. The slow network connection made downloading time excessively slow, particularly when attachments were involved. The small display of the PDA also meant that the appropriate thoughtful relationship could not be established with the information in the email making reading and responding difficult. So while the mobile devices were allowing him to form some sort of relationship with his email from the train, the nature of these relationships was not such that the train could be defined as a place where this activity could realistically be done. As such what happened was that this kind of activity would be deferred until at a location where the necessary relationships could be achieved – namely when he was in one of the organisational offices where the network connection is fast enough to manage In this simple way, the train was not an emailable work site. The point here is that the constraints of the place impact on the kind of work activities that can be usefully carried out there.

To work on a train mobile workers needed to do some other form of work activity such as reading or making telephone calls. In turn, their activities could be juggled so that the activities they did fit the places they were in. So all the emailing might be done when in the office, or all the reading when on the train. In this respect we can see how place is an important determinant in the ordering of work activities for the mobile worker. More specifically in the following example, one of the mobile workers deliberately saved up reading to do on a plane journey.

> *"No I think it's just those ones plus the sort of the bedside reading type material or background reading and I'll use the flight as an opportunity for doing an hour or so worth of the background reading. So you know I've saved it up for the last few days rather than doing it during the working day, I just thought I'll put it to one side rather than doing it during the working day and do it on the plane. Yes, or probably extracts from some of those plus some stuff to read on the plane so the last couple days the stuff that I'd sort of normally read I just sort of save it up for the journey."*

This reading could have taken place in any reasonably quiet location. The nature of this work activity was relatively undemanding on the characteristics of a particular place. This is in

contrast to some of the other work activities which he therefore carried out in the office before he left on his trip in order to exploit the richer features of the place necessary for the task.

In this example and other episodes described by our mobile workers, certain locations can have particular periods of time associated with them that are defining of how that place is experienced in relation to work. In this instance the experiences of aeroplane was not simply an issue of being in a cramped seat with limited space, it was also defined by the fact that this worker was going to be on that place for a number of hours. As such, for this worker, it was a place where he could settle into a prolonged uninterrupted engagement with the reading materials that would not have been possible in some of the more transient locations in which he would find himself. Another worker discussed how he would not get his laptop out in the boarding lounge because the time associated with his relationship with this place – so even though it was possible for him to sit and use the laptop, the time spent in that place would not be enough for him to get into the tasks he could have done on the laptop. Accordingly, he checked his voice mail and made some phone calls from the airport lounge.

For the mobile worker, there also inherent uncertainties associated with places that impact on their work choices and the kinds of activities they pursue. E-mail, for example was something that was simply not reliable in all the different places they visited. Thus, as illustrated in the following remarks from a participant, they would exploit times when they had a connection just because they could, particularly when they had been experiencing difficulties or anticipating them:

> *"I'll do it around a few things, I'll do it around, one it depends on what country I'm in, if I'm in an unreliable country like Hungary or something then often it's hard to get e-mails, I will do it definitely in the office that I'm in because usually you have a better secure line that I can get it off. If I have problems getting e-mails then I'll do it more often because I never know how many I'm going to hit so I put it all off and do it in the morning, I'll make a run and get the machine set up so it'll run it several times and I'll go and have breakfast or something and I'll come back and hopefully it will hit off of one of those times."*

Managing the uncertainty of places and their particular affordances in relation to certain kinds of activities was of particular concern to the people we interviewed. Work practices were often shaped to be more ecologically flexible. For example, many active files would be stored locally on laptops rather than on networked servers, paper copies would be taken as back up, attachments would be sent to multiple email accounts, and communication channels would often be directed to the more accessible phone and voice mail:

> *"It's [Voicemail] more accessible because you can do it from far more places geographically than you can e-mail -car, airport lounges, home, as opposed to which e-mail needs to be in the office most of the time. It's also quicker both to connect and to listen to and to respond to. It's also more personal, so if there's an urgent issue I would tend to do something by Voice mail rather than just dumping an e-mail. You have more chance of people listening and responding to Voice mail than you have for e-mail."*

The mobile worker did not simply orient towards a place in isolation of other places. As we can see from the following example, orientation towards a place in terms of the activities that can be performed there have knock on consequences for how a subsequent place will afford certain opportunities for work. As such they engage in decision arcs with respect to place and work:

> *"I normally try to find some spot that has a power outlet, it wasn't as important here because it was an hour long flight, usually I'm on a longer flight. One of the great frustrations for me in*

airports is and even with Executive Clubs is that often there are power outlets set up you know where you can access them so, particularly if you're just in the airport where you don't really want to be in the Executive Club because you've got a half hour or something, I'll still use that half hour to work on my computer. But if I'm on a five hour flight my battery's not going to last me that time and if I can't plug then basically I'm wasting time I have on the plane so I try to always hunt around try to find a place and use that."

While it is true to say that each and every location is unique if viewed at sufficient level of detail, the duplication of technology across different sites does implies a certain standardisation across work environments. Locations can share core infrastructure, and in turn, offer the same possibilities for activity. It was this – somewhat narrow - similarity between places which was important for our mobile workers. What they could do in one office they wanted to be able to do in other offices.

While office equipment is an important consideration, as we mentioned above, the most important aspect of different places is the people in them – work colleagues and clients. This is the main reason why mobile workers *are* mobile – to meet different people. One theme that was continually brought up by the workers we interviewed was their deliberate and regular efforts to visit what was their main office base even if there was no specific task reason to do so. Going into the office was not just about schedule meetings; unplanned social contact was important too. For example, one feature of work is the ongoing development of personal expertise and knowledge. This learning is not necessarily explicit or planned, but can simply be learning about other people's knowledge through serendipitous interaction with colleagues. One cannot plan for these interactions or predict the kind of knowledge that one is going to pick up, but these connections can often be invaluable. Accordingly, the motivation of the mobile workers was to put themselves in a position that would increase the likelihood of "bumping into" co-workers. This networking was seen as their "bread and butter" in terms of their long-term development of knowledge that they could bring to bear on both current and future work situations. As one of our hotdeskers noted:

"I try to work from home so that you are not disturbed so much – if you are sitting at a hot-desk you get dragged into discussions or meetings. It is difficult to balance because some of these impromptu meetings can be important – I come in partly for the social stuff...sometimes you want to feel part of the team – sometimes you want to bounce idea off them. Sometimes you overhear about someone's who has an exact same problem on another project that can help. Networking and knowledge gathering are very important in consulting. One of the biggest things is the reuse of knowledge."

In this respect the office appears as a place that is akin to a local pub or café. What defines a local pub as a place as against a generic pub is that it is associated with the likelihood of meeting at least some familiar people. People do not necessarily know who exactly, but the place is defined by the likelihood of potential relationships between members of a local group. It is the configurational properties of the relationship between people rather than the exact location that is important. As with the pub, for the office it is the common understanding among a community of people that this is the location where they will often work that gives that particular office these configurational properties that define it as a place.

Along similar lines, one reason for hotdeskers and mobile workers to go back to the office place was to make themselves *available* for interaction with others. This was putting themselves in a particular configurational relationship with other people to allow these other people the opportunity for a certain type of interaction that is not available while on the move away from the office. This was particularly the case for some of the more senior workers who were playing a

supervisory role. One participant explained that when he visited the office he would choose a place to work that was visually open so that people knew he was there. Not only do people see that he is in, but they also can interpret his choice of work location as an invitation to interruption. For example, he could have chosen one of the quiet rooms to work but this would have had a different meaning amongst his employees. So the choice of place was a means of communication to the rest of his team about his availability. This allowed them to engage in face-to-face interaction with him simply because they knew when he was in the office. In addition he choose to sit at different places around the office in order to place himself closer to people who might need the opportunity to speak to him. In this way, he and the other participants would choose locations that encouraged and allowed interactions to be initiated by relevant others. This configuration with respect to others, and configurability by others, created a sense of place for these people in terms of the potential actions they afforded.

Work changing place

This discussion so far emphasises the primacy of *place* as the organising feature of mobile work, rather than a notion of abstract space. Yet along with the effects that place had on how mobile workers could arrange their work, mobile work in turn changes places. That is to say, work reconfigures places both through work being carried out there, and by the conscious altering of places to make them more amenable to work. In these ways places are produced – in a very practical sense - by the work that takes place in them. Mobile work does not just 'take place' but rather 'makes place', transforming locations as diverse as public and private transport, cafés, sites of leisure and offices.

Perhaps the most influential theorist who has directly addressed this 'making place' has been Henri Lefebvre, specifically in *The Production of Space* (1974). At the risk of doing considerable damage to Lefebvre's arguments, here we will use Lefebvre's notions of how space is produced to help us understand our fieldwork[2]. However, as mentioned above we want to avoid presenting our fieldwork as manifestations of Lefebvre's generalisations. Rather, Lefebvre's discussion directs us to looking at the data in a new way that might not have arisen from studying our data in itself. Lefebvre discusses how the characteristics of concrete space (which we might call the 'lifeworld', or places) come to be dominated by the characteristics of what he calls "abstract space". Abstract space refers to the abstract processes that impact on the geographical organisation of the world. To Lefebvre, individual's actions, the sites and circuits through which social life is produced, are caught in the mesh of *abstract space*. The everyday is colonised by the workings of capitalism through abstract space. Derek Gregory puts this better than we could:

> Abstract space *is produced through two major processes, each of them "doubled". First modernity is shaped by an intensified* commoditisation of space*, which imposes a geometric grid of property relations and property markets on the earth, and an intensified* comodification through space*, which involves the installation of economic grids of capital circulation by means of which abstract space inscribes abstract labour and the commodity form. Second, modernity is shaped by a highlighted bureaucratisation* of space, *whereby each administrative system "maps out its own territory, stakes it out and signposts it," and a highlighted bureaucratisation* through space*, which involves the installation of juridical-political grids of which social life is subject to systematic surveillance and regulation by the state. These processes reinforce each other to constitute abstract space. (Gregory, 1993, p402)*

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[2] In particular we are ignoring Lefebvre's use of the term *production* in the same terms as the *means of production* (which Merrifield explores (1993)) . Rather our notion of 'making place', is more activity bound and interactional.

Thus, in talking about the "comodification of space", Lefebvre talked about how property relations and markets are imposed upon the earth, marking up space in terms of capital. So, land becomes owned by individuals or organisations, and trespass upon those lands becomes a criminal offence. In this way abstract space – in the form of property relations – imposes itself onto 'concrete space'. Abstract space, which in this case takes the form of capitalism, dominates, although does not determine, the spatial practices of particular groups and individuals in particular places. So, for example, one cannot trespass on private land – ones spatial practices come to be dominated by the abstract relations of poverty. With this description, Lefebvre comes to the defence of concrete space, or everyday life, through political action. Concrete space is dominated by abstract space as capital destroys ordinary life and everyday practices. Lefebvre's intention then is to "conceive everyday life in such a way as to retrieve it from its modern state of colonization by the commodity form and other modes of reification" ((Ball, 1987) cited by Gregory). Lefebvre is interested in political action, in changing this tragic domination.

There is much of interest and power in this description; even to incurable fieldworkers such as ourselves. In particular, Lefebvre discusses *spatial practices* – routines and structures of activity in individual's lives, and describes ways in which activities can be seen in the light of wider social forces (mainly capitalist forces). Although we would be critical of Lefebvre's somewhat totalising theory, unlike some social theory there is at least activity in Lefebvre's description, not just social forces, and he is clear in describing how people and their spatial practices can and do resist being dominated of abstract space (indeed, this resistance is central to his project). Lefebvre's arguments make us look at aspects of our fieldwork which we might have otherwise ignored. Specifically, looking at mobile work, how places come to be modified, and their uses change, through the impact and pressures of mobile work. How does 'capitalism' come to dominate the spaces in which mobile professionals work?

There is one obvious answer to this: the workers do it themselves. They convert, adjust and configure the spaces which are available to them so as to be able to do their work in them. In doing so they use technological artefacts: laptops, phones and coffee cups, so as to make it possible for them to achieve their work goals easier, or in less time, or more enjoyably. This can be seen in a sense as colonising places so as to use them for their work.

In a simple example, hotdeskers need to be able to find a desk to work at when they come into their fixed base. This is necessary because of the loss of the static existing office. On coming into a fixed "hub" – a building with hotdesking faculties, a hotdesker must login and find a desk. This is not straightforward; in some facilities there was a lack of desks as demand for desks varied according to time. Moreover as a hotdesker checks in and books their desk on a computer, they have to judge where to book their desk. Working in teams means that booking a desk with a specific team is of value, so they may choose to occupy a desk close to their team. Some hotdeskers talked about choosing a desk in a regular location since that location had got the reputation of being such-and-such a group's home. The location of the desk chosen, then, takes into account the social organisation of the workplace:

> *"If I am working with Public Sector – they are at the far end around there – I would try to book a desk over there rather than in the 3 GRMS desks…With a lot of his work its… one of the ABAS managers will come up to you and say a client is thinking about doing this and its more personal interaction – they are more inclined to come up to you and say to you face to face because obviously I try to book a desk near to them all so that you can see them at least once a week or more than that hopefully – so telling about the client – it might lead to future selling opportunities."*

In this way the place in which hotdeskers work is configured on a day-by-day basis – simply what desk they work at is task and time dependent.

This configuration of place also entails more than just location, however. Technology and artefacts play a key role in making work possible in different places. So hotdesking entails a lot of travelling, with an understanding that staff will frequently work on client's sites, or at home, or on the move. In these environments much of the problem is with making the environment workable. This is something made possible by two modern technologies: the network connected laptop computer, and the mobile phone (not to mention the car). The first of these enables access to the documents, files and emails which are a necessary part of work. The second allows access to other colleagues and clients.

Yet one of the most important technologies of mobile work was one of the most simple. Paper played a crucial role and was still the most universally used technology for our participants when they were mobile. Not only did the participants talk about limitations of laptop screens for reading and annotating when compared to paper, but good network connections while mobile are still beyond current technology. Rather than just preloading documents onto laptops documents can simply be printed out and carried. As Luff and Heath point out, paper documents also have a number of crucial interactional properties such as the ability to scribble in margins, pass around a room, photocopy and so on. As has been document in numerous studies (in particular Sellen and Harper, 2001) paper has a rich number of affordances which make it superior to electronic documents for many tasks. These advantages meant that paper documents of many different forms were universally packed before a business trip to be used while mobile.

More generally, so as to be able to flexibly adapt to the different situations in which they found themselves, mobile workers had to be prepared to generate workarounds through *ad hoc* activities developed in concert with the resources that they were able to co-opt at the time. While mobile workers know roughly what sort of situations they will encounter while working, they cannot know exactly what is required of them and what resources will be available. They can plan around this by collecting together and carrying particular technologies, documents and resources which *might* be useful. We have called this activity '*planful opportunism*' (Perry et al., 2001), in contrast to 'opportunistic planning' (Hayes-Roth and Hayes-Roth, 1979). That is, people make plans 'on the hoof' reacting to circumstances as they are experienced. This planning activity centred on making sure that documents and information would be available in the appropriate form when and where they would be needed. Much of the pre-trip planning behaviour then centred around the participants collecting together paper documents in a project, or trip, file. Files on particular topics (for example, client records) were printed out, photocopied or collected from filing cabinets. Having them in paper form allowed them to be collated together in a common format to be taken on a journey and then their contents selected from and configured as the situation demanded. In this way these artefacts – specifically paper documents – were used to transform spaces away from workers usual sites of work.

The train, with the right documents, becomes a site for work, as does the car parked at a lay-by, or a client's waiting room. This transformation takes place in environments which, with the exception of the train, one does not normally think of as associated with work (specifically on work while driving see Laurier and Philo, 2002). Perhaps unusually, hotdeskers specifically had a flexibility over their work environment which meant that they could choose to appropriate *any* space for work. Therefore, cafés, bars, restaurants all become transformed into sites of work. As any frequent visitor to a Starbucks café would have noticed, this is something which is increasingly reciprocated by cafés. They have areas available for the use of laptops, and cafés are as much sites for group work now as they are group leisure. To our study participants, cafés were

useful “semi-offices” where they could meet with colleagues and clients. However, cafés were not merely spaces between places, they were places which themselves had to be skilfully used in managing relations with others. While the world, potentially, becomes a workplace, there are practical and social dilemmas involved in this. Most importantly, the world is *not* literally an office. In attempting to work outside the office much of the artificial construction of that space is made apparent. In the world all manner of noises can interfere with work or conversation, such as the noisy coffee drinker. There is also little privacy, and confidential matters can be overheard. Lighting is also a controlled feature of offices, as it is not in the world. Cafés can be too dark to read, or the sun can be too bright while chatting in the park. There can simply be a lack of room in a particular setting, whereas offices are as much defined by desks and chairs.

However, perhaps most serious of all, there is a lack of access to the tools of the office - the records, files, documents and so on, which are important for the process of getting things done. To some of these problems there is, in part, a solution. The laptop computer provides a prop that can be used in a variety of settings to re-establish a link with the office. Importantly, cafes also present an image; they are settings of informality. This informality can be used as a tool – it can contribute to a friendship with a customer; or emphasise the fashionability of a new media company. The main business of coffee shops – coffee – also already has a strong niche in organisational culture. Yet it cannot be used in settings where flippancy must be avoided.

To return to our earlier discussion of Lefebvre, all these technologies are part of the “colonisation” of spaces, such as cafés and travel spaces. The mobile workers we spoke to talked about how they increasingly worked in these non-office sites. While this “colonisation” of spaces such as cafés and travel spaces might seem trivial, it impacts individuals’ lives in important ways. Increasingly “third spaces” between home and work are becoming workplaces. Regions that are demarcated as off-limits from work (or at least explicit work) are being re-interpreted. We have yet to see a pub designed for work, but we have seen people working with laptops and documents in pubs. The mobile phone is also key here in that it is a work technology that is invading leisure spaces, or at least breaking down the barriers between work and play (Cooper, 2001). The ringing of mobile phones, which has invaded trains, buses, cars, and cafes, is only one sign of this.

More specifically, Lefebvre talks about the commoditisation of space, where space itself becomes something that can be traded on the market. Something of this can also be seen in the ways in which our participants’ office space was managed. The offices in which they worked were often priced and controlled as a commodity. Should an office prove to be too expensive, it could be exchanged for an alternative office elsewhere. In this way the environments in which they worked were subject to pricing and exchange. Indeed, this move, along with the general outsourcing of office services, was one of the motivations behind the move toward hotdesking. Since staff might sit at a different desk every day, each individual desk becomes even more commoditised and depersonalised. Should staff numbers be reduced, the number of desks rented can quickly be reduced. With hotdesking office space itself is a commodity. Yet, as described above, this is not a simple division and control of space; it is one more factor in how hotdeskers arrange their practices in the places in which they work - it does not determine the nature of workplaces or work.

A second ‘comodification of space’ that our mobile workers experienced can be seen in their increasing use of mobile technologies. As mentioned above, mobile workers increasingly make use of a range of mobile technologies, most ubiquitously the mobile telephone (Brown et al., 2001), but also an increasing range of more eclectic mobile devices such as PDAs, mobile scanners, text messaging, instant messaging and so on. These devices allow some of the characteristics of places – such as co-presence, informal communication, and such to be used on

the move. As such, they transfer some of the characteristics of places into things which can then be carried around by mobile workers. These mobile devices in turn are objects which can be bought and sold by electronics companies. In this way, some of the characteristics of places become commoditised in the form of consumer electronics. These devices thus encapsulate (to a limited extent) the characteristics of specific places into devices which are not only mobile, but easily bought and sold. Indeed, since consumer electronics can usually be bought by professional workers out of their own budgets, they escape centralised control.

Yet, while Lefebvre's notions are useful in uncovering some aspects of mobile work, there is some danger of silencing some of the more difficult details of fieldwork. As mentioned above we do not see the practices we described here as manifestations of Lefebvre's theory, as literally 'the commoditisation of space'. That would be to gloss over the many practices involved by mobile workers, to reduce them to simply 'tactics' or 'strategies' to use De Certeau's own simplifications (1984). For working with a laptop in a pub is many things, and while it can be described as "the domination of concrete space by abstract space", it is not simply or only this. Cafés have not become exclusively office annexes, and indeed one side effect of this phenomena in the U.K. has been an improvement in the number (if perhaps not the quality) of coffee shops.

There are many 'problems' in mobile work, as Laurier describes, such as finding somewhere to charge your mobile phone, or getting IT support on the move. These problems which are *not* simply reducible to grand theory (Laurier and Philo, 2001). So while bringing together Lefebvre with coffee cups, minimum wage staff and mobile executives might seem like something of an unholy combination, doing so brings out some key differences between abstract description such as Lefebvre's and our own. Clean theoretical structures such as Lefebvre's can make the details of situations look trivial. Tales of coffee tables and work schedules have an uneasy relationship with the smooth clean theoretical structures of Lefebvre's (even if his own style aspires towards the more equivocal). Fieldwork is not reducible to the theory itself, and must have an uneasy relationship with grand theory, since grand theory nearly always denies the very details and specificities that fieldwork provides. In a more theoretical vain, Unwin develops a similar criticism of Lefebvre when he observes that Lefebvre's abstractions lose sight of ordinary activity – as he puts it "people seem to be subsumed within a dehumanized conception of space […] worryingly silent about the lived experience of the human dimension" (2000, p23). Lefebvre's theoretical descriptions seem to deny the relevance or importance of trivia. Lefebvre wants access to the everyday, and the rhetorical power which comes from the mundane, but without having to take seriously the details of practice (Lave, 1999). It is because of these absences that we find Lefebvre both tempting and off-putting; revealing yet disguising[3].

One defence of Lefebvre is that his project is specifically different from our own. For glossing over details can make a range of other actions possible. Specifically, Lefebvre's work has a strong political commitment – he does not just want to understand the world. Thus, in glossing over details, Lefebvre's theory can also promote political action – an important aim. Lefebvre's analysis is as much a political statement as it is one of social research. As such, its value lies as much in how it enables or constrains political action, as it does as a piece of social research. Ignoring the details and presenting an abstract account of spatial practices can be seen as important for political action. While Lefebvre's political aims are at times muted they are still

[3] So even a otherwise sensitive and careful use of Lefebvre, such as Borden's study of skateboarding and architecture (2001), there is a distinct lack of anyone *actually* skateboarding. A distance is maintained from the bodily practices of skateboarding, and it is the traces (very literally, in the form of skuff marks on pavements) which are examined.

central: "this book has been informed from beginning to end by a project, (…) of a different society, a different mode of production where social practice would be governed by different conceptual determinations" (1974, p419). However, in our work here we find the *details* of equal importance and interest. Lefebvre's account can help us understand and highlight the practices of mobile workers spatial practices, but they cannot be reduced to it[4].

Work and time

We continue our perhaps slightly dizzying oscillation between data and theory as we move on to discuss time and mobile work. Time was an important practical concern of the mobile workers we studied. They needed to travel, which took time, and then needed to work, which in turn took time. These demands had to be balanced with the need to maintain personal time and to protect non-work time from the voracious demands of work. However, time was not simply a quantity to be allocated; time at specific times could be particularly valuable, such as a day off to tend to a sick child, or a morning break to gossip. However, it was in the demands of travel, and arranging where and when to be, that time had its most serious impacts. Mobile workers needed to arrange themselves and their activities with others, so as to be able to regularly meet others, discuss issues face to face, share documents, and so on. In doing so their concerns with time interacted closely with the concerns of place since they needed to travel so as to be at different places at different times.

It is a familiar observation that distances are, so to speak, getting smaller every year. Harvey, for example, presents a diagram of a series of worlds with each world smaller than the next (Harvey, 1990). However for our mobile workers coordination, rather than simply *time taken*, was their main temporal concern. May and Harvey discuss this using the notion of 'timespace':

> *To some considerable extent, this under-development is a consequence of too heavy an emphasis being placed upon developments in transport and communication technologies and not enough upon developments elsewhere both in the field of technology (or what we prefer to call the domain of instruments and devices) as well as across a number of the other domains through which the experience of TimeSpace is rendered. When these more numerous developments are considered, and the connections between each traced, the picture is less of any simple acceleration in the pace of life or experience of spatial 'collapse' than of a far more complex restructuring in the nature and experience of time and space (May and Thrift, 2001, p10)*

One of the more interesting theorists who has discussed this transformation of time has been Manuel Castells, with his arguments that we are increasingly moving away from time as a method of demarcating and dividing events (1996). He argues that the world is increasingly organised in the form of flows – or the "space of flows" as he calls it. These are geographical organisations of work and leisure such that there are flows of material, people, money and information around a distributed geographic networks. The arrangement of these circuits come to dominate the organisation of activity in individual places. That is, the site of a place on a network and its relationship with other nodes comes to dominate over the importance of the characteristics of that place itself. While there is much to disagree and agree in Castells much discussed analysis (for example, Fuller, 1997), for our purposes here what is particularly interesting is Castells'

[4] We are not making an argument like Haraway's one against totalizing theory (Haraway, 1990), rather we are saying that our project itself is different to Lefebvre's, and as such the necessary absences in our analysis will be different. The relationship between grand theory and data is a problematic one for us since for ethnomethodology, and any approach with a strong Wittgensteinian influence, 'critical social theory' is a controversial edifice, since social reality can be studied "as it is" (Lynch, 1993; or a similar argument from a non-ethnomethodological position Pleasants, 2000).

comments on time. For Castells, the importance of time is increasingly disappearing as space comes to dominate over time. Castells argues that how individual events fit into what is happening elsewhere – how places connect with the "space of flows" – is becoming more important than the clock or social time at specific places:

> *The space of flows ... dissolves time by disordering the sequence of events and making them simultaneous, thus installing society in eternal ephemerally ... Selected functions and individuals transcend time ... the emerging logic of the new social structure aims at the relentless supersession of time as an ordered sequence of events (Castells, 1996, p467)*

That is to say, for some in the "network society", the importance of time is increasingly suppressed as connections between places come to dominate[5]. While Castells sees this as a move to "timeless time", it could also be described as a move to "relational time" – where it is the connections between different sites that dominate temporality. So the importance and connections between London as a financial centre, and other financial sectors, dominateover the specific characteristics of time in London, be that social time or clock time, and the existing sequential order is perturbed:

> *Timeless time ... occurs when the characteristics of a given context, namely, the information paradigm and the network society, induce systemic perturbation in the sequential order of phenomena performed in that context. (Castells, 1996, p464)*

Again, our interest in this work is not so as to be able to judge it nor to see if we can find evidence of it in our data. Rather we are interested in different ways in which it can inspire us to look at our data. In particular, Castells inspires us to look at how the mobile workers we studied used time in a different way from conventional workers, how mobile workers make connections with those who they worked with and how they managed those connections over time and space. This connecting was a perennial concern for the hotdeskers and mobile workers we spoke to. Their problems arose from the difficulty of actually achieving synchronicity in their day-to-day work. That is, the effort of mobile workers to get things to happen at the same time. One example of this is accomplishing synchronous conversation. The participants we spoke to underlined the problems that they had getting hold of people to have a conversation, either face-to-face or over the phone. The very reason that these workers *were* mobile was to increase the amount of face-to-face time that they had in their work. Yet in a world where other workers are mobile, this presented practical configuration problems in arranging to be in the same place at the same time. This goes beyond simple telephone tag; many actions need to be co-ordinated and tightly coupled. Yet since work colleagues would be as mobile as each other, co-ordinating to have meetings together could be deeply problematic. Individuals might not be available and needed to be in the one place, while there might be no "hub" which they might otherwise all converge upon. So while local time was hardly superseded – local routines did not disappear – the importance of connections between places became important, synchronicity becomes as important as sequentuality. Yet this change did not come easily, synchronicity was a serious problem to be managed and achieved.

To an extent, new technologies such as voice mail and electronic mail assisted these problems. Both these technologies store messages rather than them needing to be read immediately. This asynchronicity meant that reading and replying to messages was something that could be integrated into other activities when appropriate, and this assuaged the need to have individuals available "right now" at a particular point in time to communicate. Web sites also supported this asynchronous communication in that products or services could be purchased over the Internet without the need to get hold of the supplier there and then. In this way these technologies allowed

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[5] Giddens is less extreme in his formulation of 'space-time stretching' (1984), yet the argument has many similarities with Castells.

communication to stretch out over time, as well as the conventional technological role of stretching communication out over space. However, and with a little irony, one of the main uses of these *asynchronous* technologies was to make the arrangements for *synchronous* communications. Emails were frequently used to arrange visits, meetings and phone calls.

As has been highlighted again and again, the synchronous face-to-face conversation is one of the most important aspects of the working world (Boden, 1995). It is this that is by far and away the dominant form of communication. The mobile workers were no exception to this and face-to-face meetings were paramount. Indeed, many of them spent the a large proportion of their working day in these face-to-face meetings.

So as to overcome some of the co-ordination problems of arranging face-to-face meetings with geographically disparate colleagues, mobile workers commonly introduced temporal structure into their activity so as to overcome these problems. Regular meetings were a feature of the work practices of many of the participants we spoke to. These provided enforced coordination points that help to bring together otherwise very disparate schedules and locations of those comprising a mobile team. This coordination was unlikely to happen by chance given the nature of their individual movements in space and time and so a structure was necessary to impose on the work practices around which other activities are scoffolded.

Further structuring of the activities and behaviours of mobile workers came from their need to minimise the temporal cost of travel. An important feature of this activity-clustering centres around the "cost" of travelling to these different places in terms of time and effort. Somewhat paradoxically for a type of work that characterised by mobility, mobile work is often associated with a certain degree of inertia to travel. There was a general reluctance to "go back to the office for a few hours" if they had been out at a clients site for example. It was not worth the effort. As such they would "complete" their workday at the location where they had spent most of the day. The mobile workers would also cluster activities together to be performed in particular places. As one of the hotdeskers said:

> *"Normally you are in the office for a whole day. If you are booked out you will be at a client's and it is not worth coming into the office again that day – you may as well finish up where you are and go home and come in the next day. Some people come and go but generally you are in the office for the whole day – that may change when you are higher up e.g. managers but at my level it is whole days."*

Activities were thus arranged in time so as to take advantage of the characteristics of places and the links between them. Meetings are an obvious example of this. Participants gave many example of how if they had to come into the office for one meeting they would make efforts in advance to arrange to have on the same day other meetings they needed to have within a certain time window. Likewise they would defer certain smaller tasks that they associated with the office place until they had an "important" reason to justify a trip to the office. As can be seen from the following quotations, certain administrative duties such as doing expenses, for example, had to be done in the office place and would be clustered together and performed only when they were in the office for an important activity such as a meeting.

> *"The diary tends to be driven by meetings and I try to compress them into one or two days and do the lot– it tends to be back-to-back meetings. This is particularly the case when travelling is difficult as it has been with the trains being so bad. So I have forced it to say I am in London for a particular period and if you want to meet with me then do so on those days."*

"If you have to come in for that you will probably make sure that you have got 3 or 4 other things that you have got to do while you are in the office…You will have a meeting in Heathrow that is arranged. So then on your list for that week you will also have a list of other activities to do while you are in the office so you basically phone up other people on this day – can we meet and discuss so and so – so you end up with a day with about 4 meetings on it and it also correlates with say getting your time sheet done as well."

It should be emphasised that managing co-ordination with others was not just making oneself available for meeting with others. Working at home was a common characteristic of the work lives of these participants. The nature of this working at home cannot be characterised simply in terms of the convenience for these workers in helping them avoid the need to travel in the traffic for example[6]. People were not necessarily doing the same kind of work here as they would do when they were in the office or at a client's site. The sense of place of the home in relation to work activities was associated with the *difficulty* creating certain levels of action relationships with people in the organisation such as impromptu interruptions. People are not just configuring their own action-object relationships – they are themselves being configured by others. Participants were very much aware of how to make it more difficult for themselves to be configured by others by choosing to work at home. This provided a definition of home as workplace where they could do certain types of activities uninterrupted, such as, for example, those that required lengthy periods of concentrative activity. So home as a workplace was defined by the *difficulties* of having certain types of relationships with work colleagues, yet these difficulties were its very advantage.

This need for distance must be balanced with the interdependent nature of work. The mobile workers talked about the connections in their work with others, and their need to manage and minimise these connections. For example, in project planning connections are something that must be explicitly managed and minimised. One of the classic jobs of project planning is to remove tasks from the 'critical path' – that is, to remove the dependencies between particular tasks in a project so that the tasks can be carried out simultaneously. The 'critical-path' in this case, is the set of tasks in a project with depend upon the completion of previous tasks before they can be started. So, for example, the requirement that a computer program must be finished before a manual can be written could be minimised by splitting the manual writing into two stages – a draft of the manual is written using the design of the program, and then revised when the final program is written. This reduces the time spent after the computer program has been written waiting for the manual to be finished. Decoupling tasks, although a fraught process in practice, in theory means that projects can be carried out much quicker, since there is less time spent waiting for different parts of the project to be completed. Again, here Castell's point that simultaneity replaces sequentuality can be seen not as a theoretical event, but rather as an achievement of project organisation. Staff put work into arranging their activities so as to make simultaneity possible, and reduce sequentially to a minimum in their project planning.

As with our comments regarding our use of Lefebvre, there are similar dangers in following Castells' descriptions of 'timeless time' too closely. Castells' theory inspired us to examine and think about the temporal co-ordination that was an important part of the mobile workers activates. However, time does not disappear from importance; rather it becomes dominated by a concern for synchronisation of activity between places. The important practical temporal concern for the mobile workers was managing and achieving synchronicity in events across time and space – arranging phone calls, meetings and events. So although new technologies such as email and

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[6] Though this was an important consideration for them in some instances

voice mail support *asynchronous* communication, much of this is used to support synchronising activities.

Yet, in following Castells' arguments the most dangerous move is that in considering 'flows' we end up ignoring the 'nodes', in particular the work which is done in particular nodes so as to make the connections work. This local action is an essential part of making the flows themselves work. This is the work of adopting standards, appropriating rules to local contexts, managing to fill in standardised forms, of mediating between the generic and the local (Porter, 1993, Bowker and Star, 1999). It is this work which makes simultaneity, synchronisation and co-ordination possible over great distances, of fitting the local with "the flow" (Urry, 2000). If we loose sight of the local, we loose an important constraint on our accounts of the lifeworld of work.

Decorporalisation of work?

> *Telephone wires only carried literal messages, never the subterranean cries of distress, of desperation. Like telegrams they delivered only final and finite blows: arrivals, departures, births and deaths, but no room for fantasies such as: Long Island is a tomb, and one more day in it would bring on suffocation. Aspirin, Irish policemen, and roses of Sharon were too gentle a cure for suffocation (Nin, 1984)*

Before concluding this paper it is useful to consider a topic which has been of considerable importance when discussing technology in geography – that of "decorporalisation". This is the notion that as work is increasingly conducted using information and communication technology, that the work somehow "loses" its body, and becomes decorporalised. This is an intriguing notion, and one that is intuitively appealing – one need only think about "virtual" reality, and the ways in which technology seems to subsume work.

Yet as Thrift (1996) puts it, while these accounts "question corporeality, even suggesting it may have had its day" they end up as "techno-epics heralding techno-epochs". As a number of authors have commented (for example, Graham, 1999), work that comments on the increased virtuality of work often simplifies a number of complex and related changes which new technology has initiated. Although in some ways mobile work has features of "decorporalisation" over traditional work, we do not mean decorporalisation to sound highly theoretical; it was simply something these workers dealt with in their day-to-day work.

For although the face-to-face communications retained its pivotal importance in their work they did find that much of their communication increasingly took the less embodied form of email or voice mail. Many of the materials and documents for their work were exchanged electronically, rather than face-to-face. Much of this is attributable to organisational initiatives in the design of the office place itself. Aside from the obvious lack of assignment of permanent space, a number of organisations designed the space to make it more difficult to reside in a particular location. Storage space, for example, was very limited at certain office locations, with workers given small trolley type storage cabinets. This limited the amount of physical artefacts, such as documents, that could be retained in a location and in turn forced the mobile workers to adopt new work strategies that were less dependent on that specific place. Clear-desk policies were also commonplace with much the same effect of making it difficult for the mobile workers to nest in particular locations. Effort was required to manage the "limitations" of this space design. While some of the workers we interviewed leant to appreciate this liberation from space, and the ability to be more "*fleet-of-foot*" others developed strategies to manage these imposed difficulties. For example, several would simply shift to storing physical documents at home, or in the boot of their

car. So in this way the documents which are the stuff of work became 'decorporalised', stored on a laptop or in the boot of the car, rather that ready to hand on the desktop.

Moreover, mobile workers had to manage decorporalisation in their access to colleagues. The hotdeskers we spoke to, in particular, complained that much of their working day was spent travelling between meetings with clients, and that they could go long periods of time between meeting their work colleagues, even though they might be in daily (electronic) contact with them. This meant that decorporalisation was a practical concern for these workers. They found that their work could lose much of its physical character – that they did not share an office with close colleagues any more, and that many of their work relationships had to be managed 'at a distance'. In particular, one of the key problems that mobile work presented was the need to maintain contacts between people, to be in work for unscheduled discussions, to see and be seen. Yet in many ways work was still as corporal as ever. The mobile staff still had meetings nearly every day, they still worked with things and in places, and those things and places were still of crucial importance in how they could conduct their work. This can be seen if we consider one of the most important tools of the mobile worker – the mobile phone. This device both increases and decreases corporality. One can use it to talk to those at a distance and avoid face-to-face contact. Yet the phone is also a device of itself, one which has to be physical used in a particular place, it is a device that must be interactionally managed with those one is with (Murtagh, 2001). Just because a mobile phone can be used everywhere, does not mean it is appropriate to take calls in meetings, or even in specific train carriages. The mobile phone is still a very corperal tool.

Much of dealing with mobile work was therefore "managing decorporalisation", keeping it and feelings of detachment at bay. A number of the mobile workers we spoke to would phone into the office – just to "*check what was going on*", or would make a habit of calling around their colleagues on a regular basis so as to maintain contacts with each other. In addition they would use access other people at the fixed office to carry out activities that were very much tied to the fixed office base. For example, colleagues would read emails out to some mobile workers over the phone or would read physical letters over the phone. In addition they would sometimes phone the office to ask for documents to be faxed or letters sent. In this way, the mobile workers were dependent on fixed aspects of the office place by proxy – they required other people their in order to facilitate their own decorporalisation. Likewise PAs and secretaries to these workers would often be a fixed point of call in a fixed place that acted as a base through which people could make contact with the mobile workers. It was devices such as these that managed the connections between individuals that made mobile work possible, and tamed decorporalisation. In this sense, to ask if mobile work is virtual is simply to ask the wrong question; mobile work is different, it does not loose its corporeality, but rather than corporeality becomes something that has to be explicitly managed. Mobile work is thus embodied and placeful, yet also distant and strained.

Conclusion

In this paper we have attempted to analyse some of the practices of mobile workers, and in particular how these works differ from their less mobile colleagues. In doing so we have sought to draw attention to the individual's practices of work. In particular we have focused on the *mechanisms* by which the mobile workers organise their actions, both as individuals and to co-ordinate their activities with others. By focusing on the details of these mechanisms one can better understand the complexity of mobile work and the challenges it presented to the workers we studied. Along with our focus on details of practice we have attempted a dialogue with grander theory, through our impressionistic use of Lefebvre and Castells. This is perhaps an unusual mix, although one we feel is productive in exploring mobile work.

There were four broad areas through which we discussed our data. Firstly, we discussed how mobile workers are influenced by the places in which they work and the artefacts and relationships which are possible in those places. We then discussed how mobile workers change places, and in particular how they appropriate new places as possible for work. Thirdly we discussed the role time plays in mobile work, and how structures in co-ordination take on an important role for workers. Lastly, we discussed the role of decorporalisation, and in particular how decorporalisation is not just an abstract concept but also something that must be managed in a day-to-day way for mobile work.

In this paper we hope we have shown that it is not simply interesting to note various technologies at use, but to know *how* specific technologies they were used in the organisation of their work. In particular, we can see how the spatial nature of mobile work is crucial (Brown and Perry, 2002; Perry et al, 2001), and how the management of places became something of vital importance to doing mobile work successfully. As workers become increasingly mobile this emphasise the importance of studying the role which place and space have for work, and how systematic understanding of that role could assist the redesign of work.

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