Changing infrastructures, measuring socio-spatial inclusion/exclusion

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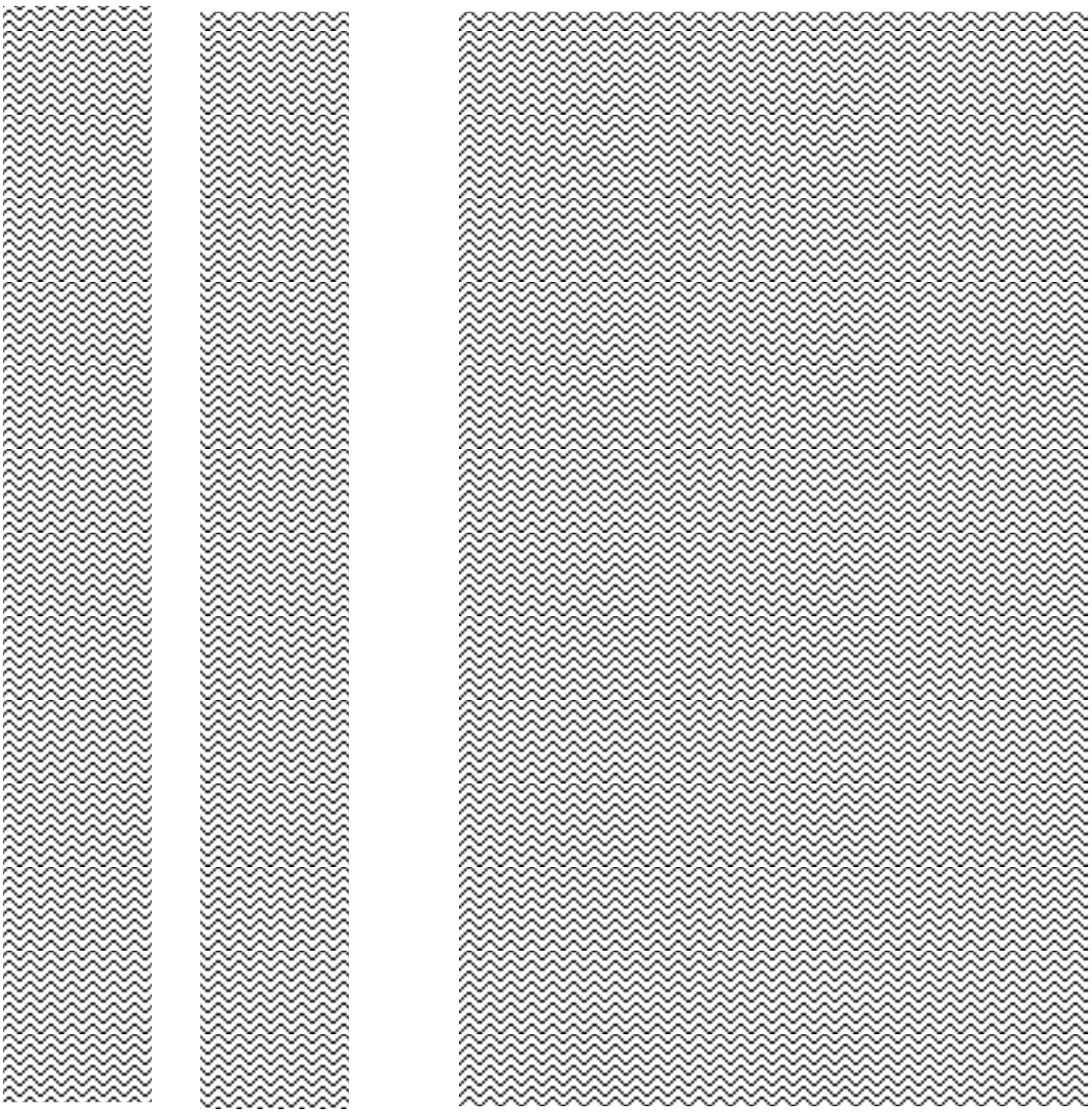

Final Report **April 2003**

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Chapter 1 Summary and discussion

1.1 Introduction

The purpose of this project was two fold. One aim was to develop and test methods that local authorities might adopt in assessing and thinking about socio-spatial inclusion/exclusion in anticipation of the introduction and impact of road user charging or work place parking levies. Given concern that such measures might have a disproportionate impact on those already disadvantaged in socio-spatial terms, how might the specifically spatial aspects of social exclusion be defined, measured and monitored? And how might the impact of congestion charging schemes be assessed in these terms? A second aim was to draw in and develop recent work on the connections between mobility and social exclusion in order to enrich analysis of the relation between different kinds of socio-spatial access and forms of social exclusion. By socio-spatial we refer to those forms of inclusion/exclusion that are specifically related to access and mobility.

The final report of the CHIME project is in eight chapters. This first chapter provides an overview and summary of the project as a whole and isolates the main findings and conclusions.

Chapter two looks at how local authorities currently conceptualise and address socio-spatial inclusion and exclusion. Chapter three takes a step back and introduces and elaborates on a three-part model of socio-spatial inclusion/exclusion that provides the basic 'framework' around which our methodological 'experiments' are organised. In essence, the model defines and represents socio-spatial inclusion/exclusion an emergent property of interaction between a) social obligation and associated requirements for proximity and mobility, b) individual resources, for example, of time and money and c) the physical infrastructure, for example, of roads, buses, parking spaces, etc. Building on this idea we explore methods of measuring or at least taking stock of each element of this 'system'.

Before putting these ideas to work we reflect and elaborate on two core aspects of socio-spatial inclusion/exclusion, namely the temporal dimension (chapter 4) and the meaning of access (chapter 5). Having reviewed and synthesised contemporary thinking about both these features, we move on to the more practical part of our work.

Chapters 6, 7, and 8 report on the results of three methodological experiments, each designed to examine aspects of socio-spatial inclusion/exclusion. The first of these studies, 'measuring the effects of workplace charging' has two functions. One is to show what might be learned about the potential impact of a work place parking levy through interviewing people who have in common the fact that they are employed by the same organisation. Our study of a new car-parking regime at Birmingham University has the further effect of revealing much about how individuals mobilise and juggle resources in organising and configuring routine journeys to (and around) work.

Chapter 7, on 'measuring the temporal and spatial dimensions of access' explores ways of representing 'accessibility' in specific parts of the country through the use of existing and readily available data: bus timetables, maps, the census, and indices of deprivation. This exercise, based in county Durham, identifies some of the practical problems involved in capturing and adequately representing the physical infrastructure and its consequences for the structuring of socio-spatial inclusion/exclusion. While it is possible to produce generic accounts of the physical infrastructure, of the provision of public transport, and of the socio-

demographic characteristics of particular populations, this tells us little about peoples' ability to fulfil their socio-spatial obligations.

Chapter 8, 'revealing exclusion through provision' again addresses several questions at once. By concentrating on the use and uptake of two recent 'innovations' - specifically, an urban and a rural demand responsive transport scheme - we show how these initiatives have the partly unintended effect of revealing 'stifled' or 'blocked' demand, thereby shedding some light on questions left open at the end of chapter 7. This chapter also evaluates the potential of another lightweight strategy for 'measuring' socio-spatial inclusion/exclusion, here involving interviews with the users of demand responsive schemes. In terms of policy and practice, this exercise has the further effect of underlining the highly contextual nature of impact: quite what a demand responsive scheme does depends very much on the situation in which it is introduced, and on the fine-detail of alternative options on offer.

Together, these chapters have a number of practical and theoretical implications for future efforts to assess and measure socio-spatial inclusion and exclusion. Before setting these out, we summarise the main insights and conclusions arising from the different parts of the project, starting with a preliminary review of how socio-spatial inclusion/exclusion is currently addressed within local authorities.

1.2 Local authorities and current concepts of socio-spatial inclusion/exclusion

The CHIME project was designed to devise and test methods for measuring socio-spatial inclusion/exclusion that would be both viable and relevant for local authorities. In order to set the scene, we undertook a brief review of how selected local authorities are currently thinking about socio-spatial inclusion/exclusion. In this our aim was to get a sense of where questions of specifically mobility related inclusion/exclusion were 'positioned' within authorities, how these issues were defined and understood, and what consequence this had for practical measures and strategies to address or alleviate associated problems.

The picture that emerged through discussion with eight officers from four local authorities was remarkably consistent. As an 'issue', socio-spatial inclusion/exclusion evidently had its roots in central government initiatives and in particular in the work of the social exclusion unit. Working definitions were derived from this source. Partly as a result, there was a persistent tendency to think of a) the socially excluded as a category of person and/or, b) to think of social exclusion as the property of particular geographical areas. Both representations position socio-spatial inclusion/exclusion as a fixed and definable attribute: if people or areas share certain pre-defined characteristics then they *are* socially excluded. On closer inspection, such definitions relate to a further layer of categories and associations having to do with work, education, unemployment or disability. Although we encountered other broader understandings, for instance, having to do with participation in social networks or leisure, or encompassing the view that services might be accessed in various ways (not only through physical mobility), the dominant approach was one grounded in the classification of social groups or areas. Consistent with this view, established methods of 'measuring' social inclusion and exclusion made much use of existing data such as the index of multiple deprivation, data on income, ethnicity, evidence of unemployment and so forth.

There were, however, a couple of exceptions. These are revealing in that the use of other methods of measurement indicates a more fundamental difference in the conceptualisation of inclusion and exclusion. For example, a number of respondents questioned the idea that there was such a thing as a 'mainstream' society (characterised by participation in work, education, etc.) to which everyone aspires to belong, but from which some are excluded. This prompted further debate about the underlying model of society around which discourses of socio-spatial inclusion/exclusion are built. Strategies adopted in Nottingham and Hampshire exemplify a more localised, more contextualised approach that takes account of

what 'involvement' and social inclusion means to different people and what this entails (or implies) for their mobility (see chapter 2). These exceptions aside, local authorities tended to subscribe to the view that social exclusion was an objectively identifiable, if multiple, form of deprivation. Defined in this way, the spatial dimension added to and exacerbated other inequalities relating to income, social capital, education, etc. Our review of more academic literature on specifically spatial inclusion and exclusion challenges different aspects of this interpretation.

1.3 Re-conceptualising socio-spatial exclusion/inclusion

Chapters 3, 4 and 5 review a some of the sociological literature on time, access and participation and in the process develop and explore alternative ways of conceptualising social-spatial inclusion and exclusion. This section highlights the main 'planks' of the approach that we derive from this work.

- *social networks and inclusion/exclusion*

A number of authors have underlined the relative and contextual nature of inclusion/exclusion. Rather than viewing it as a fixed attribute they argue that being included or excluded is instead a function of the groups and situations to which different people belong and/or want to be a part of, and their means to realise these ambitions. Standardised or 'external' representations of inclusion/exclusion are at risk of imposing, working with and reproducing a model of society and of social participation that may not fit at all with the ambitions and aspirations of real people in the real world. In refining a catalogue of 'compulsions to proximity' and in identifying some of the reasons why people come together in time and space, we point to the multiple social logics and pressures at play. Being part of family Christmas celebrations might, for instance, feature very highly in the experience of inclusion but not register at all in employment or education based measures of social exclusion. Equally, there will be some individuals for whom such family gatherings are of no significance, and for whom non-participation does not constitute exclusion. In other words, it is important to know something about the social networks that define the 'scene' in and from which people are potentially excluded. These networks are not arbitrary. As we notice, there is some patterning, for example, relating to the life-course and to social class, in the socio-spatial qualities of peoples' networks.

- *access, networks and infrastructures*

In writing about access (chapter 5), we refer to the notion of a 'networked' society and to the ideas of those who argue that the mobility 'burden' of effective social participation is increasing. Under this heading, we consider a range of admittedly generalised and often speculative propositions, for example, that people 'have a larger set of active contacts than in the past' (Axhausen 2002). We also acknowledge research that indicates the significance of work-related networks and in particular the importance of having an extensive array of 'weak ties' (Granovetter 1983) when searching for jobs. The array of tools and resources through which networks are constructed and maintained and through which 'access' in this wider sense is maintained is extensive. According to Axhausen (2002), the 'tools' of mobility, that is the tools that are useful in navigating social relations in space and time, now include a mobile telephone, a point of contact (answerphone or e-mail); maybe a car or resources to use a taxi; resources for longer distance journeying and so forth. In practice, exactly what is required or useful depends upon the fabric of the social and physical infrastructure in question. Access is, after all, also a function of how services, facilities and temporal rhythms are distributed and organised in society.

- *the temporal and spatial ordering of society*

We take the temporal to be at least as important as the spatial in characterising mobility-related exclusion and inclusion. In chapter 4, we pay particular attention to the collective ordering of space and time and to what this means for how individuals schedule and organise their own mobility alongside that of others. In considering the collective production of what we refer to as 'hot' and 'cold' spots of space and time - that is places and moments that are dense, crowded and congested - and the *relation* between these and those that are quieter, calmer and slower, we notice the apparently increasing importance of *flexibility.* What matters is not just the ability to get somewhere, but to do so at a moment's notice and according to your own timetable. We suggest that this development reflects a reduction in shared temporal rhythms (for example those relating to working hours, week-ends etc.) and with that an increase in the effort individuals have to invest in making connections, organising meetings and co-ordinating with others. The point here is that changes in the socio-temporal order are of consequence for the meaning and significance of personal resources and infrastructures. There is a sense, then, in which the 'distribution' of socio-spatial inclusion and exclusion has to do with the spatial and temporal organisation of society.

As others have recognised, planning and the physical configuration of places of work, residence and leisure have consequences for the amount of movement that is literally built into the system. Our discussion of the relation between the spatial and the temporal shows how rigidities (and flexibilities) are enmeshed in the fabric of the urban infrastructure and hence into peoples' lives as well. In writing about congestion and the extending of rush 'hours' we acknowledge that differences of time 'sovereignty' are important (that is the extent to which people can control their own time and that of others), and that mobility-related routines and strategies vary accordingly. Finally, we recognise that people are 'locked in' to certain spatial and temporal arrangements because of prior 'decisions' about where to live and work.

Together, these three chapters extend the range of issues to be considered when thinking about socio-spatial inclusion and exclusion. In particular, they prompt us to pay special attention to how people juggle and manage space and time, and what room for manoeuvre or flexibility they have in organising when and where they go. These are important issues in chapter 6, which reports on the impact of a new car-parking regime at Birmingham University. Chapter 7 examines the spatial-temporal characteristics of a particular segment of the public transport network, looking at how provision is distributed and organised in two areas of County Durham. Meanwhile, chapter 8, which reviews two demand responsive bus schemes, engages with questions about where it is that people want to get to and about how this relates to systems of public and private sector provision.

More abstractly, chapters 2- 5 imply that policy makers should not impose assumptions about where people want to go or about what forms of interaction constitute inclusion or exclusion. In socio-spatial terms, low-income groups may be less excluded than those who are locked into demanding routines of regular travel. There are good reasons for wanting to improve 'access' to key facilities like hospitals and places of education and work but this does not, in itself, ensure social inclusion, or at least not in the sense that people are enabled to meet what they see as their own 'obligations to proximity'. Second, these chapters draw attention to important but often obscured 'details' relating to the timing and frequency of journeys and the relative social significance of being (or not being) able to reach specific destinations at particular times of the day or night.

In appreciating the highly contextual nature of socio-spatial inclusion and exclusion we appear to be moving towards the highly impractical conclusion that each person is different and that it is impossible to reach any general assessment, let alone plan for action on the basis of this kind of reasoning. That is not the case. It is, however, true that the methods

and strategies we explore for assessing socio-spatial inclusion and exclusion suppose the impact of, for example, a new car-parking regime or a form of road user charging, to be mediated by the social and physical context in which they are introduced and further filtered by the specific resources and ambitions of those they affect. The logic here is that the socio-spatial impact of congestion charging schemes has to be *discovered* and can not anticipated in advance. To make the point again, the impact of such schemes will be filtered by the existing spatial and temporal infrastructure, and by the routines and means through which peoples' obligations to proximity are maintained and sustained.

More positively, the arguments that we review point to the need for a better understanding of peoples' social networks and of whether and how these are changing. Are there systematic differences in this respect with reference to region, social class, life course etc? The sense of being part of a more spatially dispersed network might, for instance, be confined to the mobile middle classes, or to those who have experienced social and/or geographical mobility. It is, in addition, important to think about how social networks expand and contract over the course of a life and with the addition or reduction of relevant mobility-related resources.

We go on to comment on the relation between the individual and collective structuring of time and space. Some people move house in order to be closer to the station, others commit themselves to long journey times in order to get their children into chosen schools. Such arrangements have cumulative consequences for the transport system as a whole and for the distribution of congested points in time and space. At the same time, the physical infrastructure (of roads, public transport, parking places etc.) structures the 'options' on offer, simultaneously constraining and enabling peoples' strategies and responses.

Informed by these ideas, chapters 6, 7 and 8 re-engage with the question of how local authorities might measure and assess socio-spatial exclusion - conceptualised as an emergent property of physical infrastructure, individual resources and compulsions to proximity. As outlined in chapter 2, local authorities tend to rely on existing measures of social and spatial inequality, but what is already counted is not necessarily that which counts for an understanding of socio-spatial inclusion and exclusion. The chances of devising a robust methodology that captures in workable detail, relevant data about compulsions to proximity (i.e. networks at individual or local level), resources and infrastructures are slim. We have therefore tried to design and test 'proxy' methods and measures and to develop practicable and viable strategies that provide some insight - however partial - into the distribution and quality of socio-spatial inclusion and exclusion.

1.4 Measuring socio-spatial inclusion and exclusion: three methodological experiments

The following paragraphs outline the three methodological experiments that we undertook and review the lessons learned from trying to put these techniques into practice. They also provide a summary of the substantive findings and conclusions that were drawn in each case.

- *Workplace parking and workplace interviewing*

A number of local authorities are considering the introduction of work place parking levies. On the face of it, such measures threaten to have disproportionate impact on people at the lower levels of the organisational hierarchy. One means of discovering whether this is in fact the case is to interview people from across the organisation in order to establish the differential impact of the 'same' measure (in this case the introduction of a new car parking regime), depending on peoples' financial, social and geographical situation. In addition, such a method promises to show how different members of staff have reacted and what new

strategies they adopt in response. In conducting face to face interviews, we were able to consider these strategies in context and to ask about how routine travel arrangements are organised and managed not just on an individual basis but in the context of the respondent's household as a whole. Although our interviews (with a total of twenty two respondents) focused on routine travel arrangements and journeys to work it became clear that these were organised around a range of other priorities, fitting in shopping, working while on the move, convenience, flexibility, and so on. The results are localised in the sense that they show that the impact of the scheme varies depending upon what people take to be practicable and viable options and responses. We are none the less able to draw a number of generic 'lessons' about peoples' perceptions of 'viability' and about how the new parking system was received. Observations about this aspect and about whether parking charges were accepted or viewed as a violation of 'rights' are of generic relevance for the design and implementation of other similar schemes.

In the event, we discovered relatively little systematic difference between the responses of those working in administrative or academic departments or in different 'grades' in the organisation other than with respect to time and flexibility. Those with academic jobs usually had relatively high levels of 'time sovereignty' and were able to organise their schedules and travel arrangements to suit. Those who had such flexibility were less likely to count travel arrangements that tied them to a fixed temporal routine as 'viable'. Few of those who could come and go as they liked thought of lift sharing as a plausible option.

We also discovered that travel arrangements were influenced by a combination of considerations including the weather, the predictability and duration of the journey, and the routines of other people - all of which were taken into account when evaluating the costs and benefits of different strategies. The final 'solution' was therefore one that best 'fitted' given what were often idiosyncratic complexes of priorities, pressures and possibilities.

Although this kind of interviewing is resource intensive, the ensuing conversations showed how respondents juggled between time, space, and other obligations and how they justified and explained their travel arrangements. Perceptions of what constituted plausible, reasonable and viable alternatives would not be revealed by a standard questionnaire survey, nor would the rippling or knock-on effects of the parking scheme on other members of the respondent's household. After-the-event evaluations of this kind are useful in identifying different forms of impact and in determining how effective work place parking is (in different contexts) as a means of encouraging people to adopt other modes of transport.

- *Describing access: documenting provision*

Our second method was to see if existing and readily available data might be read, interpreted and compiled in new ways so as to describe the temporal and spatial qualities of the physical infrastructure. We chose to work with Durham County Council and to concentrate our efforts on two areas - Stanley and Seaham - these being places believed to 'suffer' from different forms of social-spatial exclusion. In the course of this exercise we discovered that information about mobility and access is often assembled and gathered in order to make bids for funding. This results in a wealth of very specific surveys, each organised around the 'needs' of a specific funding opportunity, and a much more limited array of standardised and/or aggregate data. In practice understandings of local transport needs are grounded in experience and first-hand knowledge of what goes on and of which problems are faced by whom and in which locations.

In trying to devise a simple method for assessing socio-spatial inclusion and exclusion we had to make use of a set of somewhat incompatible materials (the 2002 index of multiple deprivation, the 1991 census, and contemporary bus timetables). It is important to recognise that our goal was not to reveal patches of socio-spatial inclusion/exclusion, but to see if we

could develop a method with which to capture the spatial and temporal properties of the transport infrastructure.

One option is to equate the 'access' dimension of the index of multiple deprivation with socio-spatial inclusion and exclusion. A second potentially complementary method is to examine census data on journey to work and car availability and in that way discover something about the distribution of mobility-related resources and how they are used (for journeys to work). A third strategy is to review bus routes and timetables in order to 'map' the spatial and temporal dimensions of provision and built up a picture of where people can get to by public transport at different times of the day and night. In thinking about how to put these layers of data together we were driven by the need to construct a simple 'back of the envelope' method that did not require further data analysis or complex modelling. Chapter 7 describes our deliberately limited attempt to link these different forms of data together with respect to Seaham and Stanley. Though our aim was to produce a composite 'portrait' of these places, and of a number of surrounding areas, the result was inconclusive and inconsistent.

Comparison between the census and the index of multiple deprivation pointed to wide variation, for example, in how people travelled to work within an area suffering from the same level of deprivation. This exercise also revealed significant differences between men and women's use of bus and car: differences that are disguised by the much-used index. Our next step was to consider the relation between public transport provision (through analysis of the bus timetables) and the availability and use of cars (from ten year old census data). The challenge of unpacking the spatial and temporal aspects of public transport provision was itself instructive. Though this exercise helped identify a few fairly obvious features of routes and times (for example, revealing the 6pm cut off in bus services), this is only meaningful if the destinations and times in question are, in fact, relevant and if they allow people to resolve specific 'compulsions to proximity'.

The very idea of linking different forms of data together immediately shows both the complexity of the task in hand, and the extent to which each 'measure' tells its own story. The problem is that these data-based narratives fail to add up in a way that makes sense of the real lives of those who live in and travel around these places.

- *Revealing and responding to demand: riding the bus*

In designing this project we wanted to study moments of infrastructural innovation, using these as a means of showing how travel arrangements and infrastructures co-evolve. To some extent, the introduction of the new car-parking regime at Birmingham University served this purpose. However, that study was organised around a fixed and pre-determined destination, namely the work place. Given our guiding model of socio-spatial inclusion and exclusion we were left with the problem of finding some method of discovering where it is that people want to go (and how their obligations to proximity are organised). By studying the introduction of demand responsive bus services we hoped to address both issues in one go: learning something about how new forms of provision relate to those that already exist and about the 'demand' to which these buses respond. In addition, these initiatives are especially designed to address the needs of 'excluded' people and/or geographical areas.

Our goal of testing the relevance and value of relatively low cost methodologies led us to conduct interviews with those who actually used demand responsive transport, and to do so while riding the bus. Although this presented certain methodological difficulties (having to do with short interview times, noise and interruption), this strategy worked well as a means of addressing the elusive question of 'blocked' demand. As well as providing a service, demand responsive schemes are doubly instructive in that they reveal 'need' in terms of time as well as space/destination.

Both the schemes we examined (Super 8 in Garstang and U-call in Newcastle) were inspired by policy initiatives relating to exclusion and modal shift, yet the practicalities of use and uptake were context specific. For some of those in the Garstang area, the Super 8 provided a service where none existed before. By contrast, the U-call system added to the repertoire of options available and so generated different patterns of adjustment and substitution. In both cases, the driver proved to be a key informant and a critical intermediary between 'supply' and 'demand', his or her local knowledge of routes and passengers being key to the operation of the scheme as a whole.

In analysing these schemes we consider the relation between demand responsive transport and the services provided by private bus operators, taxi companies, community transport, and friends and neighbours who give each other lifts or share cars. In suggesting that demand responsive transport schemes reveal 'markets' that other providers might then meet, we show how important it is to analyse such initiatives in context and to think about how one aspect of transport provision fits into the system as a whole. Although secondary analysis of existing data (chapter 7) fails to reveal much about how this system works in practice, chapters 6 and 8 provide some insight into how people navigate through the options on offer, and how they construct solutions and strategies given the resources and possibilities open to them.

1.5 Conclusions

This research was designed to generate, explore and test ways in which local authorities might measure socio-spatial inclusion and exclusion and thereby anticipate and assess the exclusionary impact of congestion charging schemes and related initiatives. Our aim was not to produce a blueprint for a standardised methodology but to identify a range of viable strategies and to articulate the characteristics and assumptions associated with each. If we take social-spatial inclusion/exclusion to be an emergent property of the interaction between social obligation, individual resources and physical infrastructure we have to abandon methods and approaches that define inclusion and exclusion as a pre-defined property of social groups or areas. In taking our conceptual model forward, we have sought to devise and develop methods that take due account of the full variety of social networks (not just those relating to work, health or education) to which people want to belong. We have also tried to develop methods that are sensitive to the physical and domestic contexts in which travel arrangements are made.

Our studies of Birmingham University, of Seaham and Stanley, and of Garstang and Newcastle reveal different dimensions of socio-spatial inclusion and exclusion and provide important insights into the processes involved in meeting socio-spatial obligations with a given set of resources and within specific systems and infrastructures of provision. Though each relates to a different aspect (Birmingham being about how people juggle resources of time and money; the study of Seaham and Stanley representing an effort to describe the spatial and temporal qualities of the infrastructure and the Garstang and Newcastle cases revealing something about social obligation and where people want to go) these methodological experiments do not simply add together.

In that sense, we have failed to find a simple way of mapping and measuring socio-spatial inclusion and exclusion as defined above. Not surprisingly, our definition of socio-spatial inclusion/exclusion as an *emergent* property proves difficult to operationalise. There are two reasons for this. First, it is hard to add existing data - relating to infrastructural provision, time, space, personal resources etc. - together in any meaningful way and, second, it is impossible to get a sense of when and where it is that people want to go and hence of 'blocked' demand. To go further we need to know much more about how social networks and 'compulsions to proximity' are actually organised.

On the other hand, our experiments have proved useful in generating a range of methodological and substantive conclusions.

Methodological

- Our work, especially at Birmingham, has shown that congestion charging schemes have multiple forms of impact and that these vary from one person to the next depending on their current travel arrangements and on the combination of pressures and priorities that together shape perceptions of 'viable' alternatives. This observation underlines the value of detailed enquiry and argues for methodological strategies built around an appreciation of the point that 'impact' is always contextualised and mediated.

- Our study of the two demand responsive transport schemes is especially important in showing how much can be learned by viewing Super 8 and U-call as pieces of 'action' research - that is as initiatives the operation of which itself reveals something about the system as a whole. The wider lesson here is that local authorities can and perhaps should evaluate such schemes not just in terms of how well they meet their objectives but also with respect to what they reveal about socio-spatial inclusion and exclusion and 'blocked' demand. This means thinking about the relation *between* different systems of provision as well as about the performance of each in isolation.

- Existing data and specially commissioned surveys tend to focus on journeys to work, or to health services and education. This is all very well but it fails to capture important aspects of daily life and in particular peoples' participation in social networks more broadly understood, including relationships with friends and family. A number of academics believe that such networks are on the move but little is known about whether this is true across the board or about how such networks vary with age, social class, ethnicity or region. This is important 'missing' data.

- The difficulties involved in trying to represent a moving landscape of public transport opportunity in Seaham and Stanley points to the need to look for other simple methods with which to represent the temporal and spatial characteristics of public transport systems. There is a significant gap between the experience of potential 'users' wanting to make specific journeys and the representation of public transport systems in terms of the 'density' of buses per hour or access to bus stops.

Substantive

- The Birmingham study showed how much juggling between time, space, convenience and care is involved in making even routine travel arrangements. Time sovereignty and flexibility proved to be key. Those who were already locked into a structured temporal regime were, it seems, more prepared to consider also structured modes of transport than were those who had, and who valued, a high degree of temporal autonomy. By implication, travel strategies are as much about time as they are about mobility - a point that is of some consequence for whether congestion charging schemes do or do not result in modal shift.

- Comparison between the Birmingham respondents and those riding the bus in Garstang and Newcastle suggests that people approach routine and infrequent journeys in very different ways. This is important in anticipating the impact of different forms of transport innovation (whether that be a demand responsive bus or congestion charging) and in thinking about how that might be measured and evaluated. In practice, difficulties in attending an infrequent event might be as socially exclusionary in their effect as disruption to routine patterns of mobility.

- All three methodological experiments (indirectly) revealed important differences in the age and gender of those who routinely used public transport. Standardised indices of deprivation and inequality often overlook such differences. Likewise, studies of the impact of road users charging or work place parking levies that focus on 'direct' impact might fail to appreciate the distribution of socio-spatial inequalities *within* households.

- If the 'need' to be mobile in order to participate effectively in society is unequally distributed, and if the middle classes are under increasing pressure to travel in order to 'belong' it is they who are at greatest risk of socio-spatial exclusion. This hypothesis raises a number of more general issues about the societal distribution of the potential for socio-spatial inclusion and exclusion, and about how that might be changing. The macro-level question of how developments in the spatial and temporal order of society generate new forms of social inequality is itself worth investigating.

Chapter 2 Local Authorities and the Measurement of Social Exclusion

2.1 Introduction

This chapter provides feedback on the first phase of the CHIME Project. As planned, interviews were conducted with officers in a variety of local authorities in order to determine their current understandings of the notions of social inclusion/exclusion (SI/E), and the means by which they assess, measure and locate it within their localities. The authorities originally contacted were members of the Charging Development Partnership (CDP), and therefore involved in ongoing collaboration with the DTLR (as then) on the development of congestion charging regimes and the investigation of their potential implications. However, it proved quite difficult to identify officers in a number of authorities with whom it was possible specifically to discuss SI/E. Interviews were conducted with eight officers at four local authorities and these were tape-recorded and transcribed. Data has also been collected from a number of other sources, including authorities' web-sites and documentary material provided by officers.

The research here addresses three central questions:

1. How do Local Authorities currently conceptualise and/or measure social in/ex-clusion (SI/E)?
2. What are the methodological implications of these strategies and definitions? What assumptions and models are adopted?
3. What resources and capabilities do Local Authorities have for assessing SI/E?

Unsurprisingly, answers to the first research question are the easiest to identify, and it is with these issues (conceptualisations of, indicators of, and proxies for SI/E) that we begin. The second question is less easily answered, especially with the majority of interviewees being in authorities' transport departments. However, the transport focus has helped identify approaches to defining, assessing and measuring SI/E adopted by those who have the primary responsibility for implementing and assessing congestion charging regimes. It has also been possible to identify more generic views of the methodologies involved in measuring transport related SI/E. Answers to the third question are explored in the 'methodological experiments' in chapters 6-8 below.

Our analysis is based on identifying discrete understandings of SI/E displayed in the data by paying attention to the contexts (or discourses) within which it is addressed. Thus if a 'wheelchair-friendly' bus is described as contributing to social inclusion, we conclude that this reveals an understanding or definition of SI/E which relates to mobility impairment.

2.2 Local authority conceptualisations of social in/exclusion

There are major ambiguities around social inclusion/ exclusion within academic literature (e.g. Levitas 1998, Sen 2000, Silver 1994). Social exclusion is variously taken to be a state, a condition, a quality, a perception, a process or a tag, which can be assigned to individuals, social groups, or geographical or political areas. The interpretations of local authorities reflect this 'flexibility' of definition, a flexibility that has major implications for any attempt to measure SI/E and the methodologies adopted to do so. Further complicating this research is that 'Social Exclusion' is itself a discourse that some respondents redefine as 'Social Inclusion'. This can be seen as a response to a perception that central government is now using this more 'positive' term (in a strictly semantic sense) as a title for the policy area of dealing with social exclusion. Thus interviewees on occasions referred to the 'Social Inclusion Unit', and

we have dealt with apparently contradictory statements that conflate the two terms as a single 'issue' (e.g. *'if you can get social exclusion as a central policy'*; transport planner).

The following show first how local authorities view social in/exclusion as a policy area, and how it is influenced by central government definitions. We then detail understandings of social in/exclusion that focus on a wide array of different elements (and see Kenyon, Lyons, Rafferty 2002: 210). There is we show no agreement amongst local authorities as to just what constitutes social inclusion. All of the following at times seem to count as the bases of social exclusion: excluded groups; unemployment; deprivation and poverty; education; disability and mobility impairment; lack of community inclusion; geographical isolation; hard to reach groups and self-exclusion; access to facilities; and information deficiency.

2.2.i Social exclusion as an area of policy

This ambiguity of SI/E is explicitly expressed by one officer stating that: *'it means all things to all men* [sic]*'* (transport planner). Another respondent comments on the discourse itself: pointing out that in *'the semantics of social exclusion, it's the modern thing to call it social inclusion, not social exclusion'* (policy researcher), before playfully commenting on the *'social delusion'* of authority officers pursuing regeneration policies that are supposed to benefit their regions.

In another case it was explained that there is, within the authority in question, someone who is *'Mrs. Social Exclusion'* (i.e. explicitly responsible for this area of policy), but that she *'has found it as her responsibility by default'* (transport planner). This suggests that SI/E is a policy area that has yet to find an appropriate 'home' within the local authority structure, although in practice its location would appear to be at the *central* or *corporate* level. The same respondents suggest that if you have social exclusion (they mean social *in*clusion) as a strategic policy, it should filter down through the workings of the authority, whereas having it as one person's responsibility is somehow 'dangerous', resulting in it not permeating all aspects of the authority's work.

It was also suggested that SI/E as a distinct policy could be rendered 'irrelevant' by the proper implementation of other, existing policies. As an example, it was suggested that integrated management or *'joined up thinking, will deal with social exclusion, but not under the banner of social exclusion'* (transport planner). Thus SI/E's nature as a discrete policy area is challenged by some in authorities, as its objectives are seen to be dealt with under other policies, or internalised in the officers' own ethos or ways of working: *'our heart's in the right place, so we don't see social exclusion, it's implicit…the norm'* (transport planner).

In authority documentation, social exclusion is frequently defined in a negative fashion. This corporate approach, and an adoption of the *discourse* of social inclusion as unquestionably positive, is exemplified by extracts from Nottingham City Council's press releases:

'Leader, Councillor Graham Chapman. 'Such steps aim to tackle social exclusion and help to create a vibrant, diverse and inclusive City.''

'Planning Councillor Alan Clark. 'Such steps aim to tackle social exclusion and help to create a vibrant, diverse and inclusive City.'' (press releases).

In some cases, local authorities frame the issue of social exclusion explicitly in terms of central government definition. This stems from the existence (since 1997) of the Social Exclusion Unit (SEU) as a site of legitimate expertise. It also perhaps demonstrates an attempt to display institutional isomorphism (in New Institutionalism's terms, see Meyer and Rowan, 1992) with the hegemonic discourses propounded by central government, a garnering of legitimacy for the authorities' efforts by 'pegging' their work to that of other legitimate bodies.

This explicit adoption of pre-given definitions is most obvious in institutional *documentation* (for example in corporate strategy documents, Local Transport Plans (LTPs) etc.), but is also found in interview data: *'There's a document upstairs, with the SEU's definitions. We generally follow government guidance on this sort of thing'* (transport planner).

The most frequently quoted, or reproduced, definition is that of the SEU, namely that social exclusion is

'a shorthand term for what can happen when people or areas suffer from a combination of linked problems such as unemployment, poor skills, low incomes, poor housing, high crime, bad health and family breakdown'. (SEU 2001)

This definition (from Tony Blair) embodies some of the ambiguities alluded to above, as some of these 'problems' relate to individuals or groups, whilst others are ascribable to areas or districts. In addition, the 'linked problems' are simply listed, without any exploration of how or why the problems are related; the lists are used to link together items whose differences are thus hidden or elided. It should also be pointed out that Government definitions offer mostly *passive* constructions of the processes of social exclusion: it becomes something that simply happens to people (or places), with no active agency ascribed to anyone specific processes of exclusion identified (see Fairclough, 2000).

Though the SEU's definition makes no explicit reference to *transport* issues, this definition is frequently quoted in local transport plans (LTPs). In this context, it functions as an easily reproducible 'sound-bite', helping to align the work of authorities with that of central government. The SEU has, in any event, recognised transport to be a key area in tackling SI/E, claiming that: *'We are analysing the nature of the transport barriers to accessing work, learning, healthcare, and other key services and activities; and developing policies to remove them.'* (SEU 2001). It is not surprising that local authorities tend to translate central government discourses of SI/E into debates about *access* (this is discussed further in chapter 5).

2.2.ii Social categories and groups

The next sub-sections show how these general ambitions are interpreted within specific local authorities. The first group of six interpretations take social inclusion/exclusion to be something shared by members of specific *social* categories, what Church, Frost and Sullivan term the 'category' approach (2000: 195).

Excluded groups

It is common for specific groups to be singled out as socially excluded, or more liable to suffer from social exclusion. In these cases, it seems that the strict governmental discourse of social exclusion (as an 'emergent' property of the afore-mentioned 'linked problems') is deviated from. Demographic definitions of potentially excluded groups suggest that there are groups of people who are likely to be excluded from full participation in society regardless of whether they personally, or the areas in which they reside, suffer from high unemployment, bad health, poor housing, crime etc. Social groups often taken to be socially excluded include:

- Women, who may be excluded in transport terms due to numerous factors including safety issues associated with travelling at night, meaning that there is *'is a need to develop initiatives specifically for women and other vulnerable users'* (LTP).
- The elderly, who are seen as excluded in the sense of suffering from isolation or lack of mobility, and therefore access to certain services; *'elderly, infirm people…they don't own cars, they can't step on the bus'* (transport planner).

- The young may be excluded through travel safety problems (which may result from lack of public transport services, or a reluctance to leave their immediate area, or the dangers inherent in the car-centred transport infrastructure), or through a lack of participation in politics or community affairs,
- The disabled, sight or mobility impaired may be excluded in a variety of ways, mostly linked to questions of mobility and the accessibility of services. It was seen as inclusionary to open public transport to *'anyone with any type of mobility impairment at all'* (Durham, transport planner). LTPs contain references to people with *'disability or physical barrier* [to movement]', and '*people with a learning disability*' (LTP), or to the '*many forms of disability that restrict movement, from wheelchair users to blind and partially sighted to those people with non physical disabilities'* (LTP). One stresses that *'*[t]*he main disabilities to consider in relation to transport planning include impairments of mobility, sight and hearing'*(LTP).
- Certain groups defined by employment status may be disproportionately excluded, especially in transport terms. These were variously identified *as 'low-paid, anti-social hours…cleaners…quite a few shift workers…people on the lowest wages'* (transport planners), *'people who are disenfranchised from society 'cause they can't get to work, or work at strange times'* (transport planners), *'in a job, but low wage…'* (policy researcher).
- Single parents were also identified in LTPs as particularly vulnerable members of society.

These are some of the groups identified as socially excluded, and it is second nature in local authorities to think about the new discourse of the socially excluded in categories familiar from more traditional authority work. In particular, specific groups have long been consulted on transport issues (for example in transport user fora) on the basis of their having specific problems with mobility or access, and so it is to these pre-defined groups that officers tend to turn when addressing (transport-related) social exclusion. Respondents also offered views of who might be affected through congestion charging, for example, highlighting *'marginal car users* [and] *people on lower incomes in manual work'* (policy researcher), who do not have the same 'time sovereignty' or control over working hours as others (Breedveld, 1998). Other definitions of social inclusion and exclusion revolve around key processes of unemployment or deprivation of one kind or another.

Unemployment

Definitions of social exclusion that focus on this issue dominate not only in governmental (or specifically New Labour) discourses but also in those of local authorities. Levitas (1998) suggests that the major plank of UK social exclusion discourse is what she calls SID, or Social Integrationist Discourse. This discourse focuses on the lack of skills or education in the individual, and proposes that 'inserting' or 'integrating' the individual into society overcomes social exclusion. Such integration is typically achieved through *employment*.

Interestingly, in interviews at a southern county council, a respondent began by claiming that in this overwhelmingly prosperous area of the UK*, 'unemployment is not an issue*'. However, this was immediately modified to acknowledge that it was *'next to zero, well, it is an issue'*, with the unemployment located in *'pockets of severe deprivation'* (transport planner) in rural and urban areas. The authority's LTP claims that *'Access to jobs and training opportunities remains key to social and economic inclusion.'*

In a northern city, a specific link between local and national governmental discourses is spelt out, with reference to training and jobs as central issues to combat social exclusion. The governmental discourse was defined as connecting jobs, levels of income, and quality of life, and contrasting these factors with those *'living on benefits and committing crime'* (policy researcher). Although these comments came from outside the authority, they display a reflexive awareness of (and perhaps distaste for) the government's models of inclusion and

their promotion of the MUD or Moral Underclass Discourse (Levitas 1998). This is defined as a portraying the 'excluded' as possessing intrinsic qualities and pursuing lifestyles systematically denigrated by 'majority society'.

In transport terms, it was viewed as self-evident that any policy which helped people to get to work was inclusionary, that *'people…are disenfranchised from society 'cause they can't get to work'* (transport planner), and that charging schemes could combat social exclusion if those identified as excluded groups saw *'noticeable improvements in their ability to get to and from work locations'* (transport planner). In contradiction to this largely hegemonic discourse, one respondent suggested that some people *'may not be excluded from the market, employment and jobs, some of that is choice*' (policy researcher), a view which fits with the later discussion of self-exclusion.

Education

In line with a Social Integrationist Discourse (Levitas, 1998), Nottingham placed great stress on education as a means of reducing social *and* spatial exclusion. The problem was described as a dichotomy between the prosperous city centre and the pockets of deprivation around them; a growth in jobs, but those jobs going to people from beyond the city, and therefore an increase in commuting. The government's concentration on education was therefore seen essential in solving transport and exclusion problems simultaneously by shifting the geographical make-up of the city's labour force. Educational indicators were seen as a good indicator of SE, with Nottingham's most multiply deprived estate also housing the school with the worst education results in the country.

It was mentioned that the council was putting SRB (Single Regeneration Budget) money into Information Technology training. This strand of policy was also linked to the over-arching priority of many urban authorities, that of job creation: *'Nottingham is looking for strong job creation, 40,000 more jobs by 2011. So we're looking at ways to do that without increasing numbers of inward commuters...educate people so that they're better placed to take jobs, which will cut traffic'* (transport planner). This was seen as a major element in the overlap between transport and social exclusion policies, and the development of IT generally would reduce the need to travel: incorporating internet access points at schools and community centres whilst supporting work from home, including the development of a 'rent-a-laptop' scheme. It was however acknowledged that such a scheme would aid primarily those already 'included' within the job market.

Deprivation and poverty

These two concepts are viewed as proxies for SE in the minds of many interviewed. In one sense this is taken as a common-sense or pragmatic association, with 'disadvantaged', 'deprived' and 'worst off' being frequently used as synonyms for 'excluded'. Thus congestion charging is described as unlikely to impact badly on the *'poorest, most socially excluded'* as they have no access to certain transport modes (the car) *'so anything to do with cars is irrelevant to them'* (policy researcher). It was claimed that *'really poor areas, the outer estates, council estates especially, are deprived by all our standards'* (policy researcher), a formulation which stresses a pragmatic approach to assessing which areas and populations will suffer multiple deprivation.

As explored later, the Index of Multiple Deprivation (IMD) is taken as the prime means of identifying areas of social exclusion (which is therefore already defined from a central source as deprivation in a more complex and relational sense) whilst 'on the ground', a ready link with deprivation or poverty (simplistically defined) still holds sway, especially in a pragmatic sense. However, it was noted that being in poverty and being excluded were not synonymous, where *'you can be one and not the other, in a job but with a low wage'* (policy researcher).

Disability and mobility impairment
There is often a more immediate association between disability and mobility impairment, for example in models of SI/E based on the concept of physical accessibility. As pointed out, it is *'the norm to think about disabled, the mobility impaired, through to the design criteria'* (transport planner). This is best illustrated by the nation-wide development of Bus Quality Partnerships, which have as a central plank the provision of 'low-loader' buses with their ease of access for the elderly and mobility impaired. These are to be provided in Durham on the access routes funded by the road user charging scheme, using hypothecated revenues. The charges *'accommodate anyone who wants to travel up there…so that creates social inclusion'* (transport planner). This area, of *personally* defined mobility impairment, is also covered in LTPs, and in most authorities is already monitored and taken into consideration in the process of assessing individual transport schemes.

Lack of Community inclusion
This refers not to individual qualities or social categories but to a more collective concept of the degree of participation within community life. The notion of 'participation' is one of the key 'modernising' discourses in local government (Cass, 2003). This was evident within interview and documentary data. At Hampshire, it was discussed to introduce the policy framing for SI/E, of 'people-centred' corporate policies. Here the focus is on increasing 'involvement', and it was reported that the authority has done well in meeting performance indicators and reached groups previously 'hard to reach'. The policy response to political exclusion, in the transport sector at least, is seen as the development of partnerships with the community. These focus on accessing people through already existing groups and networks, but also getting people in localities together to discuss the possibilities of local solutions to travel problems.

'Empowerment' is the key objective of these projects, rather than addressing SI/E explicitly. One respondent argued: *'that's the magic word, we're going to empower the local community'* (transport planner). In line with governmental SI/E discourses, 'community' was to be promoted as the opposite of 'exclusion'. For example, the SEU's National Strategy for Neighbourhood Renewal (NSNR) (SEU: 1998) defines 'community' with reference to social capital (seen as being built through skills and training), social cohesion (which can be analysed as equating to conformity to social norms) and social order (with a focus on policing, increasingly 'contracted out' to community patrols as on some of Lancaster's estates). In addition, promoting the up-take of non-car transport modes was itself suggested to be intrinsically inclusive, as *'getting people out of cars onto buses or walking together is getting interaction'* (transport planner), and interaction equates to community. Whatever their other qualities, these definitions fail to problematise the notion of inclusion itself: what communities are people expected to belong to?

2.2.iii Areas, features and facilities
The next four interpretations of SI/E concentrate on specifying socially included and excluded areas, or on the features and facilities that define each of them. These are examples of what Church, Frost and Sullivan term the 'spatial' approach to social exclusion (2000: 195-6).

Geographical isolation
This geographical definition of exclusion is reproduced through the governmental emphasis on identifying excluded 'neighbourhoods' through the initiatives such as the 'New Deal for Communities' (NDC), the Neighbourhood Renewal Strategy (NRS), and the targeting of European money through the Single Regeneration Budget (SRB). The concept of 'excluded areas' is thus hard-wired into policy thinking and deployed by authority officers. In the case of the NDC, NRS and SRB, a geographical focus is used to target funding for inclusionary policies, and this methodology has been readily adopted in terms of identifying 'excluded areas'. Rural areas and inner city estates (especially council estates) were most frequently mentioned, whilst estates isolated at the edge of cities were identified as prime candidates

for exclusion in the 'access' and mobility senses. Thus: *'The City of Nottingham represents an area of stark contrast. At one level there exists a vibrant regional city rich in cultural diversity and opportunity. This is in contrast to inner city areas and outer estates where deprivation, disadvantage and disaffection are endemic and contribute to increasing social exclusion which, in some instances, is now becoming evident in a third generation within the same families.'* (Nottingham City Council, 2001).

In the case of Durham, the decline of traditional industries allowed ready identification of areas such as the old mining villages as loci of social exclusion. Here an explicit link with unemployment is made more problematic by geography.

Rural areas with poor public transport links were taken as *ipso facto* exclusionary in the majority of cases because of difficulty in accessing key services. Although the loss of facilities like post offices, schools, doctors surgeries, etc., was seen as an increasing and seemingly intractable trend, there was an attempt to counter this problem through identifying spatial and temporal gaps in public transport and 'plugging' them by subsidising routes in partnership with transport operators.

Crime was also mentioned as a major cause of a feeling of *isolation* in certain areas, especially those targeted under the afore-mentioned programmes, along with the demographic aspect of some older council estates having a disproportionate number of long-term, elderly residents whose feelings of isolation are compounded by a lack of mobility.

Some noted the drawbacks of such a focus on areas rather than individuals. Fast Forward, a Nottingham programme to facilitate the up-take of training by providing childcare and transport costs, was pointed out as being provided on a postcode basis, and therefore insufficiently targeted. In another case it was pointed out that a peripheral estate was geographically isolated, but fared well in assessment by the IMD, except for long-term unemployment. It seems that this displays an awareness of the ways in which 'splintering urbanism' (Graham and Marvin, 2001) is spatially differentiating groups to the benefit of some (the mobile commuters) and the detriment of others (the travel-poor excluded).

'Hard to reach' groups and self-exclusion

Linked to these factors of isolation was the sense that in many socially excluded areas and groups, there was a reluctance to travel beyond the immediate area, even to access local services. Although in extreme cases it was suggested that some people *'had never been into the city centre'* (transport planner), such mobility restrictions were linked to predominantly *social* factors. These included the 'environment' people were brought up in, a feeling of being neglected, especially by the local authority, and, especially amongst younger people, a reluctance to leave their own estates (or, among their parents, to send them), for reasons to do with safety, crime, and inclusion in a territorially defined community; the estate. Information provision and travel subsidies were seen as the best policies to overcome these problems, although it was acknowledged that such incentives would not always be effective.

This notion of a 'reluctance to travel' highlights the discourse of self-exclusion. In one case, we were offered a comparison between *'people who don't want to be involved, and those who are genuinely excluded for some physical, institutional or socio-economic reason'* (transport planner). This was in the context of 'hard to reach' groups being taken as a proxy for the excluded (taking community or political involvement as a proxy for SI), but raised the spectre of the 'deserving' and 'undeserving' poor models which drove welfare policies from the Middle Ages to the latter half of the last century. Two groups are referred to in this characterisation.

Firstly, one respondent drew a distinction between rural and urban exclusion: *'there's a lack of access to facilities, but people choose to live in rural areas, so how is that deprivation?*

The people on the estates are stuck there, that's the problem' (policy researcher). This respondent argued that since rural living is a lifestyle choice it should not count as exclusion but of course this ignores the involuntary dependence upon auto-mobility.

Secondly, there was a suggestion that some groups are intentionally self-excluding. These include residents of isolated estates as mentioned above, but also 'hard to reach' groups, who *'may be hard to reach for a reason, they don't want to be reached'* (transport planner), and others who *'may not be excluded from the market, employment and jobs, some of that is choice'* (policy researcher), possibly displaying another factor of the MUD (a characterisation of the excluded as wilful deviants from the norms of majority society).

People in areas and social categories pre-defined as being 'socially excluded' may display a high level of *internal* social inclusion or cohesion, combined with the voluntary adoption of more sustainable travel patterns and a 'compulsion to local proximity' that militates against ever-increasing mobility (Pickup 1988). This links with the policies of localising services and facilities but also to a re-conceptualisation of 'exclusion' which looks beyond the idea of integration into a single, homogenised society, in favour of promoting inclusion *within* existing communities and their social networks. This might be theoretically productive in contrasting inclusion in a high-mobility 'car-job' culture with the more sustainable travel patterns actually practised by those that are defined centrally as 'excluded': *'…the REALLY excluded, very often in Nottingham these people don't move around much anyway, they're very concentrated in their areas…the people worst off are those who don't use public transport and stay in their own area'* (policy researcher) but who may paradoxically be better at 'saving the planet'!

Access to facilities

As mentioned in other sections, this definition of SI/E was readily understood and deployed, especially by transport officers, as a way of linking transport and SE. It is built into government thinking on, and framing of, social exclusion as seen in the IMD's use of a 'geographical access to facilities' index. This rates areas according to proximity of a list of sites such as post offices, GPs, shops and so on (DTLR 2000), without exploring which of these facilities might actually be visited by whom, or by which means (see Church, Frost, Sullivan 2000: 197, on how the IMD indicators are free of mobility aspects).

Orbital rather than radial bus routes were seen in Nottingham as a way of linking excluded areas with nearby local facilities, without requiring journeys into the city centre, and in general it seemed that one of the main foci of geographically based schemes funded by the SRB or NDC was to provide more localised services: in effect an attempt to intentionally reverse current development and planning trends through direct subsidy and funding. This was seen as positively impacting SI/E and traffic reduction simultaneously.

The access model of SI/E is dominant in the characterisation of social exclusion in Nottingham's Local Plan, which states as its objective: *'to contribute to the development of a truly inclusive city where all members of the community have access to a wide range of opportunities'* (Nottingham Local Plan). In a review of the Local Plan, social inclusion is described as *'access to decent homes, jobs and facilities for everybody'* (Nottingham Local Plan Review).

'Demand responsive buses' (see chapter 8) were given as one answer to these problems, and are being developed in Hampshire with Bus Challenge funding, whereby more services were provided to *'a deprived area, which was taken as a proxy for 'excluded'…people couldn't get to facilities, shops, no access to services'* (transport planner). Indeed, Hampshire described their wider vision for public transport as being an 'access for all' policy which would render SI/E irrelevant, since everyone would gain access to public transport and therefore to the services they require.

It should be noted that many of the descriptions of inclusionary policies in the LTPs specifically refer to issues of *access*. Thus identifiable groups are seen as excluded through their inability to *access* cars, public transport, jobs and opportunities, or specific sites such as educational, leisure and health facilities (see chap 5 and 8 below).

Information deficiency
This model of exclusion is used to explain why some people do not exploit public transport services, as *'a lot of it's just information of what's there, people don't know where or when public transport is'* (transport planner). This is an issue addressed in many authorities by 'TravelWise' schemes. In Nottingham a parallel 'WorkWise' scheme aims to use outreach workers to access the unemployed to provide them with travel-plans and information. The paucity of information about transport in areas of low income has been theorised as compounding the segregation of excluded areas caused by poor service provision (Grieco, 1995), and research also shows that low-income groups do not depend upon published timetables in order to schedule their transport use but rely on information provided through social networks and other users (Pickup, 1988).

The concept of information deficiency as form of exclusion is also promoted by initiatives based on 'e-government', which prioritise the extension of IT facilities into excluded neighbourhoods, as in Nottingham[1].

2.2.iv Questioning inclusion and exclusion
Although the concept of what it means to be 'socially included' is fairly unproblematic for most respondents there is some questioning of such 'inclusionary' policies. The following respondent doubts the value of the policy of encouraging those isolated in excluded areas to travel into the city centre: *'To do what? To hang around? To be excluded in the city 'cause you can't afford to eat, or buy clothing? What's the advantage of that? Probably prefer to stay at home, stay warm, watch the television rather than walk the streets just to be included in some sense…just to be invisible in the city isn't social inclusion!'* (policy researcher). This questions the realism of expecting simple mobility to result in a reduction of exclusion, whilst ignoring the importance of what we discuss below as the 'compulsion to proximity'.

There were references to the congestion related aspects of SI/E, where the question of *'how many are excluded by congestion now?'* (transport planner) was raised in the context of an 'access for all' policy of public transport provision. It was also taken that any scheme that reduced car use in general would have a specific effect of making streets safer, and therefore more accessible, for a larger proportion of the population; especially those in groups considered vulnerable to 'exclusion'.

In the context of the elasticity of demand and pricing regimes for congestion charges, another respondent proposed that in research on pricing *'the argument has always been that the fairest way of allocating road-space is to allow congestion'* (policy researcher), an argument that suggests congestion charging will disproportionately penalise the less-well off. One respondent suggested that the imposition of parking control (perhaps similar in its effects to the introduction of the WPPL) discouraged central parking, but that the more affluent had been less affected than others. In one extreme case, a solicitor who consistently parked in an area with a high tariff introduced, was willing to pay a £30 daily charge for parking there, making parking charges *'a bit socially exclusive in that sense, those who can afford to pay, will pay, and those who can't afford to pay, if they need to get into the city, will be in a position where they don't bring their vehicles into the city because they cannot afford to pay'* (transport planner).

[1] See http://www.flexibility.co.uk/issues/modgov/egov3.htm

This relates to inequality of access, but there was a view that social exclusion was better understood in terms of simple inequality, of the increased wealth of, for example, a city being distributed in increasingly unequal ways. By contrast, equality was relevant to congestion charging as *'it's one of the most substantial redistributive things you can do, tax motorists and spend that on promoting the alternatives, which also happen to be sustainable'* (transport planner). In Durham, the potential effects of the proposed congestion charging scheme on the choristers' school were seen as inclusionary in the sense of levelling social inequalities, as they *'shouldn't be* [treated as] *different to any other state type school'* (transport planner).

To summarise, local authorities are strongly influenced by central government definitions of social inclusion and exclusion. They interpret these in terms of the specification of social categories and/or the definition of included/excluded areas classified as such in terms of accessibility and the provision or otherwise of key facilities. There are, however, some who question these 'conventional' approaches and the ideas upon which they depend.

2.3 Transport policies addressing social inclusion/exclusion

The following section provides a brief synopsis of some of the specific *polices* being considered, developed or implemented in order to address SI/E in the LTPs of three regions: Nottingham(shire), Leicester(shire)[2] and Hampshire. When examining actual policies, we see that definitions of social exclusion and inclusion are normally narrowed down to those that can be tackled using existing policy mechanisms.

Most projects quoted in the institutional literature are unsurprisingly related to *public transport* initiatives improving access, information, and security in the existing infrastructure. In addition, they focus on 'promoting', extending or funding *community transport* such as minibuses, and on funding new links and routes, specifically to aid *access* to:

- jobs and education: *'a new inner orbital bus route linking Hyson Green with employment areas'* (Greater Nottingham LTP);
- health: '*Funds will be used to support initiatives, such as a three day a week transport service from the Liphook area to Basingstoke Hospital'* (Hampshire LTP), a new bus link taking in *'QMC, the University and Lenton and in the other direction the City Hospital'* (Greater Nottingham LTP).

Predictably, the greatest stress is placed on improving access to employment and, to a lesser extent, training, particularly in Nottingham, whose authority sees investment in the education and employability of their 'local' workforce essential in reducing commuting and congestion.

The 'old fashioned' model of service subsidies is still present in local authority policy in these areas. Subsidies are used to support existing forms of community transport ('*support of community transport for youth groups, churches, old people's groups and other voluntary bodies to enable individual and group needs to be met with travel for shopping, leisure, health and other purposes'* (Hampshire LTP) and to fund existing public transport routes that might otherwise be cut.

As discussed above, provision for *disabled* people of all types, as well as concern for the specific needs of identifiable groups such as the elderly, young, and women, is well-established transport policy. Indeed, in Northern Ireland, disability legislation requires lengthy consultation before *any* changes to services can be approved (even a minor route change).

[2] These LTPs are produced as a collaboration of the City and County Councils, evidence of a regional strategy approach to transport planning.

In the LTPs on which we concentrate, there are extensive lists of quite detailed works planned to increase the accessibility of a number of transport modes for disabled people. These include installing raised kerbs, low-rider buses, wheelchair access, seating, parking bays and so forth, a concentration on physical infrastructure changes. Once again, these policies primarily result from established transport concerns, and have been included in sections of LTPs that describe the authority's policies on social inclusion.

Local transport plans typically stress the provision of *security* and *safety* for public transport users, walkers and cyclists, based on the model of making alternatives to car driving more attractive. These include *'well lit bus shelters and real time information'* (Hampshire LTP). Nottingham claim that '*Crime and the fear of crime are deterrents to the use of public transport, cycling and walking… with additional concerns expressed by women, parents and the elderly*' (Greater Nottingham LTP). The measures to increase inclusion through security centre on the provision of lighting and CCTV coverage. In practice, this may also reflect a tacit acceptance of the limits to local authorities' agency in these areas. Street lighting, for example, is an area of straightforward policy that can be stretched to fulfil wider policies of increasing *access* and therefore reducing *exclusion*. CCTV coverage is being extended in most authority areas, more often for reasons of cheap crime deterrence than because it necessarily makes travel safer.

As seen in other policy areas which local authorities address, such as climate change (Cass 2003), there is a willingness to accept a model of the public as *information* deficient. This is used to explain why people do not seem willing to take up the alternatives offered. A number of initiatives in the LTPs stress that ' *travel plans have successfully established that greater awareness and accessibility to public transport information leads to greater use of available services'*, leading to the promotion of schemes such as '*tailored door to door travel information and tickets'* (Greater Nottingham LTP), as well as other targeted projects for groups such as the unemployed and disabled, which have the overall aim of re-integrating the fragmented transport infrastructure in line with the governmental meta-policy of 'integrated transport'.

Also rural exclusion and transport problems are given some weight in the LTPs, but rural issues are treated as qualitatively different from urban ones. Nevertheless, ensuring public transport access for 'vulnerable' groups forms the backbone to most policy responses, with the intention to increase *access* to transport options or services.

2.4 Measuring social in/exclusion

The measurement of SI/E in local authorities is not an *active* process for most local authorities. The notion of social inclusion itself has entered the UK primarily from European political discourse, having roots in French political theory (see Silver 1994). It entered the policy world explicitly from the foundation of the SEU in 1997. Its prime use in local authority documentation appears to be as an adjunct to other policies, or as a corporate policy presumed to be considered at all levels of policy making. For example, the phrase 'social exclusion' is often dropped into lists of issues that an authority is attempting to tackle, whilst many of its other objectives use the adjective 'inclusive' to describe their ideal policies or services in other areas such as health and education.

This adoption of the discourse at a highly abstract level of policy does not guarantee integration with authority work at a day-to-day level. Even so, the majority of LTPs include sections outlining how their transport policies will impact on SI/E. For example, Hampshire offer a definition in their LTP, of there being *'many barriers to movement present in the county, whether a result of unemployment, low income, disability or physical barrier - referred to as social exclusion in this local transport plan'*, before detailing those specific policies which attempt to mitigate exclusion.

In terms of methods used to measure SI/E, there is less detail. In each research site, there has been reliance upon the Index of Multiple Deprivation 2000 (DTLR 2000, which has replaced the 1998 Index of Deprivation as the authoritative nation-wide ranking of wards according to a series of indicators). This IMD covers income, employment, health deprivation & disability, education skills & training, housing and geographical access to services. Most councils have mapped data from the IMD to provide a geographically based over-view of which areas in their purview are most social excluded (or rather, multiply deprived).

But this was not the only method adopted. In Nottingham, the Observatory has provided the council with data used to compile a report on *Poverty in Nottingham* (Young 2001). The Observatory's current role is in evaluating the Neighbourhood Renewal Strategy in Nottingham[3]. It was noted that Nottingham had chosen not to 'go down the road' of *access* indicators, although it was mentioned that this was more important when looking at *rural* access as, for example, in work for a Countryside Commission steering committee. In addition, the Observatory was exploring the feasibility of using *'Lorenz curves to look at the change in distribution of inequality around the city'* (policy researcher), an approach that measures an un-stated aspect of social exclusion, namely economic inequality.

Hampshire produced a mapped version of the IMD, but also mentioned the existence of performance indicators relating to participation in learning, community and recreation, gathered to assess the achievement of *corporate* strategy goals seen as relevant to SI/E. A more qualitative approach to measuring SI/E was taken through a variety of research projects, including the Headstart Community Involvement Programme. It was stressed that these were *not* focus groups but involved going out into the community to ask different groups a wide range of questions relating to the local authority's activities. Hampshire's commissioning of research into certain 'hard to reach' populations shows a flexibility towards identifying socially excluded groups, though certain assumptions are made in selecting groups to study: in this case, the elderly and the young (MORI 2001).

Hampshire also produced an 'accessibility map' of their region (Hampshire 2000: 41), a result of attempts to create an accessibility model for the county. This basically consists of a graded map of public transport availability in different areas, and was geared towards informing the planning process. Its relevance and applicability to social exclusion identification were also noted. Indeed, the social inclusion section in their LTP serves to draw together a number of initiatives that previously would have been listed under access, planning, or transport user research.

In Hampshire, there was emphasis placed on balancing the need for in-depth research with *'going with our gut feeling…we have a reputation for delivering and doing as well as thinking and talking'* (transport planner), and this reputation was seen to be deserved because they didn't wait a number of years to find out the results of research before going ahead with their own projects. Therefore, the deprivation map material taken from the IMD was assessed along with the officers' own knowledge of areas to identify quickly targets for improvement.

[3] The indicators used are:

- Unemployment: number of benefit claimants, and number of long-term (over 6 months) unemployed, per ward, as a percentage of city's unemployment rate,
- Crime: number of burglaries per dwelling, and number of young offenders resident, by ward,
- Health: annual average deaths from heart disease, and number of hospital admissions of under 15 year-olds, annually, by ward,
- Education: SAT level 2, English and Maths GCSE passes A-C, by ward,
- Housing: house price averages, by ward, number of Housing Benefit claimants, and housing vacancies and turnover, by ward.
- Number of free school meals by ward.

An example of an area chosen to receive attention was selected on the basis of its having *'low economic activity, high unemployment, low car ownership'* (transport planner), all indicators which could be accessed formally, along with such informal, social factors as cars being driven *'in a rather recalcitrant way* [too fast]*'* (transport planner), leading to children being injured, and therefore their likely exclusion from streets within pedestrian areas.

To summarise, there was evidence of various indicators on which councils have data being used to identify SI/E problems in specific localities. In practice, officers use maps and tables informed by the IMD to back up their own 'soft' knowledge when identifying excluded areas. In addition, the 'socially excluded' include groups in society traditionally seen as having different transport needs. Methods of dealing with these needs are translated into social inclusion policies.

2.5 Methodological implications

In terms of creating a research methodology (or methodologies) for local authorities to use in their assessment of inclusionary and exclusionary impacts of congestion charging regimes, the data that local authorities possess favours quick, broadbrush identification of excluded areas. This data can be analysed in a number of ways, and authorities translate the IMD rating of a particular ward in terms of poverty, poor transport infrastructure, or the demographic make-up of the area. Data collected by transport planners as a matter of course is also used to identify traffic volumes and travel patterns in given (especially urban) areas. These may be compared to the IMD to determine whether or not geographical exclusion is connected to certain travel patterns and modes.

Recent research into transport and social exclusion in Newcastle (Moore and Lilley 2001) has adopted such an approach, selecting three geographically defined areas and then analysing survey data to provide a picture of the demographic make-up of excluded areas *and* of their transport practices. This work throws up some unexpected results, for example showing car use to be higher in the 'New Deal' area (most socially excluded, according to the IMD), than in the more peripheral parts of West Newcastle. This would appear to contradict the assumptions made of a link between transport exclusion and low car ownership, but may be explained by a greater degree of informal car-pooling or sharing practices (see Rajé 2003, which shows similar results).

In practice, local authorities anticipate those constituencies likely to be adversely affected by congestion charging, as the low paid, shift workers etc. In this they adopt a model of exclusion that is taken to be an absolute state, largely unrelated to issues relating to the *need* to travel. In keeping with this approach, the 'travel poor' are presumed to be those who do not own a car, or are poorly served by public transport. This way of thinking, which is refined in the minutiae of specific policies, supposes that the excluded can be identified geographically (through 'common-sense' or contingent local knowledge, IMD ratings, or easily recognised 'isolation') or demographically (belonging to a group identified as vulnerable to exclusion, or residing in an area with a high proportion of such groups). There is a general reluctance to consider new methodologies for identifying exclusion, or for evaluating the impacts of congestion charging upon it. In the next chapter we turn to some new methodologies.

Chapter 3 Measuring and Conceptualising Socio-spatial Inclusion/Exclusion

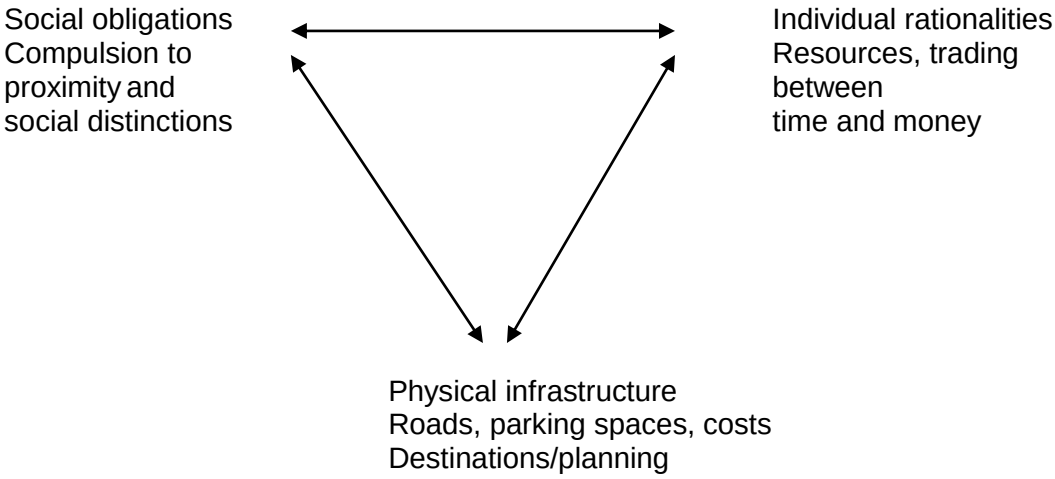
3.1 Introduction

One aim of CHIME is to operationalise the theoretical model of social-spatial inclusion/exclusion outlined in the diagram below and to see how Local Authorities might use it to measure and assess the impact of various charging schemes.

We have just seen that studies of mobility-related exclusion often concentrate on specific categories or on specific *neighbourhoods* already identified as 'socially excluded'. Our approach differs from these in that we do not assume that pre-defined social *categories* and/or geographical *areas* suffer from social-spatial exclusion. Instead of taking the social and spatial distribution of impact for granted, our goal is to help Local Authorities *discover* what difference charging schemes might make and to whom.

In tackling this issue, we argue that social-spatial inclusion/exclusion is contingent, relative and contextual and that it emerges from the interaction of (a) obligations to proximity, (b) personal resources (for instance, of time and money) and (c) physical infrastructure and provision.

Social-spatial inclusion/exclusion is an emergent property of the interaction between social obligation, individual resources, and physical infrastructure.



All three interactions can be considered in terms of time, destination and mode. This theoretical approach has practical implications for methods of measurement. First, we cannot assume that people who are, for instance, poor, or disabled, or living in a multiply deprived area are automatically social-spatially excluded. Whether they are depends upon their obligations to proximity - which groups and situations they want and need to be part of - and their ability to realise these obligations.

Second, we cannot take measures of accessibility (for instance, the number of buses passing per hour, the time it would take to reach a given destination by car or by public transport, etc.), to reveal patterns of social-spatial inclusion or exclusion. Again what matters is how those features play out in the 'triangular' interaction of obligation, resource, and infrastructural provision.

Third, and as others have acknowledged, there is a paucity of data on the *relationship* between transport and social exclusion as defined above. Adopting a similar approach to our

own, Church et al. (1999), suggest that this relationship is influenced by '(1) the nature of time-space organisation in households; (2) the nature of the transport system and (3) the nature of time-space organisation of the facilities and opportunities individuals are seeking to access' leading to a conclusion that 'there is a clear need for a selection of indicators to be identified that reflect the processes linked to social exclusion and in particular, the role of transport in that exclusionary process' (and see Scottish Office 2001: Chapter 7).

In what follows, our objective is to identify indicators that might fit this bill, that are available to Local Authorities and that could, in combination, construct a picture of the nature, location and extent of social-spatial inclusion/exclusion as defined in this tripartite model. We begin by isolating features associated with the three 'nodes' in this triangle.

3.2 Individual and household rationalities and resources

Under this heading we group together resources that are more and less readily available to individuals and households and that are relevant in negotiating and arranging travel patterns. Church et al (1999) highlight the importance of time-space organisation in households, a feature Silverstone describes as 'clocking' (1993). By this Silverstone means the patterning of domestic schedules and the routines of coordination around which the household revolves. Spatial-temporal structures of this kind have the dual effect of shaping the character of mobility-related obligations (to be home for dinner by 7pm, to leave the house by 8 in the morning etc.) and the temporal 'resources' available to different members. In considering this aspect, we would also underline the importance of the 'juggling' and relative valuing not only of time but also of money, the availability of different modes of transport and/or means of access and communication for and between different household members.

Exactly what capacities count as social-spatially relevant resources depends, in practice, on the obligations that are to be met and the infrastructural contexts in which these take place. Even so, Axhausen's generic catalogue of the 'tools' of mobility, that is the tools required for full participation in contemporary society, is a good starting point (2002). Working with this list, we identify measures and indicators that might be used to assess the means people have to meet their social-spatial obligations and that might be interpreted, in the aggregate, as relevant data when mapping or quantifying relevant resources available to households within a Local Authority area.

Access to or use of a car
Data on car ownership is available at ward area level as an indicator in the DTLR's Index of Multiple Deprivation (IMD). CACI Ltd's ACORN data (based on 78 indicators taken from census data, inter-census surveys and market research) includes figures on 'car availability' for each post-code area. A study of transport and social exclusion links in Newcastle (Moore and Lilley 2001) suggests that use of a car is more critical than ownership. Supporting this point, a DTLR study of mobility, public transport and social exclusion has shown that 30% of residents in a New Deal area and 50% of rural residents relied on neighbours for lifts (2000: Appendix 4).

Financial resources
Data on household income is available at ward area (IMD) and by post-code (CACI).

Temporal resources
These are much more difficult to assess. It might be possible to relate the conclusions of time budget studies or analyses of travel diaries to market research based 'lifestyle' clusters (for example from CACI) and so construct a crude measure of the likely time flexibilities and resources of different social groupings, perhaps relating to life course. Expectations of how long it is 'reasonable' to spend commuting and the relation between the costs in time and money and the income earned are marked by specific understandings of the value of time,

concepts of constraint, and quite pragmatic analyses of the (economic) risks of lateness. In an ideal world, we would need to capture peoples' perceptions of the relative significance of time and money in order to understand how these resources are deployed and understood by those who are variously time rich but cash poor, or cash rich but time poor.

Telephone connections
We include this as a necessary 'tool' of social participation (Fischer 1992). It is perhaps now also relevant to take note of mobile phone ownership since this is increasingly important in managing the spatial-temporal coordination of self and others. OFTEL have national data on both and on those who rely on public telephones alone or in combination with pre-pay mobile phones. Individual telephone companies may have data on withdrawal from fixed-line service provision (i.e. households that are cut off), and CACI's Lifestyle*uk* database includes information on the propensity for owning mobile phones, more than one phone line and so on (on mobile phones, see recent research by Hulme and Peters 2001; Brown, Green, Harper 2002).

Points of contact
Axhausen (2002) suggests that effective social participation also depends on having a constantly available point of contact - an answerphone or e-mail account - where messages can be left and picked up at a later date. Lifestyle*uk* data from CACI provides post-code level estimates of the probability of computer ownership and internet access. Some local authorities (e.g. Nottingham 2000) have also commissioned research into community level availability of internet access.

Individual, household or aggregate data on the availability of these tools for social participation, mobility and communication might, in combination, be used to compile a composite picture of the means and resources that individuals or groups of individuals bring to the 'problem' of meeting and managing social obligations. Research on the use of phones has, for instance, shown that people who do not have a fixed phone line are typically on a low annual income and are unlikely to own a car - but are as likely as the rest of the population to own a mobile phone (Oftel 1999). More thought needs to be given to the relative significance of these measures and to the constitution of key combinations. Before doing so, it is important to consider how we might characterise indicate people's 'compulsions to proximity' (see Boden and Molotch 1994; Urry 2002a, 2003).

3.3 Social obligations and compulsion to proximity

This is the hardest dimension to assess. We need to establish the density and spatial distribution of social obligations and networks, effective participation in which requires co-presence and proximity. Some relevant aspects of this are recorded but usually with respect to specific destinations like work, school etc. There are, for example, sources of data on:

Travel to work
National data is collected through the General Household Survey (SHS in Scotland), and by Local Authorities when undertaking traffic surveys for purposes of traffic planning. Planners also work with large employers in negotiating new developments (with reference to PPG 13), and in constructing Travel Plans or Green Commuter Plans. Some employers have good knowledge of where their staff live and how they get to work.

Travel to school
Local Authorities are collecting data on this aspect of obligatory travel when working with individual schools in developing Travel Plans. Nationally aggregated data on distances to school and mode of travel are collected by the National Travel Survey and available from DfT (see DETR 2001; DfT 2002a).

Travel for leisure/shopping
Certain sites and locations (e.g. supermarkets, sports centres, tourist attractions) survey their customers and visitors and undertake market-research to discover where these people come from, and how they get to the site in question. Some of this data may be available to Local Authorities.

Health services
GPs and hospitals hold data on the home addresses of those who use their services. The index of multiple deprivation (DTLR 2000) also uses the 'geographical access to services' index to rank areas by the physical accessibility to a number of services including GPs and hospitals.

Social services
Local Authorities hold data on the home addresses of those who use community or voluntary transport, meals on wheels services, etc.

These 'site-based' points of data collection tell us little about the combination of obligations or the bundling together of social-spatial demands experienced by individuals in the course of their everyday lives. The Joseph Rowntree Foundation *Poverty and Social Exclusion: Survey of Britain* represents a more relevant effort to capture the extent and demographic distribution of access to or exclusion from socially defined activities and customs deemed necessary for a modern citizen (Gordon *et al* 2000). As the Rowntree report notes, 'There are social customs, obligations and activities that substantial majorities of the population also identify as among the top necessities of life.' (Gordon et al 2000).

Respondents to that survey identified the following: 'Among the customs are 'celebrations on special occasions such as Christmas' (83%) and 'attending weddings, funerals' (80%). …Among the obligations and activities described as necessary are not just those which seem on the face of it to satisfy individual physiological survival and individual occupation - like a 'hobby or leisure activity' (78%). They also include joint activities with friends and within families such as 'visits to friends or family' (84%), especially those in hospital (92%). They involve reciprocation and care of, or service for, others. People recognise the need to have 'friends or family round for a meal' (64%), for example.' (Gordon et al 2000)

But the Report suggests that '…almost 14% are too poor to be able to engage in two or more common social activities considered necessary: visiting friends and family, attending weddings and funerals or having celebrations on special occasions.' (Gordon et al 2000)

This work gives us a snapshot of social exclusion based on social obligations and compulsions to proximity. It is, however at a high level of generality both geographically and temporally. There is no research that details more accurately social-spatial networks of obligation. While there is discrete and aggregated data on the location of kin, friends, membership of organisations and so on, what is missing is research that shows the precise nature and frequency of travel required to maintain such networks (see Urry 2003).

It does seem that the social-spatial patterning of obligation varies over the life course (Gordon et al 2000). Although it would involve making over simple assumptions about this relationship, data on the demographic and household composition of different areas could be used to estimate the degree or extent of social obligations creating compulsions to proximity. Such data is available from the census or from Lifestyle*uk*

Rather than trying to discern the full range of situations in which people want to be co-present with others, an alternative strategy is to focus upon 'blocked desire'. In keeping with our model, exclusion arises when people cannot meet what they take to be obligations of co-presence. We might therefore think about measuring such 'frustrations'. Although relevant

data is limited there are specific instances in which efforts are made to discover whether a lack of transport- prevents people getting to job interviews, which might be extended to cover appointments at court, with the police, at hospitals or with GPs, and so on. Localised studies as in Newcastle, have, for example, invited respondents to identify locations which they felt obliged to visit but which were in fact hard to access (Moore and Lilley 2001: pp 22-3)

More generally, and in the absence of a representative survey of social-spatial networks and their mobility-related implications, it is difficult to isolate 'proxy' measures of social obligation and compulsion to proximity.

3.4 Physical infrastructure

Local Authorities have access to much relevant data on this aspect and are, for example, able to map accessibility by automotive and public transport within their localities. Relevant and readily available data includes:

Public transport timetables
The index of multiple deprivation takes account of distance to bus stops. Other data, for instance, on the frequency of service along different routes at different times of day and on holidays and week-ends is routinely available.

Social/voluntary transport
Transport provided by the voluntary or private sectors (and in other more informal contexts, eg. bussing children to mosques) makes up a growing percentage of what we might define as public transport, for example 'commercial and tendered bus services, supermarket courtesy buses, taxis, health and social services transport, education transport, community transport of various types, various types of rail and tram service' (DTLR 2000: chapter 8). Data on the use of such facilities and demand responsive forms such as dial-a-bus schemes or the use of women's buses is often collected (see chap 8 below).

Indices of access
The index of multiple deprivation contains assessments, by ward, of the physical proximity of vital services. These can be mapped and assessed in conjunction with data on car ownership and/or the availability of public transport.

As examples, Bradford's work with Friends of the Earth (Pennycook *et al* 2001) maps levels of car ownership along with bus routes graded according to the frequency of service. This data is used to reveal localised areas in which and to which there are problems of access. Nottingham City Council use similar techniques in their Local Transport Plan (Nottingham 2000). Hampshire County Council has also attempted to provide geographical maps of overall 'accessibility' (Hampshire County Council 2001: 40), taking into account both private and public transport infrastructures. These mapping techniques are spatial and not temporal. In theory it would be possible to produce maps similar to those developed by Bradford for each hour of the day and for different periods (weekdays, weekends, holidays, winter etc). Such material would then reveal the spatial and temporal hot and cold spots of public transport provision (see chapter 4 below).

A similar, temporally sensitive, scheme is suggested by Church et al (1999) who propose 'that a GIS based system should provide a locally based view of access mapping (by address) the location of facilities such as post offices, shops and transport infrastructure (bus stop, rail station) which would allow calculations of the average time required for travel to these locations from within the area investigated. A cumulative indicator could then identify the total time taken to access a specified range of services and facilities. This would allow the identification of localities suffering from access problems; the extent to which areas characterised as excluded through other indicators suffer from poor access to facilities and

services; and could possibly also provide a means to assess the impact of transport measures implemented to address these access problems (and see Scottish Office 2001: chapter 4).

One difficulty is that these exercises consider transport (and often public transport) in terms of the *access* to predefined locations rather than in terms of more varied and unpredictable task of establishing and maintaining complex social networks.

Crossing the previous category, on obligation and proximity, and this, studies such as Moore and Lilley (2001) have sought to determine the extent to which people perceive the availability (or not) of public transport making it difficult to undertake certain predefined activities like shopping, meeting friends and family, child care, education or health care. Not surprisingly recorded difficulties relate to where the respondent lives with respect to the fabric of the town, to the social geographical location of key facilities, and to the radial routes that characterise the physical infrastructure. For example, people living in the city centre found it harder to access childcare than those based in more suburban locations, but had no trouble getting to the shops. Different patterns were recorded and experienced by respondents based outside the city centre.

As these examples indicate, spatial measures of physical proximity are commonly used in urban and transport planning. However, these miss two important aspects. First, they take accessibility to be a generic feature of equal significance to all members of the population. Second, they concentrate on access to readily identifiable amenities: work places, schools, shops, hospitals, civic buildings, etc., rather than to the informal social networks of family and friends, hobbies and leisure.

3.5 Indicating social-spatial inclusion and exclusion

Congestion charging involves changing the physical infrastructure and the services it affords. The purpose of CHIME is to develop methods for assessing the consequences of such change for social-spatial inclusion and exclusion. What might the inclusionary/exclusionary impact of such schemes be, for whom, and how might that impact be revealed and assessed?

Starting from first principles, we tried to identify a range of measures that would, in fact, relate to social-spatial inclusion and exclusion, defined in terms of the tripartite model. Building on the information and ideas presented above, we now outline a couple of plausible and technically viable exercises that could be undertaken with selected Local Authorities and which would provide a more encompassing picture of social-spatial inclusion/exclusion.

Plotting resources
Ward or even post code level data on household income, predicted access to the internet, access to mobile telephones, car availability and ‘time’ (roughly approximated in terms of life course, some stages being more ‘harried’ (see Southerton, 2001; Southerton, Shove and Warde, 2001) than others), could be analysed and combined in different ways to explore the relationship between these variables. This would allow us to plot distributions of, for example the time-rich/cash poor and the time-poor/cash rich, to identify those with a full range of such resources as compared to those with only a few, and so on. Such an exercise would generate better understanding both of the distribution and likely combination of social-spatially relevant resources and an appreciation of how Local Authority populations are provided for in these respects. This would permit identification of social groups likely to have specific social-spatial relevant resources, or combinations of such.

Plotting aspects of social-spatial and temporal access
Access mapping exercises like those undertaken by Friends of the Earth for Bradford could be extended to take account of temporal variation in the frequency and timing of public transport. This, together with existing data on traffic flows and car availability, could be used to produce time-sensitive pictures of what we refer to in chapter 4 below as the 'hot' and 'cold' spots of time and space with respect to public and private transport.

Resources and infrastructures in combination
Together, the two exercises outlined above could be used to identify 'hot' and 'cold' places and populations. For example, it might be possible to identify areas/times in which only those with high levels of relevant social-spatial resources could reach distinctively 'cold' (i.e. poorly served) areas at specific times of day. Equally, people close to 'hot' spots - i.e. rush hours and rush places - may not suffer from social-spatial exclusion despite lacking what might be otherwise important social-spatial resources.

In combination, secondary analyses of this kind could help Local Authorities focus attention when thinking about assessing the social-spatial impact of congestion charging schemes. This would have the further benefit of actually testing the relation between transport-related social-spatial inclusion/exclusion and that represented in composite indices of multiple deprivation. It may be that there is considerable overlap, but maybe not. This is an empirical question that could be explored. On both counts, such tests are still worth pursuing.

However, the understanding of patterns of social obligation and compulsions to proximity remains elusive. We have not found relevant research or material that would allow us to estimate this essential dimension of the theoretical model. In the next chapter we explore some travel and time dimensions of social obligation resulting from what we term the compulsion to proximity.

Chapter 4 Time, Congestion and Exclusion

4.1 Introduction

Building on the idea that patterns of mobility have to do with changing patterns of social life and urban development, this chapter has two ambitions. One is to articulate and further explore the social dimensions and determinants of travel, concentrating especially on aspects of spatial and temporal co-ordination. We address this issue from various angles, thinking about the collective ordering of space and time *and* about how individuals schedule and organise their own mobility within the context of given infrastructures. The second goal is to consider the implications of this discussion for developing 'integrated' transport strategies and for Local Authorities' capacity to influence the relation between space, time, mobility and social inclusion/exclusion.

As a specific example from interviews conducted, the adoption of 'parking control' by local authorities is explained as a conscious intervention to discourage 'commuter parking' (which ties up space inefficiently for long time periods) in favour of 'leisure parking' (by tourists or shoppers, who use the spaces for efficiently short times whilst directly contributing to urban centres). Since proposals of this kind tamper with physical *and* social systems and associated distributions of space and time, they cannot be understood in isolation. In anticipating the operation of such schemes it is necessary to consider how people in their increasingly complex and networked lives juggle time and money in order to satisfy various 'compulsions to proximity' (relating to the social networks within which they are embedded), given that is the opportunities and constraints engendered by the transport infrastructures which surround them.

We begin by outlining some of the 'social' processes that determine travel flows and structure the social-technical-temporal properties of transport systems as a whole. Our next step in is to organise these ideas in terms of a distinction between the 'hot' and 'cold' spots of space and time. This framework underlines the *relation* between rush hours, rush places and calmer, less dense, locations and times. It also shows the complex intersection of individual and collective systems of mobility. We subsequently turn specifically to the importance of 'time' for understanding travel, transport infrastructures and congestion. A wide range of such times is discussed with regard to households, infrastructures and local authorities. Further discussion of the relation between time and mobility leads us to consider social divisions that are implicit in and reproduced through infrastructural change. We review alternative styles of policy intervention, each of which draws upon different notions of need, and each has specific implications for the long-term density and distribution of hot and cold spots within the infrastructures of space and time.

4.2 Social Determinants of Travel

Compulsion to proximity

In thinking about the social determinants of travel we start by observing that it is often not 'necessary' for people to travel since there are many other forms of communication between them. These include the letter, telegram, telephone, e-mail, videoconference, text messaging, radio, television and so on. Indeed the 'necessity' of travel was significantly highlighted by September 11th with its apparent effects in substantially reducing domestic travel within the US. It seemed that a variety of alternatives to physical travel were in fact available. The key notion we argue in explaining why travel is *on occasions* felt to be necessary is the 'compulsion to proximity', that people largely travel in order to be co-present *with others for certain periods of time* (see Urry 2002a). Travel is embodied and as a result people are physically co-present with work-mates, business colleagues, friends, partner or family, or they bodily encounter some particular landscape or townscape, or are physically

present at a particular live event. In other words travel results in intermittent moments or intermittent *periods* of physical proximity to particular peoples, places or events. This proximity is felt to be obligatory, appropriate or desirable. It is not a matter of choice on that occasion. Why is this?

In relationship to other people, this 'thick' co-presence involves rich, multi-layered and dense conversations (see Boden and Molotch 1994). Co-presence especially affords eye contact with the other that can establish intimacy and trust. Face-to-face conversations enable the talking through of problems, especially the unmediated telling of 'troubles'. In such conversations topics can come and go, misunderstandings can be corrected, and commitment and sincerity can be directly assessed. Especially important is how this enables the building up of trust, something that gets worked at and involves a joint performance by those in such co-present conversations. Also physical co-presence can reveal the lack of trust such that somebody should not to be believed or that the deal should not be completed.

Participants travel to meet together, at work but in many other contexts. People commit themselves to remain there for the duration of the interaction, and each uses and handles the timing of utterances and silences to 'talk'. There is an expectation of mutual attentiveness and this is especially the case within 'meetings' (see Schwartzmann 1989, one of the few studies of 'meetings co-presence'). Such meetings can often be multi-functional, for making decisions, seeing how one is heard, executing standard procedures and duties, distributing rewards, status and blame, reinforcing friendship as well as distance, judging commitment, having an enjoyable time and so on. *Ceteris paribus*, mobility is a social good.

Research shows that managers in the US spend up to half of their time in face-to-face meetings and much of their time lies in working with and evaluating colleagues through physical co-presence (Boden and Molotch 1994: 272). This reflects the apparent shift within how organisations work, from the 'individual work ethic' to the 'collective team ethic' in which face-to-face social and leadership skills are especially valued. The higher the position in an organisational hierarchy the more significant is establishing and nurturing 'complex networks', where unwritten and informal co-presence is especially salient. Such networks also facilitate the 'inadvertent' meetings that happen because like-minded people from similar social networks are informally encountered, in certain parts of towns or cities, on golf courses, campuses, cafes, bars, conferences and so on. Where people live geographically distant from each other, then sites of 'informal co-presence' will be regularly travelled to. Research on the City of London in particular also shows how its intense communicative role has by no means disappeared and if anything has been enhanced, with those in financial services regularly travelling to meet up often in informal 'thirdspaces' for quality time (see Boden 2000). Indeed, companies such as Starbucks, who promote their coffee shops as such 'thirdspaces', have explicitly exploited such a need for 'meetingness' (see Urry 2003).

Changing contexts of co-presence and proximity

Further social processes affecting proximities include changing household composition with there now being many more, smaller household units and resulting travel between the dispersed members. There are increasingly global migration patterns with families strung out across the world forming new 'communities across borders' (Cohen 1997; Kennedy and Roudometof 2002). Leisure changes increasingly involve many more shorter visits being made to other places, rather than the standard two-week holiday (Urry 2002b). Computer-mediated communications are deconstructing organisations that were once huge centres of work and enforced proximity. Now organisational relations are most significantly made with consumers and this involves branding and 'navigation'. Neither demands the physical unity and organisational hierarchy of very large numbers of workers working within a single 'co-present' site with resulting works trains or buses (Evans and Wurstler 2000: 107-9). There is some growth of computer-mediated home-working (Doyle and Nathan 2001). All these processes, however erratic and unequally distributed, change the possibilities of, and need

for, intermittent co-presence that travel affords. They dramatically increase what Shove terms the 'mobility-burdens' in contemporary lives (2002).

There are also complex connections between the flows of people *and* the transporting of goods. Changes in the urban infrastructure will involve changes in the transport of goods, to shops, households, factories, offices, wholesalers and so on. But where goods go, people may also go, as with out-of-town shopping centres. Alternatively, people and goods may travel in different patterns, if say goods are delivered to the doorstep following a telephone or internet order. The equipment within a household affects these intersecting flows of people and goods, as Shove and Southerton show in the case of the apparently humble freezer (2000). There is some development of e-commerce that reduces visits to shopping centres and increases the delivery of individual items (and has apparently proliferated the use of mountain bike deliveries in New York).

Finally, deliberate interventions in the form of urban and suburban planning continue to shape the density of the built environment and the distances travelled by people and things.

4.3 Hot and cold spots of space and time

The generalised compulsions and contexts of co-presence and proximity outlined above have real meaning for how people organise their daily lives. The morning 'rush' hour is, for instance, a consequence of many individuals each striving to reach appointed locations of co-presence (schools, workplaces, etc.) at an appointed time so as to permit synchronised proximity. The institutionalisation of the 'normal' working day and the social-spatial geography of cities in turn translates into hot spots of space and time: jams, overcrowding, and congestion being the result. There are also cold spots such as now neglected seaside resorts in summer, second order shopping centres, empty industrial estates and so on[4].

While collective scheduling continues to be an important coordinating force, there is evidence that social-temporal patterns are changing. The twenty-four hour society creates opportunities for distributions of activity not possible under other more rigidly scheduled regimes. One consequence of an apparent breakdown of what used to be predictably scheduled events (fixed meal times, specific times for social interaction and times for work) is that people are increasingly obliged to negotiate the details of co-presence case by case often via the mobile while actually 'on the move'. For some at least, the scheduling of social life appears to be an increasingly 'do-it-yourself' operation - a question of arranging encounters around flexi-times, and of searching for common slots between people with idiosyncratic, mobile phone organised schedules (Shove 2002; Hulme and Peters 2001). In such contexts, controlling the schedules of others, of when and where to meet, constitutes an ever more important asset of power.

For those involved in the morning rush hour, the experience is one of managing more and less 'dense' moments of the day and of moving between moments packed with greater numbers of discrete events, and of periods and places of relative calm. While certain people may have greater temporal flexibility than before, the consequent need to organise ever more complex diaries (more complex *because* other peoples' time is also more fragmented and less formally controlled), generates distinctive pressures for co-ordination and what we might call 're-coordination' in time and space (as Laurier and Philo 2001, describe in the case of highly mobile workers). Southerton argues that in coping with these pressures people cram multiple events and activities together, creating an intense busy-ness, so as to carve out other periods of 'quality time' elsewhere in their schedule (2001; see Shove 2002, on the 'rush class' as opposed to the 'leisure class'). Though developed person by person, such

[4] We do not literally mean that these hot and cold sites are like spots or hubs. They can take a variety of spatial forms, including often that of 'corridors'.

strategies have emergent consequences for the generation of the density and distribution of 'hot' and 'cold' spots of space and time across the complex social-spatial world.

The day-to-day management of stop and go, rush and slow, has further implications for the mobility *and* immobility of things, including vehicles, trains and aeroplanes. Again the relation between hot and cold spots of space and time is central. For example, all transport systems have to manage situations when their machines are immobile, partly to allow access, as at stations, car parks, airports and docks, and partly for longer-term storage. Issues involved include where such machines should be kept, whose land and resources are involved, how much should be paid for such 'parking spaces', who has access to such spaces, and what happens to these access and storage spaces when they are empty of their designated users. In the public transport sphere, issues are raised by factors that are integrally built into their operation, such as resting times at 'timed' stops, inactivity at stations, *ad hoc* alteration of routes due to perceived low demand and so on.

More generally, the urban infrastructure encompasses complex 'spaces', such as car parks, meeting places, roads, oil extraction sites, garages, underpasses, flyovers, motels/hotels, petrol pipelines, stations, workplaces, airports, shops and so on (Sheller and Urry 2000). These spaces *also* involve complex times. And again there is a range of different, often contested, social-temporal frames and scales at stake. As we consider below, the horizons and ambitions of the multiple interests involved are rarely synchronised. More immediately, the nature of congestion - exactly where, when it occurs and who is involved – results from the intersection of personal, commercial and political trajectories, and the individual and institutional strategies which ensue. The following comments unpick some of the elements of time that are integrally involved here, starting at the level of the household.

4.4 Contested Times

Path-dependency and flexibility: households and mobility

Some such rush hours/places stem from how travel comes to be 'locked in' to people's patterns of life. There is what we can call a long-term 'household path dependency' that means that modal choices are not simply a matter of short term individual household calculation but involve long-term commitment and obligation, of profound 'mobility burdens' (Shove 2002). These household path-dependencies involve living near rail or road links, a decision that then binds household members to a range of other commitments, to travel to specific schools, shops, workplaces and so on. And each of these 'locked in' travel patterns typically happen at certain moments of the day/night. Thus what seem like relatively superficial journeys occurring at certain rush hours can often stem from long-term household path dependency. These lock in that household and its members to travel to certain places at certain times, collectively creating the momentous ebbs and flows of people and machinery which define certain cities and towns, and can make some such places seem unbearably congested.

How household members manage their various compulsions to proximity also relate to individual and collective juggling of key resources including those of time and money. People in different situations have varying 'amounts' of both, the paradigmatic examples being those of a professional with plenty of money but a very tight timetable (see Southerton, Shove, Warde 2001) compared with an unemployed person who 'possesses' almost limitless time but few financial resources

The very idea of 'trading' between time and money, for instance, paying more for a faster or more convenient train, to use a particular road, or to avoid waiting implies a common currency of value, exemplified by the phrase 'time is money'. Although a common formulation, this equation obscures two dimensions both relevant to an understanding of social division and the structuring of space and time (see Adam 1995).

First, time is not valued in the abstract, but in terms of how it might be put to use. For example, it might be naively assumed that the unemployed are 'rich in time', but as many writers about time have pointed out, being rich in time involves having time to perform *meaningful* tasks (Reisch 2001). For many who have 'time to spare', such tasks are absent, leading to frustration and boredom.

Second, and depending on the route and distance involved, certain modes of transport (hitch-hiking, walking and to a lesser extent cycling) are only possible for those with 'time to spare'. In opting for these modes rather than faster alternatives, there is a conscious trade off between time and the *quality* of the experience. Thus: 'Hitching onto campus when I have the bus fare, in my case, is a conscious tactic of trading resources. I keep my money in my pocket, risk a long wait for a lift, but trade the speed and comfort of a car and the sociability of talking with the driver for the slowness, over-crowding and anti-sociability of public transport' (Cass 2002).

A further point to notice is that the relation between time and mobility is not fixed. Put simply, congestion convinces some people to leave their car at home but as road-space is opened up by the diversion of journeys or their displacement onto other modes, others take advantage of this new freedom and instantly negate it. Other positive feed-back loops relate to the demand to achieve temporal coordination. If more commuters seek to arrive by 9 am it becomes necessary for each to start out earlier to anticipate congestion and still arrive 'on time'. Rush-hours are therefore extended as a result.

In this context *flexibility* is potentially as valuable as the 'amount' of time itself. In short patterns of mobility are not only geared around the reduction of time (in the time is money sense), but also around the management of *timing*. This emphasis is evident in the spread of many *just-in-time* 'familial machines'. Devices like the telephone, radio, household TV/VCR, the PC, heating appliances, the camera/camcorder, and especially the family car are mainly stored within the home or garage and helped to form twentieth century family life. Easily operated and always accessible, they come to life *when* the family requires them and not when experts or the state determines. Their use depends upon personalised or familial time and not upon the objective, public timetable of the railway or airline (see Urry 2000: 191-2). Being one amongst this family of 'time-machines', cars extend where people can go to and hence what they are able to do.

Much of what many people now think of as 'social life' could not be undertaken without the temporal flexibilities of the car and its availability 24 hours a day. It is possible to leave late by car, to miss connections, to travel in a relatively time-less fashion. Not only that, some people find pleasure in travelling when they want to, along routes that they choose, finding new places unexpectedly, stopping for relatively open-ended periods of time, and moving on when they desire (Sheller and Urry 2000). By contrast, research shows the time-inflexibility for those who depend on public transport for the journey to work. In some cases this involves setting aside hours to make a journey which would take 20 minutes in a car, out of a fear that arriving late will further threaten their already precarious employment situation (Grieco 1995). Stradling summarises much survey evidence that brings out the importance for many people of the 'freedom to go where I want when I want' (2002: 4). The car permits extensive forms of flexible co-presence.

In this respect, cars are a 'convenience device' of contemporary society, a device that makes complex, harried 'just-in-time' patterns of social life possible, but only for those families owning, or with access to cars through renting, hiring taxis, accessing lifts from friends/family (Shove 1998). As Breedveld points out, in practice the amount of *'time sovereignty'* held by an individual is likely to be determined by social factors, of which the most salient is found to be education (1998). For those lacking *time sovereignty,* the issue may not be one of

changing travel times to avoid hot-spots, but one of lacking public transport connections at the times they need to travel (in the case of shift workers, cleaners and so on), or of having no temporal leeway at all which makes the co-ordination of their personal or household schedules with those of the transport infrastructure extremely problematic.

In sum, the distribution and density of hot and cold spots of space and time (and the consequent patterning of mobility) at the level of the household has to do with two apparently contradictory dimensions, namely those of lock-in and *path-dependency*, and the availability of resources that permit *flexibility*. We now consider the spatial and temporal dimensions at stake in the co-evolution and provision of transport infrastructures, paying special attention to Local Authorities' roles in this process. Again it is relevant to take note of path-dependencies, resource flexibilities and different forms of 'mobility power'.

Path dependency and flexibility - transport infrastructures
There are very *different time-scapes* involved in various transport infrastructures. There is the long-term infrastructural immobility of motorways, junctions, slip roads, underpasses, bridges and tunnels, as roads/cars connect almost all significant places in 'western societies' to everywhere else. These infrastructures based on the average size of cars/lorries historically derive from the shape of the horse drawn carriage; they are built for at least 4 people although 70% of journeys in the US involve 'driving alone' (Putnam 2000). The extent, range and impact of such infrastructures are becoming more and more extensive and increasingly interlocked with other infrastructures, especially flows of information (Graham and Marvin 2001). And at the same time the amount of infrastructure *per car* is declining, making driving increasingly demanding.

Further, in many cases changes to a transportation infrastructure take an exceptional time to occur. So while businesses and residents of an area may demand improvements in relationship to their perceived short-term needs, the design, consultation, planning and implementation of major infrastructural changes can take decades (such as the Channel tunnel rail link, Terminal 5 at Heathrow, or the Lancaster by-pass; Vigar 2002: chap 5). Thus there often is a contradiction between an instantaneous demand for improvement, and the lengthy timescapes involved in the implementation. This further means that the 'improvement' once built is often no longer relevant to new perceived requirements.

In addition, there are endemic issues of *temporal co-ordination*. For 'transportation' to be improved within an area and hence that the social exclusion of certain groups may get reduced, then many other changes have to be implemented in a temporally coherent fashion. This process is further complicated by the fact that the very groups that these changes are intended to benefit may be those who are slowest to adapt to them, as excluded groups are often dependent on informal information networks regarding public transport schedules, take many months to accept new routes and timetables, and may even abandon this mode if the changes are perceived as 'irregular' or 'unreliable' (Grieco 1995).

Thus alongside pricing schemes, other developments need to occur in urban environments, often before or at least at the same time as the demand reduction strategy. But these changes typically involve many other 'organisations' whose time-frames and financial 'interests' may be inconsistent with each other. These organisations can range from the local governing party that may lose majority status at the next council elections, to train operating companies concerned with shareholder value, to bus companies pursuing a long-term global strategy, to professional engineers concerned to build roads for the long-term and so on. Moreover, developing a mobility infrastructure should be partially iterative, so that changes take place in such a way that commitment to changing priorities occurs so as to build up support for new developments over a significant period of time. This relates to the conditions under which a growth coalition, involved in infrastructural developments, may be established and sustained within a given area. Vigar shows how UK local authorities have a built in bias

towards road building partly because that is the main policy under their control and where there is a powerful policy network of road engineers that work within local authorities as well as DTLR/DfT (2002).

To complicate matters further, relevant developments, including the long-term dislocations of home, work, school, shopping and leisure, lie beyond the control of any single 'actor' in the situation. In effect, the distribution of options foreclosed and still open (that is the shaping of path dependency and future flexibility) depends upon the interdependence of many factors, including:

- the rise of *megabusiness* (such as the supermarket chains) which increasingly wipe out other consumption choices and lock people into less sustainable travel patterns
- the hegemony of the ideologies of *choice* and *competition* in many areas of life, so that for example schools are ranked by exam league tables, and therefore there is a rupture of the home-neighbourhood-school link due to social competition portrayed as 'choice'
- the localised effects of *globalisation* in work situations, such as flexibilisation, dual income households, short term contracts and job insecurity, the rise of edge-of-town employment zones, all result in lengthening travel-to-work patterns
- similar developments in *leisure* facilities, with recreation areas in neighbourhoods being swallowed up by retail, industrial and housing developments, and their subsequent 'peripheral centralisation' in edge-of-town sports or leisure centres.

Such trends knit together and consequently change the landscape of opportunity for most. Hence it is no longer the case that a family can escape household path-dependencies of the kind we have described by simply relocating to another area. Instead, the changing nature of urban spaces dictates the travel patterns which are necessary to secure access to facilities which were previously available within a *local neighbourhood*; such access being a central aspect of social inclusion.

Local Authorities are in a position to influence certain elements of the long-term developments, yet these are but one amongst many processes, policies, products and plans involved. In reviewing Local Authorities' role and capacity for action it is relevant to take account of what we refer to as the *politics of time*.

The politics of time

Taking time, saving time or rescheduling tasks are central to all transportation systems. Many infrastructural improvements result from the unequal politics of time whereby certain social groups are able to convince policy-makers or private companies that their time and its scheduling is so important and needs to be saved (such as the reduction of car journey times by 2 minutes if a particular by-pass gets built). Different social groups politically organise around the importance of their time or the time of some other social group or around the claim that they have to travel at particular *moments* of time (rush hour, dinner time, holiday time and so on).

But also all transportation systems involve *waiting.* Again different social groups are variably willing or able to 'wait' and they demand and get very different conditions in which to wait. With the growth of a splintering urbanism and a 'galactic metropolis' there are increasingly segregated travel experiences and marked differences between groups (Graham and Marvin 2001: 228). There are striking contrasts between the VIP airport lounge and the uncovered, unsafe, unlit and 'non-smart' bus stop. More locally, the politics of time and waiting are central to the patterning of social inclusion and exclusion within an area. The more socially excluded a group the more that we would expect their time patterns to involve time-inflexibility, much longer periods of waiting in less safe and provisioned environments, and

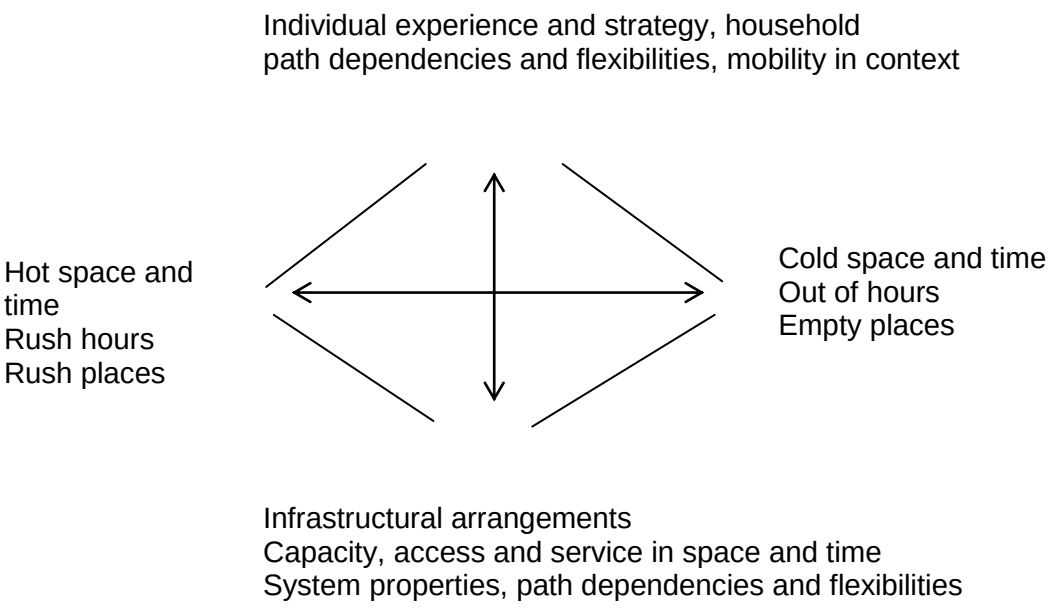
what could be called ‘time-dependence’. Even within the same transport system there are big variations in the degree of time-dependence (charter air passengers versus frequent flyers).

These observations about the politics of time redress what seems an imbalance in Local Authority policy-making. For the most part, Local Transport Plans focus on space rather than time. Where they do deal with time they concentrate upon the scale of minutes and journeys, and not upon the more macro-level issues associated with the scheduling and co-ordination of crucially significant *social* activities. There are, for example Local Authority plans (and some implementation) to up-grade bus-stops and make them ‘smart’, providing real-time information as to waiting times and connections. There are also plans to install technological systems that provide interaction between buses and the infrastructure itself, so that traffic lights allow the passage of buses as a priority. This again helps to ‘level the playing field’ between users of different transport modes in a temporal sense. Likewise the development of bus lanes should help to change travel times in favour of public transport.

However, other schemes such as those which promote car sharing, lift-sharing and car-pooling, both require *and* engender new forms of temporal and spatial co-ordination. In practice, difficulties operating these schemes relate to some of the trends already identified: flexible working hours, increased commuting distances from scattered locations, and a valuing of travelling alone and at whim (see Bull 2000, on the pleasures of sounds in the car). In designing such schemes the challenge is to manage the specific pattern of time-space challenges that people now confront. The community provision of ‘White Bicycles’ in Amsterdam in the 1970s was, for instance, momentarily suited to the flexible management of short journeys in a compact city. However, other methods and modes would be required to provide equivalent solutions within central Manchester or Birmingham today.

4.5 Hot and cold spots: infrastructures and policies

Thus far we highlighted the relation between space and time, and pointed to the interdependence of ‘hot’ and ‘cold’ spots, recognising the relative status of rush and calm, congestion and desertion. We have also commented on the relation between individual and collective strategies in managing time and space, for instance, noticing patterns of positive feedback, and the collective challenge of co-ordination and the organisation of co-presence. In thinking about these strategies we noted individual and infrastructural path dependencies and examined inequalities in terms of both individual and institutional flexibility. The diagram below puts these elements together:



As this suggests, patterns of congestion and emptiness (in space and time) are structured through the intersection of personal schedules and arrangements and the infrastructures, resources and facilities available to them. In order to understand the properties of the system as a whole we need to think about how when and why combinations of people, proximity and conjunction get locked together. This means paying attention to the distribution of 'hot' and 'cold' spots of time and space, but above all to the relation *between* the hot and the cold both at the individual and at the aggregate levels.

We now consider the varied plans, policies and products that different public and private organisations have developed that affect the operation of such mobility systems. We can distinguish three main forms that these take, each based within different agencies and having different implications for the structuring of space and time.

First, there are the national and local authority 'predict and provide' models of demand and infrastructural development. In these increased mobility was seen as a desirable good. Predictions of future car use, which involved extrapolations from the present, were planned for through new road schemes developed by road engineers. These schemes then provided for what was predicted in the model. Such models governed transport planning up to the mid-1990s (in the 1986 Dept of Transport, there were 12,500 civil servants concerned with roads, 72 working on rail and 53 working on public transport; Vigar 2002: 58). And these models were in effect successful, as shown by the extraordinary growth of car movement within the second half of the twentieth century, as opposed to mobility using other modes of travel. In the early 1950s there were many more miles travelled by bus and coach than by car, van and taxi. But by the mid 1990s car travel was a dozen or so times greater, swamping all other mobilities (see Vigar 2002: 12; Axhausen 2002). Predict and provide produced 'successful' increases in car-based mobility (see critique in Whitelegg 1997; Adams 1999; Vigar 2002). From this perspective, the ambition is to conquer space and manage flow and thus time by increasing capacity for automobility.

Second, there is the more recent policy of 'new realism' dating from the early 1990s (see DETR 1998). Here it is argued that the very expansion of the road network is not neutral but increases the amount of car-based travel (although many predictions were not in fact fully met: Vigar 2002: 49). With new realism the focus shifts from road engineering and its policy network linked into Local Authorities, the construction industry and the DTLR/DfT, to more difficult social engineering, namely changing car driver behaviour for economic and or environmental reasons through various forms of demand management. New realism also involves expecting that many organisations should develop new plans and policies, both local and national/European, and not simply engineering more roads and car use. Such a policy concentrates upon improved public transport, better facilities for cyclists and pedestrians, advanced traffic management, more effective use of land-use planning (through banning out-of-town shopping centres), traffic calming and a much widened analysis of how transport impacts upon many aspects of the environment and not just upon local amenities (see Vigar 2002: 15, 46, 58, 67; see Macnaghten and Urry 1998: chap 2, on changing notions of what actually counts as *the* 'environment'). This model focuses quite explicitly on managing and changing the relation between space and time (in different ways for different sectors of the population) for economic or environmental reasons.

Third, there are the plans and processes resulting in increased 'commercial segmentation' that develop a 'splintering urbanism' (see Graham and Marvin 2001: 249-52 on 'automotive secession'). Here the strategies of very many different private corporations and public authorities result in splintering the urban form, with strikingly increased segmentation of markets and of products. Automobility has always effected certain separations, of work from suburban home from leisure spaces from shops and so on. Social exclusion is very significantly spatialised through the increasing dominance of the car, taken to the furthest

extreme with the 'gated' commodified cities of north America. This exclusionary logic is taken further with planned electronic road pricing (ERP), road user charging or the work place parking levy. Graham and Marvin maintain that: 'highway space has shifted from being 'dead', public and electromechanical; now it is (or can be) 'smart', digitally controlled, privatised and sold as a priced commodity in a market for mobility that is increasingly diversified in both time and space' (2001: 250). Thus road networks may increasingly become computerised systems supporting new practices of privatised commodification, control and exclusion. Examples of electronically tolled private highways in North America include the Riverside SR 91 Freeway in Los Angeles, the Electronic Toll Road 407 in Toronto and the 1-15 Highway in San Diego (Graham and Marvin 2001: 253-5). Congestion charging represents a way of manipulating the relation between space and time through the introduction of market-based forms of demand management[5].

The first of these three policy styles, predict and provide, involves relatively straightforward extrapolations from the present, while the second developed in response to long term climate change and the need for transportation options to move beyond the incessant development of the 'great car economy' (Margaret Thatcher). The third alternative, of 'commercial segmentation', is consistent with processes already underway in other areas of infrastructural provision – what used to be uniform services are becoming commodified and differentiated in new socially excluding ways. Graham and Marvin describe this splintering urbanism, with for example the travel-rich having increasing choices of good public transport, paid for parking spaces or toll-based roads, protected cycle tracks and pedestrian walkways, and a generally 'smart' environment. While the travel poor, the time-dependent, may have almost no such choices as they wait in unsafe bus stops or unmanned stations or find it too expensive to get their cars on the road or lack the smart cards necessary to enter premium places.

How to overcome congestion without adding to the splintering of the city is thus a major challenge for those devising transport plans and policies, given that major companies are producing new products that are based upon segmenting the market-place across time-space. This constitutes a formidably challenging task. While it is easy to identify contrasting interests and sometimes possible to identify differences of power (over the longer and shorter term), it is hard to pinpoint what Hughes terms 'system builders', that is actors in a position to steer events, enrol others, and deliberately engineer the direction of infrastructural development (1984). Local Authorities are able to devise plans, yet they do so in a context over which they have only limited and always changing influence, whatever policy they adopt. The more positive conclusion, and one following from the analysis here, is that the future of transport infrastructures depends not only on the distribution of roads, rails, cars, buses, trains and so on but also on the structure and organisation of social life. By taking account of space *and* time, and by reviewing the relation between 'hot' and 'cold' spots and moments, Local Authorities may be able to identify non-transport related opportunities for intervention (most obviously through planning and access-related initiatives) which have far-reaching effects on the mobility system as a whole. Looking optimistically, the promotion of 'participation' in transport policy making, through out-reach work and partnerships or real or virtual fora, may install local people as the very 'systems-builders' of the future as their travel needs get directly inputted into policy developments.

[5] There is a further central government policy we do not consider here, namely 'ecological modernisation' that also developed during the 1990s (see Hawken, Lovins and Lovins 1999). This arose in the context of long term assessments of global warming. One emphasis is on how private sector manufacturers should produce smaller, lighter, micro-cars, perhaps based on 1-2 persons, using battery or hydrogen fuel cells (or a hybrid), and replacing the heavy steel body with a much lighter and longer-lasting carbon or nanotechnology chassis (see Motavalli 2000). Further, long-term developments in hybrid public-private leasing schemes could separate private *mobility* from the institutions of private *ownership*, and this would solve both car parking problems and the massive problems of car disposal and recycling. The UK Government appears to endorse this policy in the report for the Cabinet Office, 2001.

In most models of Local Authority agency over transport demand management, it is usually stressed that the control of land-use and planning is central in reformulating travel patterns over the long-term, essentially reconfiguring the spatial-temporal matrix to combat the splintering of the urban form. In practice, data suggest that *centrally* issued planning guidance such as PPG13 (which directs Authorities to presume against developments which are located at the edge-of-town or otherwise increase unsustainable travel patterns) are frustrated *centrally* (by government inspectors or Ministers) even when they are supported and deployed *locally* by the authorities themselves (the Metro Centre in Gateshead and a factory retail outlet in Co. Durham are examples from research we have conducted). The localised effects of the processes of globalisation impact (especially, but not exclusively, urban) local authorities in terms of the priority given to policies of encouraging inward investment and job creation, and these then militate against the effectiveness of those demand-management policies which they are currently pursuing.

In practice, the discourse of 'partnership' is the most widely used attempt to bridge the disparity between local authorities' agency and that of other bodies in the transport arena. This often amounts to the exercise of highly informal 'influence' in discussions with transport providers on the desirable routes and schedules, pricing etc. Where there are 'gaps' in either a temporal or spatial sense in the provided infrastructure (identified more often than not by Local Authority transport departments rather than the providers themselves), the 'old' model of *subsidisation* for socially necessary services is still often the norm.

In addition, the definition of 'public transport' has been very significantly widened in the DTLR's report on social exclusion and transport to include commercial and tendered bus services, supermarket courtesy buses, taxis, health and social services transport, education transport, community transport of various types and various types of rail and tram service (2000A). This broader definition includes many more agencies that interact with Local Authorities in this area, and will complicate issues of transport supply whilst increasing the range of possibilities in tackling social exclusion. In terms of 'plugging the gaps' in transport infrastructures (the model most often employed by transport planners themselves), some of these modes may be more efficient than subsidising commercial provision.

The flexibility of 'just-in-time' transport technologies is also to a degree being extended into the public transport world. Local Authorities' local transport plans (LTPs) are increasingly including plans to extend demand-responsive services (such as 'Dial-A-Bus' services) as a more efficient way to enable socially necessary travel in a way which begins to parallel the flexibility of the dominant car mode (as we discuss in chapter 8 below).

4.6 Conclusions

We have sought to show that the nature of congestion and of potential congestion charging has to be related to the fundamentally 'social' processes that determine travel flows and structure the social-technical-temporal properties of transport systems. These flows need to be analysed, we have elaborated, in terms of the distinction between the 'hot' and 'cold' spots of space and time. More generally, there are many 'times' involved in the understanding of travel, relating to households, to infrastructures and to Local Authorities. Various policy intervention have been outlined, each drawing upon different notions of need. These interventions, especially those of Local Authorities, have specific implications for the long-term density and distribution of hot and cold spots within the infrastructures of space and time. We have shown how these varied policy interventions have different consequences for time and space distributions of mobility and access, especially as they develop within the context of large-scale commercialisation and splintering of cities.

Finally, the very notion of car-based congestion is itself complex and not something that is simply 'waiting' to be dealt with. Indeed our analysis of proximity shows that congestion is not necessarily a 'bad'. Indeed, in one of our interviews it was asserted that 'the fairest way of allocating roadspace is to allow congestion', as people with different financial resources are impacted equally and those for whom 'time is money' (such as the travel 'rich') may even be more likely to switch transport mode to avoid it. Congestion results from very large numbers of people desiring and needing to be proximate with each other at very particular moments of time and hence to travel to certain hot spots. Some congestion may be deemed tolerable since atmosphere and ambience in a place make it inevitable that there will be too much traffic at certain moments. There would have to be congestion in order that there is mass co-presence at that very time. Such congestion can indicate high levels of social capital within a particular urban environment. Reducing congestion through dissuading people from travelling could reduce social capital (see Putnam 2000, on social capital).

Alternatively it is argued that social life is actually far less rich because car-based transportation and especially high levels of commuting appear to lower the levels of social capital in an area (see Putnam 2000, on the US). In the latter case any systems to reduce congestion would be a good. Schemes for WPPL or RUC must consider whether dense, overlapping and rich patterns of social life will be sustained or might even be undesirably reduced if some charging systems are introduced. One implication is that it is necessary to distinguish between good and bad congestion. Thus congestions caused by many people going out in a city centre in the evening might be deemed 'good' while early morning commuting congestion is 'bad' (like good and bad cholesterol?).

Further, we should also distinguish between *actual* and *perceived* 'congestion'. The latter is probably much more important in affecting the willingness of the 'public' to accept forms of charging or levy upon their use of the car. But this allows for the possibility that actual congestion could be lower in some places than others and yet no pressure builds up socially and politically to deal with it. The Lancaster by-pass is an interesting case for us where there is very little agreement on whether the LOCAL roads are badly 'congested' (see Vigar 2002).

Also while new road building is a fairly straightforward policy, it may be hard for many to understand what is desirable about the policy of demand reduction especially at a time when bus transport is declining and rail transport is said to be in chaos (see Vigar 2002: 197). Demand reduction techniques may look like an unfair and discriminating imposition by public bodies.

Indeed, some of the objections to congestion will be developed by those with products to sell, especially smart products that can enable cars or their passengers to be monitored and charged (as with the recent plans from the Commission on Integrated Transport: see www.cfit.gov.uk/reports/ on February 2002). A technological fix is likely to stem from companies that would sell expensive and possibly ineffective smart products to public bodies, products that may be no more useful for supporting and developing a rich life of travel and co-presence than were the predict and provide road engineering solutions in the 1960sonwards. Overall Local Authorities have no option but to operate within a highly commercialised 'mobility network'.

Finally, non-transport policies are also often essential in reconfiguring people's relationships with transport infrastructures and changes in access. Grieco stresses the importance of *information networks* that are being taken into consideration by Local Authorities in developing policies (see on 'real-time' info schemes; Grieco 1995). While Hampshire County Council found that in addressing the transport needs of a school through partnership with the students, parents, governors and neighbours, no spending was required on 'on-street' transport measures. Instead, the creation of an on-site bus stop, the provision of information and cycle-lockers, and other measures satisfied travel needs without extensive transport

infrastructure spending. Social engineering of this kind may thus be as important as the substantial and often more dramatic transport engineering.

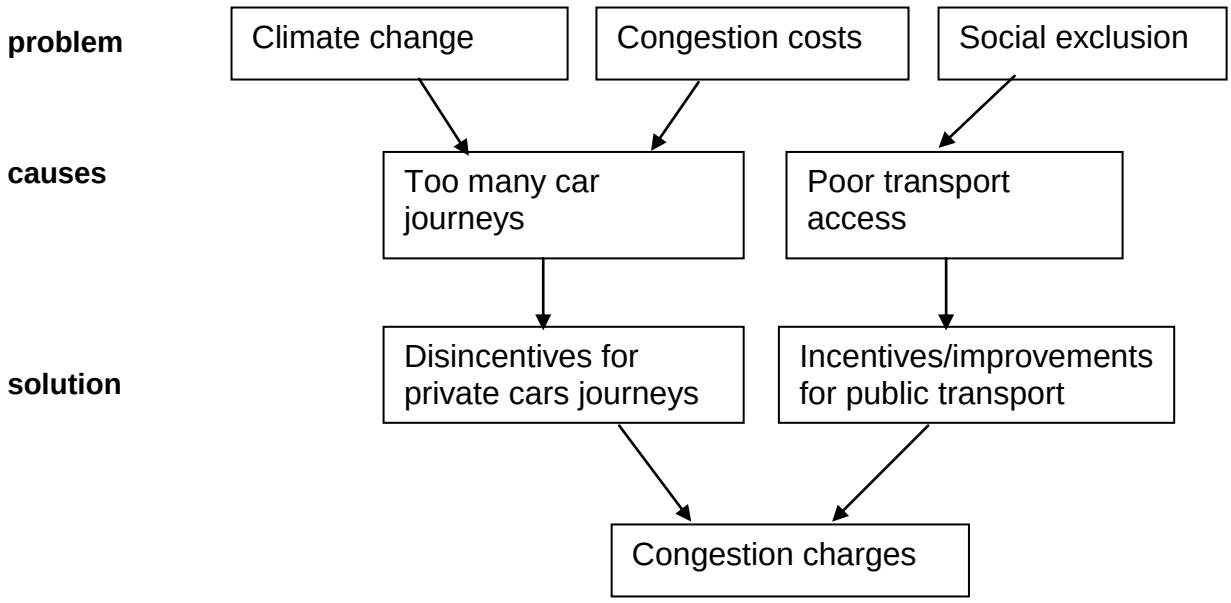
In the next chapter we re-consider the concept of ‘access’.

Chapter 5 Access and Social Exclusion

5.1 Policy Context

Congestion and workplace charges are part of a policy context in which the number of car-based journeys SHOULD be significantly reduced. The intention is to fine-tune policy so as to limit climate change by reducing the emissions of greenhouse gases, to reduce the deleterious economic effects of congestion, and to improve social inclusion by improving 'access. This threefold benefit from charging is shown below in Figure 1. A key element in understanding how congestion charging might reduce social exclusion is through improved 'access'. This chapter focuses upon this relationship of 'access' and travel (and does not consider climate change or the economic impacts of congestion charging).

The following figure sets out the policy context:



The importance of improved access is to be found in various Local Transport Plans. These are often framed in terms of reducing social exclusion through enhancing access or accessibility. Thus the Cheshire LTP intends to improve 'accessibility to everyday facilities for all, especially those without a car'. Indeed Objective 1 is 'To promote sustainable accessibility'. To achieve this the County Council will:

1. seek to reduce traffic growth and congestion;
2. ensure adequate *access* is provided to development areas;
3. improve *access* to economic centres of the County;
4. improve opportunities for inter-modal trips; and
5. improve facilities for the vulnerable and disadvantaged sections of the community, particularly with respect to *removing barriers to mobility* wherever possible (our emphases).

Likewise the Hampshire LTP maintains that lack of easy *access* to employment, shops, education, leisure and health facilities leads to social exclusion and a tendency to car use for such journeys. Improved accessibility and hence greater social inclusion is a strategic theme

in the local transport plan. The authority's LTP claims that: 'Access to jobs and training opportunities remains key to social and economic inclusion' (Hampshire LTP).

And more generally the Social Exclusion Unit's *Making the Connections: Transport and Social Exclusion* outlines the travel and transport implications of 'access'. This Report states that: 'We are analysing the nature of transport barriers to accessing work, learning, healthcare, and other key services and activities; and developing policies to remove them' (SEU 2002). *Inter alia* the Report notes that young people with driving licenses are twice as likely to get jobs as those without; that nearly one-half of 16-18 year olds experience difficulty in paying for transport to get to their place of study; that almost one-third of carless households have difficulty in accessing their local hospital; that children from the lowest social class are five times more likely to die in road accidents than those from the highest social class; and twice as many people without a car find it difficult to see friends. The Report concludes that 'social costs have not been given due weight in transport policy'. It also suggests, notwithstanding the LTPs briefly noted above, that 'local authorities do not routinely assess whether people can get to work, learning, health care or other activities in a reasonable time or cost' (SEU 2002: 4).

We consider that thinking about the spatial and mobility aspects of social exclusion is a generally very positive step. But we also suggest that the idea of improved access is a difficult one to implement. We suggest various extra considerations that local authorities might take into account when planning for improved 'access' through local intervention.

5.2 Limits of Existing Approaches

In a mobile world access to other people, places and services that are at some geographical distance is going to be of increasing importance to ensuring full 'social' inclusion. This sets up a significant series of challenges for local authorities charged with improved social inclusion especially when they develop *local* improvements to access.

The first challenge is to understand what is meant by the idea of 'access'. We showed in chapter 2 that many authorities use the term 'access' to refer to how pre-existing 'social groups' are or are not 'socially excluded'. But we argued that identifying large-scale socio-demographic categories and then concluding that all members of such categories suffer from a lack of access is not an effective way of determining the complex patterns of 'social inclusion/exclusion'.

We went on to demonstrate that in order to examine what effects charging might have on social inclusion it is necessary to examine the *spatial* and *temporal* aspects of the changing organisation of contemporary life. There are many ways in which people are unable *geographically* to access components of social life at *appropriate* times of the day, week or year. We suggested some methodologies to analyse and measure these temporal and spatial elements of social inclusion/exclusion in chapter 4. Socio-spatial inclusion/exclusion stemmed we suggested from the dynamic interactions between social obligations, individual choice and physical infrastructure.

Further, our research also showed that various authorities normally conceive of access in terms of the more *public or formal* aspects of contemporary life. The SEU Report refers to: 'work, learning, healthcare, and other key services'. The Hampshire LTP describes how the 'Lack of easy access to employment, shops, education, leisure and health facilities can lead to social exclusion and a tendency to rely on car use for these journeys' (Hampshire LTP). A typical concern then is whether certain clear social categories such as single parent families, or certain geographical categories such as those resident on certain estates, can access a range of mostly *public* facilities, of work, hospitals, schools, courts and so on.

However, this is too limited a view of what is involved in the notion of 'access'. We propose that the idea of access needs to be thought through in terms of the 'networked society' (see Castells 1996; Urry 2003). What seems important in contemporary life are the overlapping and intersecting social networks - in leisure, friendship, family life as well as in work and organisations. Moreover, intermittent travel is crucial to forming and sustaining such networks producing what we call 'moments of co-presence'. So social inclusion involves the capacity to form and develop various social networks often stretching across substantial distances but where that network intermittently meets. Being able to meet face-to-face is crucial to continued membership of that network. We now briefly describe some features of social, work-related and family networks, and the networks of older people, before drawing out some considerations for local authorities concerned to improve 'access' to these networks. Overall the networked nature of social life makes the notion of 'access' more complex and less locally focussed; and this provides a further challenge for local authorities operating within defined geographical limits and seeking to reduce car use.

5.3 Social Networks

It is argued that societies have now shifted from being based upon 'little boxes', where there was strong, overlapping membership of different social groups, to a system of 'networks' where connections are spatially dispersed and membership of one network does not necessarily overlap with any other network (see Axhausen 2002: 9). The members of social networks are more widespread than in the past, social networks less coherent with fewer people sharing multiple affiliations, and membership spatially overlap less. In transport terms this means that people have to travel longer distances when they want or need to meet face-to-face in order to maintain the 'same' level of social contact (see chap 4 above; Urry 2003, on face-to-faceness).

It seems that 'people have a larger set of active contacts than in the past' and increasing time is spent in sustaining these far-flung contacts. Since networks overlap less there is less likelihood of quick, casual, unplanned meetings (Axhausen 2002: 10). More time is spent planning and sustaining contacts with a small proportion of those who are known, while often devoting little effort with the many dispersed contacts except by phone, fax or email. Axhausen establishes the *prima facie* case that the increasing importance of social networks, as opposed to life organised in 'little boxes', explains changing travel patterns. Rather uniquely Kenyon, Lyons, Rafferty explore significant connections between travel, social networks and social exclusion (2002).

To summarise then: average distances between where people live in networks has substantially increased since the 1950s; social networks are more spread out and less coherent with fewer overlapping multiple affiliations; more 'work' has to be put into nurturing such networks since there is less casual interaction; and when people do meet face-to-face this often involves travel across substantially longer distances (Axhausen 2002: 9).

Networks at Work

Moreover, these informal networks are not just central to friendship and leisure activities. In well-known US research Granovetter showed that extensive *weak* ties of acquaintanceship and informational flows are particularly significant to searching for jobs that turn out to be successfully obtained (1983). It is these *weak* ties that connect people to a realm of outside worlds, providing a bridge other than that provided by close friends and family. The immediate social world is too close. It is the weak more distant ties that need to be 'accessed' and sustained. Serious limits are placed on the capacity to job search effectively without those weak ties *beyond* family and friend that are intermittently activated.

More generally, the Henley Centre summarises how Britain is a 'connecting economy'. The Centre argues that since: 'few of us actually make anything: we have meetings, we make

presentations, we encourage people'; hence 'our work is based on the influence we have over our networks' (Justin Worsley, Associate Director, quoted *Leisure Week*, June 15th, 2000; reported Henley Centre press centre). Access and meetings are crucial to contemporary life. And thus travel is necessary in order to meet up from time-to-time, by some or all of the participants. Doyle and Nathan describe how the logic of hyper mobility has set off an explosive growth in instant offices and airport hotels. The latter they describe as perfectly formed conference centres, allowing travellers to stay put, stay over and do their 'business' (Doyle and Nathan 2001). PricewaterhouseCoopers describe the growth of new 'nomadic networkers' (2000), while Wittel talks of the emergence of a new 'network sociality' (2001).

Many organisations have shifted from the 'individual work ethic' to a more networked model, with lots of face-to-face meetings and hence travel (see Evans and Wurstler 2000: 217; Boden 1994: 211). Reeves notes that 'the opportunity to socialise with work peers is a key factor in job satisfaction. Work is about companionship as well as compensation' (Reeves 2002). Moreover, the higher a person's position in an organisational hierarchy, the more significant is establishing and nurturing 'complex interpersonal networks' through face-to-face meetings (Boden and Molotch 1994: 273). Doyle and Nathan argue that: 'only via personal travel can members of top management teams position themselves for important face-to-face interactions' (2001: 13). Maznevski and Chudoba highlight the importance of face-to-face meetings even for the effective working of global virtual teams (2000). On the basis of longitudinal research they say that the temporal rhythm of such teams: 'is structured by a defining beat of regular, intense face-to-face meetings, followed by a less intensive, shorter interaction incidents using various media' (Maznevski and Chudoba 2000: 489). And into the future workplaces: 'will be highly interactive, not just with technology, but with people. The pacing and sequencing of work tasks will continue to be talk-based' (Boden 1994: 213).

By contrast with face-to-face meetings, it seems access achieved through letters, memos, faxes and email is less effective at *establishing* long-term trust relations. This is especially so where emotional, personal or financial activities are involved. It is said that the telephone is best used between persons who already know and trust one another. Overall non face-to-face access is more functional and task-oriented, less rich and complex (Boden and Molotch 1994: 263-7; Urry 2003). To be in a network thus requires access to appropriate forms of travel. Communication devices are important but often as a means to 'arrange' such travel.

In chapter 3 above we noted the importance for social participation of people possessing a 'constantly available point of contact', such as a 'secretary', answerphone, email address/account, mobile phone, answering system and so on. Moreover, computer communications will not in the short run reduce substantially the need for co-presence. There is certainly no simple substitution process of travel by other communications. Not all work situations fit this description by any means, yet virtual business communities seem to require frequent trips (Doyle and Nathan 2002: 8-10) especially since development of email adds to social interaction face-to-face and does not seem to substitute for it (Castells 2001: 122).

Family Networks

Family life is also increasingly conducted at-a-distance with considerable negotiation about who is responsible for what, when and why (see Finch and Mason 1993). Responsibilities involve negotiation. Moreover, this negotiation and deliberation is even more marked when 'families' consist not just of clear-cut nuclear families but where households have been split up through separation and divorce. There has been a proliferation of 'family fragments' (Smart and Neale 1999). Family responsibilities to children or parents or grandparents now have to be negotiated across various complex boundaries, of families, step-families, step-step families and so on. Such negotiations over who will do what and when will involve communication and travel. But there will be complex choices involved as to which family

members are communicated with or seen, the frequency and length of visits, the activities carried out, and the character, form and significance of such meetings.

Accessing one's family is more inchoate and unspecific than where families lived in Axhausen's 'little boxes' and regularly encountered each other within the immediate neighbourhood within which people walked. This ease of access was shown in classical studies conducted in the East End of London in the 1950s (Young and Willmott 1962). Now in the UK one in ten households move every year and 15% of individuals have a different address from one year to the next. The pattern of family life is more dispersed and networked (PIU 2002: 1). There is the growth of the 'networked family'.

Miller and Slater show some international aspects of this family networking. In a case-study of Trinidad it is shown that one can really only be a proper 'Trini' by going to spend some time abroad. About 60% of nuclear families have at least one family member living abroad (Miller and Slater 2000: 12, 36). Accessing family members requires to-and-fro travel, as well as extensive email communications. Travel and communications are necessary to sustain family life that occurs in-between Trinidad, the US and the UK, keeping some access to the transnational 'networked family'.

Networks of Older People
Wenger also shows that networks change their significance as people move through the life cycle (1997). She argues that as people age, so accessing a 'support network' becomes more important than more strictly 'social networks'. There are different forms of the support network providing a mixture of emotional support, companionship, instrumental help and information on a more or less daily basis. The form of the support network depends upon the relative significance of local neighbours, local family members, wider community friends living within a few miles that are still mobile, and locally provided formal and informal services. It is argued that increasing geographical mobility and the spreading out of social networks has rendered access to these support networks significantly more difficult and hence questions of appropriate travel and communications devices *more* important.

5.4 Five Dimensions of Access

Thus networks are central to many aspects of such social life; so as not to be socially excluded from the wider society people have to 'access' such networks. But since most of these services and networks are located at geographical remove from where people live or work, access involves intermittent travel and communications. Hence social inclusion is significantly a matter of overcoming certain constraints of space at particular moments of time in order to gain access to especially the informal networks of work, leisure, friendship and family.

We now summarise the issue of access by distinguishing its five key dimensions. These are financial, physical, organisational, temporal and networking, although setting them out in this way is not meant to imply that they are necessarily distinguishable in specific cases (see Church, Frost and Sullivan 2000, for a similar 7-fold categorisation).

Financial
All forms of transport (with the exceptions of lift sharing and walking) require the expenditure of financial resources. A simplistic definition of 'social exclusion' that equates it with 'poverty' would point to this as the underlying factor behind transport-related social exclusion. This dimension is concentrated upon by those local authorities that subsidise transport for social groups pre-identified as in relative poverty, such as the unemployed, school children, teenagers, or the elderly. Providing reduced or free travel for those of pensionable age also seeks to offset access problems seen in financial terms.

Physical
Physical access to different forms of transport is a barrier to accessing social 'goods'. Those local authorities that fully provide or subsidise special transport services for people with mobility problems due to disability, health or age understand these physical barriers to access. The 'low rider' buses that are becoming common indicate this approach to solving 'access' problems.

Organisational
Access to services and facilities also depend upon not the existence of a form of transport but upon how it is organised. Thus with regard to the car it is necessary to concentrate upon availability rather than ownership, due to the suspicion that 'social inclusion' often depends upon the ability to negotiate lifts with others, such as family, friends, neighbours, work colleagues, or members of other social networks. Access even to the car is thus an organisational matter (as shown for Asian households by Rajé 2003)..

Where access to a car is not available (and we have found that transport preferences are frequently organised in this simple, hierarchical way), then the organisation of public transport is crucial to access services and facilities. The proximity of bus stops (or railway stations) is a standard indicator in assessments of deprivation and therefore of transport-related exclusion. However, this indicator is not fully satisfactory. In interviews, we found that people hold as important, not only the proximity of a bus stop or railway station, but the frequency of services, the directions they travel in, the ability to reach a variety of destinations directly or indirectly, the cost of travelling, the quality of the travel experience, the conditions of waiting and interchange locations, and above all the reliability and punctuality of services. These organisational aspects form an inter-related tangle that positions public transport as an alternative to private car usage. They are highly relevant to assessing whether the provision of public transport translates into inclusion through the ability to access goods, services, places and peoples.

Temporal
Access also depends upon temporal *availability*. Thus many people will find that there is no 'public' transport before or after working hours, or that services to cheap shopping centres are unavailable when they are free to shop, or that leisure activities have to be curtailed because of the time and frequency of services. Also there is the question of 'time sovereignty', the degree to which people have control over, or flexibility built into, their temporal regime. The 'socially excluded' may include those who have extensive resources of time (and therefore a high degree of flexibility), but also the low-paid, for whom the pressures of punctuality reduce their 'time sovereignty' and for whom temporal co-ordination is highly important. Our research at Birmingham University (chapter 6) showed the importance for people in modal choice of choosing that transport mode that 'does not waste time'. Access is therefore also a matter of timing, time resources and time management.

Networking
Thus far transport-related social exclusion is seen as based upon a model that views inclusion in terms of people being able to 'get at' pre-defined goods and services located within pre-determined locations/destinations. This model rests on a definition of what it is that excluded people want or need, evident in the destinations which are taken as self-evidently desirable (hospitals, doctors, shops, post offices, schools, banks and so on). These destinations are important in defining the access that a citizen has to a certain 'bare-minimum' level of inclusion. However this obscures the role that social networks play in maintaining a 'good life', or social inclusion in a broader, indeed more inclusive, sense (as we have seen in work, leisure, family life and friendship; this dimension of social exclusion is missing in Church, Frost, Sullivan 2000).

Local transport initiatives should thus it would seem promote meetingness (and minimise missingness) and networking amongst those living, working and visiting any particular place. This implies learning much more about where and why people want to go (see Kenyon, Lyons, Rafferty 2002).

5.5 Conclusion

In the next three chapters we set out three empirical pieces of research designed both to investigate the applicability of our tripartite conceptualisation of transport-related social-spatial exclusion better and to consider how various authorities seeking to improve social inclusion through mobility might themselves research the topic. We have though shown that people's social activities are hugely complex through time and space and so researching what patterns of mobility might improve social inclusion is a formidable task. Each of the following chapters therefore tests a research methodology that might be utilised by authorities and addresses one of the nodes of our model in greater detail, with the intention that the findings will also be relevant in coming to grips with the potential impacts of congestion charging. Chapter 6 looks at workplace interviews and opens up the area of the juggling of personal resource (primarily time and money, but encompassing other aspects). Chapter 7 explores how existing data might be brought together to highlight factors normally occluded in authority work, and explicitly concerns the existing transport infrastructure. Chapter 8 uses interviews with transport users during their journeys in investigating how different personal and social obligations ('compulsions to proximity) are met or frustrated within the contexts of infrastructure and resources. We begin with a study we undertook of the introduction of a new workplace-charging scheme at Birmingham University.

Chapter 6 Measuring the Effects of Workplace Parking Charges

6.1 Introduction

This chapter outlines research undertaken at Birmingham University in July 2002, exploring the impacts of a new car parking charges regime on the campus. [6] We first lay out some of the background to the research, in terms of how the purpose of this study fits within the CHIME Project, why it was undertaken at Birmingham, the research questions we hoped to address, and how the work feeds into other parts of the Project.

In the CHIME proposal we set out a number of suggested 'methodological experiments' we would like to undertake in order to test our tripartite model of 'social-spatial exclusion', and methods of operationalising it. The following section is taken from the bid document:

Juggling resources: accommodating to change

The third pole of our three-part definition of social-spatial exclusion relates to individual (or collective) resources – in terms of time, money, etc. – and to peoples' capacity to mobilise these in order to meet social obligations in the context of a given physical infrastructure. Relatively little is known about the kinds of juggling and negotiation which underlie observed travel arrangements, nor about precisely how existing patterns might be modified in response to initiatives such as those of congestion charging. This methodological experiment consists of a pilot study based in a single workplace. The selected location will be one which has recently introduced parking charges. The plan is to interview no more than ten individuals employed at different levels of the organisational hierarchy. Interviews will focus on the respondent's journey to work, how this has changed, if at all, and with what implications for other members of the household. Issues of cost, time, security, convenience etc. will be explored. It will also be useful to discuss a number of 'what if...' scenarios, to assess the strength and character of current priorities.'

In arranging this project, it was necessary to find a situation in which an organisation had recently implemented a parking charge. DTLR (at the time) documentation on the tax revenue implications of different methods of modal shift identified a number of organisations that had used parking charges to this end. Telephone and e-mail approaches were made to see whether any of these schemes were current enough to allow research on a *recent* development. Birmingham University proved the most viable, having brought in charges in January of this year. Details of the new parking charges can be accessed at this website: http://www.estates.bham.ac.uk/transport/chargesfaq.htm. Contact was made with the Estates Management Department of the University (who administer the scheme), who gave permission for the research to go ahead. In addition, we were interested in providing Birmingham University with data which explores, in a qualitative manner, the impacts of, and responses to, their new charging scheme.

Interviews were designed to elicit information on the juggling of resources by people (embedded in households) in the arrangements of their daily travel patterns. Birmingham University has undertaken a (limited) 'Journey-To-Work' survey in the past, and our research will add to their understanding of the information collected, looking behind the data to reveal some processes that shape peoples' complex travel arrangements. We plan to open out the discussion from a model that treats 'J-T-W' trips as a singular moment undertaken by a single individual, with an individualistic model of decision-making. Instead, we view the journey to work as existing within a context that includes highly contingent social

[6] See the Appendix for details of research methods used.

circumstances as well as the prosaic details of bus times and parking places. This context includes the travel needs and expectations of other members of the household, as well as questions of convenience, security, flexibility and so forth.

Insofar as the University has framed the parking charges as an anti-congestion measure, the new charges are comparable to a WPPL (Workplace Parking Levy), and have met with an initial level of opposition from employee unions and student bodies. Thus this case is directly of interest to local authorities considering congestion charges, as it provides evidence of the likely problems with implementation. Although we are not proposing a comprehensive 'assessment' of the policy, our data and analysis should help the University in gauging the effects the scheme has had on transport practices, as well as exploring factors which might limit modal shift.

To this end, we focus on the broad question of what counts as *a viable alternative* to car driving in this situation. For an alternative arrangement to be viable, it must be known about, it must fit the needs of the traveller, and it must fit in with the other household travel needs currently satisfied by the car. In looking at these areas, the issues of personal resources (of time and money in particular), of available infrastructures and of the 'compulsions to proximity' (flexibility of hours, combination of trips for other purposes etc) will all be relevant. In view of the context of the research (the new charges), we focus on those who use a car for some or all of their travel to work.

In our initial proposal, this study was to be one of three methodological experiments. We subsequently decided that the work reported here would also inform part two of the CHIME project, looking at 'People and Infrastructures'. On this basis, we extended the number of interviews. In discussion with the Estates Management Department, it was explained that we would collect data from people at different levels of the institutional hierarchy in order to gain a picture of the travel arrangements made by people who have (on the face of it) different resources at their disposal. In addition, it was decided to interview staff in both academic *and* administrative departments to explore the effects of the apparently greater time flexibility of academics.

6.2 Research context: the charging scheme

The car parking charges (of 50p per day per car) implemented at Birmingham University since January 1st 2002 are part of a general Transport Policy which has been adopted by the University. Full details of the policy can be viewed at http://www.estates.bham.ac.uk/transport/strategy.htm. An initial consultation document was circulated to staff, students, and related bodies within and beyond the University, aiming to discuss the 'linked questions of traffic, pollution, the environment and the University campus as a place to work.'. Car parking charges were suggested as a method of paying for 'proposals for improving opportunities to travel to and from the University on foot, cycle and public transport, so reducing dependence on the private car.' The current state of car use had been assessed by a 'survey carried out in 1996 by Scott Wilson Kirkpatrick and Partners [which] indicated that up to 62.5% of staff (3125) and 11.5% of students (2,100) made their journey to and from the University by car, giving a total approaching 5,000 return journeys a day. If these numbers are to be maintained without increase, a significant change in travel habits (a 'Modal Shift') will be necessary.' Thus modal shift is asserted as the primary aim of the scheme.

During the consultation and amendment of the Transport Policy, a number of other actions were undertaken[7]. The substantive changes appear to be the provision of cycle racks and

[7] These include:

the loss of some parking space. The latter had been noticed by at least one respondent, and others argued that parking space had been reduced due to building works around the Bio-Sciences building.

The fully modified proposals resulting from consultation are available at the web-site, and state that the number of parking spaces will remain static, with all new spaces built to an agreed standard (Secured Car Park Standard) and existing ones gradually brought up to this standard.

In the area of cycling (to be promoted to achieve modal shift), 135 new cycle racks had been provided, and many more are anticipated, a new cycle path had been built linking parts of campus. The remaining policies in this area were anticipatory rather than concrete at the time of writing.

With regard to public transport the focus is on lobbying the responsible agencies, whilst a free bus service exists to link residences and campus, and more information availability was proposed. It is suggested that the University is 'prepared to consider subsidising service improvements where a direct benefit to the University community can be shown'. Benefits to pedestrians were projected as being pathways and crossings 'where necessary', and separation of cyclists and pedestrians in some areas (such as University Square), in addition to extended CCTV and lighting coverage of footpaths (whether this is a transport policy or an existing safety policy was not mentioned).The Estates Department has summarised responses to their consultation on the proposed changes. They discovered broad support for their objectives and methods. The overwhelming majority of respondents (over 80% in every case) agreed with the general sentiments put forward, i.e., that something should be done about traffic and car parking on the University campus, that less traffic on the campus was a desirable objective, and that the various improvements proposed (see below) were desirable. A slightly smaller proportion (about 70% of car drivers only) was prepared in principle to pay an increased parking charge. When it came to the series of questions about the detailed structure of parking charges about 38% expressed a preference for charges to be on a sliding scale related to income.

- The ageing traffic barrier system has been entirely replaced, with a much more 'intelligent' system using the University Identity Card. This allows a far more sophisticated level of control to be exercised on who can enter at which entrances at what times. It also incorporates control on exit, which is a vital aid to the reduction of car crime, an effect that has already shown itself.

- Improvements have been made to the facilities for cyclists, specifically the installation of 135 'Sheffield' – style cycle racks.

- The university has been in discussion with Travel West Midlands, the major bus company. As a result, students and staff can travel free between the University Main campus and Westhill/Selly Oak Colleges.

- A Transportation Web Site is being developed, which will provide information on all forms of travel to and from the University.

- In order to pursue the Estate Strategy, a new Development Plan has been submitted to and approved by the City Planning Committee, which has profound effects on the traffic circulation and car parking arrangements. The university has entered into a number of specific agreements with the City on Transportation and Car parking matters, as conditions attached to the grant of planning approval.

- The University Hospital has introduced its own car park management scheme, which has restricted car access and parking to the Hospital sites. This has affected the University's own parking availability.

Although there is no space here to go into an extensive analysis of the results of the consultation exercise, or a discussion of the relative merits of different research methods, these figures are derived from a 10 question multiple-choice questionnaire explicitly referred to by one interviewee (the most vocal opponent of the charging scheme) as restricting the responses:

respondent I thought the consultation process was completely dishonest, I don't know if you've seen it?

interviewer I've seen one of them yeah

respondent It asked question like 'what would put you off coming?' Not, I mean which you know they were all double edged questions where you couldn't answer that 'I think its wrong that I should pay anything' it was how much would stop you coming in to car park? And of course the average [unclear] was 50 to 100 pounds, you know I could have said 10 000 pounds would stop me coming in to park, they'd average it to get an even higher amount, I mean it's the most stupid question to find out what people are prepared to pay (PK9)

38% of those consulted stated a preference for sliding-scale charges, while only 5% preferred the system that was applied. This would seem to have predictable consequences for the popularity of the scheme. From examining some of the consultation responses, it appears that this flat rate being applied across the board is the one that provoked most negative responses from interviewees. The self-selecting opponent of the scheme spelt out an alternative arrangement:

respondent …if its to deter car usage which is what they say, then 50 pence a day or a pound a day which it's going to be in a year or two [unclear] deters cleaners and junior technicians and people but it doesn't deter the 30 people in the University with over a 100,000 pounds a year, who obviously don't care about it all. So we said, well if you want to deter car usage charge 0.1% of salaries. And they said oh that'll mean that some of the senior people pay five pounds a day, we can't possibly do that, it might put them off using their cars (PK10)

It is stated, in the transport policy, that the revenue raised by the charging scheme will be ploughed directly back into the implementation of the transport policy: 'If the aims are to be achieved, a large sum will have to be raised, and it is intended that it will be raised by increasing the current very low level of car parking charge by a substantial amount'. At the same time, it is intended that the money collected will be ring-fenced for improved transportation facilities, and for running the car parking operation, a hypothecation in alignment with proposed congestion charging schemes and which is supported in principle by most interviewees.

6. 3 Reacting to the charges

In our interview data, there are many indications that one source of resentment to the charging regime is a lack of trust in the University's motivations for its introduction:

respondent …I'm cross about them hiking parking charges anyway, because its gone from what 50p a month to 50p a day…I was just really cross because I think the University were hiding behind environmental issues and they were being totally disingenuous they were it was just ridiculous because they haven't done anything to try to improve erm public transport (GMR2)

respondent …I remember one of the things that really annoyed me was was actually the university saying that they were doing it for congestion reasons and for a green issue when I think there's an awful lot of perhaps its cynical but there's an awful lot of people that think it was just to make a bit more money…somebody raised the issue if you're really concerned about green issues why don't you have some sort of policy on recycling (SH11)

respondent I mean the … worst thing about the University and its car parking was the dishonest way it tried to present it as for ecology you know for the good of the surroundings the pollution (PK4)

It is frequently claimed (by respondents) that the prime justification for introducing parking charges is not environmental, or even to do with transport, but simply financial, with the parking space on campus seen as an under-exploited resource to provide additional revenue to the administration:

respondent … I guess you know if it is profit generation, and in fact there's probably a large element of that then I think University is in need of money, there've been all sorts of problems with finance recently and you know and if it's a way of helping the University out of its financial problems then fine as long as they're spending that money on reasonable things. I'm not always convinced that they are (SH12)

It has been noted that the original framing of the parking charge, the transport policy for the University, placed some emphasis on the intentions to invest in a number of measures which would help to encourage modal shift and promote public transport use in the staff. This situation is therefore analogous to one pertaining in the preparation of a population for the introduction of congestion charging schemes. The evidence from the data suggests that the University has not been fully clear or persuasive in putting forward a case that the revenue generated would be fully hypothecated for investment in transport:

respondent ... I don't know but just there doesn't seem to be the willingness to invest in improving public transport and I think they've got to do that before they encourage people to use it as it exists and its not, its not good really

interviewer I mean that's one of the factors in congestion charges that the ones that local authorities mostly bring in they do have to say what they're going to spend the money on before they bring the charges on

respondent Yes, yes, which I don't think the university, well what did it say it was spending the money on?

interviewer … part funding with some of the other public transport providers, services that actually benefit the university, that's what it says in the

respondent In the transport plan yes, well I can't say I've noticed any improvement in public transport. (GMR9)

We included one question to respondents about transportation policy itself, to see where they felt responsibility and agency over this issue lies. The following illustrates some responses, which highlight where respondents would like to see hypothecated revenues spent:

respondent Buses may be the only area you can really improve I don't think you can do much for the trains really (SH13)

respondent Oh it is depressing because I mean I know we've all got to we all need to use our cars less really erm but oh I don't know. I don't know but just there doesn't seem to be the willingness to invest in improving public transport and I think

they've got to do that before they encourage people to use it as it exists (GMR9)

respondent Erm, if understand correctly, the money that the university gets its promised to invest in car parks, to improve car parks…and public transport I think, you know, get the train more alive (SB9-10)

respondent I would pay more but I'd have no objections to paying more if the extra was went to improving bike facilities and things like that and security, because I used to cycle in and that's what put me off when I did cycle in (ST6)

When transport to campus was given as the specific context, the most common requests were for extension of parking space, and its improvement in terms of security, but cycling facilities and the improvement of public transport services also featured highly.

Another criticism is that the imposition of the charging scheme is a typical example of the administration's more general poor treatment of its staff. This was most obviously promoted by the aforementioned vocal opponent[8]:

respondent …the same reason they screw the staff over the sports centre, I mean that used to be free when I was student and a young staff, they gradually put it up, it costs as much now to use the university sports centre as to use a commercial one. You know they put Staff House prices up, three times the price of coffee out of the same machine as down at …. They're just out to screw the staff for every penny they can get (PK5)

Also opposition to the charges was based not so much on the details of the scheme but as a matter of principle:

respondent I always used to drive to work every day of course before I go and start in the office and … I still do most days, but as a matter of principle I try to avoid paying as much of the parking charges as I can (PK1)

A minority considered the charge an imposition on a captive population, that staff were being forced to pay to work for the University, and that transport to work is primarily of benefit to the employer and should therefore be free.

However, most respondents assessed the actual level of charge to be reasonable, especially by comparison with parking charges experienced elsewhere:

interviewer what do you think about the level of charge, is that reasonable enough?

respondent yeah yeah, I mean it was going to be more, I think originally they wanted you to pay more … but it's still less expensive than by public transport. (SA3)

respondent I think it is reasonable, and people are prepared to pay it. The problem for me is, if I do come in and park on the car parks every day, it could take ten quid a month off me. And I value that ten pounds which is why I try and avoid the charges. But I think the fact it's 50p is quite good (BR3)

respondent I think it's very reasonable yeah. I didn't have to pay where I worked before, but I have worked in the city many years ago and had to pay astronomical prices for parking there, prices that they charge … are really really high. So I think fifty pence a day is really good (DD2)

[8] Who, as explained in the appendix, selected himself for interview.

There was also a general acceptance of the fact that the previous system, where staff was charged what was frequently described as a 'peppercorn' rate, had been highly favourable compared with other institutions and organisations, although it is not clear whether special privileges and exemptions for academia were claimed or supported:

interviewer … what do you well how do you rate the level of charge. Do you think its reasonable or..?

respondent well er it's probably reasonable actually. I mean although I'm awkward by not paying it when it comes down to it paying 50p to park somewhere is actually quite small by comparison to most car parking charges we have nowadays. Having said that if it's easier to park for free why not. But I think when you compare it with say er I've driven to Manchester University for a meeting that's very expensive there. On the other hand that is closer to the centre of town so it is sort of understandable. And I'm I assume its absolutely nothing compared to London (SH5)

There were examples of the charges being unfavourably compared with others:

interviewer So how do you, I mean you say that erm car parking charges has changed your travelling pattern in a way. How do you rate the level of the charge?

respondent … I think its excessive, it's far more than my husband pays and he pays a lot, I think it was just an excessive, well the rise particularly if it had been more staged, I think I would have been less against the idea, it's just the fact that its come so suddenly (GMR5)

Even when respondents themselves saw the charging level as reasonable, they were conscious of the effects on other, lower-paid members of University staff:

respondent …I don't regard it as being necessarily excessive, but.. You know, it's not an issue for me but I think for some people it may well be an issue, particularly the low paid. Also, I think it seems unfair that people who work part-time should pay the same charge. I work part-time, and as I say, it's not an issue for me, but probably a major one for somebody who is low paid. And worked part-time. You know, the two almost go together. (JA2)

respondent Well its, to be honest the parking fees are not very significant if you're on a professor's salary, the thing I'm most angry about is the junior technicians, you know and people like that, where it is a significant effect, and some of them have no alternative, I mean there are some technicians who come places where public transport will take an hour and a half, two hours (PK11-12)

This is particularly relevant to the CHIME Project. It seems that people are wary of the effects that schemes such as this (and by analogy, congestion schemes such as the WPPL) have on people who are particularly vulnerable to transport-related exclusion, particularly the low-paid. Yet ironically, the charges are actually not applied to those on the lowest wage scale but this was not generally known in the university.

6.4 Changing travel patterns?

We noted that reduction in car use is the espoused aim of the introduction of the car parking charges. The University's transport policy stated that: 'The aim of the policy is to achieve a position where, although the University's activity level continues to increase […] the use of

cars for travel to and from the University does not increase. [There are] 5,000 return journeys a day. If these numbers are to be maintained without increase, a significant change in travel habits (a 'Modal Shift') will be necessary'.

Parking charges are conceptualised as a *disincentive* to use the private car, but there was agreement that the charges would have to be much higher in order to preclude driving to work or alternatively that no financial disincentive would have any such an effect:

interviewer If parking fee was doubled or trebled, or… That wouldn't make much difference to how you…?

respondent It wouldn't get me out of my car. It would just change the areas I would park in. It would stop me parking in areas which are charged, but I would still drive (BR7)

There was, however, some evidence that the charging scheme has altered the travel arrangements of certain staff (albeit not radically), with the charges cited as the direct motivation for this change:

respondent …I mean I did when they first introduced the scheme I tried the train for a whole two weeks (SH6)

interviewer And what is the main reason for using the bus when you get it?

respondent Usually irritation with the parking charges, thinking to myself I'll be damned if I'm going to pay it all the time (PK2)

More typical was the suggestion that the charges (particularly if increased) could act as a catalyst for change in travel patterns (that is, they would discourage on-campus parking), *but* that car-based solutions were preferred if they were at all possible:

respondent Yeah, I think I would be discouraged a lot more if the charges went up. I think if you went beyond a pound, then I think they would drastically see a drop in people parking in the car parks. Whether they would park elsewhere I don't know. 'Cause I mean there are options in terms of just going down to the Bristol Road and parking on one of the side streets in Selly Oak, and then just walking up – I mean it would take you about five minutes to walk up. Whether people will go to that, I don't know.

interviewer I've heard of a couple of people who are doing that already

respondent Right, yeah, that doesn't surprise me (BR3)

A switch to bus use was envisioned by one respondent, something made possible by their already organising travel in the context of household interdependence:

interviewer I asked you could you imagine the parking charges getting high enough to affect your travel. If the parking fees were doubled or trebled or more, so it was a pound fifty a day or two pounds a day would that have any effect or would you reconsider, or would you still..?

respondent I think, if it got too high, I would have the option of leaving the car at [employers] where my husband works and just jumping on a bus up the road

interviewer Right so you'd be able to get from there on to campus

respondent Yes its on the same road, I can't see that that would be a problem

interviewer And there's free parking there is there

respondent Yes yes (DD5)

Perhaps most promising (in the sense of assessing the effectiveness of the policy in reducing work-related car journeys by inducing changes in travel practices) is some evidence of lift-sharing.

There was also confirmation that the introduction of charges had at least freed up space on campus for parking. As described in the next section, this is not as a result of modal shift, but of people parking off-campus:

respondent It's easier since they've introduced parking fees at 50 pence a day – I have to say that.
interviewer So generally you can find a space now?
respondent More likely to find it up on the gravel, at the corner of Pritchard Road and Vincent Drive, than the one in Vincent Drive (HC4)

It is also interesting to note that another household had switched their normal driving and parking practices and managed to accommodate this with fulfilling their different (but intersecting) travel needs, by swapping the role of driver to take advantage of free parking elsewhere.

It was pointed out that some re-arrangements result from how the charge is generated once a day, no matter how many journeys on or off campus are made. This can have unexpected consequences:

respondent … I mean they say its for pollution and things, but its actually cheaper for my wife to bring me in, drop me off drive the car back home and come collect me in the evening double the pollution. That's cheaper than the pound a day they're going to charge when they get settled (PK2)

And this factor might induce more journeys:

respondent Very rarely, I mean I call at Sainsbury's going home for lunch - I go home for lunch as well …..As they don't charge any more for that (PK7)

Another response suggested was that people might re-arrange their working hours to only come onto campus 4 days a week.

Some people had not changed their practices at all as a result of the scheme, and this was even described as a conscious process:

interviewer So is this routine, this would be before and after the change over of the charges, have they had any effect on your

respondent I'm afraid that I refuse my lifestyle be affected by money I'm afraid you know

interviewer You just

respondent yeah you just take it on board (SB4)

This response was, however, from a Professor whose higher income may have affected this view:

interviewer OK, well I'll try and question you on that – how do you rate the level of charge that's been set fifty p a day, do you think that's reasonable

respondent I don't I don't have a view on it I don't really care

interviewer Could you, at what level do you think it would actually start affecting your decision, or do you think

respondent It wouldn't no, I don't no

interviewer There wouldn't be any limit that would stop you

respondent No no (SB4)

Thus if ready alternatives (usually still car-based) are recognised or accepted as *viable* (see below), there is leeway within people's 'compulsions to proximity' and there are possibilities to alter travel in ways that the policy-makers would applaud. These possibilities are however contingent upon questions of time-flexibility and availability of alternatives. It would appear that there are differences in what has been described as 'time sovereignty' (Breedveld, 1998) based on position in the institutional hierarchy, with senior academics more able to re-arrange their hours. However, the nature of the University as an academic institution appears to sanction time-flexibility for most employees.

6.5 Getting around the charges

The first tactic for evading the charging scheme was that of 'tail-gating':

respondent The thing, the funny thing is of course, its dead easy to tail really. They've gone to a lot of trouble to put bumps to try to stop you tailgating, but actually its dead easy, so just to annoy them I come in, put my card in so I've paid for the day, then I go home for lunch, back around in the evening...But I can't resist doing it just to annoy them. If you wanted to if I wanted to be dishonest it would be dead easy to tailgate in…it would be dead easy not to pay, but I always did actually pay, because I didn't want to do anything for which they could say you're fired that was fraud. So you know, I've never tailgated in to avoid a payment, I've always genuinely come in at least once in the day, and that really incenses the Estates Management when you tailgate on from the road (PK10)

respondent I'm paying and displaying; I'm waiting to hear what the people here, who are having it out of their wages, to see how often they get it wrong. People can still get tailgate through the car park, though […] It's still done, even with the barriers coming down, apparently, although I've never tried it – you can get the barrier to go back up. But then, that would only be worth doing if you had a green windscreen pass (HC3)

Another interviewee pointed out that using a motorcycle or scooter was a way of avoiding the charges, which also made parking on campus easier.

Another, more popular, option was to park just off-campus. In different cases this was a direct reaction to the introduction of the charges; a normal practice employed, for example, when parking space was scarce; and a preferred option, for reasons relating to other spatial and temporal factors:

interviewer OK, and where do you park? Do you manage to park…

respondent I park in I park in Oakfield Road, which is quite a wide road on the other side of the Bristol Road, because, I don't park outside anybody's house, well there's hedges, no driveways there

interviewer Did you used to park on campus before the charges?

respondent I did yes yes, although that was a bit of a struggle because the spaces were never if you came in late, there was just no spaces. (GMR2-3)

respondent …this er comes to on car parking charges what is I do is park slightly off campus and then walk the last five minutes into my office

interviewer right

respondent (laughs) and then I don't have to pay the 50p (SH1)

respondent …on a Thursday evening I go to a step class, so I actually have this ridiculous thing where I park off-site in the morning and come on to campus, and then round about half past four, sort of dash over there, because they stop charging you for bringing your car on, go and get the car bring it, park it between here and the sports centre, because I don't finish the class until sort of half seven eight by the time I've had a shower… I do that as I don't have to pay [after 4.30] (GMR5)

respondent There are people who park on the roads, rather than pay the charges. You've probably come across them in your survey (JA7)

Off-campus parking is thus a preferred option:

respondent … I still bring the car in but I leave it outside the University now...I don't know if you've heard this from anybody else anybody that does this its actually probably cut my journey time down because maybe coming by train you wouldn't know, but the road outside here Bristol Road is very busy and er I live on the other side essentially, and erm one of the major sort of factors in the timing in getting home when I used to park on campus was just getting across the Bristol Road. There is there's sort of a cheat method at the moment because there's a gate out of the University campus which sort of lets you into the stream. But even so that gets very backed up and if you leave about any time before 4 and 5 you find yourself in a big queue. Whereas what I do now is I walk past that queue, cross the Bristol Road by foot and go to my car which is parked on the other side [laughs] and this actually probably saves me something like 5 or 10 minutes journey time (SH3)

This by-product of the scheme was not unexpected at least to staff interviewed and to opponents of the scheme in consultation. It was anticipated that this would result in some form of interaction between the University and other agencies (the local authorities primarily), to ensure that the different transport policies became co-ordinated.The following quote from a letter (from the Vice-President of Birmingham AUT to the Evening Mail) was pinned up in the Staff House:

> 'We feel sure many staff will seek to avoid the charges by parking on public roads. This will contribute enormously to traffic congestion in the area and is also likely to cause problems for local residents. We understand the University administration has plans to donate some of their expected parking revenue to Birmingham City Council to help pay for local 'residents only' parking schemes, which may not be what the residents want'

This demonstrates that the likely impacts of the scheme, and the ramifications of displacement for the surrounding area, are recognised and thought through by its opponents.

Thus there was little evidence that the policy induced 'modal shift'. The changes in travel arrangements largely consist of car-based solutions, based on re-negotiating driving roles, travel and parking practices, often based within the context of the household. For example:

interviewer Right so you basically use your own cars, but you can use each other other's cars if there's problems with the cars [?]

respondent yeah yeah (SA5)

interviewer So if he didn't have his car what do you do [unclear] you go by train?

respondent No occasional no occasionally we do swap in that way he can't if he can't get a lift locally he has the car and then I use the train or the bus. (SA6)

6.6 Alternatives to car use

In designing this study, it was decided that an approach which investigated how people decide and define the viability of alternatives to car travel might be informative, whilst also testing the applicability and relevance of our tri-partite model of social-spatial in/ex-clusion. This consisted of investigating not only the nature and negotiation of regular, habitual travel patterns, but also attempting to discover how people negotiated alternative situations, such as planned travel during the day, the need to travel unexpectedly or in an emergency, or the absence of the household's car(s) due to failure etc.

We also wanted respondents to reflect upon the question of how else they might arrange their travel, and why those alternative arrangements were not pursued. We discovered that in most cases, there was a high degree of knowledge about alternatives, and that these had been dismissed through a form of cost-benefit analysis highly illuminating in assessing the relative values of different factors, including time and time-flexibility, money, availability of a car, convenience, security, reliability, comfort and so forth. As a general finding, we discovered that alternatives to car use are often taken up for pre-planned travel during the day when time pressures are slight, whereas car-based solutions are sought to problems created by the need to travel unexpectedly, or by the lack of access to their car.

These questions about responses to alternative situations have been successful in revealing possibilities for travel not normally considered, for example when a respondent denied ever using public transport but then remembered doing so when temporarily without a car. It can of course be argued that these 'alternative' arrangements only become viable in such circumstances, and so we attempted to draw out explicit explanations of why they were unviable. In order to reveal some of the prime barriers to reducing numbers of car journeys or achieving modal shift it is important to discover the real *and* perceived shortcomings of the alternatives.

One respondent suggested that he would be willing to lift-share, although he appreciated the difficulties associated with this arrangement:

respondent I was surprised, that the university didn't encourage people to car-share. Because of the hours I'm working, it'd probably be a bit difficult. But if I knew someone who, who it was convenient for them to, you know, make the same journey, then I'd certainly consider it. Yeah, it's not… for me it's not necessarily easy, but I would imagine there's a lot of scope for it in and around

Birmingham, I'm sure I'd do it anyway, but, I was just impressed with Warwickshire County Council 'cause they allocated spaces (JA7)

Another pointed out the problems of spatial-temporal organisation (linked to work flexibility) that make this a tricky option:

respondent […]the trouble is with using anything other than car is you lose the flexibility, you know if you're tied to train times, or even sharing lifts, I've got a friend that lives sort of my direction, but she tends to come in early and finish early and I just know that I couldn't finish early so I haven't found anybody

interviewer So it's how to coordinate times?

respondent It would be I think really yeah (GMR3)

We also found that a number of respondents would regularly use public transport for pre-planned travel during the day, leaving their car on campus:

respondent It depends where I'm going. Sometimes I have meetings at the Children's Hospital in the centre of Birmingham[…]If I'm late, I go by car. If I can co-ordinate getting on the train, I'll do that. And then walk through New Street (HC3)

respondent oh if I go into town, I never go by car into town, I always go by train, if I need to go into town

interviewer From home?

respondent From campus (SA4)

interviewer … if you do change the routine arrangement which is the routine arrangement which is driving in both of you to work, what are the most common reasons for changing?

respondent Oh because of a different start time, sometimes, I go to London about once a week, so I you know I tend to I take the bus or the train into New Street (SB3)

respondent If I go into Birmingham I always get the train from here because its only two stops and you know I just can't be bothered with the parking in Birmingham. I must admit you never, we very rarely take the car into the centre of Birmingham (GMR6)

If people were forced to leave the car at home or in a garage, the first point of recourse appeared to be borrowing any other household car, followed by sharing lifts with another in the household, then sharing lifts with friends or colleagues, before the option of taking public transport was considered. This provides a hierarchy of preferred travel options based on the private car:

respondent So, yeah, I mean I would use public transport, probably as a last resort really. Rather than… It's not the first thing that'd come to my mind … (BR5)

Indeed, one respondent stated that hiring a car would be his automatic reaction to losing the use of his own, with the expense less of a consideration than the status and convenience ascribed to car driving.

The following give examples of car-based solutions to unexpected travel, that is, using other household vehicle/sharing within household:

interviewer So that's if you know that's something's coming up, but if you're on campus and something unexpected came up you have to go, say to one of your children's schools, would you tend to phone your wife and use the car or would you..?

respondent … I think yeah I probably would do (SB5)

respondent Oh yeah. There isn't, well there are alternatives, but…unless the car had broken down or something I would take the car…my last car was on it's last legs there was one occasion where I couldn't get to work in it, so my wife wasn't working at that time so I managed to borrow her car (JA3)

respondent Yes, yeah. I mean I have had problems with my car, in the past, like I said. And it forces me to get on the train. Or borrow a car – I've borrowed a car in the past.

interviewer Right – who did you borrow it from ?

respondent I borrowed it off my Dad.

Lifts with friends/colleagues:

interviewer I mean that's one of the main questions we're asking you know how do people actually cope if they usually use the car how do they cope with, if they usually have the car, what do they do when they don't have the car

respondent Yeah, OK. I mean I can also have a lift from a colleague occasionally. (SA2)

respondent [without wife's car]I tend to either walk or take the bus I get very occasionally, erm but generally I try and walk, or if its not pleasant I get my colleague around to come and pick me up. If I'm going to be leaving after her I beg a lift, my neighbour Jack Cole often drives back (SB1-2)

interviewer And I if your car broke down and you couldn't use the car

respondent I'd phone a friend. I have phoned a friend actually when I've had to, during the petrol crisis actually, I hadn't got much petrol so I had to obviously adjust my working hours to fit in with her but I had to I did that for a while (GMR10)

However, public transport was an option:

interviewer Do you ever change that arrangement, do you use other transport modes apart from car on occasion?

respondent On occasion I use the bus, very rarely

interviewer and what's the reason for changing that arrangement, why do you use the bus?

respondent Because I don't have the car (SA1-2)

This response was from a member of staff who lived only 6 miles away, a 45 minute journey.

In general the car is relied upon as the most flexible and convenient response to unexpected travel needs. The viability of alternatives to the car depends on the particular situation in which people find themselves.

Significantly, the weather featured prominently in people's travel decisions, with some using the car in inclement conditions:

respondent …I had to go to the machine way over the other side of the car park and during which time I got very wet because the only reason I came onto campus in the car was that it was a really wet day (laughs) (SH4)

Others used public transport on these occasions:

respondent there's also one bus that takes a very tortuous route here…I have done it when the weather's bad. I've wondered about cycling along the tow path, cycling's fine but if you've got a lot to carry, and er if the weather's bad I'd end up in the canal [laughs] (GMR1)

interviewer So in what circumstances have you have you used the bus or the train to get to work or…

respondent Bad weather if it was really bad snow or something, and you know I don't enjoy driving in really bad snowy conditions, so I did do that, but not recently, because we haven't had particularly severe weather and to be honest the bus isn't any better option probably than the car (GMR10)

The University examined the viability of other options by including in its original transport policy consultation questionnaire a multiple choice question about possible incentives to 'leave the car at home'. The results indicated that '33% said they would consider using their cars less regularly if bus services were better, 32 % if train services were better, and 14% if there were better facilities for cyclists. Only 1% of respondents claimed that under no circumstances would they give up their cars'. Given that most commuters have not left their cars at home, we must assume that they have not noticed improvements in alternatives. However, whenever such questions are posed, we should be aware that people are often willing to entertain the *possibility* of taking alternative actions, whilst remaining bound in their habitual routines for most of the time.

Indeed we noted that in most cases, people were able to describe (in some detail) the alternative travel arrangements that were open to them. People could name the numbers of buses that operated between their point of origin and the campus, had knowledge of the routes they followed, could give estimates of frequencies and detail any changes that were necessary to make the journey:

respondent The bus as I say, I have to walk I don't know how far but at least half a mile to get to the bus to get to the nearest bus. Actually that's not quite true, there is a nearer bus the 44 that goes every half hour and misses out alternate buses and takes a huge detour round to get here, the whole journey takes on average about an hour each way (PK9)

interviewer And if and when you do take a bus, is that one direct bus, or do you have to change?

respondent It depends which way I do it. There's two buses. One bus, the 636 is about a 5 minute walk from where I live, and drops me off at the university station. But it only runs half hourly. To walk in the other direction is a 5 minute walk, and it's a bus which will drop me off on Harbourn High Street. So then it's a 15 minute walk. But that bus, during peak hours, runs every 5 minutes. And it's the same price either way (HC2)

This knowledge of public transport appears to be 'back-grounded' for most people, even if they are extremely infrequent users. In fact, some respondents revealed that this information had been garnered by having to use the services, even if they had previously claimed they never used buses. For example, a respondent who organises his life and travel practices

around his ownership of a Mercedes revealed that he used to be a regular bus user, for reasons of low cost and convenience:

respondent Yeah, I mean I'm not so good as I was when I used to be an accountant in public practice, I used to have the bus because it was quite useful to zoom all over the city on bus routes

interviewer Within the city?

respondent Within the city, and I had you know the bus pass was actually quite cheap and er I could get to clients actually quite easily. So I am used to using the buses. But that's a few years ago now (DH6)

Amongst other factors, he blamed de-regulation and changes in services as a disincentive for trying to use public transport again:

respondent […] So I am used to using the buses. But that's a few years ago now. Since deregulation all the bus services I used to know backwards in my head have all changed and it's a nightmare now to try to find which services run which bus routes (DH6)

This confirms Grieco's findings about public transport users and their in-built 'conservatism', where reliability in the sense of reassuring regularity rather than punctuality appears to be important in retaining users' loyalty, and even minor changes can become a major problem (1995). However, the respondent was very clear about how these problems could be overcome:

respondent But I think at home somewhere we have got, well, all the bus routes. Probably a couple of years out of date now, but I know where, well you just phone Centro and they pop a copy in the post, you know for train services as well. Which is what I think I did when I had to use the train, because Centro run the train services as well, so they sent me a timetable (DH6)

These findings would contradict the assumption generally held within local and national government that the way to induce more public transport usage is to provide people with much better information about its availability. However, in some cases the lack of knowledge of public transport provision could be remedied through providing more information to those who do not habitually encounter timetables.

6.7 Disincentives for public transport use

There were several main disincentives quoted by numerous respondents. The first was the unacceptability of having a *broken* journey. If the journey necessary to access work from home by public transport involves changing buses, people seem to be highly unlikely to take this option:

interviewer Do you ever take any a bus or train?

respondent No. Unfortunately it's not, it's at least two bus journeys and they're not convenient in terms of walking and getting two bus journeys from where I live so, from that logistical point its unpractical, that would take me longer than driving and there's no direct train route (ST1)

interviewer Was that just one bus you didn't have to change buses?

respondent …well I needed to you know change bus but that even more time consuming and er generally I took the bus and I walk something like 15 minutes which is really the time I am concerned about (DL1)

There were a number of reasons given for this, which should perhaps be noted by transport planners who rely on models of feeder services and interchanges (not really relevant to Birmingham, except insofar as the city centre itself acts as an interchange). A number of respondents mentioned the existence of the inner and outer orbital bus routes, which facilitated access to a point near the University, but not quite near enough. The unpredictability of the *weather* was one consideration in avoiding changes, especially when combined with health or safety issues:

respondent Yeah. And I should say, I don't whether this is relevant, but I had a stroke five years ago and sometimes waiting for a bus in the cold is probably not the best thing for me (SA6)

Cost was also quoted as a reason for avoiding using public transport, particularly when the costs were compared to the perceived costs of driving and parking:

respondent …I did look into it once and it was more expensive than driving. So it would be the price; I don't think frequency of the trains is necessarily the issue. Because they are reasonably OK (JA6)

respondent OK, cost, definitely! At the moment, even if I bought some sort of saver card, for a train, it would still cost roughly what it would be for my car. Possibly a little bit more. If you build in the convenience factor of having the car, there's no way that anyone's gonna get me out of my car. Reliability, certainly another factor. So cost and reliability I would say are the two main ones (BR7)

However, the temporal factor was primary based on a distrust of the *reliability* of bus services. On a precautionary basis, people seem unwilling to risk missing a connection and therefore having to waste time waiting, especially if this takes place in conditions seen as unacceptable (i.e. on the street rather than in a station). Thus unreliability was the primary concern of those whose potential bus journey to work would not entail changes:

respondent I generally drive into the school because if I take the buses, buses are not so convenient because of mainly we're concerned about the time and er and the public transport is always delayed … they are not that kind of on time (DL1)

It was accepted that this lack of reliability was caused to some degree by congestion itself, but was still considered to be primarily the responsibility of the operators rather than other drivers. In pursuing the question of what would make public transport use a viable option, this factor of reliability rated higher than other considerations such as the frequency of the services.

The fact that some bus routes were not direct enough also figured as a disincentive:

respondent …there's also one bus that takes a very tortuous route here, its unreliable as well apparently … there's one point of the journey where you approach one roundabout and then about ten minutes later you come back to the same roundabout from a different direction, so it's a really long journey, I have done it when the weather's bad (GMR1)

Overcrowding was also regarded as a problem:

respondent The problems with buses I find are overcrowded – I don't like standing. Even if I came on the bus, for a 20 minute journey, I don't think you could read standing up. So…(HC5)

As was security, in terms of waiting for a bus in the dark, seen as an issue even for parking on campus:

respondent And if I'm working late in the evening, the last thing I want to be doing is hanging around a bus stop wondering if I've missed the one at half hour – or walking for 15 minutes. So… the car is convenient 'cause I'd only get mugged. Although if you park on the gravel car park, you can get mugged up there, quite likely. Regularly (HC6)

We can see this as a call for hypothecated revenues to be spent on bringing the car-parks up to scratch, something promised by the University's transport policy.

On the other hand, some respondents quoted other reasons for ruling out public transport altogether, meaning that an analysis of the processes of juggling resources in making travel decisions would be entirely wasted in some cases. This rejection of public transport was ingrained and based on questions of status and social stereotyping:

respondent …The thing I find that I disagree about buses is the people on them, I mean the grammar is unbelievable, you know I mean you know, I mean they banned cigarettes though you often get cigarettes, but the grammar, well you know well I think something should be done, well it's a danger the grammar on the buses (SA6)[9]

respondent No I hate public transport anyway especially when you take into account, second level on buses, the smell and the swearing, sometimes people smoke, even drink, so I hate public transport(DY5)

respondent I'm afraid if if if I had to come on the bus all the time, my attendance would drop dramatically, because I find the bus an incredible off-putting experience. Nearly every time I do it its usually enough to put me off for at least the next week or two…I don't like crowds, I mean they're just crowded and you have wait a long time…it's almost entirely to do with reliability and cleanliness (PK10)

respondent yeah, as a rule I don't like transport public transport just because its sometimes even not safe. For example I wouldn't like my son to use the bus frequently (DY7)

interviewer Right, and does she [partner] have to travel to work or does she…?

respondent she gets a taxi….

…..

respondent Always a taxi! (DH7)

Finally, two respondents actually spelt out the advantages of being able to combine travel with work:

[9] This complaint about bad grammar was delivered in a rather ironic tone.

respondent I mean well obviously I prefer the train if possible because it's just nicer, I mean I used to read you know on the train and that

interviewer That was when you were working in Birmingham

respondent Well when I first started work that was when journey length really didn't matter, because at that time we only had one car and my husband was working in Coventry so I really had to get the train (GMR7)

respondent I mean [G] … she's my postdoc, she lives in Telford and takes the train and she she does papers on the train, so when she was she was going through the final reading of this, it really is the very final text, what she meant was she'll read it on the train.

interviewer Yeah, yeah, so that's another thing, with a train you can actually combine work and sort of

respondent Yeah sometimes you get a lot more reading done than [laughs]

interviewer than you would normally? (SB5)

6.8 The hidden factors of travel: juggling resources

This brings us to another major factor in the decision making process as regards travel practices; the context of the household. We have stressed the importance of this in the CHIME project, drawing on work by others who problematise the dominant model of travel decisions as being rational, self-interested and individual (Grieco 1995). Although some respondents had no other members of the household with whom to co-ordinate their travel practices, most elaborated many ways in which their journeys were entangled with the travel arrangements and needs of 'significant others'. To illustrate these arrangements we take a few accounts as miniature 'case studies'.

CASE 1 Journey to/from work

Journey to work:

respondent …I tend to come in in the morning with my wife, My wife works at the QE hospital, just up the road, and we tend to drive in together. We both tend to start at nine o'clock and we tend to drive in together and then go home separately.

interviewer Right so you have different finishing hours?

respondent Yes that's right yes, she only starts, my wife generally, I very rarely drive, well I can drive but I very rarely drive

interviewer So does she drop you off on campus and then go over to…

respondent Well in fact[…]she parks with my pass in the car park. You're aware of the fact that the medical school abuts the QE yeah? And so there are car parks up there, so she generally parks the car (SB1)

Journey home:

interviewer That's right OK, and er but because you come back separately, who gets the car then?

respondent My wife generally

interviewer Your wife. And you tend to …

respondent I tend to either walk or take the bus I get very occasionally, erm but generally I try and walk[…]If I'm going to be after her I beg a lift, my neighbour Jack Cole often drives back (SB1)

These arrangements are based on a difference in 'time sovereignty' within the household:

interviewer And what time does she leave then, does she have more fixed hours?

respondent She has more fixed hours

interviewer So she leaves at five o'clock

respondent five pm that's right

interviewer you're usually working late then

respondent … well yeah I tend to work all sort of hours[…]

interviewer you can vary your hours and…

respondent That's right yeah, I mean I don't do very much teaching so I'm therefore very flexible (SB2)

The situation is further complicated with children in the household:

respondent One of them goes one of them goes to an after school club and he has to be picked up and either my elder son picks up or […] my wife does on the way back from work

interviewer Right

respondent but the after school club finishes at six, that's on … So for example yesterday, because I went back with [my wife], I picked him up from there

interviewer So your older son, he's got he's got his own car.

respondent No he's eighteen so he's just done his A levels so he's waiting for University entrance

interviewer So that's with your car

respondent … I went to an assembly at my daughter's school, you know an awards assembly. My wife couldn't go so she came to work in the car I went to the assembly and came in on the bus

interviewer Right. From the school

respondent Yeah that's correct (SB3)

The main reason why the interdependence between the two is not a totally limiting factor in travel decisions is that the respondent lives near to the University. Thus the options of walking or taking a bus are more viable and attractive.

CASE 2 *Flexibility and time sovereignty*

The increase in 'time sovereignty' that results from having fewer infra-household dependencies is particularly noticeable to those whose children have grown up:

respondent […] So really a car is my main, well I used to travel by public transport before I had children, but … when you've got children you've got to get back home, I mean. Mine are grown up now so I haven't got the time constraints that I did have (GMR1)

respondent […] one daughter is at University and the other one is at sixth form college so sometimes actually I because public transport near us isn't very good unless you have an early start every day, although she's got a bus pass, if she's got an early start because she has to actually leave the house earlier than me to get a bus to ensure she got in on time. Unfortunately it's the opposite direction to here because my husband, before he was made redundant his job was on the business park by the NEC and he used to quite often, well in fact my older daughter when she was a sixth former and learning to drive it was quite useful because she used to drive to college and he would carry on to work then, so she could practice her driving, but he's now got a different job so he goes in early and er

interviewer Right, you used to coordinate all those journeys?

respondent Yes, yeah

interviewer With the daughter whose in sixth form you drive in the other direction, do you then?

respondent To take her, then I come home, oh actually I tend to come home because I've usually had to leave the house in a hurry so I'll go home, do something useful at home and then come in (GMR4)

CASE 3 *Negotiation and unpredictability*

respondent yes that is sometimes because of the weather … the bus delayed or sometimes because of some reason because the daughter she works late shift in the evening and she cannot get up that early and … takes the morning so we need to send her to school first and then my wife drives back in the car and then I drive to work. Or if I wish to rush in myself I also take the bus…

interviewer So does your wife drive to work as well or..?

respondent She sometimes drives to work yes

interviewer You just have the one car between all of you?

respondent Yes yeah yeah

interviewer sometimes she uses the car and you…

respondent yeah sometimes but I use it most

interviewer you use it most?

respondent I use it the most, probably something like you know because I come here also I come here weekends, I almost…come here every Sunday and Saturday, so during those days my wife drives me to University and then she drives across to the ..to go shopping or somewhere.

interviewer That's what we're interested in as well people the journey to work and joining it to other journeys for other reasons. So at the weekends she would drive you to work and then take the car away?

respondent Yeah yeah yeah

interviewer and then use it for those..

respondent But that is not the major time, major time I drive it to my work because I need it to you know… my work

interviewer And when your wife doesn't have the use of the car when you're using the car does she then take the bus to work?

respondent She takes the bus to work (DL3)

Here the use of the household car is constantly re-negotiated with numerous factors influencing the decision: weather, time pressures, combination of trips etc. Those who lose the access to the car take public transport, despite the distrust of its reliability. The daughter normally uses a bus to get to school which, it is claimed, is more reliable. Again, some degree of flexibility is built into the arrangements with proximity to the University (7 miles), but a broken journey by public transport is still required - enough to discourage most drivers.

CASE 4 Combining car and public transport

In this case there is limited interdependence, but unusual circumstances are met by sharing the household car *and* by using public transport:

interviewer Are there other people in your household who make use of your car, or is it just yourself?

respondent Well there's only my husband as well, so he occasionally uses it but [unclear] he works in town [?] [unclear]

interviewer Right so you basically use your own cars, but you can use each other other's cars if there's problems with the cars […] So if he didn't have his car what do you do [unclear] you go by train?

respondent No occasional no occasionally we do swap in that way he can't if he can't get a lift locally he has the car and then I use the train or the bus. (GMR7)

CASE 5 Two cars

Here two cars are available in the household, but one is used for the journey to work, whilst the children use public or school transport:

respondent Yeah. I travel by car, erm with my husband now, we share cars, erm we, he only works just down the road at Bristol Street Motors [?] so I drop him off there and I come here (DD1)

interviewer Erm, how, seeing as how you have the sort of routine journey to work because you're getting a lift with your husband or he's getting a lift in with you, how often do you actually change that arrangement, is it very routine or do you ever?

respondent No its very routine, I only walk four days a week so for me it useful if it's [?] routine, apart from, apart from at the moment my husband's having

	physiotherapy over at … hospital on a Thursday morning so we both come in, we came in separately today, so I came in a little bit later, I was here about quarter past eight today.
interviewer	So does that mean did he go via a different, you didn't give him a lift?
respondent	No he's had to go to the hospital first, until half past eight and then he'll come back
interviewer	And how did he get to the hospital ?
respondent	In his own car
interviewer	in his own car, so he's got his own car as well but you usually share one for the journey to work?
respondent	Yes (DD2-3)
interviewer	Is there anyone else in your household apart from you and your husband, is there anyone else that you have to run around
respondent	We've got two children but they tend to just …
interviewer	Is that a school service or do they just take public transport?
respondent	Take public transport
interviewer	And how long is their journey the…
respondent	Erm, they both go to different schools. Its not far they're both in Sutton schools, it takes [?] ten to fifteen minutes for one, fifteen to twenty minutes
interviewer	Do they set off before you set off to work or afterwards?
respondent	No
interviewer	So you don't have to take them and drop them off at the bus stop?
respondent	No no (DD3-4)

Here, where the children are presumably old enough to be allowed to make their own way, certain time pressures are considerably reduced.

A household sharing a car is a familiar arrangement. We found evidence of lifts being given by neighbours and work colleagues, usually as a response to unexpected circumstances. Formal lift-sharing was established in one case.

Attempts to induce a modal shift in regular travel patterns have to take account of how journeys that may appear singular in purpose and destination (such as the journey to work) are often embedded in household travel arrangements with varying degrees of flexibility. Travel decisions are made through weighing up the intersections of: personal resources of time and money; the transport infrastructures in place (including private car availability); and the 'compulsions to proximity' that form the basis for the need to travel.

These factors are obviously highly inter-related, and in the academic context of this research site (with a higher than normal degree of time-flexibility allowed to most of the subjects in their working hours) the constraints exercised by the 'compulsions to proximity' node are substantially reduced. The respondents from the administrative department in particular were able to spell out the details of their flexi-time arrangements, and talk about how this was used in negotiating travel patterns, avoiding congestion, securing a parking space and also building up time off:

respondent The finance office as a whole works on a flexi-time scheme. The way that works is, we have a set number of hours. If we make up those hours in a shorter space of time, we can use any hours we do as extra, we can build that up, and effectively have it off as holiday. So we build up seven and a half hours, which is roughly a working day – we can just take a day off without actually using up any of our annual leave. Which is quite clever […] So if I do get in for eight, I usually leave at four. If I leave at four I should be back for about quarter to five, five o'clock, no later than that.

interviewer So is that deliberately to miss the…?

respondent Yeah.

interviewer Right. So you're missing the traffic by leaving early?

respondent Yeah, that's right. If I leave at five – which I have done in the past, it's very rare that I'd get in before quarter past six.

interviewer Right, so it pus an extra half an hour on your journey, right.

respondent Yeah.

interviewer So, I mean – I've asked this of everyone in… 'cause we're talking about flexibility but basically it's the same for everyone in the finance office, isn't it? (BR3)

The flexi-time system is much appreciated, although it is not clear whether the hours worked at lunch-time, or working late in the evening to avoid congestion, are necessarily the most productive. There was also reference to a consultation being carried out on the extension of the flexi-time scheme, presumably through the reduction of 'core hours'. This was seen as a good way to allow employees to work around congestion *and* to stagger their travel times to avoid it.

Also, the ability to work from home (possible through communications technology, or through work being reading or drafting documents) introduced 'tele-working' arrangements (see Reeves, 2002). This option was taken up more often, the higher up the academic hierarchy:

respondent Well I work at home almost every night, I mean I tend to work at home. I mean I used to, before we had computers, particularly during the summer I used to do what was called what I call summer hours, and that is I go home about four o'clock, have dinner and then come back here, but now we've got computers, so I work … late at night, just stay at home and work there, so but you know the high speed campus network on the internet has helped greatly, because I can access my email and documents at home now. Also my kids are older now so there are less interruptions and it's more pleasant working at home than coming here (SB2)

The last point underlines that this option is dependent on contingent social factors. The same respondent argued that this option was not fully appreciated by some:

respondent Yeah what's really what's really irritating when you do that is the 'oh you are you having a day off today' you know that's what you do, I mean they can't understand that you know that one can work flexibly, you know (SB4)

Another subject outlined objections to this option, of replacing the need to travel ('compulsions to proximity') through technology and home working, on the bases of maintaining a work ethic, commitment and co-presence amongst colleagues:

interviewer Do you have the possibility to work from home do you ever work at home or do you..?

respondent […] First of all certain very important I would say is your working spirit you know your spirit towards work […if] you're working out of home you're really lost your kind of spirit. Other than you know come in and see

interviewer Being with your colleagues?

respondent yeah yeah you're nearer to working on your colleagues and then you a need a kind of environment working environment […] People who come to work are having to concentrate on the work

interviewer Instead of sitting at home and..?

respondent If you're going to home you're relatively relaxing[…]but here you know what do you think about – how do you think your work progress […] sure I could choose flexible time but I work but I insist on my working hour my scheduled time table (DL5-6)

In considering personal resources, time sovereignty was again important in determining the framing of travel decision. It was strongly felt that the reliability of public transport was a greater factor in the determination of 'how much' time one had, in the sense of being able to correctly 'guesstimate' travel times, than the actual length of journeys taken. Thus the decision to use a car appears to be based on a perception that in choosing public transport, one surrenders any control over one's time and this is risky if there are penalties to pay for lateness, and 'unprofessional' if there are meetings to attend promptly.

Most common was a set of valuations that led travel decisions to be more determined by an attempt to avoid 'wasted time'. In a variety of contexts, this could mean time waiting for a bus or train; time spent on a non-direct route; time waiting for a connection; time spent looking for parking; and time spent in traffic jams. The latter was referred to explicitly only on a couple of occasions, e.g.:

respondent If I set off any time before about half past 8 I get caught up in the school runs and it takes a lot longer, it takes half three quarters of an hour and you're just sitting in a queue of traffic which is unproductive, so I'd rather just stay at home […] I think there's nothing more soul destroying than sitting in a queue of traffic (GMR5,8)

It should be noted that a link was made by a number of respondents between the parking charges and the concept of time management. As the letter quoted earlier points out, modal shift induced by parking charges is seen as contradicting another institutional discourse, that staff should make the best possible use of their time. Here using public transport is equated with 'wasting time'. This was contradicted by reports that working from home could be more efficient, that work could be done whilst on a train, that time wasted in traffic congestion was 'truly' wasted time, and that driving onto campus and parking itself could take long periods of time.

In general, our research backs up the assumption that because of the nature of car travel (in a private personal space, in relative control of one's progress, with the flexibility to adapt to travel conditions), this time is not perceived as 'wasted'. By contrast time spent as a pedestrian or public transport passenger is resented as wasted. This is despite the fact that it was acknowledged that time (on a train at least) could be utilised for work-related activity.

Considerations of financial resources lead most people to simply compare public transport fares with parking charges, which in the case of the fairly nominal level of the charges at Birmingham led to an assessment that driving is by far the cheaper option. The costs of driving more generally (road tax, insurance, maintenance etc) remain invisible in most people's calculations of their resources as deployed.

Most respondents, therefore, spelt out their rationales for car-based commuting in fairly simple terms: as a preference for convenience and control over time over cost and unreliability. Whether this cost-benefit analysis is based on a comprehensive assessment of the options, or is 'loaded' by perceptions and almost subconscious biases is another question. Given this back-grounded cultural commitment to car-driving, the moderate infrastructural change represented by the increase in parking charges at Birmingham is unlikely to induce significant modal shift.

6.9 Conclusions

This 'methodological experiment' has tested the use of work-based qualitative interviewing to access aspects of travel arrangements that remain occluded in quantitative studies. One drawback of such interviewing is its time-consuming nature. It is probably more suited to academic research than to use by local authorities or organisations such as universities, hospitals and businesses seeking quick responses to policy proposals. Nevertheless, it can produce information on issues that may be entirely overlooked by those responsible for drafting such policies.

The method also produces a large volume of data, which can be intimidating to analyse, but which can be mined for a variety of reasons. As an example, the prosaic details of origin, distance and length of journey (which are also captured by more conventional methods of research) can be mapped or tabled, but also cross-referenced with the more qualitative data, to reveal which factors affecting travel arrangements are linked to spatial issues. Thus we can draw conclusions such as the link between living close to work and the greater likelihood of accepting public transport as a viable option, or the fact that distance from a train station has an impact on the acceptability of this option, for those in outlying districts.

Generally this research reveals many of the considerations that lie behind the 'decision' to drive to work and relate them to those outlined in our tri-partite model of social-spatial-temporal exclusion. These include the juggling of financial and temporal resources, the compulsions to proximity that create the need to travel (including a discussion of the household context and flexibility) and the transport infrastructures, which impose further restraints and opportunities. Whilst the data support our contention that such processes underpin travel practices, certain other factors, from the weather to the exact details of the charging regime, affect people's travel arrangements in contingent ways.

In looking at car-users, we also noted that certain qualities of the private car experience (privacy, convenience, comfort, flexibility and so forth) predispose people towards remaining dependent on the car for most journeys. Although some respondents were willing in theory to effect modal shift and use other modes of transport (or had already in practice), such switches appeared to be forced by circumstance rather than a result of the change in conditions brought about by the imposition of the parking charges. There was an over-riding preference for car-based solutions before recourse was made to other modes. The persistent viability of car-based solutions was influenced by various factors: more than one car in a household, flexibility at work, the existence of parking spaces outside campus and so forth. This suggests that inducing modal changes through these levels of charge is unlikely, and that setting the charges at a higher level might have a number of consequences, including increased disgruntlement, but not necessarily desired modal shift.

Chapter 7 Measuring the Temporal and Spatial Dimensions of Access

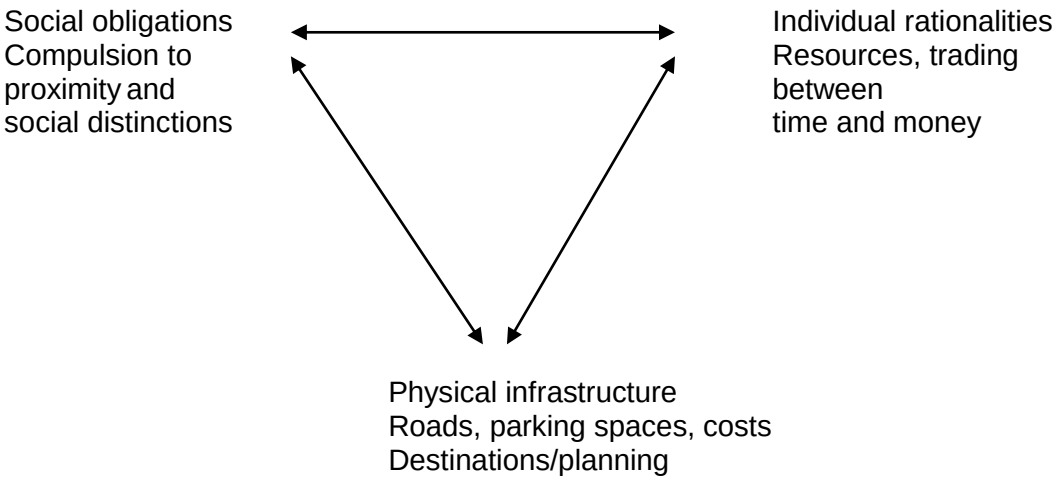
7.1 Introduction

This chapter reports on an exercise designed to explore ways of capturing dimensions of specifically socio-spatial inclusion and exclusion through the secondary analysis of existing data. The idea was to see if we could devise a method with which local authorities could map and measure at least some aspects of the three critical dimensions namely persons' 'obligations to proximity', the resources that can be mobilised in meeting these obligations, and the spatial and temporal properties of the physical infrastructure through and in which these resources are used. If we could describe some of these elements we might be in a position to *discover* persons who are, in our terms, socio-spatially included or excluded. This represents quite a different approach to that which is normally adopted.

Studies of mobility-related exclusion typically concentrate on specific categories such as the disabled, ethnic minorities, women, the poor or the long-term unemployed. They do so on the basis that these are distinctively vulnerable groups on whom impacts are likely to be both negative and disproportionate. Alternatively, investigation focuses on *neighbourhoods* already identified as 'socially excluded', for example, in the Social Exclusion Unit's Neighbourhood Renewal strategy, or on the basis of their ranking according to the Index of Multiple Deprivation.

By contrast, we do not assume that pre-defined social *categories* and/or geographical *areas* suffer from social-spatial exclusion. Instead of taking the social and spatial distribution of impact for granted, our goal is to help local authorities reveal differences of social-spatial inclusion and exclusion (and hence what impact congestion charging schemes might make and to whom). In what follows, our objective is to identify indicators that might fit this bill, that are available to local authorities and that could, in combination, help construct a picture of the nature, location and extent of social-spatial inclusion/exclusion as defined in our tripartite model, introduced in chapter 3 and reproduced here for ease of reference.

Social-spatial inclusion/exclusion is an emergent property of the interaction between social obligation, individual resources, and physical infrastructure.



We begin by cataloguing potentially relevant sources of data relating to each node of this triangle before going on to think about how these might be drawn together.

Individual and household resources: relevant data

- Access to or use of a car
- Financial resources
- Temporal resources
- Telephone connections
- Points of contact/ answerphone/internet/e-mail

Social obligations and compulsion to proximity: relevant data[10]

- Destinations and frequency of travel to work
- Destinations and frequency of travel to school
- Destinations and frequency of travel for leisure/shopping
- Destinations and frequency of travel for health services
- Destinations and frequency of travel for social services
- Destinations and frequency of travel for visiting friends and family

Physical infrastructure/provision: relevant data

- Public transport options in terms of destination, duration and frequency
- Road and rail networks and connections
- Potential for interchange
- Cost
- Evidence of congestion and of network 'hot spots' and 'cold spots'

It is immediately obvious that much of this material is simply not available or not so in a form that is readily accessible. This observation forced us on to another track. Rather than identifying potentially useful (but unrealistic) indicators, we decided to find out what data local authorities actually had to hand, and what they already knew about mobility and exclusion. We would then work with this material, as best we could.

7.2 Reviewing existing data: Durham County Council

Representatives of Durham County Council had been interviewed during the initial phase of the project (see chapter 2) and were willing to continue working with us. A first step was to discover what data they had access to and how that was already being used in evaluating socio-spatial inclusion and exclusion.

There were basically three ways of addressing this issue depending on the context in which the question of inclusion/exclusion arose. One, important with respect to overall investment and the concentration of resources, was to refer to the index of multiple deprivation. In this case, socio-spatial inclusion and exclusion was simply equated with a high level of multiple deprivation. Areas around Easington and Seaham were prioritised on the basis that the Easington District included 48% of the population within the county who were living within wards ranked within the top 10 most multiply deprived in England.

A second approach related to the need to better understand and anticipate the consequences of specific developments and initiatives. Recent reorganisation of health care in the area - typically involving centralising and concentrating services - had for example, meant that certain patients and visitors would face especially complex and long journeys. In this case efforts were being made to track the consequences for those who might be worst

[10] Rather than trying to discern the full range of situations in which people want to be co-present with others, an alternative strategy might be to focus on 'blocked desire'. In keeping with our model, exclusion arises when people cannot meet what they take to be obligations of co-presence. We might therefore think about measuring such frustrations.

affected (never mind how they scored in the more generic index of multiple deprivation). Similar efforts were made with respect to the relocation of work places and the development of new call centres in areas not well connected by public transport. In these instances, first hand familiarity with the region was extremely important as was local knowledge and an appreciation of the history of the area.

The third reason for gathering data on socio-spatial inclusion and exclusion related to the need to prepare bids for funding. As described this was a more or less continual process and one that was particularly demanding in that each bid had its own rules and criteria for success. As a result, much effort was invested in assembling information and conducting local surveys in order to make the case for quite specific projects. One side effect of this was that much more was known about parts of the county that were in receipt of specific packages of funding (for one reason or another) than about those that had yet to fit such criteria. In this context, information gathering was clearly driven by the needs and interests of initiatives like those of regional development, the rural bus challenge, or whatever.

As these paragraphs indicate, there was not much existing information 'between' the highly generalised index of multiple deprivation or the aggregate analyses presented in County strategy documents, and a patchwork of highly specific (bid driven) studies of particular issues in selected localities. This realisation forced us to re-consider our methodology once again and to think about what might be gleaned from publicly available data such as the census, neighbourhood local area statistics, and local bus timetables.

Our meetings with Durham County Council were important in helping to focus our enquiry. Our intention was to experiment with ways of representing socio-spatial inclusion and exclusion by looking at a number of selected locations. Two came to the fore as relevant and interesting candidates. Seaham and Easington, on the East coast rank high in the index of multiple deprivation (a factor that is being used to structure investment in public transport) yet they appear to be relatively well connected. By concentrating on this area we might be able to discover whether Seaham/Easington is in fact socio-spatially 'rich', even if deprived on other counts. Stanley and surrounding 'villages' (further to the West) represented another potentially useful location on which to concentrate on the grounds that there were (at the time) plans to develop a demand responsive bus service in this area and bids for the rural bus challenge were in preparation.

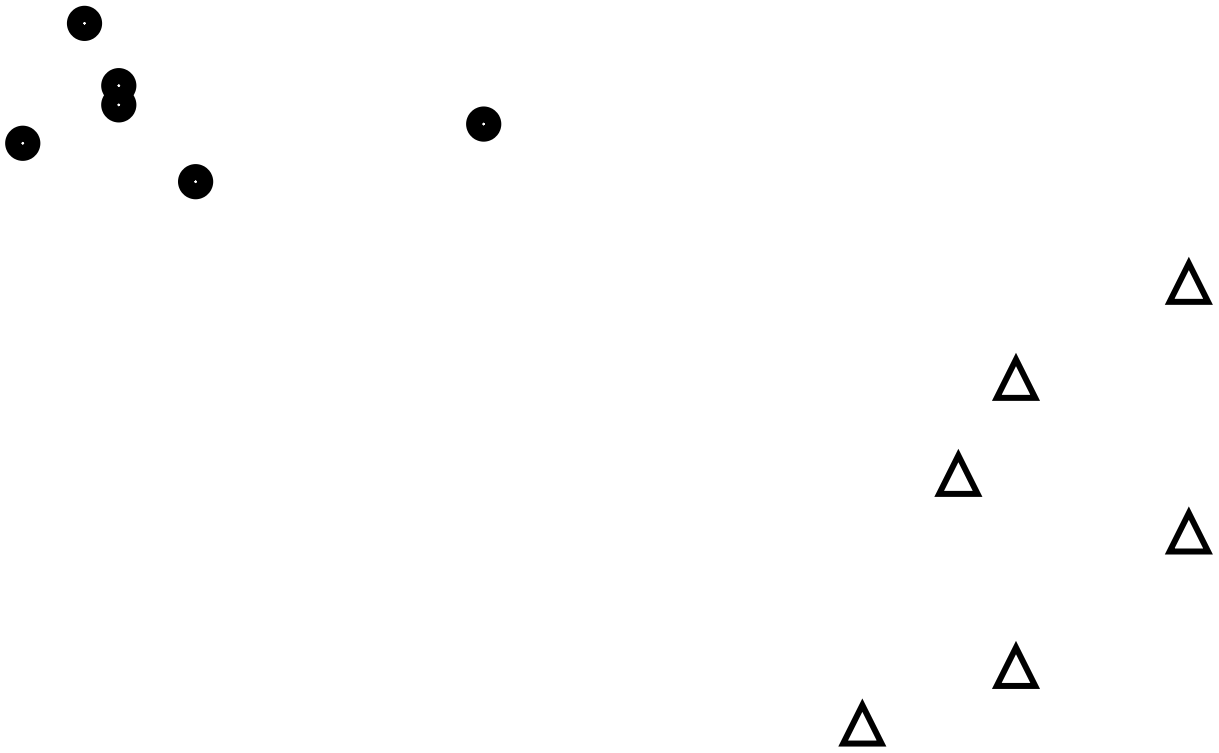
Though we have concentrated on Seaham (and surrounding areas) and on Stanley (and surrounding areas) for these reasons, it is important to keep in mind that this is a *methodological* experiment. In piecing together data from different sources we are well aware of the fact that we are setting more than ten-year old census results alongside contemporary bus timetables. Likewise, though talking about 'areas' and 'localities' it is quite clear that the geographical boundaries of our analysis vary each step of the way, when considering indices of deprivation, when looking at the census and especially when reading the bus timetables. For these reasons there is little point in placing much weight on the substantive conclusions drawn from this exercise. To make the point again, our limited aim is to see what, if anything, can be gained from trying to characterise and draw together specifically spatial-temporal and mobility related data.

Is it, for example, possible or reasonable to relate census data on car availability to the use of cars for journeys to work and to relate both to the richness of public transport provision (based on analysis of bus times) and the extent to which people use public transport for their journeys to work (from the census)? Can we compile a composite socio-spatial portrait of Seaham and Stanley? And can we do so with limited resources?

We gathered data together for a selection of 12 ward areas. These were chosen to include a range of more and less dense rural-urban areas scattered around the two focal points of

Seaham/Easington and Stanley/West Durham. The selected areas in the first category were: Thornley, Shotton, Murton West, South Hetton, Seaham and Easington Colliery. Chester central, Craghead, Stanley Hall, Tanfield, South Stanley and Annfield Plain were included in the second 'Stanley-related' group. This selection interprets the Seaham and Stanley areas quite broadly.

The map below shows where these ward areas are located.
(map removed in order to e-mail the file: will be included in printed document)



7.3 Neighbourhood statistics and the 2000 index of multiple deprivation

Table 7.1 compares the 'positioning' of these 12 ward areas with respect to the index of multiple deprivation and more specifically with respect to the 'access domain' of that index. The access measure represents features like the existence of facilities like a GP, post office, primary schools etc. within the ward. As the table shows there are considerable discrepancies between these two measures in the areas examined.

Table 7.1 Index of multiple deprivation and measures of access

	IMD score	IMD Rank	Access domain	Access rank	Position, nationally, in terms of access
Sorted by access domain					
Shotton	64.88	165	**-0.73**	6773	50% least deprived
Thornley	56.6	347	**-0.64**	6471	50% least deprived
Seaham	35.73	1434	**-0.22**	4748	50% least deprived
Easington Colliery	64.57	176	**-0.1**	4228	50% least deprived
South Hetton	46.88	709	**0.12**	3382	40-50% most deprived
Murton West	47.98	654	**0.2**	3130	30-40% most deprived
Chester Central	19.95	3575	**-1.72**	8269	50% least deprived
Annfield Plain	40.72	1071	**-1.15**	7753	50% least deprived
South Stanley	65.22	160	**-0.78**	6943	50% least deprived
Stanley Hall	43.32	915	**-0.33**	5231	50% least deprived
Craghead	62.81	214	**-0.13**	4321	50% least deprived
Tanfield	29.11	2109	**0.29**	2880	30-40% most deprived
Sorted by IMD rank					
Shotton	64.88	**165**	-0.73	6773	50% least deprived
Easington Colliery	64.57	**176**	-0.1	4228	50% least deprived
Thornley	56.6	**347**	-0.64	6471	50% least deprived
Murton West	47.98	**654**	0.2	3130	30-40% most deprived
South Hetton	46.88	**709**	0.12	3382	40-50% most deprived
Seaham	35.73	**1434**	-0.22	4748	50% least deprived
South Stanley	65.22	**160**	-0.78	6943	50% least deprived
Craghead	62.81	**214**	-0.13	4321	50% least deprived
Stanley Hall	43.32	**915**	-0.33	5231	50% least deprived
Annfield Plain	40.72	**1071**	-1.15	7753	50% least deprived
Tanfield	29.11	**2109**	0.29	2880	30-40% most deprived
Chester Central	19.95	**3575**	-1.72	8269	50% least deprived

In national terms, few of these areas are especially deprived in terms of 'access' as defined above. A number of them are, however, amongst the most 'multiply' deprived parts of the country. Given our interest not just in the availability of local facilities (which constitutes the definition of access here), but in peoples' ability to reach places to which they need and want to go, we chose to look at other data including that relating to car availability and journey to work. We drew this from the 1991 census.

7.4 1991 census data

It is relatively easy to compare data (by ward area) that describes a) car availability, b) means of transport to work and socio-economic group and c) car availability and means of transport to work.

Table 7.2 summarises

- the number of households,
- the percentage of households with a car,
- the percentage of men travelling to work by car (whether as driver or passenger),
- the percentage of women travelling to work by car (whether as driver or passenger),
- the percentage of all journeys to work made by bus,
- the percentage of men travelling to work by bus,
- the percentage of women travelling to work by bus,
- the percentage of all journeys to work made on foot, and finally
- the percentage of people included in the top two socio-economic groups (employers and managers and professional workers) in each of the 12 ward areas.

Table 7.2 Summary of 1991 census data for the 12 ward areas

	Number of households	% of household with a car	% of men travelling to work by car	% of women travelling to work by car	% of all journeys to work made by bus	% of men travelling to work by bus	% of women travelling to work by bus	% of all journeys to work made on foot	% of all presons in the top 2 SEGs
Seaham area									
Thornley	1202	64	85	50	21	10	34	4	2
Shotton	1721	60	68	50	13	7	11	17	6
Murton West	1437	60	59	47	19	14	26	19	7
South Hetton	1131	65	72	47	21	10	33	6	14
Seaham	1667	71	68	51	12	6	17	17	13
Easington Colliery	2231	58	52	40	11	5	19	34	5
Stanley area									
Chester central	733	70	72	42	13	7	20	16	7
Craghead	1151	52	82	43	19	11	29	8	8
Stanley Hall	1743	57	80	39	16	12	20	17	11
Tanfield	1682	92	83	84	10	4	16	6	20
South Stanley	1914	49	74	35	21	10	33	15	7
Annfield plain	1668	64	73	54	13	12	14	12	7

The first point to notice is the extent of local variation, for example in the percentage of journeys to work made on foot, but also in the percentage of households with a car. Further ordering of this data reveals what is at first sight a highly inconsistent picture as indicated in table 7.3. Table 7.3 simply lists the three ward areas showing the highest percentage of:

- journeys to work by bus
- men using the bus to get to work
- women using the bus to get to work
- journeys to work by foot
- households with a car
- men using cars to get to work
- women using cars to get to work

Table 7.2 Comparing ward areas

Highest % of:	Were in these ward areas…		
Journey to work by bus	Thornley	Murton West	South Hetton
Men using the bus to get to work	Murton West	Annfield Plain	Stanley Hall
Women using the bus to get to work	Thornley	South Hetton	South Stanley
Journeys to work by foot	Easington Colliery	Murton West	Shotton
Households with a car	Tanfield	Seaham	Chester Central
Men using cars to get to work	Thornley	Craghead	Tanfield
Women using cars to get to work	Tanfield	Annfield Plain	Thornley

It is important not to make too much of this snapshot from 1991 but there are a number of observations that can be made. First, this material shows that there is a striking difference in how men and women get to work. Where there is a lot of bus use, it is women who make up the numbers. More generally, there are many more women than men on foot and travelling by bus. Second, where there is a relatively high availability of cars, women get to use them. Where availability is lower, they are mostly used by men.

That said, there is no clear picture relating to car-availability and use of public transport and no obvious distinction between the loosely defined Seaham and Stanley 'areas'.

Our next move was to try to identify contemporary 'hot' and 'cold' spots in public transport provision. To this end we made extensive use of Durham County Council's on-line journey planner,(http://www.durham.gov.uk/durhamcc/usp.nsf/pws/Journey+Planner+-+Journey+Planner) as outlined below.

7.5 Mapping public transport provision

We wanted to explore ways of representing the temporal as well as the spatial properties of the public transport system and to do so in a way that described the 'potential' for mobility afforded by the present infrastructure.

We started by printing out the times of all buses leaving a selection of bus stops through the day (a Monday-Friday timetable). Since the aim was to roughly relate this exercise to the one just described the first challenge was to decide which stop to pick to represent, for example, Annfield Plain. Each 'place' resolves into a series of more precisely defined 'stops' when analysed in terms of bus routes. So what should we take to 'represent' our chosen locations?

From an initial catalogue of 17 stops (itself somewhat arbitrary) roughly relating to the 12 ward areas, we cut that down to a list of 8, chosen to represent we took to be the more 'central' of the stops. We were particularly reliant on the way the on-line journey planner is organised and on the naming of specific stops. In slimming down the list we recognise that we are making quite a number of assumptions about how people might reach the stops we have picked.

Having chosen 8 bus stops on which to concentrate, we then plotted the number of buses leaving those points at different times of day. The results are shown on the next page.

This figure reveals a rather dramatic cut off point at around 6pm. It also shows the importance of 'hubs' like Chester le Street and to a lesser extent Stanley. Although this gives a sense of the overall distribution of bus provision it tells us nothing about where these routes go.

To take the next step we focused on just two locations, Annfield Plain (superstore) and Seaham (bus station), both of which have roughly the same number of buses leaving during the course of the day. The question was then where might people be able to get to and how this varies at different times of day.

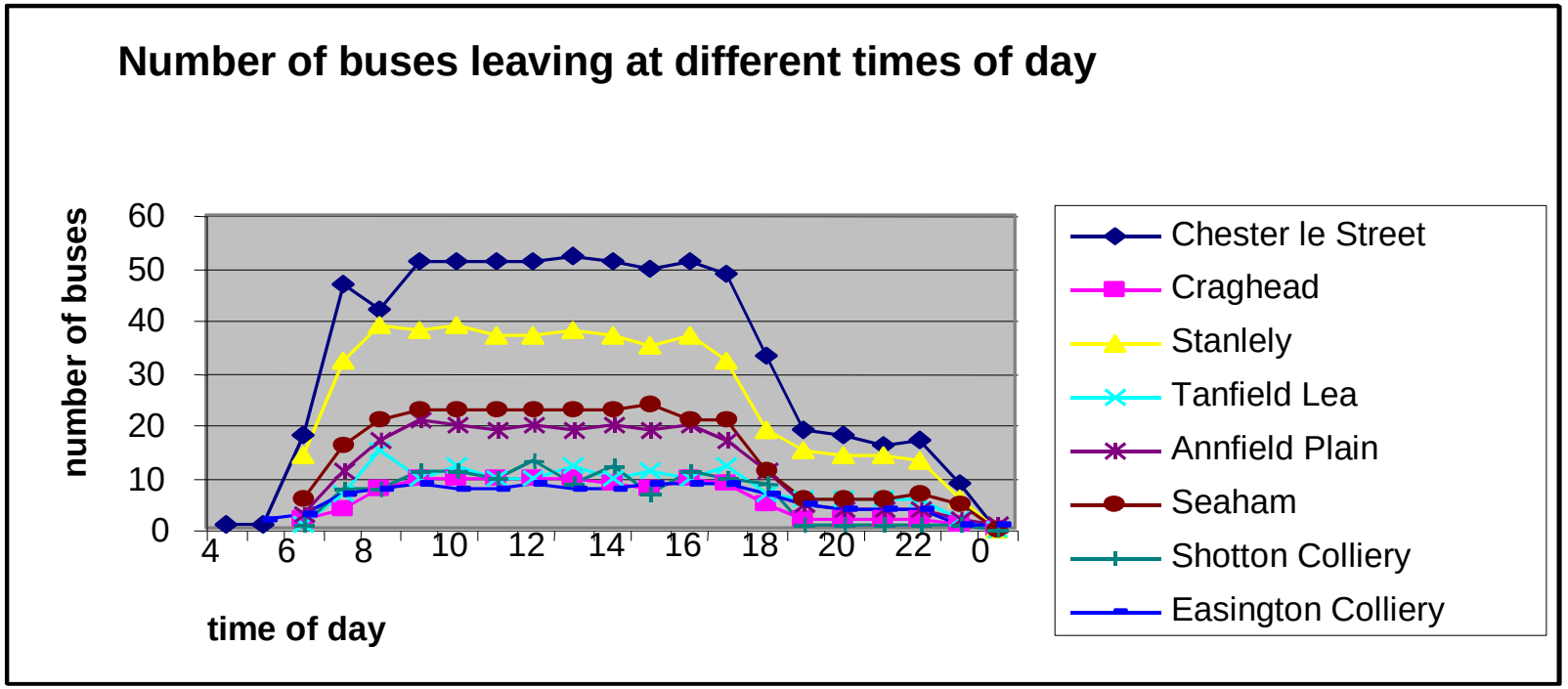
This led us to re-read the bus timetables, this time concentrating on the routes and destinations of buses leaving Annfield Plain (superstore) and Seaham (bus station) at 7am, 9am, 6pm and 10pm. The results of this spatial-temporal exercise are represented on the eight maps shown below.

The pattern is relatively clear. The main and most frequent routes from Annfield Plain are North to Newcastle (via different stops along the way) and East to Stanley and Sunderland and back (again often via different routes). From Seaham, the most frequent routes are to Sunderland, Peterlee and Newcastle. In both cases there is a limited number of main bus routes (on which buses are more or less frequent) and few opportunities to reach destinations off these main tracks. Of course this kind of analysis plays down the importance of 'intermediate' stops and does not allow us to show how easy or difficult it might be to get to some of these locations even though that is likely to be extremely important in practice, nor does it tell us anything about potential return journeys.

Most limiting of all, there is no way of knowing if these are, in fact the places to which people want to travel. This is a point we take up in the next chapter.

Numbers of buses leaving selected stops at different times of day

Time of day	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	
Chester le Street	1	1	18	47	42	51	51	51	51	52	51	50	51	49	33	19	18	16	17	9	0	
Craghead			2	4	8	10	10	10	10	10	9	8	10	9	5	2	2	2	2	1	0	
Stanley			14	32	39	38	39	37	37	38	37	35	37	32	19	15	14	14	13	6	0	
Tanfield Lea			1	7	15	10	12	10	10	12	10	11	10	12	7	6	6	6	6	2	0	
Annfield Plain			3	11	17	21	20	19	20	19	20	19	20	17	11	5	4	4	4	2	1	
Seaham			6	16	21	23	23	23	23	23	23	24	21	21	11	6	6	6	7	5	0	
Shotton Colliery			1	8	8	11	11	10	13	9	12	7	11	10	9	1	1	1	1	1	0	
Easington Colliery		2	3	7	8	9	8	8	9	8	8	9	9	9	7	5	4	4	4	1	1	


Number of buses leaving at different times of day
number of buses
60
50
40
30
20
10
0
4
6
8
10
12
14
16
18
20
22
0
time of day
Chester le Street
Craghead
Stanlely
Tanfield Lea
Annfield Plain
Seaham
Shotton Colliery
Easington Colliery

Buses leaving Annfield Plain (superstore)

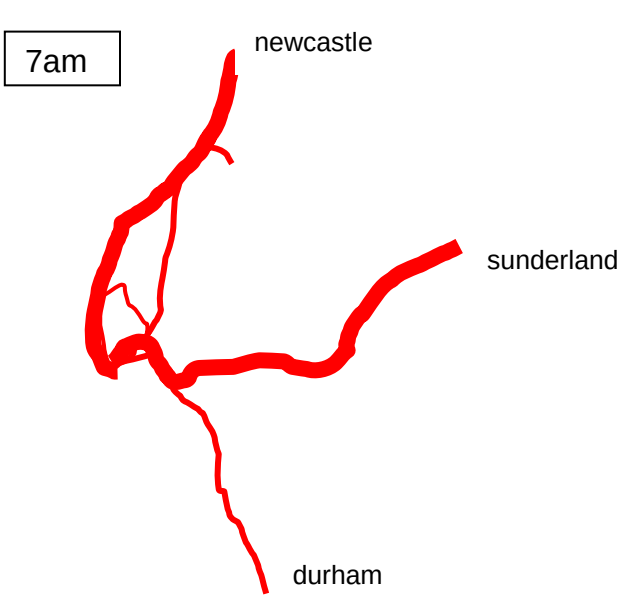
7am.
708 North to Newcastle
775 x2 East to Chester le Street and Sunderland
934 North to Team valley via Causey
778 East to Stanley and Sunderland
700x3 North (local) Stanely via Flint Hill
719 South to Stanley, Durham Consett and Shotley Bridge
705 North to Newcastle
X7 East to Stanley, Sunderland

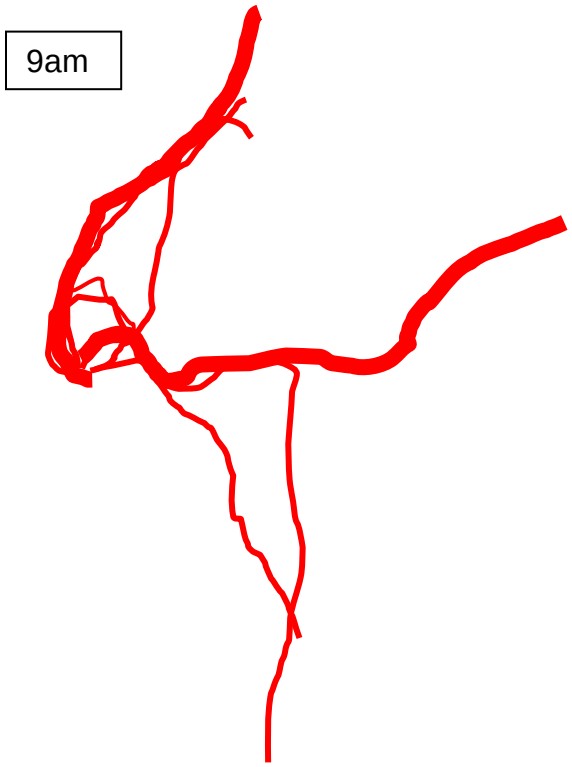
9am.
352 Blackpool
708 x2 North to Newcastle
775 x2 East to Chester le Street and Sunderland
719x2 South to Durham
X12 North to Newcastle
700x4 North (local) Stanely via Flint Hill
778x2 East to Stanley and Sunderland
705 North to Newcastle
807 East to Stanley
MC1 Metro Centre
806 Stanley via Catchgate

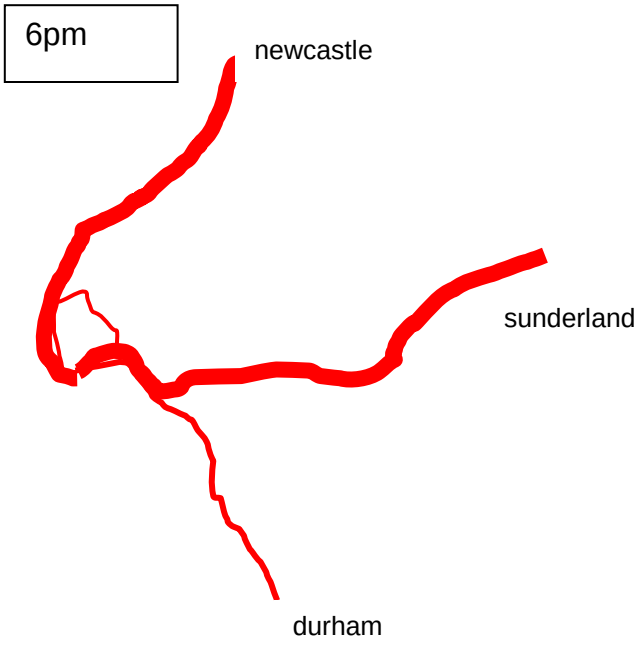
6pm.
775 East to Chester le Street and Sunderland
X7 East to Stanley, Sunderland
X12 North to Newcastle
700 North (local) Stanley via Flint Hill
705 North to Newcastle
778 East to Stanley and Sunderland
719 South to Durham
708 North to Newcastle

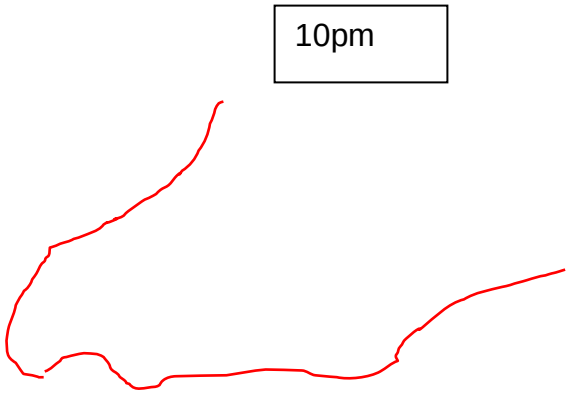
10pm.
705x2 North to Newcastle
778x2 East to Stanley and Sunderland

Routes from Annfield Plain









Buses leaving Seaham bus station

7am.
150x8 North to Sunderland
146 North to Sunderland
147x2 West to Murton
x90 North to Newcastle
148x3 South to Peterlee
154 South West to Durham

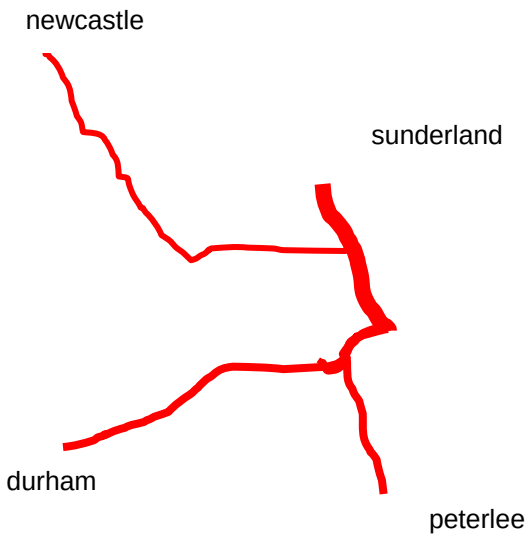
9am.
150x7 North to Sunderland
147 South to Peterlee
146 North to Sunderland
145 Local to Deneside
154 South West to Durham
143 Local to Deneside
X90 North to Newcastle

6pm.
148 South to Peterlee
150x7 North to Sunderland
146 North to Sunderland
154 South West to Durham

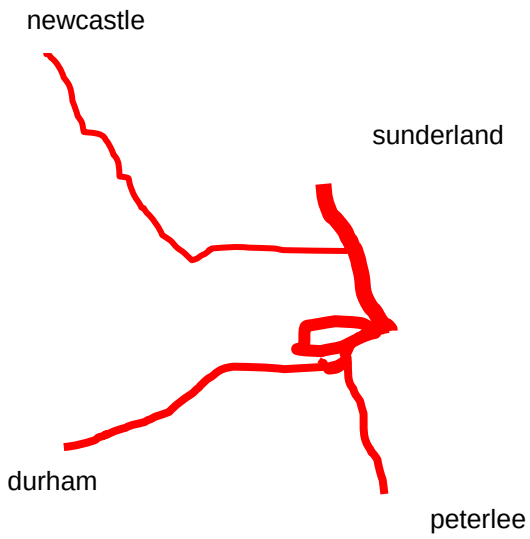
10pm.
150x6 North to Sunderland
154 South West to Durham

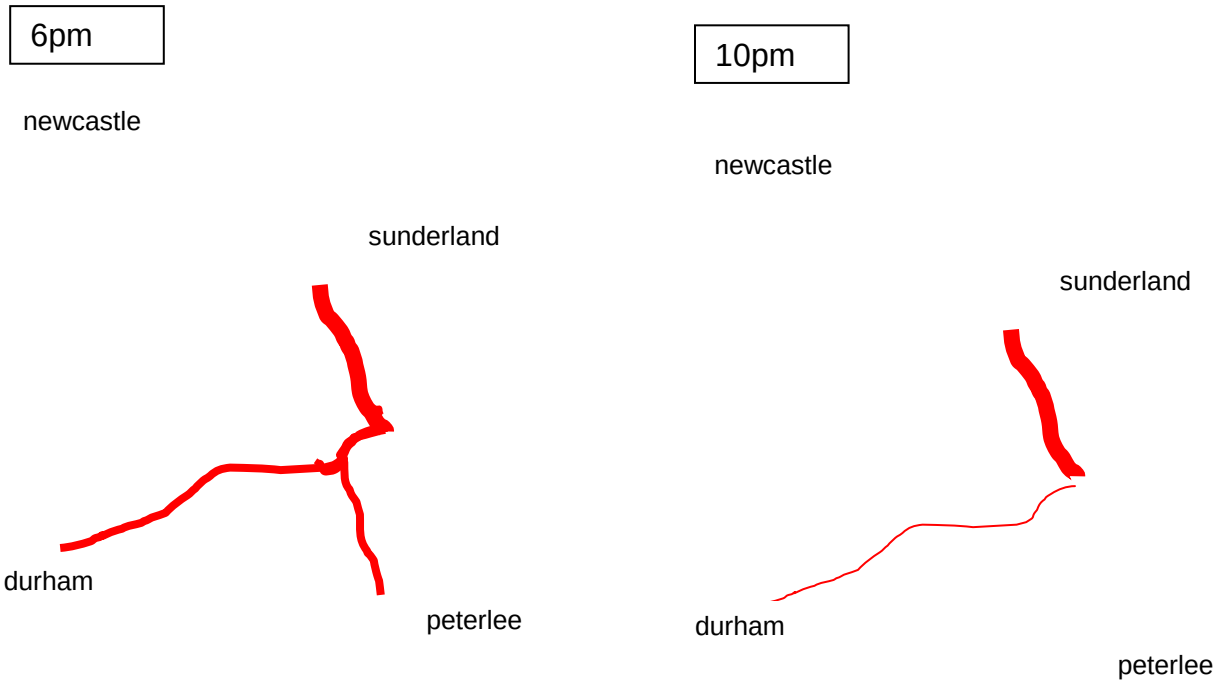
Routes from Seaham

7am



9am





7.6 Conclusions

There are a number of lessons to be learned from this exercise.

First, no matter how we approach the problem, it is extremely difficult to capture or represent the socio-spatial and temporal qualities of the physical infrastructure in a way that makes sense to those who use it. Although we can describe and compare the number of buses per hour or levels of car ownership the results do not add up in such a way that we might conclude that, for example, the infrastructure is in some sense richer in Seaham than in Stanley. For those who want to go to Sunderland from Seaham there are plenty of opportunities, many more so than for those whose destination is Durham. Likewise places that seem to be well connected at 10 am are almost totally unreachable by public transport after 6pm.

At the grain of detail with which we have been able to work there is also no way of relating, for instance, the relative availability of car and public transport to the use made of these modes though we have noted significant differences in the way that men and women travel to work. This suggests that there may be important but routinely invisible forms of socio-spatial difference, if not inequality, *within* as well as between households in similar areas.

More positively we have shown the on-line journey planner (a service designed for customers) to have some value for research. It is not clear whether the journey planner provides a comprehensive picture of all routes and options but in so far as it does, it can be used to identify 'gaps' in routes and especially in times of day in a manner that might well be useful when preparing bids and trying to describe existing provision with respect to specific localities.

Our work especially with the bus timetables is important in revealing the complexity of the system. In embarking on the limited exercises outlined here, we had to make all manner of decisions about what constituted an 'area' and about the relation between that and selected bus stops. Although we took notice of time in the sense of looking at the density of provision at

different times of day, we paid no attention to the time it would actually take to reach different destinations by bus - nor did we even consider the possibility of interchange. Likewise, we took no account of the cost of travelling by any of the means considered.

Our provisional, and somewhat disappointing conclusion is that we have yet to find a way of revealing the properties of the physical/temporal infrastructure at a 'middle' level of resolution: that is at a level that is not so abstracted as to be of little specifically socio-spatial relevance (such as the index of multiple deprivation or summary data from the census), but not so localised (such as the day to day experiences of actual travellers) as to require case by case surveying. In addition, we have learned that exercises that were intended to be 'light weight' and easy to adopt were in fact quite time consuming to develop and implement. Although we have failed to map and capture systems of transport provision in the way that we hoped, we have explored a selection of different methods each of which have certain qualities and each of which may be of use in addressing other less ambitions challenges.

Chapter 8 Revealing Exclusion through Provision: Rural and Urban Demand Responsive Transport Schemes

8.1 Background

This chapter describes research undertaken into two recently introduced public transport schemes that are specifically intended to reduce transport-related social exclusion, namely the Super 8 and U-Call Demand Responsive Transport (DRT) services based in Garstang, Lancashire and West Newcastle respectively. The research examined the schemes in the contexts in which they have been introduced, and involved interviews with the officials responsible for their introduction, as well as with the users. The schemes are of interest to the CHIME programme of research as they reveal that such projects enable local authorities or their transport authorities to simultaneously reveal, assess, and address transport-related social exclusion in the areas in which they operate.

The chapter first presents the background of the research and a discussion of the research methodology and outlines the nature of the two transport schemes under discussion. It then turns attention to the policy issues that surround the development and implementation of the schemes, before exploring how the schemes reveal and address transport-related social exclusion.

This part of the work looks at how infrastructure provision (of a novel kind) can help those who may be suffering from exclusion to fulfil their social obligations within the restrictions imposed on them by their resources. The study also looks at how the setting up and running of these schemes acts to identify transport exclusion in a flexible, reiterative and responsive manner, building up a picture over time of the nature of exclusion in the areas served by the schemes.

In chapter 6 we looked at the potential impacts of WPPLs through the analogous situation of the introduction of parking charges at a single institution, testing the methodology of work-place interviews. This research also implicitly tests another methodology, that of *interviews undertaken with transport users during their journeys*. This course was chosen as the most direct way to access those people whose data we wished to collect. An alternative might have been to collect the names and addresses of users of the schemes from the providers, and to conduct interviews either at their homes or at a central location. This course of action would have entailed its own problems: how to select the subjects, how to access their homes (they by definition live in areas of poor transport infrastructure), and of course the obtaining of consent. The methodology we have adopted has the advantage of affording automatic access to subjects, also making it relatively easy to obtain consent for the interview. On the other hand there were a number of draw-backs, including the environment in which the interviews were conducted (a moving and sometimes noisy bus), and the fact that the interviews were necessarily short, as people were often undertaking fairly short journeys. In addition, it was not possible to interview everyone using the services on the days that research took place, although the majority were covered. Of considerable help was the fact that on three out of the four data collection days, the researcher was accompanied by someone from the organisation providing the bus service, who was able to quickly explain the researcher's presence and the nature of the research, which facilitated consent to be interviewed in all cases bar two, in one of which a group of youths were unwilling to be recorded, and in the other the subject was profoundly deaf.

The interviews were based on a short schedule of questions provided in the Appendices. In practice, respondents would frequently answer a number of the questions simultaneously and un-prompted, and subjects generally seemed keen both to express dissatisfaction with 'regular' transport provision, and to praise the new DRT schemes. Nevertheless, with around 50% of the subjects being elderly (here defined as aged 50 or above), there were other problems encountered which need to be taken into account when researching this target population. These include hearing problems, and the willingness to talk, especially to strangers. Some subjects would talk with little encouragement, and did not stick to the topics being researched, whilst others were very reluctant to say much in the presence of a Dictaphone and required prompting and the formulation of questions to which a simple yes/no answer could be provided.

In retrospect, there is an aspect that should have been addressed more thoroughly, and that is the *spatial* aspect of the journeys that were researched. Bearing in mind that the CHIME project has focussed on the spatial and temporal nature of exclusion, it would have been very useful to precisely record the locations of all pick-ups and drop-offs, in order to build up a picture of the spatial nature of the exclusion serviced by the schemes. In practice, the research was undertaken in environments with which the researcher was unfamiliar, and in the case of the U-Call scheme, the high degree of flexibility meant that the routes taken were effectively determined by the drivers as they went along. As I will detail later, the software behind the U-Call scheme allows some analysis of journeys on a spatial-temporal basis, after the event.

In summary, although the methods adopted have drawbacks in terms of the restrictions imposed by interviewing during short journeys on a bus, we feel that the resulting data provide a snapshot of the use of the schemes that can be quickly and easily arranged by a single researcher, and that could easily be adopted by authorities in a number of public transport situations.

8.2 DRT Schemes

DRT schemes are an example of an important new trend in public transport provision that fist the category of 'infrastructure change' that addresses transport-related social exclusion. It is a method of transport provision seen in governmental and transport circles as ideally suited to addressing transport exclusion, as demonstrated by its traditional usage in providing 'door-to-door' transport for those with particular transport needs, in particular those with mobility problems due to age or disability. DRT is widely viewed as an necessary adaptation to changing transport needs and levels of service provision which have resulted, in part, from the effects of public transport privatisation; in particular the cutting of services which are seen as 'inefficient'. These services are often those that do not fall into the category of major 'corridors' that are the major revenues generators for private transport providers.

We were also interested in looking at 'soft' infrastructure change[11], the area in which the majority of public transport responses to exclusion are being made. As in the case of the parking charges described in chapter 6, we first identified the most *recent* schemes which had been put into place, in order to be able to observe the *process* of exclusion being addressed as much as the mere running of such schemes. Initial fieldwork looked at different schemes being proposed or put into place around the country, and the Super 8 and U-Call services stood out as the most recent. In fact, the U-Call scheme had not been officially launched when the research began, and has only been running as a full service (with the coordinating software on-line and the fleet of three specially adapted vehicles operating) as of October 2002. Fieldwork at this site was therefore deferred until December 2002. The Super 8 service has been operating for two years,

[11] Defined as change that does not require *physical* infrastructure change.

but like the U-Call scheme is still attracting new patronage (at a slower rate) and qualifies as an innovation in transport provision which is still being developed.

8.2.i Super 8 in Garstang

The Garstang Super 8 bus service is described as having "both a conventional bus service with a fixed route and timetable and also […] the flexibility, within a designated area, to deviate from this route to pick up passengers who have booked the bus in advance"[12]. It operates around the market town of Garstang, which sits on the A6 between Lancaster and Preston. It is the largest town in the service area[13].

The service's name is derived from the routes the bus takes, in loops to the east and west of the town, forming a figure-of-eight. Although it was originally planned that the bus would service both areas daily, it was eventually decided that the service would alternate between the eastern and western loops on a daily basis, with the exception of Thursday and Saturday services. On these days (Thursday being the market day and Saturday a traditional shopping day) both loops are serviced, with less frequency.

One bus runs the Super 8 routes, although another is available in case of breakdown, The bus is a custom-modified Optare minibus, with 16 seats, space and facilities to carry one wheelchair, and a rear-mounted bicycle rack which can carry two bikes. Although, as mentioned, the bus runs to a timetable, the DRT aspect is provided by the facility to book a journey from anywhere within a set catchment area. This is done by telephoning the Super 8 Control Centre, with bookings being communicated to the driver via an on-board radio set. When the bus is over-subscribed, a taxi is called out to fulfil the same journey for the same fare. The service is run as a partnership between Lancashire County Council (LCC) and Preston Community Transport (PCT), and has absorbed some of the services provided by each of the partnership organisations in the realms of public and community transport.

8.2.ii U-Call in West Newcastle

The U-Call scheme comprises four different routes[14]. West Newcastle is an area which ranks highly on the Index of Multiple Deprivation, and which includes New Deal for Communities neighbourhoods. It has also been the focus of other research on social exclusion (Moore and Lilley, 2001). The West Road runs through a part of the area serviced by U-Call, and is a typical major corridor in terms of regular bus provision. However, the areas surrounding this corridor are poorly serviced by public transport, and the Metro system is only accessible in the northern fringe, at Kingston Park station. The (day-time) U-Call service is primarily designed, like the Super 8, to enable access to a central hub which has shops, health and community services, as well as further transport links, in this case the West Denton shopping centre, swimming pool and library complex.

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[12] Super 8 website (http://www.garstangsuper8.co.uk/).

[13] Comprises the rural districts of the parishes of Preesall, Stalmine, Hambleton, Out Rawcliffe, Pilling, Winmarleigh, Nateby, Barnacre-with-Bonds, Nether Wyresdale, Claughton, Bilsborrow and the Oakenclough part of Bleasdale Parish. This area contains many hamlets and villages and a widely dispersed population, and stretches from the foothills of Bowland Forest in the east, to the flatter farmland bounded by the Wyre estuary in the west.

[14] The fieldwork was carried out on the most frequently used service, that which operates from 09.30 to 16.40 in an area bounded by West Denton in the east, Kingston Park in the north, and the villages of Lemington and Throckley to the west. The other routes comprise a through-the-night service to the city's airport, and morning and evening services that provide links to employment sites that are still being developed. Apparently the patronage of these services is still low, and we were advised that it would not be worthwhile attempting data collection on the services at the time of fieldwork.

U-Call operates with a fleet of 3 minibuses, and one in reserve, a mix of Renault and Optare vehicles that are accessible to push-chairs and the elderly due to low floors, and have facilities to carry wheelchair users and space for push-chairs. The drivers are in constant contact with the control centre in the city centre offices of NEXUS[15] through the on-board Mobile Data Terminals (MDTs) and their pick-ups and drop-offs are relayed to them on screen in a system comparable to taxis' call out displays. Although it is advised that passengers book their journeys at least an hour in advance, the system is sufficiently 'real-time' to allow last minute pick-ups, and the drivers can relay information about delays back to the office.

Unlike the Super 8, the U-Call service does not operate to set timetabled routes. Instead, the buses call at set nodes half-hourly, with all three buses returning to the West Denton 'hub' on the hour. Thus it also operates as a hybrid DRT/timetabled service, although with greater flexibility than the Super 8, with pick-ups being bookable from and to anywhere within the service area. The system is coordinated by Trapeze software in the NEXUS offices, which automatically sends the travel information (including the name of the passenger) to the relevant bus. Like the Super 8, the U-Call also operates as a 'hail-and-ride' service whilst it is in operation on route.

These two schemes have arrived at a specific point in time, designed to fulfil a number of policy objectives that exist in the public transport arena. To explore this relatively new form of transport provision, it is necessary to understand the factors that prompted their development and implementation. Although we are treating the schemes as a response to transport-related social exclusion, their origin is dependent on a number of contingent circumstances relating to wider policy issues and, we would argue, the direction of public transport policy itself.

8.3 Policy Issues

In interviews with officers responsible for the two bus services (Alex Ainsworth at LCC and John Usher at NEXUS), the backgrounds and justifications for their introduction were spelt out. These factors span a number of issues, but can be summarised as comprising:

1. central government policy discourses,
2. the existence of transport-related exclusion in the localities, and
3. the availability of funding.

8.3.i Central Government Discourses

To begin with central government's demands, the two schemes both provide a more *flexible* service, which attempts to 'fill the gaps' in provision which have been created over time by the withdrawal of services by providers. They tap into the DfT's concern over the links between transport and social exclusion, a concern that has been addressed in the commissioning of numerous pieces of research, including of course the CHIME project itself. The DfT's *Social Exclusion and the Provision and Availability of Public Transport* (2000) report is perhaps definitive of the government's current approaches to the issue, and stressed that transport policy must engage with the government's focus on social exclusion, work which centres on the Social Exclusion Unit. This report was forward-thinking enough to point out that there must be a move beyond viewing transport purely in terms of 'access' and to also consider its "social, health, economic and symbolic functions. These functions need to be recognised by transport planners and providers." (DfT 2000, i).

[15] The Tyne and Wear Passenger Transport Executive that administers funds on behalf of the Tyne and Wear Passenger Transport Authority.

The report focussed on the way in which certain populations, in areas that have already been identified as 'multiply deprived', suffer from poor public transport service provision, a factor that compounds their social exclusion. It drew attention to the problems existing in rural areas, and urban districts of multiple deprivation, and this research has followed this concern in researching the same geographical categories. The groups which it identified as having major transport problems are those which we largely found patronising the DRT schemes, namely "unemployed people, families with young children, young people, older people, and all those on low (benefit level) incomes" (DfT 2000, ch.1). Thus we can see that the DRT schemes are part of a policy of targeting transport innovations on areas and populations that have already been identified as being prone to exclusion (see also next section).

The two schemes also combine *public* transport and *community* transport in a more flexible approach to transport provision. Such moves were specifically recommended by the DfT's report, which pointed out that ""Public transport" is generally used to refer to timetabled bus routes and train services" (DfT 2000, ch.7), and urged that a more relevant and inclusive view of public transport should include commercial and tendered bus services, supermarket courtesy buses, taxis, health and social services transport, education transport, community transport of various types, and various types of rail and tram service. The DfT report specifically recommended that "local authorities should ensure that they bring together the complete range of public transport (including school and social service, taxis and voluntary transport), to ensure that the proposed strategies and implementation programmes meet the needs of socially excluded people, as well as the rest of the community" (DfT 2000, ch.10). The Super 8 and U-Call schemes address this coordination within a widening definition of public transport, in that they collate public and community transport services, utilise taxis when necessary, and are designed to facilitate access to specific sites such as shopping zones, health facilities and schools.

The very model of DRT as the future of transport provision has also been foreshadowed in research and policy. DRT schemes began as early as the 1970s, and have been linked from the first to *community* transport, satisfying the transport needs "arising from the issues of gender, ethnicity, young people, isolation, poverty and people on low incomes, as well as older and mobility impaired people" (DfT 2000, ch.7). In the form of 'Dial a Ride' or 'Ring and Ride' services, usually provided by minibuses, it is a familiar model of responsive transport provision which has experience in addressing the different transport needs of the particular populations which have also been identified as being particularly susceptible to social exclusion. The advice to authorities bidding for Urban Bus Challenge (UBC) funding stresses that bids that include flexibility, and specifically DRT, are being particularly sought.

The providers of the Super 8 service identified a perceived need to distinguish the service from *community* transport as such, through the marketing and promotion of the bus (for example, removing a picture of a wheelchair from the advertising for the service). This was seen as important in escaping a 'ghetto' of perception, where the service might be mentally associated with old people and wheelchair users only, reducing the likelihood of attracting other others such as youth or tourists. Although it is difficult to assess the effectiveness of this marketing strategy (as the elderly and mobility-impaired are still over-represented in the patronage of the service), it is important to realise that both of the schemes researched represent an attempt to combine public and community transport, whilst treading a fine line between servicing particular populations and appealing to the public in general.

Another recommendation of the DfT's (2000) report stressed that "[i]n most of the study areas there were quite frequent services down major routes […] However, […] the passengers sometimes had difficulty reaching the stops and needed to sit down when they got there […]

There is a need to see how far feeder services, possibly some form of flexible transport, together with adequate waiting facilities, could be used to ferry people to and from transport nodes on well-served routes, both in urban and rural areas" (DfT 2000, ch.10). In discussions with both service providers, it was stressed that the buses were intended to enable people to travel onwards from the 'hubs' of Garstang and West Denton, which were well serviced with transport to Lancaster, Preston and Blackpool on one hand, and to Newcastle City centre on the other. In practice, the up-take of this option was not widely evident. That the services are intended to act as feeder services, and to fulfil the requirements of 'joined up thinking' and 'integrated transport', is shown by the fact that 'through-ticketing' onto other bus services had been negotiated for both services. This promotion of a single fare, if not a seamless journey, addresses one of the major disincentives for public transport use, that is the lack of integration.

In the case of the Super 8, it was regularly acknowledged by Alex Ainsworth of the LCC that attention was paid, in making bids for funding, to the prevailing discourses with most *cachet* in central government. Thus mention had been made that the Super 8 would help to regenerate a market town, and it was felt that in the next bid, more would be made of the scheme's 'holistic' and 'sustainability' aspects, as a 'wrap-around' project which potentially serves many different transport needs (leisure, educational, health related) in one package. It was even suggested that the idea of combining multiple 'contract' style services in this way is a newer approach to flexible service provision that might be supplanting DRT as the most 'fashionable' discourse in the public transport policy arena.

8.3.ii Exclusion identified in the localities

In the case of the area around Garstang, it is not clear that social exclusion is being addressed *per se*. Rather, the bidding process for bus subsidy grants (see next section) had identified that the very dispersed rural populations in the surrounding villages suffered from an unacceptably low level of transport services, although this was a judgement by the LCC rather than by central sources. It was found, for example, that some villages that were too small to have received an assessment of their travel needs in this bidding process, have only one bus connection a week. A consultation carried out in 1998 with parish councils had identified that people missed having transport links with Garstang as their nearest conurbation. Another project, which was thwarted by building development, involved building a proper bus terminal in the town, thus the development of the Super 8 proposal seems to have been built more on the basis of increasing *access* to Garstang (which in itself is a tackling of rural service exclusion) than on nationally determined social exclusion concerns.

In Newcastle, to begin with, bids to the UBC fund are in part judged by the previously identified level of social exclusion in the wards to be covered by the proposed schemes (as measured by their ranking in the Index of Multiple Deprivation). West Newcastle has already been identified as both economically deprived and socially excluded in national (New Deal for Communities) and European (SRB) regeneration projects.

There was also more information about the methods through which the *transport* needs of west Newcastle had been identified. The participatory or consultation system was described as already developed, with advisory committees in the localities part of a move to "get away from making decisions at the town hall, they're very much empowering the community to make decisions". These meetings cover various community issues including transport, and are supported by the authority providing resources for minute-taking etc. to feed back into the council's policy process.

It was suggested that such a meeting between councillors and the local community came up with the idea of a DRT scheme, and the local community was asked to come up with its own

proposals as to the transport links they felt were missing. These were then developed into the U-Call proposal. The main observation was that in the west-end, the commercial services had been cut over time, until the main bus links merely ran east-west, into the city centre. The provision of a north-south link that fed into other transport links at West Denton and Kingston Park was therefore seen as a 'fairly simple decision', with links to the metro and the airport further north seen as important to satisfy travel and employment needs. Health access issues made a link to Throckley desirable, as health facilities had recently been combined and moved out to a new centre on the very edge of the city.

In addition to these factors, it was commented that common sense had played a large part in identifying the area and the particular links that were missing from transport provision. The local commercial services are provided by Stagecoach, and cuts in services have continued over the last 3 or 4 years, with focus being placed on the main corridors (west into the city). In addition, the complaints service and the work of area bus managers helped to provide further information.

8.3.iii Availability of funding

Although it may seem cynical to suggest that this is one of the primary motivations for the implementation of these schemes, it makes perfect sense in the context of the public transport arena. The two schemes are funded by centrally administered finances that are made available through the Rural and Urban Bus Challenges. The RBC 'competition' began in 1998 and aims to target funding (through a bidding process) to schemes which address the provision of public transport in rural areas, which have been identified (in advance of the recognition of specific social exclusion concerns) as suffering from poor transport links. As the transport Minister Sally Keeble pointed out in launching the 2002 round of bidding, "these schemes tackle some of the deep-seated transport problems of rural areas. Decent transport links play an important role in improving people's lives. They help people get to hospitals and shops and get access to jobs and social events" (DfT press release, 25/01/02)[16]. This is a framing that ties the discourses of rural issues and social exclusion together.

In the Super 8's case, the bid for funding arose from the securing, in 1999, of £0.75M of funding from the Rural Bus Subsidy Grant (RBSG), another pot of money made available to help local authorities to address the shortfalls in service provision largely created by the private transport providers' withdrawal of 'inefficient' but 'socially necessary' routes and services. *Subsidisation* has traditionally been the model through which local authorities have supported services which the providers would rather were cut, and the LCC noted that the resources available through this scheme (the RBSG) are still increasing, whilst annual RBC funds remain static. Documents used to assess the level of transport provision in Lancashire for applications to the RBSG (through the 'benchmarking' of services by ward and parish) were transferred directly to the bid for RBC money that made the Super 8 possible

In this process of 'benchmarking' the LCC decided (or noticed) that the use of parishes for drawing boundaries to the areas under attention mis-represented the physical realities of the dispersal of communities and populations. This led to a desire to increase the level of service provision in these areas, and therefore to the Super 8 proposal. A number of routes running in the area between Lancaster and Preston were already being supported by the RBSG, including a (one-day-a-week) market day service from Lancaster to Longridge that passed through the area served by the Super 8's eastern loop. This service was cut at the same time as the Super 8 began, enabling the transferring of savings to that scheme.

[16] DfT press release (http://www.press.dtlr.gov.uk/pns/DisplayPN.cgi?pn_id=2002_0016).

Another factor relating to funding was the loss of a community transport service that had run to Bilsborrow, after two years of lottery funding. This scheme had created, or revealed, six or seven users who had become dependent on the services, and who were potentially to be abandoned in terms of transport until the Super 8 manifested. In making a bid for continued RBC funding, the Super 8's future existence has to some extent been protected by a decision of the LCC to cover its costs with RBSG funding if this becomes necessary. It was stressed that this decision comes *not* from a desire to subsidise the service directly from the authority, but a desire to ensure that those who have come to rely on the service are not left worse off. We therefore see in this area a willingness to transfer funding and to re-jig service provision in response to the conditions prevailing, essentially rationalising the services which have been running by combining them in a single, more flexible, service.

In Newcastle, John Usher of NEXUS revealed that the U-Call scheme results from a *second* bid to the UBC, the first having been unsuccessful and further developed. The UBC (launched June 2001) was modelled on the RBC, and again is predicated on addressing social exclusion through transport initiatives: its aim being "to contribute to the regeneration of deprived urban areas by improving the transport provision, targeting support on areas of economic or social exclusion" (DfT, 12/11/02)[17]. It was stressed that the DfT themselves pushed the importance of DRT schemes in their advice to NEXUS. NEXUS had already received and administered funds from the RBC in setting up a new interchange in western Gateshead, involving minibuses and taxis coordinating feeder services from villages to the transport hub. It was suggested that if further money is sourced for this project, an element of DRT would be introduced. The U-Call scheme is being run purely on UBC money at the moment, although other NEXUS schemes are looking for partnership with other funding agencies, such as the Countryside Agency and Neighbourhood Renewal bodies.

From the above we can see that the two schemes are receiving targeted money from central sources, which is allocated to schemes which alleviate social exclusion in rural and urban areas through transport provision, In both cases there is some agreement that DRT is being pushed as the most appropriate flexible form of service provision, but there also appears to be some concern about the financial future of the schemes, with the funds being received through a competitive bidding process, and not intended to be continued indefinitely. The concern appears to be that responsibility for the continued running of such schemes, after the users have become habituated to them, may depend on the providers themselves.

8.4 DRT and 'exclusion'

These schemes are primarily designed to address *transport* exclusion rather than *social* exclusion as more inclusively or centrally defined. In much social exclusion discourse in academia and policy (see Levitas, 1998), there is a tendency to equate social exclusion with *unemployment*. Although this has been addressed by the work of the SEU in treating exclusion as a more complex concept, there is still a sense in some texts of a continuing focus on this more simplistic formulation. Bids to the UBC are, for example, expected to provide links between areas of unemployment and of new job opportunities. This may explain why the U-Call service officially runs services to the airport (at unsociable hours), and to a new employment centre along the Tyne (in the early morning), despite the fact that these particular routes are under-used. The main problem with supplying the new employment zone with transport links, according to one of the drivers, is that it is still being built, and there is confusion about how to market the U-Call to likely users.

[17] DfT press release (http://www.dft.gov.uk/pns/DisplayPN.cgi?pn_id=2002_0335)

Although the employment situation in Garstang and surrounding areas is considerably smaller in scope, the officers administering the Super 8 have been able to identify a number of employment sites that are within the geographical remit of the bus. Indeed, our fieldwork identified users who access work using the bus, but then also rely on works transport to get to or from shift work. As a result, the future of the Super 8 seems to involve targeting these sites and offering a form of old-fashioned works contract either provided by the present DRT system or a specialised vehicle. It appears, then, that lip service is being paid to the notion of tackling employment issues discretely, whilst there is an understanding that the majority of demand for these services is during the day, for those populations suffering exclusion through other problems.

Modal shift is another objective being pursued through the realm of public transport policy. The impression given by the data collected in this research from users and providers is that the DRT schemes in both rural and urban areas are *not* creating modal shift from private to public transportation. In a sense this is to be expected, as the schemes aim to provide for those who are already experiencing transport exclusion, which usually implies not having a car or access to one. One user of the Super 8 scheme had used a car previously, but on loss of the ability to drive through health had switched to community transport, and then to the Super 8. Similarly, only one user of the U-Call service mentioned having a car. There was a suggestion that some users failed to pre-book a journey on the Thursday (market day) service of the Super 8 as this meant that they would be provided with the back-up taxi service for the same fare, which suggests a canny manipulation of the service to achieve some of the benefits of automobile travel. The users interviewed were almost exclusively dependent on public transport, and the primary use of the DRT schemes was to replace the patronage of other less accessible, frequent or reliable bus services.

In earlier chapters we have discussed the framing of transport exclusion in terms of *access* throughout transport policy, and particularly in the case of local authorities and their Local Transport Plans (LTPs). It would seem that this is very much the model that is being employed in designing and running these schemes. As we go on to discuss, access to shopping, leisure, health, educational, transportation and social facilities is seen as the primary motivation for DRT in areas of low transport provision. The spatial model of connecting peripheral zones with hubs appears to dominate thinking, and our model of ‘hot and cold spots’ of service provision (taken from Guy and Marvin, 1996) offers a more nuanced theorisation, with the estates and villages ‘cold’ in terms of services, but still containing much of the demand for public transport which is being ignored in the over-emphasis on the ‘hot’ corridors.

More generally, the change from public transport provision to largely private ‘public’ transport provision is well known as one of privatisation and competitive tendering. These processes have resulted in the transference of the majority of transport provision to a dwindling number of private operating companies. These operate primarily on the basis of making a financial profit for their shareholders, rather than satisfying the transport needs of the public.

Numerous governmental and international policy drives have concentrated on the reduction of car-based travel for social and environmental aims, most notably promoting health, tackling congestion and reducing climate changing emissions. In turn, these drives have focussed on the concept of *modal shift*, attempting to persuade people to change to using public transport for more of their journeys. At the same time, public transport has been in decline, with real or perceived reductions in frequencies, numbers of routes, cleanliness and social acceptability. Reliability is also the most frequently quoted failing of modern public transport in this research as

in others, although this can, in part at least, be blamed on the numbers of people filling the roads with their cars as a way of avoiding public transport: a negative feedback loop.

In addition to these large-scale changes, there has arisen a new way of looking at poverty and deprivation, the discourse of social exclusion. This looks at the multiple factors of deprivation which, taken together, deprive people of the opportunity of partaking in society in a full and enriching manner. Transport deprivation (lack of access to a car or to adequate public transport) has been highlighted as one of these factors: compounded by, and in turn affecting, many others. The very fact that bus and train services are still called 'public transport', in an era when the overwhelming majority of them are provided by private (super) companies, illustrates that for a half century or so, we have conceptualised the ability to travel quickly and cheaply as something of a collective, public good that should ideally be provided by a public body. In this sense, transport provision has traditionally held the same sort of status as that of clean air, drinkable water, libraries and green spaces.

The privatisation of bus services has seen a reduction in the number of routes and services being provided. In both cases economics plays the major role, and in both cases it is the inefficiency of providing full services for small numbers of users/citizens/customers that has justified cuts in provision. In the case of rural bus services we see another negative feedback loop, with increasing numbers relying on private cars rather than dwindling public transport to enable them to conveniently access necessary services and facilities. In the sense in which public transport has become private transport, this is understandable: private companies are driven by the private interest of profit rather than the public interest of facilitating movement. As we have mentioned in earlier CHIME work, Guy and Marvin (1996) and Graham and Marvin (2001) have outlined and theorised similar processes at work in the provision of a number of other previously notionally public (or national) goods under liberalisation and privatisation, using the model of 'hot and cold' areas of provision.

They argue that capitalist commercial drives to capture heavy users of these goods have led to urban areas being splintered into:

- 'hot' zones, where the majority of the major consumers are located, and whose custom is hotly desired and attracted with cheaper prices; and
- cold spaces, where the rest of us effectively subsidise these (usually commercial) users by paying higher standing charges or rates.

Water, electricity and transport provision can been seen to fall into these new patterns of differential provision, which essentially penalise under-consumers to subsidise over-consumers. In the realm of bus services, this is most clearly seen in the concentration of operating companies on major arteries or corridors, where demand is high, and the neglect of orbital or peripheral routes where the numbers of users is in decline.

For many years, PTEs and local authorities have understood the implications of these processes. The transport needs of those living in the newly created and increasing 'cold spots' have been accepted once more as a *public* responsibility. The fulfilment of this responsibility has most often taken the form of the *subsidisation* of 'failing' routes, essentially a financial bribe to the private operators not to cut these services. In addition, a number of other agencies have been increasingly 'plugging the gaps' in transport provision: taxis, community transport schemes, supermarket buses, dial-a-ride, informal arrangements within (particularly) ethnic minority communities and so forth.

With the rise of the social exclusion discourse, and the increasing attention being paid to transport-related exclusion or deprivation, the central government has become aware of these

trends, and accepted it as *their* responsibility to ensure that the cold spots of provision can be kept warm, artificially so to speak. The latest schemes to attempt to fulfil this responsibility are the Urban and Rural Bus Challenge schemes.

Precedence is given to those authorities that can demonstrate that they are providing transport to the transport-deprived and excluded in new and interesting ways. In effect, it is *necessary* to employ novel solutions such as Demand Responsive Transport in order to reveal and capture the hidden demand for transport provision that is occluded by the private operators' neglect of (inefficient) cold spots in favour of (lucrative) hot spots. Routes and services which have been seen as 'inefficient' (underused) may essentially create themselves; if the fixed route does not go where people want to travel, there will not be many takers. The new DRT and related modes of provision should prove valuable in identifying to some degree exactly where the transport excluded are, and where it is they wish to go. Time is also very important in this regard, as buses sometimes miss the major demand times for their use, or fail to capture the intricate inter-weavings of time and space that constitute travel driven by individual and collective needs and obligations.

The irony is that having accepted the burden of 'plugging the gaps' in the private operators' infrastructure, of working out how to 're-wire' and heat the cold spots, the local government, with national government backing and resources, is effectively performing market research for these providers. In the case of the Garstang Super 8 service, the officer in charge of implementing the scheme wants to see the service put to private tender in order to reduce the overheads incurred by running it through the public body (to make it more efficient), and in the case of the U-Call scheme, it is suggested that having proved the viability of the new services (by supporting the operator with new vehicles, software and so forth), they may be handed over to the private sector.

There is therefore a concern that such schemes are merely a highly expensive way for the central government to fund local authorities to do the public transport operators' jobs for them: to find innovative ways to 're-wire' the transport infrastructure in (commercially-created) cold spots so that transport provision once again becomes commercially viable for their profitable operation. It is hard to see how this outcome can be avoided, unless a responsibility is placed on the private operators to fulfil wider public (and political) responsibilities, or else transport provision is accepted once again as a public service, which should be administered by public bodies, using public funds.

Transport-related exclusion, therefore, is seen from the point of view of the scheme providers to be based in issues of access to a variety of services, and of transport or travel *needs*. In discussing the users of the DRT services, private sector discourses were utilised in talking about the 'markets' for the service, and marketing to the right audiences. This fits with the model of privatised public transport given above. Both of the schemes were explicitly referred to as 'experimental', and both have seen modifications in different aspects of their running. These 'tinkerings' with the system are intended to find different ways of capturing more markets, of satisfying more travel needs, of reducing more transport exclusion. As such, they are revealing transport exclusion simultaneously through the process of tackling it. The following are ways in which the projects have enabled exclusion to be identified and targeted.

8.4.i Consultation and direct input

As previously mentioned, in both cases the forms of the services were to some extent determined by the results of consultation with parish councils, and through area subcommittees. In Garstang, one of the users interviewed revealed that she had herself written to the authority

on numerous occasions to request some form of transport provision to replace the community transport services that had been cut. As a wheelchair user and former community transport provider, she was well known to the service providers and other users as a vociferous campaigner. She had particularly highlighted the fact that a number of other community transport users were concentrated in one area (around Bilsborrow) and asked for more flexible services to be available to them. Similar campaigners were also mentioned in the Newcastle fieldwork.

8.4.ii Route changes

In both schemes, there have been changes to the route taken by the bus during the set-up and running of the services. This would obviously be impossible with a regular service, and contribute greatly to the flexibility they can offer. In Garstang, road improvements had forced the bus to take a diversion to meet its scheduled stops, and it was found that more people would find it convenient to hail the bus on this diversion, in addition to its revealing and securing new users. The route was therefore altered to service this new constituency of users. Another mini-route (a branch of the eastern loop) operates during the timetabled day, but only if booked through the DRT system. It was also clear in the fieldwork that particular journeys (the DRT aspects of servicing the routes) were undertaken by the drivers even though they were not strictly supposed to be in the timetable, as a result of the willingness of the drivers to maintain the goodwill and support of users. Feedback from the drivers seems to be a highly valued aspect of these services, from staff who have usually come from a background in community transport, with its high degree of attention to care and personal *rapport* with the users.

In Newcastle, the lack of timed stops beyond the main nodes of the service lent an unusually high level of flexibility to the drivers. This was compounded by the drivers rotating the routes between them over the course of a day, so that each built up knowledge of the areas services and the users in each. Two main benefits derived from these aspects of flexibility. Firstly, the drivers had themselves identified the areas of highest demand, and thus altered the routes themselves so as to make sure that the most peripheral zones were covered by two buses within each half-hour period. Secondly, drivers with a low DRT workload (requiring access to set locations) were free to cruise the area, picking up people waiting for less reliable services and introducing them to the service. In both research sites the fieldwork revealed that casual and first-time users were represented, being approached by the drivers if they were waiting at stops, and offered a cheaper and quicker journey. The schemes therefore *reveal* transport need in the sense of under-serviced travel needs.

8.4.iii Register of users

The operation of the services as ‘hail-and-ride’ buses thus means that there is an increasing population who come to know the services and the flexibility of provision they offer, but in Newcastle in particular the users are supposed to register with NEXUS, if they wish to book journeys through the DRT facility. This means that through the use of the software, trip details include the names of the user. This enables pick-ups to be confirmed as in taxi arrangements, although in effect the drivers tend to know regular users by face. More importantly, the use of a user register means that the U-Call system began with the names of dial-and-ride users transferred to its data-base, and these people were already identified as being prone to transport exclusion. Community transport users in the Super 8 area were similarly targeted in the set-up of the scheme.

8.4.iv Marketing

Both schemes appear to have been extensively and consciously marketed, Advertisements in local press are backed up with leaflets on the bus and in information centres. A number of users

interviewed confirmed that they had found out about the service from a variety of sources, including friends, relatives and a variety of council offices, including rent offices, libraries and community or social centres. In addition there have been attempts at out-reach, especially to the local schools as a potential source of more users with specific travel needs. We have discussed the attempt to avoid the service being perceived as a community transport 'ghetto' in an effort to attract more patronage.

Perhaps the most important aspect of marketing, undertaken by both providers, was the use of promotional 'road-shows' in advance of the launch of the services. These involved the promotion of the services in the areas they serve, and were an attempt to directly engage with the potential user. In the case of the rural scheme, this was of particular importance to access those who could not currently get to Garstang in order to find out about the service from any of the usual sources of information, and in Newcastle the road-shows focussed on community centres and other sites adjudged to be frequented by the socially excluded.

In Garstang there was another aspect of marketing, carried out by one of the users. A sixth-former apparently offered to advertise the service to his friends and to collect information on the kinds of journeys they needed to make. Such informal spreading of information has been theorised (Pickup, 1998) as one of the most important ways that knowledge about public transport services is disseminated and maintained. In this manner knowledge of the service feeds into the pre-existing networks of the excluded, who pass it on to others who they know have need of it.

8.5 Transport Needs Satisfied?

We turn now to examine the nature and extent of travel needs which have apparently been satisfied by the two DRT schemes. The assumptions made are based on the fieldwork carried out, discussions with the service providers and informal discussions with 7 drivers on the schemes. This largely analytical section also looks at the ways in which users have gained awareness of the schemes, and the future plans which the provider have for the services, as already alluded to.

8.5.i Monitoring

An accurate assessment of the nature of the transport exclusion being alleviated by the schemes is problematic in the case of the Super 8, as there is no formal monitoring or data-collection about the trips undertaken, other than data on passenger numbers. This reflects, perhaps, the perceived emphasis on 'value-for-money' in the assessment of such projects. Public transport schemes being compared in terms of cost per passenger trip, this data is seen as the most relevant for assessment of the service, especially by external audiences.

The U-Call bus, conversely, is run on Trapeze software, which would allow analysis of the booked journeys it services in some detail. Because of the U-Call registration system, a database is held which contains details of the registered users, which could be analysed by standard demographic populations. In addition, the modelling of the area served by the buses by the software, and the recording of the geographical details of trips (pick-up and drop-off locations being more important than routes taken) would in theory allow quite sophisticated analysis of the geographical nature of the transport exclusion. Such an analysis would primarily identify the most common areas from which transport was required, and the locations that were accessed. A more in-depth analysis of the services to which access was required, or our terms, the nature of the social obligations or networks which gave rise to the need to travel, would require more qualitative research of the type we have carried out.

8.5.ii User profile

As mentioned above, a rough analysis of the interviewees[18] met during fieldwork reveals that they are comprised of typical community transport users and the public transport dependent, with a smattering of occasional and first time users. The majority of users in both areas were aged 50 or above (ages were estimated, not specified), although pre-school children and teenagers were also represented. In the case of the Super 8, a majority of users (13 out of 22) were over 60, whereas in Newcastle middle-aged users (40-60 years) formed the largest group (13 out of 33), followed by pensioners (11 out of 33). This difference in the age profiles may reflect general trends in rural and urban public transport user profiles.

Females were also in the majority in both study areas, in roughly similar proportions (15/22 in Garstang, 24/33 in Newcastle), and those males who used the services appeared to be predominantly single, parents picking up children, or elderly, with the main exception being a group of male youths staying at a caravan park serviced by the Super 8.

In both cases there was a small representation of disabled users (a wheelchair user, a profoundly deaf man, and two elderly people with severely restricted mobility), although a large proportion of the older users cited mobility problems as their prime motivation for using the services, avoiding lengthy walks to access existing regular services. Members of ethnic minorities were not encountered in either study area. This loose demographic breakdown identifies the users of the services as roughly in line with the expected profile of both public transport users and those populations identified as being susceptible to social exclusion.

8.5.iii Trip frequency and purpose

The interviewees were also asked about the frequency and purpose of their trips.

In Garstang, only two interviews were with users using the service for the first time, the vast majority used the service two or three times a week, with only a single user reporting almost daily usage. In Newcastle, there was a fairly even split between first time users, occasional users (2/3 times a week) and frequent or daily users. This may be explained by a number of factors. Firstly, the dense population combined with widespread dissatisfaction with regular bus services and the flexible way in which drivers 'cruised' for custom resulted in higher levels of first-time or 'on spec' usage. In exactly 50% of the Newcastle interviews (12/24) the bus services previously or regularly used by interviewees were described as unreliable, poor, or not materialising at all.

This inadequacy of the regular services in an urban environment, combined with the facts that bus transfers were necessary for many simple journeys and services could only be accessed on major transport corridors (the West Road), may explain why regular or heavy reliance on the DRT service was characteristic in this area. Although in terms of regular transport provision (as measured by indicators such as number of routes and proximity of stops) the urban area would appear to be better served, the comparative reliability of rural services and the lack of any alternatives in the area would appear to lead rural users to restrict their mobility within the constraints that exist, whereas urban users appear to use the different public transport options available in order to service a higher level of mobility. Asked about other transport modes utilised, the rural user group were noticeably dependent on walking and buses (in 6 out of 14 interviews), with taxis being the next most used mode (4/14), and lifts, own car, dial-a-ride and a works minibus being mentioned once each. In comparison, the urban users were still extremely

[18] See Appendices.

dependent on walking and public transport (mentioned in 23/24 interviews), but the metro, taxis, lifts, cars and bicycles were also mentioned as possible options.

Although the main purpose of travel in both areas was given as access to the hubs' services by the buses, further probing discovered that shopping was the primary purpose of travel. This was particularly the case in those trips to and from Kingston Park in Newcastle (which is a combined metro station and retail zone). Unsurprisingly, it was also the primary motivation for those travelling from isolated areas to Garstang. The Super 8 bus was unusual in being patronised by tourists. In addition to the youths previously mentioned, a pair of elderly sisters and an elderly couple with their grandchildren were using the service to access villages around Garstang on day-trips, primarily to the coastal village of Knott End with its ferry to Fleetwood. The former had found out about the service by contacting council information services before visiting the area, the latter had opted to use the bus to access the coast in preference to using their car. In both areas parents used the service to pick up children from nursery and school. Other trip purposes in Garstang included access to employment for shift work, social visits (to a pub and a café), medical appointments and visits to community centres and a library for an exhibition and talks.

In Newcastle (perhaps due to the larger sample), more purposes for travel were uncovered, which chimes with the larger range of services available in the urban area, and the greater degree of mobility discovered. Social and leisure activities (pubs, parties, swimming, carol services, dancing, Townswomens' Guild meetings etc.) as well as travel to work were more common here, and medial or care trips were less represented. The latter is perhaps due to the medical facilities being concentrated in the hospitals that lay beyond the DRT service area. In comparison, medial journeys were more evident in the rural area, with the doctors' surgeries located in the hub of Garstang. In each of the study areas, the use of the service hubs for further onward travel was only mentioned once. Interestingly, visits to friends and family were mentioned in four of the Newcastle interviews, and in only one at Garstang. Combined with the difference in the levels of personal contacts responsible for awareness of the schemes (see below), this suggests that social or familiar networks are more developed in the urban than the rural study area.

This brief analysis suggests that the services do indeed satisfy a number of travel needs based on differing forms of social and personal obligations and desires. The analysis of purposes for travel given do appear to reveal the different compulsions to proximity generated by the different physical distributions of services in the rural and urban areas, and the different natures of the transport infrastructures in place. This offers strong support to our model of the nature of transport-related exclusion as arising from the interaction of compulsions to proximity, the transport infrastructure and personal resources.

In addition, mention was made of various unsatisfied desires. One Super 8 user mentioned that it would be handy if the bus went direct to her doctor's surgery. The driver, overhearing this, explained that it could, and took her there. Users of the U-Call service also requested better links to medical services, particularly to the two hospitals just to the south of the service's remit area. These needs were known to the providers, and it was stated that the service area might be extended to take these factors into consideration.

Temporal factors were also identified. Both earlier and later services were requested by Super 8 users in order to access evening education classes, social events (again mainly pubs) and shift work. In Newcastle, it was mentioned that the evening service was often very busy towards the weekend, as people travelled to pubs both on the outskirt of the city, and conversely to central

amenities. The U-Call service effectively operates a 24-hour coverage, but the Super 8 is more limited in this respect, and plans exist to extend its temporal scale in the future.

8.5.iv Awareness of service

The interviews also revealed how users became aware of the service. The marketing of both services had succeeded with adverts and leaflets being quoted in both study areas. The variety of locations at which these are placed by the providers was reflected in the data, with most leaflets being picked up from council-run premises. Super 8 users had also telephoned for information to be sent (due to geographical isolation?). Evidence for personal contacts being responsible for public transport awareness was found in the case of the U-Call service (4 mentions) more than in the Super 8. This may be explained by the greater range of ages in the Newcastle sample, with family being the most common point of reference. In Garstang it was the visiting sisters who had been informed by family of the service before their arrival.

8.5.v Future plans

Interviews with the providers of both schemes revealed plans for the development of the services. In the case of the U-Call service, the main suggestion of plans for the future, other than securing funds for the continuation of the scheme, was the idea of developing the scheme until it became financially viable. At this point, it was suggested that the service could offered to commercial operators, probably the current ones, Stagecoach, with the call centre and coordinating service still provided by Nexus thus reducing the operating costs.

The Super 8 service was also seen as potentially being offered to commercial operators once it has proved viable, but there were more concrete plans as to its extension and transformation. The suggested changes have already been outlined, and consist of bidding on the basis of two options. Firstly, the providers wish to see an extended service with two vehicles, to run a service from 0700-1900 as originally planned. The continuation of the original service (expanded if possible) was stressed as essential to maintain the trust and relationships with users that have already been built up.

They also want to cover peak travel times to satisfy a variety of identified travel needs, including employment, school transport contracts, social services, Garstang High's out of hours classes etc. They plan to tailor this extra service around already identified specific needs that have been highlighted through the running of the service, and particularly by our fieldwork. This secondary service was envisaged as being "not so much DRT as 'wrapping around' the contracts", it being seen as more efficient to kill multiple identified needs with one bus. This represents another model of targeting services to fill gaps in transport provision, through attention to specific destinations that are in 'cold spots' of provision, and 'cold times' where demand has been identified. It was intended that the Super 8 continue to run the core service with its DRT level of flexibility, and market it further to those groups which have not taken up usage as expected. Schoolchildren and cyclists were mentioned as two groups that might be further targeted.

It was stressed that the latest bids for new and continued funding were consciously tailored to the prevailing paradigms and orthodoxies of this area of policy. Thus the bids emphasised the service's 'sustainability' aspects, the 'holistic' view (of linking work, education, social services contracts, and general travel needs) and the efficiency of satisfying all of these targets together. It was observed that reducing duplication also makes financial sense. The willingness to promote these new innovations in public transport as in line with the most advanced contemporary policy discourses is obviously seen as vital in more effectively targeting and addressing transport-related social exclusion.

8.6 Conclusions

The following points highlight the most important conclusions to be drawn from the research. They address the usefulness of the research itself, as well as summarising the effectiveness of the two different schemes in fulfilling transport and social exclusion policy objectives.

- The *methodology* employed in the research, of carrying out short, semi-structured interviews with the services users during their journeys, was successful and displayed distinct advantages over more conventional research design. Disadvantages included difficult recording conditions and short interview times.

- The schemes were found to satisfy a number of the central government's *policy requirements* in the areas of general transport policy and in particular of addressing transport-related social exclusion. In other cases the policy objectives were not being met:
  1. Through ticketing in both schemes increases *transport integration*, although take-up of this facility was slight.
  2. The schemes displayed a combination of *public and community* transport, as promoted by the DfT as a method of addressing transport-related social exclusion.
  3. *Novel or innovative* approaches, and in particular DRT, were used in addressing transport-related social exclusion.
  4. The schemes have demonstrated the possibility of achieving a *hybridisation* of DRT and timetabled services.
  5. The *population groups* found through the research to be using the services reflect those previously identified as being in need of responsive transport. These are also those groups identified as being susceptible to transport-related social exclusion in terms of both *geographically* and *demographically* defined target groups.
  6. The specific addressing of *unemployment* aspects of social exclusion is not entirely successful in either scheme, although access to shift work was discovered in both cases. Further efforts in this area are projected in both schemes.
  7. Evidence of the schemes effecting *modal shift* was very minor, being evident in only 2 out of 38 interviews.
  8. The Super 8 scheme has shown success in attracting the custom of *tourists*, one of its stated aims.
  9. Neither scheme showed particular success in attracting *youth* custom.

- Both schemes had been set up based on existing work to *target* the funding to best satisfy *previously identified* travel needs or social exclusion.

- These travel needs and exclusion had been identified through a mixture of *technical* and *participatory* mechanisms, and were supplemented by *common sense* and *local knowledge*.

- The Super 8 service in particular enabled (and projected further) *rationalisation* of existing services for greater *efficiency*. Savings from services cut at the initiation of the service were transferred.

- *Flexibility* in the set-up and running of the schemes allows the *simultaneous identification* and *satisfaction* of *previously hidden* travel needs in a number of innovative ways.

- Research confirmed the success of the variety of *marketing* techniques used in the promotion of the services to specified groups.

- *Monitoring* of the use of the service is made possible by the use of tailor-made software, in the case of the U-Call service, and the data produced might be analysed usefully at a later date. The Super 8 providers might consider the need to address this shortcoming in terms of monitoring.

- Demographic analysis of users indicates that *transport dependence* and *exclusion* is addressed and alleviated, rather than *modal shift* being achieved.

- Urban users of these hybrid DRT schemes appear to be *mobile* than rural users, who are more *constrained* within infrastructures. Urban users have more alternative transport *options* and more apparent opportunities or *obligations* to satisfy or fulfil.

- Differences in *reasons for travel* can be partly explained by the physical distribution of services and facilities, the transport infrastructure etc. As examples:
  1. Travel to *work* using the scheme was more evident in the urban study area, reflecting greater population density and more employment opportunities.
  2. Journeys satisfying *medical* needs were more common in the rural study area, which linked to the service hub's facilities. In the urban study area, medical facilities were beyond the service area, or at the periphery.
  3. *Shopping* was an overwhelmingly common reason for travel in both areas, but more so in the urban case where the service linked to a local shopping centre and a major peripheral retail zone.
  4. *Social* and *leisure* needs were serviced by both schemes, but these were predictably more diverse in the urban area with its greater variety of facilities.

This study therefore recommends the use of on-board user interviews as a method for researching public transport usage, and the promotion of hybrid DRT bus services as a method of simultaneously and flexibly identifying and addressing transport-related social exclusion in both urban and rural areas. It further supports the CHIME model of the nature of transport-related social exclusion.

APPENDIX A Birmingham Study

Selecting subjects for interview

We proposed interviewing people from different levels within the University structure, from management/professors, through senior staff and lecturers, to postgraduate students and administration staff. It was also decided to approach both academic and administrative departments to explore possible differences in travel arrangements and attitudes, and responses to the charging regime, in the two different target groups. Given the weighting of staff numbers at the University, we settled on two academic departments and one administrative department. Together with our hierarchical divisions (four in an academic department, three in administration), this gave us a grid of 11 different target 'groups' to research. We hoped to arrange interviews with two members of each 'group', entailing an ideal total number of 22 interviews. This design is not intended to ensure generalisability or representativeness of the findings, but to capture what we expected to be relevant variation of practice and discourse within the population.

The departments we chose to approach were selected through a randomised procedure, although the initial selection threw up two departments that were unsuitable for different reasons. The final selection consisted of the School of Physics and Astronomy, the School of Bio-Sciences, and the Finance Office.

Letters were sent from the Estates Management Department to the heads of these departments, outlining the background to the research and requesting the co-operation of the staff. It remained to locate suitable office space for the interviews to be conducted in, and to approach the staff directly for their participation in the research, through e-mail and telephone lists provided by Estates. Interviews were scheduled to take part in the two middle weeks of July, from the 8th to the 21st and the 15th to the 19th.

Interview format and schedule

The interviews were expected to take approximately 45 minutes to an hour, to allow flexibility for the interviewees to fully explore any issues they feel they need to expand upon. In the event, the length of interviews varied from 20 minutes to 45 minutes. They were based upon a schedule of question areas, which ran as follows:

INTRODUCTION/EXPLANATION OF RESEARCH

TRAVEL TO WORK:
How do you usually travel to work?
How often do you alter this arrangement?
What are the most common reasons for changing this arrangement?
Where do you live/what are the other options?

NEW CAR-PARKING CHARGES:
Has the change in the car-parking charges had any effect on your travel arrangements?
IF have a car and do use the car park..
How have you elected to pay (daily/monthly/annually)?
How do you rate the level of charge?

Can you imagine the level of charge (ever) affecting your travel arrangements? When, why and how?
Have you altered your normal parking place as a result of the charges? (do you have a normal parking place, how did that come about? etc.)

FLEXIBILITY:
Do you work to set hours or can you vary your hours?
How does this influence your travel arrangements?
Do you have a mobile phone? (needs a bit of introduction/context – ask about need to make adjustments, fit in unexpected events, levels of routinisation. And then ask about how interruptions/delays/changes are coped with re. travel… and *then* maybe ask, as a follow up, about mobile phone and its use.)

REPLACING/UTILISING TRAVEL:
Do you have the ability to carry out work from home?
What makes this possible (i.e. technology etc.)? and if it is, when, how and under what circumstances do you do this?
Do you make use of travel time for work-related activities?

TRIP-LINKING:
How many other people in your household make use of your car, as drivers or passengers?
Do your trips to and/or from work include travel for other reasons (shopping, childcare, partner etc)?
How many journeys, of what type, are linked, and how often? For example, think about the past week.

JUGGLING:
Also interested in mobility within your household as a whole: how many people are there in your household and where do they need to get to (to work, school etc.)?
How are your travel, esp. journey to work, arrangements affected by those of others in the household?
E.g. if you have the car, someone else has the car, what then?
What time do different members of the household generally leave and return home? Is this predictable, very variable?
How about where you live and how that relates to where you/others work/need to get to during the day?

ALTERNATIVES:
IF car. Do you know of alternative ways of getting to work without a car?
If you had to make a journey now, to home, hospital or shops, how would you arrange this? What other factors would have to be taken into consideration?
How do you arrange JTW in the absence of a car?
In an emergency?
What makes these alternatives un-desirable in normal circumstances?

SCENARIOS:
How would your travel arrangements change (if at all) if the parking fee was doubled or trebled?
If more public transport were available? (at different times?)
If public transport could be guaranteed to get you to work as quick as a car?

If parking on campus was prohibited?

CONGESTION:
Is your JTW affected by congestion? How, and what do you do to manage this/avoid it? Is it a problem.
What measures do you think would be most effective in reducing this congestion? – for whom? The university, the LA? Etc?'

Interviews were tape-recorded and transcribed for analysis. As CHIME 0 states, the purpose is 'to test the value of work-place interviewing as a means of revealing the differential impact of 'the same' infrastructural change; and of identifying the types of collective judgements which inform travel habits' and the analysis focuses on the juggling of resources and the influences of household circumstances, as highlighted above.

The fieldwork

Arranging the interviews proved to be (as expected) a fairly protracted affair, taking nearly two weeks over the telephone and e-mail, with the usual problems of cancellations and re-arrangements being dealt with whilst the fieldwork was taking place. Eventually 20 interviews were possible, and the following breaks down the institutional positions of the interviewees by location and role:

ADMINISTRATIVE:	ACADEMIC:	
Finance Office	Physics and Astronomy:	Bio-Sciences:
1 Manager	1 Professor	2 Professors
1 Auditor	1 Senior Lecturer	1 Senor Lecturer
2 Accountants	1 Reader	3 Res. Fellows
2 Clerical Staff	2 Research Fellows	1 Post-Graduate
	1 Data Assistant	
	1 Technical Staff	

As can be seen, we achieved a fair coverage of the hierarchical strata in each department. However, the primary source on which we based approaches to staff (the University's directory of information) contained lists of academic staff only in the academic departments, and so access to the technical and administrative staff and students was limited. We secured some interviews by using the telephone directory, and through asking those who picked up the telephone when not the target subject but in Bio-Sciences the respondent sample remains 'lop-sided'.

Although all three departments were approached by the Estates Management Office on our behalf, the Physics department requested an e-mail to be circulated, explaining the research and asking for responses. This was provided, but it included a request that staff contacted Noel Cass directly, if they were interested in talking about their journey to work *and the introduction of the new parking charges scheme*. This had the effect of producing two interviews with subjects who had self-selected. For the purposes of the methodological experiment, this provides an insight into the danger of this way of securing interviews, as one interview in particular was with an individual who had actively organised a campaign against the parking charges scheme. His views on the matter were known to a number of other subjects, and whilst this project is not

intended to provide a statistically representative sample of responses to the scheme, this factor should be borne in mind.

Finally, although we took care to ensure that respondents were primarily car-users (to maintain the relevance of their responses to the project), two subjects slipped through the net, and were regular train users. Despite this, their responses are useful in analysing how travel decisions are made in contingent social/infrastructural circumstances, and in exploring the concept of viable alternatives. We kept notes on the responses to *all* approaches for interviews, and the responses of those who could not help provide additional data: one was a holder of an honorary position, and therefore exempt from the charging scheme; 4 explained that they had no car; whilst others explained that they walked, took the train or bus, or used a motorbike or scooter. Others were away, could not be contacted, or denied an interview on the basis of time pressures.

APPENDIX B Garstang and Newcastle study

Interview schedule

The following schedule was used for all interviews, although in practice it was interpreted flexibly in response to previous answers, the contingent circumstances of the particular case, and the time available.

How often do you use the (service)?

How long have you been using it?

How did you get about before the (service) started?

Do you still use lift-sharing or other informal travel arrangements?

Do you use the (service) to get to Garstang/West Denton, or to access other places en route?

Do you travel from (hub) to elsewhere?

What are you using the (service) to access? [Shops, doctor, friends, transport etc]

Are there other destinations you wish the (service) could get you to?

How did you find out about the (service)?

What other public transport serves your home?

Has the (service) allowed you to do new things, or changed how you get to the places you do these things?

APPENDIX C Summary of analysis of Super 8 data

Number of interviews: 14

Number of users: 22

Gender of users: F 15 M 7

Age of users:
- <10: 3
- Teen: 3
- 20-40: 1
- 41-60: 2
- 60+: 13

Disabled: 2

Frequency of use:
- First use: 3
- 2-3 times/wk: 8
- 4-5 times/wk: 1

Reasons for trip (mentions in interviews):
- Shopping: 6
- Holidays/daytrip: 5
- Doctors: 4
- Social/leisure: 2
- Visiting husband in home: 1
- Work: 1
- Further travel: 1

Other transport modes used (mentions in interviews):
- Walk and bus: 6
- Taxi: 4
- Lifts: 1
- Have car: 1
- Dial-a-ride: 1
- Works bus: 1

How service discovered (mentions in interviews):
- ‘on spec’: 3
- Leaflets: 3
- Roadshow: 2
- Adverts: 2
- Personal contacts: 1
- Campaigned for service: 1

APPENDIX D Summary of analysis of U-Call data

Number of interviews: 24

Number of users: 33

Gender of users: F 24 M 9

Disabled: 2

Ages of users:
- <10: 3
- Teen: 0
- 20-40: 6
- 41-60: 13
- 60+: 11

Frequency of usage:
- First use: 6
- Infreq/once/wk: 4
- 2-3 times/wk: 7
- 4-5 times/wk: 6

Reason for trip (mentions in interviews):
- Shopping: 13
- Social/leisure: 8
- Work: 4
- Visit friends: 3
- School-run/lessons: 3
- Doctors/care visit: 2
- Further travel: 1

Other transport used (mentions in interviews):
- Walk/bus: 23
- 2 buses needed: 5+
- Buses unreliable/late/don't come: 12
- Metro: 2
- Taxi: 2
- Lifts: 2
- Car: 1
- Bicycle: 1

How service discovered (mentions in interviews):
- 'on spec': 7
- Leaflets: 6
- Adverts: 3
- Roadshow: 1
- Personal contacts: 4
- Campaigned for it: 1

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