Creative vs Non-Creative: The Role of (Flexible) Working Practices on Travel Demand

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Abstract: The shape of the economy and the nature of work is changing and this will have implications for the demand for travel. Knowledge, innovation and creativity have recently been identified as powerful economic drivers in the US and Europe. In the UK for example, the creative industries subsector has grown significantly in recent years in spite of the well documented economic downturn. Creative workers are said to have greater access to increased flexibility in terms of their working hours and working location, than other professions, and this study hypotheses that work structure has an important impact on how people travel to work. This article, through analysis of 29 in-depth semi-structured interviews with workers within the creative and non-creative industries, examines the elements of participant's working practices that contribute towards creating the demand for travel and what effect flexibility has on the opportunities for both shifting and reducing travel demand. The most significant findings show that the potential to work flexibly does allow for working from home and time shifting but there is no difference between industries studied because of other factors.

Keywords: flexible working practices, flexibility, creativity, travel demand, time-space fixity

1. Introduction and background

The change in the size, scope and nature of employment is likely to have an important influence on commute travel. Varieties of factors are contributing, or have contributed to, such change; most notably the economic recession of 2008 and the widespread introduction of information and communication technologies into society. Further to this, there have been significant declines in employment within both manufacturing and agriculture, accompanied by increases in business services activities and real estate (Stehrer and Ward, 2012, Storrie et al., 2012). This changing nature of the economy and technology is not only influencing what work is done, but where, when and how work is done. Moreover, working practices in many organisations have also been transitioning to enable employee's access to flexible working practices (Kelliher and Anderson, 2009).

From a transport perspective, there has been around two decades of work conducted looking at the impacts of telecommuting, a form of flexible working that promotes home-working. The research broadly examines three issues; the extent to which telecommuting relaxes spatial constraints and results in longer travel (Kim et al., 2015, Zhu, 2013, Zhu, 2012), the extent to which it allows for the retiming of journeys away from peak times (Olszewski and Mokhtarian, 1994, Mokhtarian et al., 1995, Mokhtarian and Salomon, 1997, Kim et al., 2012), and the extent to which flexible working practices and the introduction of ICTs have impacted upon travel to work and commuting (Brewer, 1998, Viswanathan and Goulias, 2001, Ben-Elia et al., 2014, Kim et al., 2015). In addition to the transport focus of telecommuting, Allen et al. (2015) asked 'How effective is telecommuting?' in a wide-ranging critical synthesis of the telecommuting literature, concluding that the practice has widespread benefits at individual, organisational and societal levels.

ICTs have been found to weaken links between activities, places and time (Kwan and Dijst, 2002, Schwanen et al., 2006, Schwanen and Kwan, 2008, Hubers et al., 2008). However, little work has been conducted into the elements of work that constrain people's time and location, and in turn may induce/create the demand to travel. Research into space-time fixity constraints, the binding of certain activities to specific place(s) and moment(s) in time, has experienced somewhat of a resurgence recently. This is exemplified by Schwanen and Dijst (2003) who assume that activities at home and work are important determinants of an individual's path through time and space. Doherty (2006) calls for a challenge to the usefulness of traditional activity types in understanding travel behaviour, searching for more salient attributes of activities that serve to better explain this behaviour.

Building on the literature above, this article will discuss, through a comparison between creative and non-creative professionals, the elements of work that are considered 'fixed' and what effects these fixed elements have on the demand for travel. The paper will then continue and finish by discussing the role of flexible working practices in shifting and reducing travel demand, utilising data from 29 in-depth interviews. Before reaching this point, this paper will explore what flexible working is and introduce a rationale for using a comparison between creative and non-creative workers, along with the hypotheses and methodology used.

1.1. What is flexible working?

Whilst the literature identifies multiple facets of flexible working there is no agreed definition. Two key elements are temporal and spatial flexibility. This separation is highlighted by several studies that highlight only the spatial or temporal influences of flexibility, for example Yeraguntla and Bhat (2005) whom define flexibility as *'the ease to which an employee can arrive 30-45 minutes late to work'* (p.237). Further definitions concerning the temporal nature of flexibility are found in work by Baldock and Hadlow (2004), where they discuss a *'flexible work schedule' and define this as 'an employee's ability to choose when to start and end work on a given day'* (p.511). Moen et al. (2008) then theorise 'control over work time', defined as '*employee's degree of flexibility and choice over the time, timing, and sometimes location of their work*', and see it as an important complement to the traditional concept of job control (p.416). In addition, Schieman and Young (2010) introduce another term into the literature; schedule control. The authors explain how schedule control entails the degree to which workers have control of the start and/or finish time of their work and is more specifically related to an individual's capacity to determine the temporal parameters of their work. Furthermore, Schieman and Glavin (2008) explain how '*schedule control, or the 'temporal flexibility in work schedules'* involves the extent that individuals are able to select the times they start and/or finish work'. In addition, they contrast this to '*job autonomy, which involves the extent that individuals have the freedom to decide when, where, and how their work gets done*' (p.592). In addition to conventional flexibility, job autonomy would therefore seem to include the control over how work is done.

Schedule control has been approached from a different angle by Kelly and Moen (2007),as they define schedule control as '*the ability to determine when one works, where when works, and perhaps how many hours one works*' (p.491). In a later paper, the authors define schedule control '*as the employee's sense of latitude or control regarding the timing of their work, the number of hours they work, and the location where they work, which affects their commuting time and total time away from home*' (Kelly et al., 2011, p.267). Discussing considerations for the spatial aspects of 'flexibility' from the literature is of importance, especially given that where one works may have considerable impacts or effects on daily schedules and decisions. As an initial example, Schieman and Glavin (2008) define flexibility as '*the degree to which work duties are allowed to be performed outside the usual spatial and temporal arrangements of the workplace*' (p.591). Furthermore, Rau (2003), defines 'flexible work arrangements' (yet another term) as '*alternative work options that allow work to be accomplished outside of the traditional temporal and/or spatial boundaries of a standard workday*'.

There are of course some subjective phrases in this definition; the first being 'alternative work options'; and the second 'standard workday'. One therefore assumes that the traditional temporal and spatial boundaries of a standard working day are those characterised by single location, 9-5 working. Kelly and Moen (2007) introduce 'flexible work arrangements' into the equation, and describe how these are '*practices that vary along a continuum from very minimal flexibility (e.g. the ability to request a change in normal hours once per year) to moderate flexibility (the ability to work at home occasionally with a supervisors' approval) to extensive flexibility (e.g. the ability to set one's own hours and perhaps work location with appropriate coordination with co-workers)*'. Interestingly, this is first time that the notion of co-ordination has appeared. One might suspect that co-ordination with others would be an essential part of flexibility. It is all well and good for an individual to have access to flexible working practices, but if their use of flexibility does not align with that of their colleagues, partners, clients etc., then this may cause problems for the utilisation of such flexible practices.

Moving forward from flexibility, an introduction into the 'fixities' of certain activities and responsibilities is required. Fixity relates to activities that are bound by specific times and specific places. Schwanen et al. (2008) for example, explain how '*transportation geographers commonly denote activities as fixed or flexible on the basis of their purpose or type. Roughly speaking, paid employment, education, sleep, and transporting children or other persons are considered fixed, and shopping and leisure are regarded as flexible*' (p.2110). Therefore, the concept of fixity is important to the discussion concerning flexible working practices, as an individual's flexibility may be compromised by certain 'fixed' activities, with both fixity and flexibility having potentially significant influences on a person's work and daily schedule. Schwanen et al. (2008) continue by explaining how strongly fixed activities may circumscribe responses to different urban planning initiatives, perhaps restricting freedom to use environmentally sustainable transport modes, reduce the timing of activities, or even limit the opportunities to benefit from the spatial and temporal aspects of employment flexibility and other work/life balance policies; something which may be of further consequence for employed parents. The issues regarding time shortage and mobility resources have often been repaired through the increased use of private vehicles, which allow for access to fast and convenient transportation, with an increase in potential destinations within a short distance, ultimately reducing the spatial fixity of at least some activity types (for example dropping children at school and then driving to work). The better private vehicle availability, according to the authors, reduces the rigidity of temporal constraints.

For the purposes of this article, flexibility of working practices is taken to be the ability to access and use aspects of both temporal and spatial flexibility, either separately or in tandem with one another. Such aspects temporally include the ability to influence start and end times of work and the duration of work, with spatial aspects including decisions over where work is done, be it in one or multiple workplaces or at home. Finally this article considers how work is done to be important in conceptualising the flexibility of working practices, thus includes control over schedules and meeting, for example.

1.2. Why the creative industries?

Knowledge, innovation and creativity have recently been identified as powerful economic drivers in the UK and elsewhere (particularly the US and Europe) by several authors, most notably Florida (2002). Florida, through his 'Creative Class' theory, explains that if urban areas wish to be competitive and economically successful they should be attempting to attract 'creative' people into the area. Florida's approach, as highlighted by Krätke (2010) '*starts with the assumption that 'creativity' - the ability to generate new knowledge or to convert existing knowledge into economically successful applications - is becoming an increasingly important resource for economic development*' (p.835). Thus, it is argued that the driving forces of economic development are not just technological and organizational, but human, creating a new phase of capitalist development in the process and entering an age of creativity. Moreover, human creativity is theorized as the defining feature of economic life and that systems have evolved to encourage and harness its potential because new technologies, industries, wealth and all good economic things 'flow' from it (Peck, 2005).

The creative class theory has been subject to debate and criticism since its introduction, primarily due to weaknesses in methodology, a highly affirmative conception of contemporary class society and as a justification for neoliberal development agendas through urban restructuring in favour of these 'new' elites (Peck, 2005, Krätke, 2010, Brenner and Theodore, 2002). This argument is also evident in Bontje and Musterd (2009) work, as they point out scepticism towards policies that aim to attract the creative class only benefiting such an elite of higher educated, well-paid professionals while conversely might result in a decline of other areas and possibly increase issues such as social polarisation and poverty. Further discontent can also be found towards Florida's creative class due to its vagueness in both conceptualising creativity and the grouping of occupations, of which there are three different occupational groups. Krätke (2010) however, claims that the three sub-groups offered by Florida should be disaggregated further and subdivided into five groups, with only the first two of

these having a specific relevance to regional innovation capacities. The author claims '*that the group of high-ranking professionals from finance, real estate, management and consulting do not represent a relevant driver of regional economic success, compared with the productive impact of scientifically and technologically creative occupations*' (p: 839). The UK Government define the creative industries as 'those industries which have their origin in individual creativity, skill and talent and which have the potential for wealth and job creation through the generation and exploitation of intellectual property' (Department for Culture, 2016, p.3).

The study will compare, assess and evaluate the access to and use of flexible working practices and the associated influences on travel demand of a variety of creative and non-creative occupations. This approach will enable the study to compare the practices of workers within creative occupations that are considered to be inherently more flexible and occupations that are stereotypically considered less flexible. Approaching flexibility in this manner will, it is hoped, offer an interesting comparative lens in which to view the effects of flexibility on getting to and doing work.

Building from the previous discussions regards the commute, creativity and creative industries, flexible working practices and the influences on travel demand, this article explores the hypotheses that:

- Creative professionals have greater access to flexible working practices;
- There are elements of work that constrain people both temporally and spatially; and
- The access to and use of flexible working practices have potentially important consequences for travel demand

2. Data, methodology and analysis

This article draws on data from research concerned with how flexible working practices influence travel demand. The primary source of data was in-depth interviews conducted with 29 participants whom worked within Leeds, England. Qualitative methods are useful in exploring these complexities, as they allow the research to investigate an individual's own explanations of their behaviour and reasoning in more depth than quantitative methods, and have been used extensively within travel behaviour research (see Beirão and Cabral, 2007). With this article focussing upon the role of flexible working, and the discussion above hypothesising that creative professionals have greater access to flexible working practices, this paper centres upon the comparison between a selection of supposedly creative and non-creative professions to assess how flexible working might influence travel demand. The sample comprised individuals whom work within specific professions, as outlined in Table 1 below, with each having differing access to flexible working practices. These professions are; Architects, Graphic Designers and Academics, against Accountants, Solicitors and University Support Staff. All were professionals, some employees and other employers, with a mix of full- and part-time employment, and with ages varying between 18 and 65. The sample also comprised single household, couples with and without children and both male and female respondents.

Respondents were contacted through phonebook and internet searches, personal contacts, and snowballing (asking one participant to recommend another, and so on). Interviews with participants lasted between 30 minutes and an hour, and were conducted either face-to-face in their place of work or over the phone, with variance in duration and location principally due to the participant's temporal constraints. Adopting a semi-structured interview approach (Southerton, 2006, Hitchings, 2012) and using a pre-defined interview guide, participants were asked about both their working practices and commutes. Semi-structured interviews enable more comprehensive responses to questions and provide increased scope for investigation into specific answers or questions (Clifton and Handy, 2001). Speaking about their working practices, participants were asked to explain the types of tasks conducted on a daily basis, when and where they conducted these tasks, how they did it and what technology was used to facilitate the accomplishment of the tasks. The participants were then asked to describe their flexibility, highlighting specific fixed aspects/elements of their day and who decides

their schedules and meetings, with focus upon working with colleagues and clients. In terms of their commute, participants were asked how frequently they travelled into the office; when, how long it took and how they did it, and whether there was any variance in these practices. Furthermore, there was discussion around what the participants brought with them whilst travelling and the main determinants of route, time and mode chosen.

In order to gain further background information on the participants, they were asked to complete a short question sheet at the beginning of the interview, which included some socio-demographic travel data, such as; age, gender, occupation and role, highest educational qualification attained, household characteristics, car ownership, distance and duration to work and number of stops to/from work and why.

Creative	Access to Flexibility?		Non-Creative	Access to Flexibility?	
	Spatial	Temporal		Spatial	Temporal
Academic A	✓	✓	Accountant A	✓	✓
Academic B	✓	✓	Accountant B	✓	✓
Academic C	✓	✓	Accountant C	✖	✓
Academic D	✖	✓	Accountant D	✖	✓
			Accountant E	✓	✓
Architect A	✓	✓	Accountant F	✓	✓
Architect B	✓	✓	Accountant G	✖	✓
Architect C	✖	✖			
Architect D	✖	✖	Solicitor A	✓	✓
Architect E	✓	✓	Solicitor B	✖	✖
Architect F	✖	✓	Solicitor C	✖	✖
Architect G	✓	✓			
			University Support Staff A	✖	✓
Graphic Designer A	✓	✓	University Support Staff B	✖	✖
Graphic Designer B	✖	✓	University Support Staff C	✓	✓
Graphic Designer C	✖	✓	University Support Staff D	✖	✓
Graphic Designer D	✖	✓			
Totals	8/15	13/15		6/14	11/14

Table 1: Breakdown of participants by profession and self-reported access to flexibility, both spatial and temporal

The in-depth interviews were recorded and fully transcribed. The qualitative data analysis software QSR NVivo (10.0) was used to facilitate the organisation and structuring of the process of coding and aid in the development of relationships among concepts and ideas. The data was initially coded into themes and nodes emerging from the literature review and the data itself. The analytical process was further refined through an iterative process of comparison between the data and previous concepts within the literature. The next step involved analysing the interview texts line by line, with relevant and pertinent extracts assigned to the conceptual codes created. The second stage involved searching for relationships between the themes and codes, principally structured around those relating to (flexible) working practices and travel demand.

3. Discussion

As highlighted from previous literature, the space-time fixity constraint that binds certain activities to specific places is considered an important concept. With Schwanen et al. (2008) outlining roughly the activities that are regarded as flexible and fixed. Perhaps problematically, differences within activities are generally ignored, as Doherty (2006) questioned whether this broad categorisation approach is

useful in both understanding and modelling travel behaviour. From here, and building on Doherty's approach of looking for more 'salient attributes of activities' (p. 518), this section of the paper will introduce and examine specific elements of participant's working practices that influence travel demand, both spatially and temporally. These elements, through the use of excerpts from the interview data, will be broadly structured within two areas; the first concerning 'creating the demand for travel', and the second focussing upon 'the role of flexibility in reducing and shifting demand'.

3.1. Creating the demand for travel

As perhaps could be expected, work, and all the processes involved in doing and completing work, have degrees of fixity and flexibility attributable to them. There are expectations at play, either coming from a participant's employer or themselves, which dictate the need for their presence in the office. For example, the use of core hours (or office hours), the hours in which an employee has to be at work, plays a significant part in determining the demand for travel. University Support Staff (USS) D explains how;

> 'There is a kind of core hours approach. I think that core hours are sort of seen as like 10 while 4, you need to be around for those hours. I generally tend to do a 9 while 5, half 5 kind of day'

With Accountants B, E and G; Solicitor C; University Support Staff A, B and C; Architect D and C; and Graphic Designer D all reporting the need and expectation to be present in the workplace between specific times of the day. The process of core hours therefore constrains participants in both time and space. It would seem the particularly constraining elements of the participants whom are University Support Staff revolve around the delivery of a 'service' to colleagues and external parties. As an illustration, three of the four University Support Staff interviewed explain their service expectations and obligations;

> USS A: 'We have to man the phone, especially when there is only one person in the office. That is a new function now my office has become the reception.'

> USS C: 'I mean the standard office hours are 9-5, and as a research office we are providing a service… but we are basically providing a service, so we do cover for each other… you know because we can get people just, if you were like in a business, we can get people just walking in off the street and say 'oh by the way, I am putting in a research bid and the deadline is tomorrow lunchtime', and then we generally deal with that sort of thing. So if you are not about then there is a diminishing of the service that you provide.'

> USS D: 'I think face to face you get a lot more out of it. Because what I do is a support service, you have to build a relationship and build trust with them so they will involve them in what they are doing and you will get more, and that only happens when you have a personal relationship and you are there when they need you, so I think being in a support service makes you a lot more adaptive to things in that sort of way.'

In terms of expectations placed upon themselves, Academic D and Graphic Designer D explain how they set their own constraints in terms of work, both in space and time, and these expectations heavily dictate when and where they conduct their work. Academic D for example is cautious of ensuring that separation from work is taken, and that he 'cannot treat this job like his PhD', and so getting to work at a certain time and leaving at a certain time – usually within peak hours – is undertaken to cement that 'work' feeling;

> 'I need to treat it, I cannot treat this job like I did my PhD, and I need to treat it like a job, and if I'm going to treat it like a job, although it's got the flexibility of being an academic, I need to treat it like a job, so I need to get to work at a certain time and leave at a certain time to help me ensure that… because of the vagueness of what I am actually doing you can work all the time basically… so you treat it like a job and take breaks.'

Moving on from expectations surrounding service and working hours, seniority seems to play a key role in determining the presence of participants within the workplace, with supervision requirements in particular providing a platform for constraints. Numerous participants reported supervision to be a key component of their role and as such felt obliged to be present within the office, be it to help resolve any issues that may arise or provide guidance and support to colleagues. Accountant A provides a detailed account of why he feels the need to be in the office, not only as part of a social setting, but for legal requirements and training needs. Perhaps interesting, prior to his colleague being around (employed by the company), Accountant A felt little expectation to be in the office and would frequently work at home, or use his home as a base from which he attended client meetings. The process of employing his colleague has therefore meant that the pressure and obligation placed upon him to travel into the office on a daily basis has risen, and so too has his travel demand.

> *'I think part coming to work is in all honesty having my colleague around. The social aspect of it. So it is coming in, prior to her being around, I would spend quite a lot more time at home… because she has been under training, she needs help, she needs guidance, and it is the social aspect of work isn't it. I still feel the pressure to come in, because I am responsible to supervising their work, and you can't get around that. I'm legally obliged to, and insurance obliged to supervise their work.'*

Architect A, Accountant C and F, Graphic Designer A, and Solicitor A all reported elements of supervision and control expected and required from them as part of their role, and therefore a presence was required within the office. However, the extent to which presence was required in the office differed between participants, as the use of technology for the purposes of supervision struck a contrasting figure. Architect A and Accountant F were able to manage their supervisory responsibilities effectively whilst away from the office, however others did not find this process as complimentary or easy to manage. Accountant A for example felt that due to the software and technology being used to complete both his own and his colleagues work, it would be easier to sit down at the computer screen and work through any issues that have arisen more effectively than through the use of technologies such as Skype or the telephone. Graphic Designer A (GD A) and Solicitor A (S A) also considered speed and effectiveness key elements in their supervisory roles, and contributed to their desire to be present within the office;

> *GD A: 'Obviously staff are in and I need to be in because when I am questions get answered faster and things like that.'*

> *S A: I have got to be here to some extent, because I have got to supervise people. Especially the junior lawyers who need help when doing things because they can't do everything because they are not as experienced and need assistance and help… I do have to be here. Otherwise there is no point having an office then. The supervision side of it is one of the reasons why we need to have an office… It is more difficult with the junior lawyers, because they need more supervision from the senior people, and you can't really give that effectively at a distance.*

Other elements that have arisen from the interviews that create the demand for travel include the use of particular facilities located within the office, be that the need to print material or have access to specific documents, drawings and/or technologies. Architect C for example was very constrained spatially in terms of where they could conduct their work, principally due to the need to access a computer within the office, accompanying drawings and the printer, among other 'things';

> *'Interviewer: Are there any reasons for you having to be in the office?*
> *Architect C: Just the type of work I am doing. It is all on the computer so I need to have access to a computer.*
> *Interviewer: And do you not think you would be able to do that at home with the correct software?*

> *Architect C: Not necessarily, no. I need to have access to drawings that we have in the office. Also, things like the printer and things like that. So I am actually quite constrained in where I can work.'*

Requiring access to certain, sometimes confidential, materials was echoed by Solicitor C whom described the ease of conducting their work whilst in the office due to this access and the difficulty of transporting large files and documents away from the office;

> *'Files. That we have to be very careful with due to confidentiality. And if they are huge files, I am going to have to struggle. It is very hard for me to do really [work from home], because I have big files, we are more or less paper based… in fairness to my employer I have been offered the option of doing some home working, I have been offered a Blackberry, but I don't think it is possible It is much easier here… any files that were too big they stayed in the office and I just did them there.'*

Co-presence, 'the degree to which an actor perceives mutual entrainment' (Campos-Castillo and Hitlin, 2013, p.171), has been implicit throughout the majority of this discussion so far, as it subsumed within the practice of 'doing' work, particularly through face-to-face meetings - of which the majority of the participants were actively engaged in. Very few instances of explicit co-presence have been identifiable from the data, however a couple examples introduced below highlight the possible difficulties faced when trying to reduce travel demand for the journey to work. More explicitly, Architect G elucidates how;

> *'I think it is working in an open plan office and being interactive a lot. It is not like you are in a cellular office cut off from everyone, you are chatting about with each other about the various jobs and bouncing ideas off each other and if you have got a query you don't know the answer to you just ask someone. I find it a lot harder to work at home, so it is a lot better for us to come in and you know work together really. We can solve problems together as well. Things like communication side of it when I am at home I can log on to my computer and work, we are all on mobile phones now, so that isn't an issue, it is more that it is best to be with all the other guys to sort of, so we can question each other and get a bit of advice and things like that.'*

Accountant C presented similar sentiments;

> *'As I say it is what I achieve, I achieve through interaction with other people here. The truth is now, maybe a few years ago it was quite important to me [to work at home], but now it doesn't bother me. I am quite happy to come into the office and to get people to make me cups of tea and people treat me with respect, so being here is quite pleasant.'*

Aside from the constraints and expectations discussed above, meetings are perhaps the most defining elements of a participant's working day and were portrayed as essential components of a working day. The extent to which the scheduling, duration and location of meetings differed for each participant, as did the compulsory nature of particular meetings. Academic D gives a succinct explanation as to the critical nature of these meetings and a definite obligation to attend particular meetings, especially those relating to project work and involving colleagues whom are senior to him;

> *'When you do the face-to-face you get everyone round the table, so there's a quality if you are going to be there, everyone is going to put the work in… So I think the meeting quality is enhanced, and in particular it is enhanced because the face to face and also enhanced because they are so infrequent because you know they are going to be there, so there is a hyper awareness that any decisions we are going to make need to be there, and that is interesting… Oh yeah, there's more of any obligation, I mean if you don't go, you need to go. I mean it is an obligation by definition, but I don't think obligation is strong enough. It's like yeah, particularly if everyone goes there, but there is usually always one that doesn't make it, but if all 4 are going to make it, then it's like yeah you need to be there.'*

Client meetings, certainly for the architects, accountants, solicitors and graphic designers play a key role in not only defining travel demand into the office, but also travel between locations, be those site visits, court hearings, photoshoots, account discussions, and so on. Meetings are definitely a key component to every participant's day and although telephone communication and video conferencing technology use has risen in recent years, a large proportion of the meetings conducted by participants revolve around the co-presence and interaction of certain people in certain locations, again increasing the propensity for time-space constraints upon a participants' day. Figure 1 below illustrates participant's control over when and where meetings take place. The interpretation of meeting control is based upon participants' own reported experiences of scheduling meetings when asked during what proportion of meetings they took part in during the previous week did they determine both the timing and location of. Further to this, participants were also asked whom, if it wasn't them, decided and scheduled the meetings they were involved in. As an example, Academic A can '*always negotiate times and days for meetings*', whilst Architect C has the majority of their meetings prescribed to them, with organisation very much from a client perspective, i.e. when and where fits the client best.

> *'Yeah, they are already pre-organised in advance and I just turn up... It is all sort of from the client point of view.'*
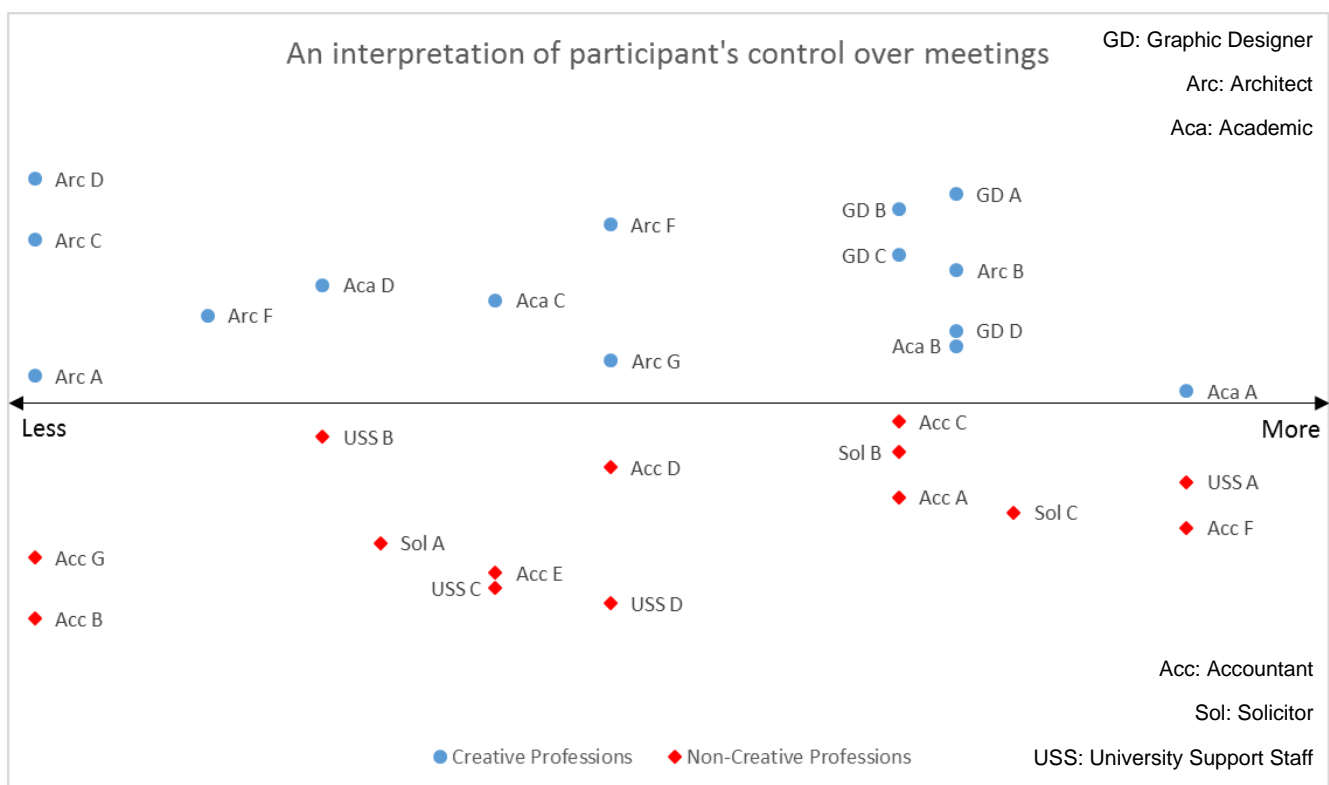

Figure 1: An interpretation of participant's own control over the scheduling and location of meetings.

Figure 1 (above) is a representation of participant's own self-reported control over meetings. The chart illustrates, one-directionally along the horizontal axis, the variation in this control. The positioning of the points on the graph are for illustrative purposes only. As can be seen, there is very little difference between the Creative and Non-Creative participants in terms of meeting control, which perhaps shows that whilst individuals may have access to greater control over their schedules and in organising meetings, it is not necessarily an attribute of purely creative or non-creative occupations. Interestingly, many of the architects are clustered having less control over their meetings, attributable to their requirements to attend site visits, client meetings, training sessions and internal project meetings. If we contrast this with the graphic designers, whom are all clustered in having access to

more control over their meetings, one could infer that the nature of the work provides an explanation as to the difference, in that the graphic designers interviewed had fewer structured meetings, and of those meetings very few required movement away from the office, compared with numerous site visits attended by the majority of the architects interviewed.

3.2. The role of flexibility in reducing and shifting demand

Having investigated the elements of work that create the demand for travel, this section of the discussion will introduce examples of when and how participants utilised their access to flexibility, either shifting demand to travel temporally or reducing their demand by spatially altering where they conducted their work. The piece will also introduce elements of their work that facilitated this shift and/or reduction in demand, principally through the use of technology. Revisiting Table 1 illustrates that there is little disparity between the creative and non-creative participants interviewed in access to both spatial and temporal flexibility, with this slight disparity reflected in the use of flexibility to shift demand temporally and reduce demand spatially, principally through working from home. Table 2 below shows these similarities between the creative and non-creative participants in the use of flexibility to shift and/or reduce demand.

Examples of:	**Temporally shifting demand**	**Spatially shifting demand**
Non-creative:	- Accountant A, B, D and E - Solicitors A and C - University Support Staff A, C and D	- Accountants B and F - Solicitor A - University Support Staff C
Creative:	- Architects B, E, F and G - Graphic Designers A, B, C and D	- Academics A, B and C - Architects A and B - Graphic Designer A

Table 2: The participants whom utilised their access to flexibility to either shift demand temporally or reduce demand through spatial relocation, i.e. working from home

Beginning with the use of temporal flexibility, Accountant A and Solicitor A both exhibited occasions when travelling outside the peak, principally to avoid the traffic encountered whilst travelling during the peak. Both participants did some work whilst at home before travelling, however this did not negate their need to travel into the office, it just allowed them to 'beat' the rush-hour and the traffic. Accountant A for example said;

> *'I start usually at 6. Yeah so quite an early starter. Mostly that is to avoid traffic, if I'm honest. Partly because I am an early starter. So I do some work at home and then travel in but I always try to avoid the rush hour, because life is too short to be stuck in the rush hour. Yeah so that is kind of a conscious decision to avoid the traffic.'*

Solicitor A echoed these sentiments, although his avoidance of the rush-hour is borne out of his want to keep fit and go swimming before work in the morning. On these occasions the participant explains that;

> *'I'll try and go for a swim at 7 o'clock 3 days a week. And if I can I will do that, well I do it near home, and go to the pool, quick half hour in the pool, then set off to work. But if I do that, I am automatically opening myself up to being stuck in traffic. So if I do that, what I'll tend to do is,*

> *I'll come back from the pool, have some breakfast, I might do a bit of work at home, and then I come in when the rush hour is over. Which might be, I might leave at 9 or something like that... I've got some flexibility, so I use it. But I don't like sitting in traffic. I hate it.'*

Doing work either side of the day is something that Architect B advocated, to ensure 'focus time' to do some work on his own and not be interrupted by colleagues. This approach often led to him '*come in early and go home late to just have those two hours, an hour or so either side to do some stuff on my own, be it at home or in the office.*'

One process evident throughout the use of temporal flexibility was the concept of 'making up' time that had been lost or replaced due to starting later. A number of participants reported using flexibility in this way, to both arrive later and leave later, or arrive earlier in order to finish earlier and usually complete personal tasks, such as going to the dentists or doing some shopping in the city centre, as evidenced by Graphic Designer D, University Support Staff C, Solicitor C, Architect E and Academic D. These processes therefore enable the participants to shift their demand outside of the peak and contribute to reducing the burden on the network. However, with the use of temporally flexible working practices by just over half the participants, there is still a large proportion of participants that need to travel at peak times. Architects E and F explain how owning and running the architecture firm themselves allows them to have flexibility over when they start and leave;

> Architect E: *'The benefits of doing a company yourself is the flexibility, because I can choose if I have got a dental appointment I can just walk out and get it sorted. If I have a hangover I can turn up a little bit late in the morning and make it up at some other time… I will say sort of I will come it tomorrow at 10 o'clock and leave at say 6 half 6.'*

> Architect F: *'It is very flexible. With us owning it ourselves we can come in at like, we say 9 till half past 5, yet today I have come in at half 9, so I will leave at 6. Or I will leave at 5 o'clock and tomorrow I am just going to work an extra hour and a half.'*

It is very much a case of 'getting the work done' and providing that the tasks are completed and the work finished at the end of the day, it would seem that there is little difference in being a creative or non-creative worker in the use of temporal flexibility. Accountant B and University Support Staff A exhibit this approach, whilst Graphic Designer A explains how, even though he may arrive up to an hour past 9am on some days, he '*makes sure I am doing my hours'*, and Architect G shares this approach by noting that '*if we do the overall hours a week, we are not bothered… so basically if the work gets done, we don't have a problem'*, in reference to both his colleagues and himself utilising temporal flexibility in their start and finish times. University Support Staff D explains that '*nothing is going to drop dead'* if they arrive half an hour late due to a delay in travelling in on the bus, and that apologies would be made and time made back up, usually by working half an hour later that day. In addition, and uniquely, Accountant D combined his use of temporal flexibility with the reduction in travel demand later in the week;

> *'When I was working in Manchester, they were on flexi-time anyway, once I had been there a while I said to them 'this is hard work to me' so I would rather do extended hours, so I would set off early and set off late back, so I would do 10 hour days, or whatever it was 9 and a quarter hour days, instead of 7, and then I would just have Friday off, which also missed all the traffic you see. So if you went in early you would miss all the traffic. If I set off at 8 o'clock I am only going to get there for half 9, quarter to 10, so setting off early helped me miss the traffic.'*

Moving on from Accountant D's flexibility use to focus more prominently upon the reduction of travel demand due to the use of spatial flexibility, Accountants A and B (whilst working together) had an interesting approach to the reduction in travel demand, albeit for just Accountant B. This approach centred upon when Accountant A was either out of the office visiting clients and/or delivering training sessions, or in meetings all day, then Accountant B could work from home, as the process of supervision and training would be negated by Accountant A being unavailable. In his own words,

Accountant A explains how this process works and his feelings towards his colleague working at home;

> *'I am very happy if she wants to work from home. So there are some days where being involved in this business here, this company, I will come in and I will have meetings in here from 9 until you know sort of 1 o'clock, and then in the afternoon I will be with other businesses where I might need to, typically I think it is Tuesday, frequently I will be in meetings in here in the morning and then meetings all afternoon over in Wetherby. What is the point in her coming in as I will just be like 'hi how are you' and in some ways I give her complete flexibility to work here or work at home. We speak on the phone, we email, and I think the thing is there is a trust issue around that. Definitely a trust issue. And its given time. And you know I feel we have got a fair balance. I say 'well work from home and manage your hours'. And that's generally how I feel about it. I know she won't rip me off and I am not going to rip her off.'*

In the subsequent interview, Accountant B then confirms this practice by explaining that when her boss is not in the office she does not need to be in the office and often works from home. She then goes on to note that because of the laptop they use she can work anywhere, appreciating her boss allowing her '*to manage my own time, he has trust and faith in me. It works, I really like it.*'

The majority of the academics interviewed (3/4) have access to and used spatial flexibility, and meant that work was conducted on a regular basis from home. Therefore, travel demand for Academics A, B and C was significantly reduced as the spatial constraints were perhaps not as great as other participants, with the number of meetings lower and the need for face-to-face interaction and co-presence in the office not as important or essential as other professions. Academic C for example frequently works from home twice a week, Thursday and Friday, as this is when meetings rarely occur and is when focussed writing is conducted. This approach is somewhat reflected by Solicitor A, whom works from home when it is more 'efficient' to do, usually when there is a client meeting elsewhere than near the office in Leeds city centre and thus does some work at home and then travels to the meeting from home. Though not completely reducing the demand for travel, working from home for part of the day has been found to temporally displace one or both commute trips (Lyons and Haddad, 2008), with Solicitor A often scheduling his meetings for later times in the day. Accountant E and F both exercised periods of working from home, but were constrained by commitments in their diaries, as discussed previously. Accountant F in particular tries to work from home as and when he is allowed the time to do so, explaining how he '*doesn't need to go into the office every day and keeps in constant contact with the office*' (assisted by having a PA there), but needs to go in to 'catch up on odd things', done on an ad-hoc basis. Further to this, he continues by outlining how his time at home is scheduled;

> *'It is definitely ad-hoc and on odd days. With me it is usually two days, but could be three, however my diary is so full, so if it is a full day at home even then I may be going out for a meeting or an event, like for example today I am going out to a craft brewer's that I am involved with this evening, so I use it to mainly catch up on emails and thinking time. You know, normally the whole day is full and my diary ahead is pretty full as well. So that is how it happens really.'*

As a final example as to how spatial flexibility is exercised, Architect A is frequently split between different locations; home, an office in London, an office in Birmingham and client meetings. Typically, he is London three days a week, principally for internal meetings, which he uses the train from Leeds to access. The other two days, usually Monday and Friday, are spent either working at home, in the Birmingham office, or visiting clients for project meetings and site visits, with these locations usually arising from the client's demands. This approach, although not conducive to demand reduction every week, still enables Architect A to reduce demand for a proportion of the week through home working. The way in which the participant works and travels would not have been available if it was not for the current 'arrangement' with his employer, which perhaps has only been realised due to his importance,

status and seniority within the organisation as a director and the modest size of the Leeds office (currently being run solely).

4. Concluding Remarks – Creating demand and the role of flexible working practices on travel demand

It was proposed that a deeper consideration and understanding of the elements that constrain people's working practices was required, principally to examine the key components that create the demand to travel to work. To this end, it was found that several elements constrain the working days of participants both temporally and spatially and impact upon their use of flexible working practices. Importantly, limited disparity was found between creative and non-creative professions in access to flexible working practices, with a majority of all respondents having access to temporal flexibility and around half access to spatial flexibility. Furthermore, it was identified throughout that access to and use of flexible working practices have potentially important consequences on travel demand, with examples of both shifting demand temporally and reducing demand spatially introduced. These processes are not revolutionary, as have been highlighted previously in the literature, though what is Interesting is to consider these processes normalised. Thinking in this way raises questions as to the future scope of flexible working in shifting and/or reducing travel demand. The fact that the structure of work remains a dominant feature and working hours still matter to the organisation of people's days suggests the limitations of these processes could restrict any further growth in reducing and/or shifting travel demand. Further research investigating these future limitations is required, principally to improve understanding, but also contribute to finding new processes that may help shift and/or reduce demand when the limitations of the current processes are reached.

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