

## **THE USE AND VALUE OF TRAVEL TIME**

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### **Abstract**

This paper, focused primarily on UK data and debates, considers the potential significance of travel time use within past, present and future patterns of mobility. In transport scheme appraisal, savings in travel time typically represent a substantial proportion of the benefits of a scheme – benefits used to justify its often enormous financial costs. Such benefits are founded on the assumption that travel time is unproductive, wasted time ‘in-between’ ‘real’ activities and which should be minimised. Travel demand analysis treats travel time and activity time as separate.

The paper challenges these approaches by exploring how travel time can be, and is, being used ‘productively’ as activity time, and what enhancements to time use are emerging in the ‘information age’. Recent research from the UK is drawn upon to examine the degree to which some work activities are undertaken ‘on the move’, the increasing range of friendship, leisure and fun activities also occurring while moving, and the important communications that take place in movement including arrangements concerning the nature and form of ‘meetings’.

These various developments have implications for future levels of mobility, for the modal distribution of travel, for the validity of current transport appraisal methodology, and for undermining the conventional divide between transport *and* communications.

## THE USE AND VALUE OF TRAVEL TIME

‘Today my favourite kind of atmosphere is the airport atmosphere... Airplaces and airports have my favourite kind of food service, my favourite kind of bathrooms, my favourite peppermint Life Savers, my favourite kinds of entertainment, my favourite loudspeaker address systems, my favourite conveyor belts, my favourite graphics and colors, the best security checks, the best views, the best perfume shops, the best employees, and the best optimism’ Andy Warhol (*From A to B*, 1976: 145)

### **Growing mobilities**

This paper focuses primarily on UK data and debates and considers the potential significance of travel time use within past, present and future patterns of mobility. In appraisals of future transport schemes it is conventionally presumed that travel time is unproductive, wasted time that lies ‘in-between’ ‘real’ activities and should be minimised. Travel demand analysis treats travel time and activity time as separate and hence tends to support investments that minimise future travel time. In this paper most of these assumptions are challenged through drawing on a range of UK Government and social science materials. We begin with some data on the awesome growth and scale of contemporary (domestic) travel.

Personal travel in the UK across modes, when measured in billion passenger kilometres, increased from 218 in 1952 to 728 in 1999, with a rise of 7 percent in the last decade (DETR, 2001a). Between 1972 and 2000 (see Table 1) the average annual distance travelled per person in the UK increased by 53 per cent. Over the same period the number of trips increased by only 8 per cent and the time spent making these trips by only 2 per cent (DTLR, 2001). The average time spent travelling averaged across the population appears stable at around one hour per person per day (although see Mokhtarian and Chen, 2003, and below). It is increases in journey speed (achieved by changing modes or because of improvements to the transport system) that enable

people to travel further – expanding their spatial access to other people, goods, services and opportunities.

**Table 1: Distance, trips and hours travelled per person per year: 1965 to 1998/2000 (DTLR, 2001)**

Year	Distance	travelled	Number of trips			Time taken	Average trip length
	(miles)		All	Trips of	or	(hours)	(miles)
	All	Trips	All	1		All trips	All trips
	trips	of 1 mile	trips	mile	or		
		or more		more			
1965	-	3,660	-	584		-	-
1972/1973	4,476	4,357	956	594		353	4.7
1975/1976	4,740	4,638	935	659		330	5.1
1978/1979	4,946	4,828	1,097	736		376	4.5
1985/1986	5,317	5,192	1,024	689		337	5.2
1989/1991	6,475	6,353	1,091	771		370	5.9
1992/1994	6,439	6,322	1,053	742		359	6.1
1995/1997	6,666	6,553	1,052	758		355	6.3
1998/2000	6,843	6,749	1,030	768		360	6.6

Most of this increased travel results from much greater use of the car. In terms of total domestic distance travelled, car travel accounted for 85 per cent of the total, compared with 6 per cent for rail and 1 per cent for air (in 2001). However, in terms of the increase in travel by each mode, 1991-2001, car travel grew 7 per cent, rail travel increased 21 per cent and air travel 60 per cent (DfT, 2002). This suggests that as road congestion worsens, the trend to ‘further and faster’ is bolstered by faster modes of rail and air. This appears to be supported by the UK Government’s £180 billion ten-year investment Plan for transport for which “The vision is for journeys that are quicker and more convenient by making it easier to switch between different forms of transport” (DETR, 2000a). The aim of the Plan, whilst not to prevent road traffic growth, is to reduce congestion. Yet Goodwin suggests that if the targets of the Plan are achieved: ‘a motorist who travelled the same 10,000 miles a year in 2000 and 2010 would save nearly a minute a day, though in practice much of this saving would actually be spent on slightly longer average journey distances’ (see Goodwin, 2001, for his aptly entitled critique, *Running to Stand Still*).

There are huge environmental and social consequences of such large-scale movement. More people and goods travelling further and faster generates greater consumption of natural resources.

Globally, transport accounts for one-third of total carbon dioxide emissions. It is the fastest growing source of greenhouse emissions, and there is limited likelihood of this abating with especially the growth of car and lorry travel within China. Many other 'environmental' consequences also follow, of noise, smells, medical costs, reduced air quality, ozone effects, visual deterioration, increased obesity and so on (see Adams' critique of 'hypermobility', 1999; Whitelegg 1997).

Moreover, referring to increases in the distance the *average* person travels masks the growing disparity between the mobility-rich and mobility-poor (Adams, 1999). The mobility-poor cannot afford higher levels of movement since their spatial access is constrained by the limited distances afforded by walking, cycling and local public transport (see Cass, Shove, Urry 2003; Raje, 2003, on the gender and ethnic implications). Such access is eroded by land use changes that arise from the mobility-rich having the greater spatial range afforded by cars, high speed trains and planes (but see Froud, Johal, Leaver, Williams, 2003, on the 'motoring poor'). Those able to afford mobility can overcome, for example, the loss of local amenities unlike those suffering mobility-related social exclusion whose plight is at risk of becoming progressively worse (Kenyon et al, 2002).

However, these analyses of the economic, environmental and social consequences of travel ignore a black box in the argument, namely the travel time itself. This paper tries to prise open this black box by assessing what are the amounts, the value and the uses of travel time. What do people do while they are on the move, what are these activities, how are activities and travelling increasingly intertwined? Is it any longer correct to regard the time of travelling as dead time, as empty or is it being increasingly filled? And if it is what does this imply for the thesis of a constant travel time budget and for the appraisal of transport expenditures organised around the economic benefits involved in minimising 'dead' travel time?

## **Travel time budget**

It is claimed that: ‘People spend somewhat more than one hour per day travelling, on average (travel time budget), despite widely differing transportation infrastructures, geographies, cultures and per capita income levels’ (Schafer, 1998: 459). The notion that a travel time budget is stable over time and space and independent of modes of travel remains subject to much debate. The notion itself was recognised at least as far back as the 1970s and much empirical work seeks to confirm the phenomenon (see Mokhtarian and Chen, 2003, for an extensive review). The appeal of a fixed travel time budget is that it can aid the accuracy of projections of future (total) mobility and the share taken by each mode. Moreover, if a limit to journey speed can be reached or can be enforced, then it suggests that total mobility (in terms of distance travelled) within a given society might eventually plateau. This could have very positive environmental and social benefits.

However, it is clear that the constancy of such a travel time budget only at best applies at the aggregate level. Once behaviour is disaggregated then large variations become apparent. For example, Londoners spend 30 per cent more time travelling than those living in Scotland (Schafer and Victor 2000: 174). Overall the richer the person or the city, the greater the likely time that will be spent ‘on the move’ (see Höjer and Mattson, 2000). An alternative hypothesis has thus been offered by Mokhtarian and Salomon who argue: ‘Rather than uniformly trying to minimise travel, people seek to decrease their travel if it exceeds the desired optimum, but seek to increase travel if it falls short of their ideal amount’ (2001: 712). Later in this paper we consider how activities undertaken while travelling may transform the sense of what counts as an optimal journey time (for example if like Andy Warhol it involves visiting an airport!).

We now turn to consider briefly the crucial way that travel time is regarded within systems of transport appraisal.

## **Appraising Transport Schemes**

Transport system interventions typically involve intentional changes to the capacity, availability and usage cost of the transport network. Historically, interventions have most

commonly concerned the building of new infrastructure, notably new highway construction (see Vigar, 2000, on the politics of this in the UK). Before proceeding with an intervention, it must be appraised. In 1998 the New Approach to Appraisal was developed in the UK (NATA – DETR, 1998). Appraisal involves five objectives of environment, safety, economy, accessibility and integration, and is largely based on two components, the Cost Benefit Analysis (CBA) and the Environmental Impact Assessment (EIA). In 2000 the UK Government produced its ‘Guidance on the Methodology for Multi-Modal Studies’ that sets out a revised version of NATA (GOMMMS – DETR, 2000b).

In such appraisals, the calculation of transport user benefits and disbenefits is based on: changes in travel time; changes in user charges, including fares, tariffs and tolls; and changes in vehicle operating costs met by the user (DETR, 2000b). In an investigation into links between transport and the economy it was importantly noted that: ‘Travel time savings are the single most important component in the measured transport benefits/disbenefits of most schemes and policies. Hence the methods of valuing them critically affect the measurement of the economic impacts of schemes’ (DETR, 1999: 183).

How then is travel time valued? It is assumed that: ‘time spent travelling during the working day is a cost to the employer’s business. It is assumed that savings in travel time convert non-productive time to productive use and that, in a free labour market, the value of an individual’s working time to the economy is reflected in the wage rate paid’ (DETR, 2000b). GOMMMS further notes that: ‘changes in travel time on employer’s business are valued the same whatever the stage of the journey is involved, i.e. there is no weighting applied to take account of the reluctance of passengers to walk to/from or wait for transport services. This is because the time spent or saved is assumed to be lost or gained in productive working time – the travel activity taking up the time is therefore deemed irrelevant’ (DETR, 2000b). Values of time disaggregated by modal group are used in such appraisals and are based upon National Travel Survey data of the incomes of working travellers that use each mode.

For non-working time, including travelling to and from work, values are used that reflect people's willingness to trade time for money. Values are determined from the many revealed and stated preference studies (see Wardman and Mackie, 1997). Willingness to pay will depend on various factors such as the traveller's income, the value and urgency attached to the journey purpose and the comfort and attractiveness of the journey. However, to avoid significant equity implications, and a bias towards measures that benefit travellers with higher incomes, a standard 'national average' value is used. Unlike valuation of travel time during work, for non-work journeys: 'waiting for public transport and all walking and cycling (whether in connection with a journey by a motorised mode or not) should adopt a value which is double the standard in-vehicle value' (DETR, 2000b). The majority of journeys take place in non-working time and consequently 'time savings to travellers in their own time typically make up a large proportion of the benefits of transport investment' (DETR, 2000b).

This approach to the treatment of the valuation of travel time in appraisal 'has been the practice in the UK since the earliest transport cost benefit analyses in the 1960s' (DETR, 1999:161). The latest values of travel time are shown in Table 2.

**Table 2: Values of Time per Person (£/hour, average 1998 values) (taken from the Transport Economics Note: DETR, 2001c)**

	Resource Cost (£/hour)
<b>Working Time:</b>	
car driver	17.44
car passenger	13.69
PSV (bus) passenger	11.09
taxi passenger	23.74
rail passenger	25.17
underground passenger	21.15
walker	24.01
cyclist	11.98
motorcyclist	9.41
<b>Non-Working Time:</b>	
standard appraisal value	4.52

This interpretation of the value of travel time has significantly shaped the current UK transport system, justifying much expenditure especially on trunk roads because of the high value placed upon saving the 'waste' of dead travel time (see Lyons 2003, for further documentation).

### **Travel time *and* activity time**

The treatment of travel time in UK appraisals straightforwardly identifies travel as wasted time *and* as discrete from the activities undertaken which give rise to travel. Traditionally, modelling approaches, whilst incorporating differences in the behavioural valuation of time, treat the time spent travelling in isolation from time spent undertaking activities. In other words a trip-based approach is adopted. However, more than 20 years ago the alternative activity-based approach was developed, based on the idea that travel demand arises, or is derived, from the desire or need to participate in activities. 'T[t]he development of the activity-based approach to travel demand analysis is characterized by a desire to understand the phenomenon of urban travel, not merely to develop predictive models that appear to produce acceptable forecasts' (Pas, 1996). The activity-based approach acknowledges that daily patterns of travel are shaped around and dictated by the concurrent planning of activity schedules. Nevertheless, this approach too treats travel time and activity time as separate notions, albeit with some assumed interdependencies.

Schwanen and Dijst examine the relationship between travel time and activity duration, or more specifically the relationship between commuting time and work duration (based on the 1998 Dutch National Travel Survey: Schwanen and Dijst, 2002). The assumption is that individuals balance travel time and activity duration leading to the notion of a planned or realised travel-time ratio, defined as 'the ratio between travel time and the sum of travel time and activity duration'. Whilst an average travel-time ratio is determined from their research, variation around the average value is considerable. The authors nevertheless believe that a maximum tolerable travel-time ratio exists for workplace visits; they suggest that: 'for individuals visiting the workplace for more than 4 hours, the maximum travel-time ratio may be at a level of 0.20-0.25. In other words, individuals in the longer term might not be prepared to spend more than one-fourth of time available for



commuting and working on travelling to and from the workplace’ (Schwanen and Dijst, 2002: 590). Table 3 shows the overall values of travel-time ratio by mode. What is noticeable is that people accept considerably higher travel-time ratios when travelling by public transport compared with travelling by car.

**Table 3: Travel-time ratio concerning commuting time and work duration by mode (Schwanen and Dijst, 2002)**

Mode of travel to/from work	Travel-time ratio
car driver	0.111
car passenger	0.107
bus/tram/metro	0.159
train	0.222
bicycle	0.073
walking	0.050

This suggests that many people are using some travel time, by train, bus and maybe car, to undertake activities, thereby blurring the boundaries between travel time and activity time. The ‘cost’ to the individual of travel time is reduced as travel time is converted into activity time. In turn, at the aggregate level, less of the travel time budget is used and this enables longer distances to be travelled or encourages greater use of modes (some public transport) that may enable en-route activities to be undertaken effectively.

Mokhtarian and Salomon provide a significant contribution to analysing travel time use in the US (2001; and see Salomon and Mokhtarian, 1997). They suggest that positive utility is gained from one or more of three elements of a journey to a given destination: ‘1. the activities conducted at the destination; 2. activities that can be conducted while travelling; 3. the activity of travelling itself’ (Mokhtarian and Salomon (2001: 701). The first element adheres to conventional wisdom in transport modelling and appraisal, that ideally the individual traveller would forego travelling to the destination if this were at all possible. The second element reflects the potential utility of activities that can be undertaken while on the move. Mokhtarian and Salomon note how some

examples of this might be ‘anti-activity’ (‘the ability to use the time for relaxing or thinking, including “shifting gears” mentally between origin and destination activities and roles’: 2001: 702). The third element is: ‘a consequence of intrinsic aspects of travel itself...the sensation of speed, movement through and exposure to the environment, the scenic beauty or other attraction of a route’ (Mokhtarian and Salomon, 2001: 703; see Featherstone, Thrift, Urry, 2004, on the pleasures of speed, movement and emotion involved in car driving). They argue that ‘excess travel’ is that resulting from the second and third elements.

Interestingly while Mokhtarian and Salomon point to the difficulty of being able to disentangle the three elements and to identify their relative weightings, their survey showed that: ‘nearly half [of respondents] disagree that travel time is generally wasted time. More than a third see their commute trip as a useful transition, and use that time productively. With respect to travelling itself, more than two-thirds of the respondents disagree that “the only good thing about travelling is arriving at your destination”, and nearly half agree that “getting there is half the fun”’ (Mokhtarian and Salomon, 2001:709; there were 1900 respondents).

Within the UK, research for the campaigning organisation Transport 2000 into UK rail considered the potential economic value of rail journeys for business travel if some travel time was productively used (2002). In 2001 nearly 200 million business and personal business trips were made by rail. The study conservatively assumes that: ‘every rail business traveller on strategic routes undertakes one hour of productive work on each business journey – a not unreasonable assumption given that a typical rail journey from Newcastle to London will take 3 hours, Manchester to London 2 ½ hours and Cardiff to London 2 hours’ (Transport 2000, 2002). Based on this assumption, the value to the economy of this work time would be £731m per year. However, the study highlights the problem of overcrowding (at certain times of day and on certain routes): ‘Estimates put the total seating capacity of trains into London in the morning peak at about 355,000. This indicates the excess of passengers over seating (2000 figures) at 111,900 – about 32%’ (Transport 2000, 2002). More generally this highlights the importance of the design and the

‘affordances’ of different forms of transport, and of how robust those are at different times of the day or week or year.

We deal below with how much of that work on the move will involve laptops and other communication devices, but it is important also to recognise paper-work. Sellen and Harper have documented in detail what they term *The Myth of the Paperless Office* (2001). They show that even (especially?) in the offices of those working in 'high tech' there is an enduring importance of paper documents. By implication working on and with paper documents will also be important for those working ‘on the move’, provided of course that the materialities of the mode of transport permit effective and secure working of those pieces of paper.

### **Travelling in the Information Age**

The following ‘tale of middle class life’ illustrates some changes taking place in the balance between ‘travelling’ and ‘activities’, changes facilitated through new devices for accessing, storing and transmitting information and communications.

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#### **Figure 1: A past and future scenario of the evening commute as the information age advances**

**1990** John’s 8 mile drive home from work is a journey which takes at most 35 minutes. Thoughts about work and listening to the Drive Time radio show help pass the time. A typical weekday evening sees him arrive home at 6.00pm in time to watch the national news on TV before enjoying a gin and tonic and a chat about the day’s events with his wife (who works part-time). He deals with a few bits of paperwork before settling into a good book for half an hour. He then helps his wife with the remaining preparations for a pleasant evening meal. The evening consists of watching national TV, consulting some holiday brochures and phoning another couple on the landline to check on the whereabouts of their children.

**2005** John's place of work is no longer a convenient car journey away. Having moved job again he now has a 90-minute train journey to get home each evening. The train departs at 5.30pm. He switches on his laptop computer complete with TV receiver and watches the news. Half an hour later he calls his wife on the mobile, who is herself journeying home. They compare information about respective times of arrival, referring to real time information that each can access. Out with the gin and tonic to accompany sending some work-related and personal emails and then the journey is over. 15 minutes later he pulls the car into the drive having collected a takeaway meal for two ordered by mobile phone during the train journey. His wife returns a bit later. They talk as they eat about journey times and computer crashes. They relax in the TV room watching a DVD, they listen to music downloaded from the internet, they check future flights on the internet and they send and receive pictures and messages on their 3G phones. Their children regularly interrupt the evening with phone, text and pictures to indicate where they are and when and how they will return. When one child fails to reply to a text within a short period, anxiety levels rise dramatically. Overall new salaries pay for longer journeys and the new communication devices that compensate for not having to move house and home and which a life of instantaneous and personal scheduling and of all family members seems to demand.

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That this is not far fetched stems from the pervasive growth of a new economic-technological paradigm (see Castells, 1996, 2000, 2001, on the information age). Information/communication technologies (including genetic engineering) are the basis of the new paradigm that developed in the 1970s and 1980s, beginning in north America but now gone global. The main properties of this paradigm are that the building blocks are bits of electronically transmitted information; ICT technologies are pervasive since information has become integral to almost all forms of human practice; there are complex and temporally unpredictable patterns of informational development occurring in a distributed fashion in specific localities; technologies are organised through loosely organised and flexibly changing networks; different technologies gradually converge into

integrated informational systems; and instantaneous flows of information are the precondition for social life at least of the more prosperous and especially for those 'on the move'.

Thus the internet has gone global, with 16m users in 1995, 400m users in early 2001, and a projected 1 billion by 2005 (Castells 2001: 3). Information on the internet is doubling every few months (Brand 1999: 14, 87). It enables horizontal communications that cannot be effectively surveilled, controlled or censored by national societies. Ever-new computer networks and links proliferate, mostly in unplanned and mixed patterns. Knowledge was once physically rooted in specific form (the manuscript, the book, the map), located in particular places (archives, museums and libraries) and embodied within the minds of certain people (scholars, archivists, mapmakers: Brand 1999: chap 12). But knowledge is now transmutating into digitised information (Featherstone 2000). This change can be appreciated through a shifting metaphor of travel, from the stationary, wooden, fixed 'desk' occupied by the individual scholar, to the ephemeral, mobile and interchangeable 'desktop' occupied by anyone (with the right password). With digitisation, information adopts patterns of mobility substantially separate from material presence (Hayles, 1999: 18-20). Information is everywhere (and nowhere), travelling (more or less) instantaneously along the fluid networks of global communications.

Until recently these sources of information were accessed through large, cumbersome and relatively immobile computers. They sat menacingly in the corner of offices and then homes, they had many leads trailing out the back, and they had to be visited in order to work. They were like the TV, large, weighty and fixed in place. But this is rapidly changing as laptops, palmtops, PDAs, WAP, WiFi and 3G phones have dramatically increased their capabilities and affordability. As people are on the move, so increasingly the distinction between home and away becomes blurred since people can be said to dwell within mobilities. Cars, planes and rail carriages increasingly contain screens, as the provision of computing for those on the move is becoming commonplace amongst airport and train operators. Mobile communications increasingly support 'life on the move' (89% of the UK population now own a mobile: Peters 2004). Social science research shows the complex patterns of how mobile communications now enable people simultaneously to move,

to access information and to communicate with those both far away and significantly those nearby as well (see Peters, 2004; Brown, Green, Harper 2002). Indeed such technologies are increasingly invisible, prostheses, that are taken for granted, ready to hand, part of the background for a mobile, modern, connected life with others. And indeed this ready-to-handness of these machines means that even tiny slithers of time can be made 'productive' as people are running and grimacing (Sherry and Salvador, 2002). They provide what Jain explores as the significance of 'equipped waiting' (2003). In such a communications blizzard it makes no sense to imagine that travelling *and* undertaking activities are distinct and separate, and that an unambiguous value can be placed upon discrete travelling time.

We will now illustrate this further by considering the most unlikely of travel modes for consideration here, the car and its capacity to stimulate 'excess travel'.

### **Travelling by and living in the car**

A car is not just a means of travel and comparing cars with buses, trains, planes and ships is partly to make a category mistake. Being in a car is in part being in a place of dwelling or inhabiting, not just of travel and the spending of travel time (see Sheller and Urry, 2000, for the following). Those within a car are able, not only to prevent the smells and sounds of the road outside from entering the car, but also to produce an environment in which a sociability or solitude can occur. Car-drivers control the social mix in their car just like homeowners control those visiting their home. The car is a place to perform business, romance, family, friendship, crime, fantasy and so on. Unlike 'public' transport, the car facilitates a domestic mode of dwelling. The hybrid 'car-driver' is surrounded by control systems that simulate the domestic environment, a home from home moving flexibly and riskily through strange and dangerous environments. As one respondent in research conducted by Bull expressed it: 'You and your car are one thing and that's it and that's your space. Outside it's different. You're in your time-capsule, it's like your living room, your mobile living room' (2000: 17). The car is a sanctuary, a zone of protection, however

slender, between oneself and that dangerous world of other cars, and between the places of departure and arrival (see Mokhtarian and Salomon, 2001: 702, on 'carcooning').

Central to carcooning is the soundscape of the car, as new technologies of the radio, the cassette player, the CD player and now the TV screen increasingly ensure that this mobile home is filled with sound. The car enables a purer immersion in those sounds, as the voices and the sound of music are there, in the car, travelling right with one as the most dangerous places on earth are negotiated. Stockfeld describes the car as 'the most ubiquitous concert hall and the "bathroom" of our time' as sounds are privatised out of the context in which they are produced (quoted Bull 2000: 4). Acoustic design permits drivers to experience the immersive qualities of sound. Thus one respondent declared: 'I don't like not having music. I love driving my car. I've got an MXS (convertible). It's the only way to drive...I change the music. If it's a nice sunny day it's more old time jazz or something quite up and happy, some really good chirpy classical - it's nice and loud - in my car I've got speakers in the headrest, so although it's quite loud it's not very intrusive for everybody else' (Jane, quoted Bull 2004). Music and voices in the car fills the space. Drivers can co-ordinate the soundscape of the automobile to match their mood or journey. The management of experience through sound technologies is tied to control. Thus some respondents reported their preference for driving alone, so as to more effectively appropriate their time. Immersion in sound is enhanced by sole occupancy so as to manage their environment, mood, thoughts, space and the pleasures of travel time (see Bull, 2004; Putnam 2000, reports that 70 percent of American car journeys involve 'driving alone').

Moreover, at the beginning of this new century, a further shift is occurring towards the intelligent car. As information is digitised and released from location, so cars, roads, and buildings have been rewired to send and receive digital information - for example in the building of 'Intelligent Transport Systems' (see Graham and Marvin, 2001). Until now this information has been mainly for traffic control or car and road safety, through computer-assisted operation control systems, dynamic route guidance, and traffic information systems. However, more significant is the development of transformed vehicles, smaller, lighter, smarter, information-rich,

communication-enhanced, enabling email, messaging, mobile banking and electronic shopping, with place specific and real time messages being sent and received. Cars are being hybridised with the converging technologies of the mobile telephone, the personal entertainment system and the computer.

Some of these features can also be seen in research into 'mobile offices'. Laurier and Philo examine how work activities that were once mainly carried out in offices can now be conducted in company cars functioning as mobile offices (2001; their study involved only women workers). The car is transformed into an office through its combination with the mobile phone, as well as using the car as a place for files, papers, storage and so on. Work materials can be synchronized and connected to other company members while 'on the road'. The mobile is regularly used to rearrange the day as traffic impedes the smooth planned for series of meetings and encounters, involving a 'playful opportunism'. And even traffic jams can be used to make phone-calls, preparing for subsequent meetings. Team working is achieved by the skilful use of mobile telephony so as to maintain connections both with those back at the office (including making meeting arrangements, dictating letters and so on), as well as with others on the road and with whom a 'meeting' might be possible to arrange. Often these face-to-face meetings are held in the many 'thirdspaces' lying along the road network, coffee shops, service stations, cafes, pubs, restaurants and so on.

These mobile workers are thus on each day, driving, listening, communicating, gossiping, scheduling and rescheduling meetings, downloading information, meeting up, moving on, building networks, planning the next meeting and coordinating a complex choreography in time-space. Activities and traveling flow into one another. They are not separate in time or space.

### **Traveling and Meeting**

We now describe how some of these features are found more widely across modes of travel and new patterns of a mobile (working) life. First, we should note how travel to meetings typically



involves longer distances than say shopping and education. Table 4 shows that business travel accounts for only 3 per cent of trips in the UK but 10 per cent of total distance travelled.

**Table 4: Distance and trips per person per year by journey purpose (1999/2001) (DfT, 2002)**

	Distance (miles)	% of total distance	Trips	% of all trips	Mean trip length (miles)
Commuting	1324	19	156	15	8.5
Business	710	10	35	3	20.3
Education	200	3	67	7	3.0
Escort education	104	2	47	5	2.2
Shopping	893	13	214	21	4.2
Other escort	426	6	82	8	5.2
Other personal business	477	7	105	10	4.5
Visiting friends at home	1152	17	133	13	8.7
Visiting friends elsewhere	246	4	46	5	5.3
Sport/entertainment	456	7	62	6	7.4
Holidays/day trips	777	11	29	3	26.8
Other, including just walk	51	1	44	4	1.2
All purposes	6815	100	1019	100	6.7

We now examine some studies of different kinds of ‘businesses’ and their travel, beginning with recent research of new media workers in central London (Wittel 2001). It was found that for them work and play increasingly overlap, with workplaces being designed to look like play places and leisure places being sites for much work. Times of play, times of work and times of travel are not tightly drawn. For these media workers the categories of friend/workmate merge into and cross one to the other. This sociality is embedded in communication and transportation. Wittel summarizes: ‘It is a sociality that is based on the use of cars, trains, buses and the underground, of airplanes, taxis and hotels, and it is based on phones, faxes, answering machines, voicemail, video-conferencing, mobiles, email, chat rooms, discussion forums, mailing lists and web sites’ (2001: 69). Travel normally involves he argues some complex mix of what is nominally work as distinguished from leisure.

Indeed more generally people have to spend much time in planning and sustaining contacts that are often a mix of work and friendship (see Axhausen 2002). PricewaterhouseCoopers describe the growth of new ‘nomadic networkers’ (2000), while Tully argues on the basis of German research

that networking characterises young people's experiences since: 'mobility and communication play a prominent role in the way young people organize their everyday lives' (2002: 20). Other recent research shows the significance of mobile telephony for doing, behaving and seeing the world, changing the character of contemporary work. Kakihara and Sørensen describe the development of 'post-modern' professional work (2003). This they describe as operationally mobile, often forming and reforming into various project teams; it is locationally mobile since it involves work done in often many different locations; and it is interactionally mobile in that it involves many kinds and forms of fluid, collective working. The Henley Centre thus describes how Britain is a place of networks and networking, a 'connecting economy'. Since 'few of us actually make anything: we have meetings, we make presentations, we encourage people' and hence 'our work is based on the influence we have over our networks' especially through meetings (Justin Worsley, Associate Director, quoted *Leisure Week*, June 15<sup>th</sup>, 2000).

Much travel time is thus about meetings, with friends, family, workmates, professional colleagues, with one's network; and often these meetings take place in the increasingly large number of places that are neither 'home' nor 'work' and get arranged while on the move (see Urry, 2002, 2003, on the following). Meetings are complex encounters, 'ritual affairs, tribal gatherings in which the faithful reaffirm solidarity and warring factions engage in verbal battles ... When in doubt call a meeting. When one meeting isn't enough, schedule another' (Boden 1994: 81). Beyond the making of decisions, meetings stabilise one's network through spreading trust, demonstrate 'presentism', see how one is heard, execute procedures and duties, distribute rewards, status and blame, reinforce friendship, judge commitment, have fun with colleagues, and so on. Meetings entail *travel* by some or even all of the participants with many meetings held on 'neutral' territory. Boden writes: 'The drums beat and from far and near the chosen foregather, face-to-face across the shiny table' (1994: 82).

And our point here is that there are many kinds of meetings: team meetings, romantic candlelit dinner, work colleagues collaborating, a group of old friends, extended family members, chance encounters with similar-minded people, special interest group meetings and so on. The location

chosen has to be highly appropriate. Not just adequate but distinct, the 'special' place to be revisited and recommended, in terms of the kind of food/drink, the ambience, the standard of accommodation, timetable of meals, the capacity to be productive and so on. The main activity of most meetings is conversation, with many events being 'multi-functional', combining some or all of friendship, family, holiday-making, leisure and business/work.

Travel places are increasingly significant places of meeting, the travel is part of the activity. Thus airports are increasingly 'destinations' in their own right (see Jarach 2001, on their multiple services). Doyle and Nathan describe how hyper mobility has set off an explosive growth in airport hotels that they describe as small but perfectly formed conference centres, allowing travellers to stay put, stay over and do their 'business' (2001). Business trips are anyway becoming shorter and involve a greater precision of timing, scheduling and coordination. Doyle and Nathan note both the decrease in the average length of the business trip and in the length of the overseas assignments (2002: 6). One consequence is often that: 'Airports and airplanes will be, increasingly, temporary offices for senior people, who, ironically, will spend more time on the road [sic] as a result of better communications' (Cairncross, 1997: 237).

Another way that work and leisure increasingly overlap is in the development of teleworking. 7.4% of UK workers describe themselves as 'teleworkers', either all of the week or for part of each week. Teleworking is increasing most rapidly amongst those who possess or have access to an 'office' at their place of work (Reeves 2002). Employees may live further from their workplace but such workplaces will be intermittently visited. They are visited because: 'the opportunity to socialise with work peers is a key factor in job satisfaction. Work is about companionship as well as compensation' (Reeves 2002). Indeed this pattern of intermittent teleworking is changing the character of workplaces themselves, shifting away from that of the formal 'office' occupied for 'work' from 9-5, to more of a 'club' where informal conversation, brainstorming and gossip are the main activities. Cairncross projects this as likely for many professional employees: 'Some offices have become a bit like clubs, in which employees can talk, brainstorm, meet people and catch up on gossip' (Cairncross 2002: 41; 1998). New office buildings are often designed around

such a 'club space', while workers who are endlessly 'on the road' can by contrast find the lack of such 'club conversation' a source of frustration (Laurier and Philo 2001). More generally cities are having to make themselves centres of meetingness, places designed for co-present meetings and hence for travelling to (see Amin and Thrift, 2002).

## **Conclusions**

There are many issues yet to be resolved with regard to the nature of travel time, some necessitating new kinds of research. *Inter alia* this will involve determining the material nature of travelling activity. Does it involve working on documents or a screen, or communicating at a distance, or talking face-to-face or making arrangements or playing games/doing puzzles or reading book/magazine and so on? How is this organised and structured and how does this constitute a set of activities on the move?

In conclusion we return to the policy issues in the light of the empirical materials outlined. First, the notion of productive travel time use existed a long time before the information age. People read books and magazines, wrote letters, played games and socialised on trains during the age of steam (see Richards and Mackenzie, 1986). However, contemporary evidence from the UK (and elsewhere) does suggest the following: there are substantial increases in these productive uses, these uses are increasingly diverse and intertwined with new communication technologies, much 'work' concerns making and stabilising networks, travel results in meetings located in many different locations for different purposes and not just a single activity at *the* destination, spaces are being designed as meeting places for people 'on the go'; and there is in the sense specified above a fair amount of 'excess travel'.

So given all that, what happens to the value of travelling time for appraising newly proposed transport schemes and innovations? At one extreme, travel time might be so productively used that no time is wasted and hence the benefit of any saved travel time from some new investment would be zero. Any degree of excess travel reduces the economic benefit, given the cost remains unchanged. Consequently a scheme that, under the current appraisal framework, showed a benefit-

cost ratio of greater than one, might, when taking account of excess travel, show a benefit-cost ratio less than one. The result would be that the investment does not occur (or not in the way proposed). Since we have seen that such 'excess travel' characterises car and non-car modes then this might apply to both new roads and other infrastructures not going ahead.

Furthermore in current transport scheme appraisal, commuting is not thought to take place within an employee's work time. The authors though are aware of someone who agreed to change offices within his company provided that he had first class rail travel and his working day would be deemed to have begun immediately he boarded the train. Clearly many people work during the journey to or from work. The research by Schwanen and Dijst seems to suggest that individuals commuting by rail have proportionally longer journeys in relation to the time they spend at work than individuals using other modes (2002). Therefore it may be that employers and employees are already blurring the accepted boundary between commute time and time spent at work. To some degree this would further raise issues concerning appraisal – if the working day begins when one boards the train then it cannot be appropriate to class such time as non-work time and substantially reduce its value. It also means that productive use of travel time is enlarging the long hours work culture in the UK.

If employers formally acknowledged that commuting by collective transport enabled equivalent work per unit of time to be undertaken during the journey as would be completed at work, then this would massively improve staff morale and retention through offsetting long hours in the UK (compared with the rest of Europe). It might also shift the choice of travel mode for such commuting. An employee with a one hour commute each way by rail might be entitled to class the two hours of travel as part of their eight-hour working day. That same employee would lose two hours of non-work time each weekday if they travelled to work by car. This could then prove a powerful incentive for modal change, although the shift might be to very cheap air travel and anyway we noted above some very productive car workers.

Developing the notion that travel time can be productive might also have a long term impact analogous to part-time homeworking, namely to encourage urban sprawl and to trigger workplace

or home relocations resulting in longer journey distances, so that one can really get stuck into the work task! Ever increasing mobility could of course be deemed undesirable both environmentally and socially as well as being a source (if unchecked) of greater inequality and exclusion. We might then suggest that travel time should not be put to productive use since this could lengthen journey times. This would restore the attraction of accessing centres of 'activity' that are in closer proximity to places of residence.

Yet it would seem foolish to encourage people to waste time in this way since wasted time cannot be recycled (time is therefore not necessarily like money). What would be desirable would be discouraging the 'reinvestment' of travel time, which has been converted into activity time, by travelling further and for longer periods. The most evident means of discouragement is increasing the economic cost of travel, particularly excess travel. Yet this could make collective modes that facilitate excess travel (even) more expensive than car travel.

The expanding extent, range and scale of the uses of travel time in the emerging 'information age' thus yields many complex conceptual, empirical and policy debates and dilemmas. It seems that our attempts hitherto to simplify (or trivialise?), categorise, measure and value travel and activities in support of policy formulation and evaluation might themselves now require a thorough reappraisal.

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