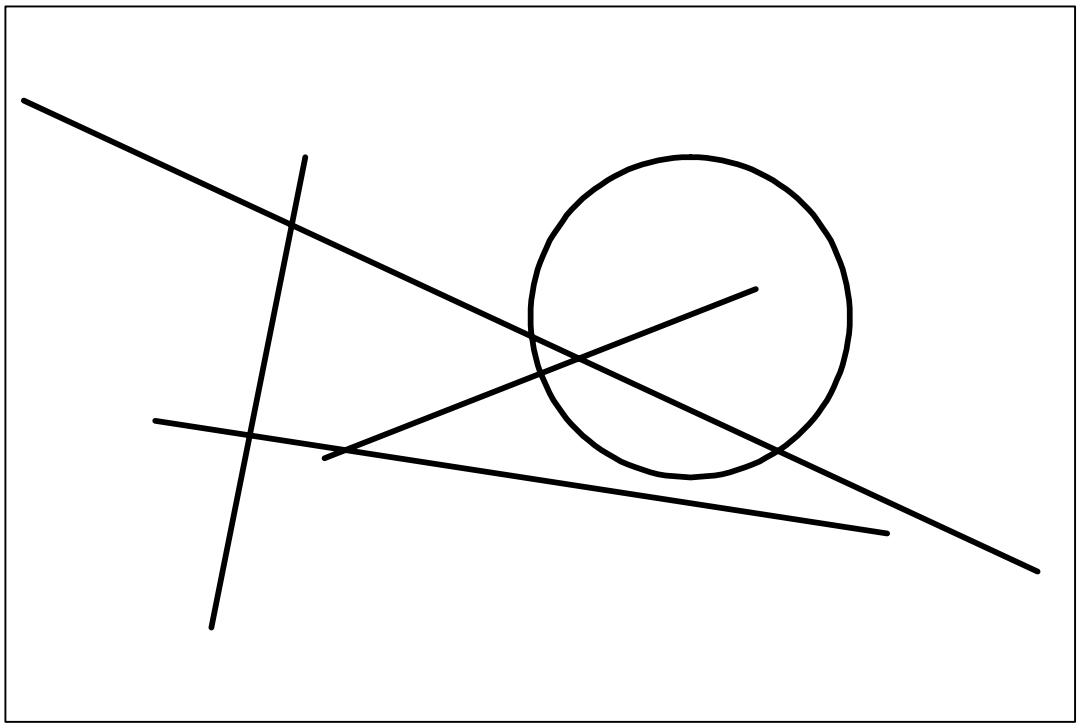

Travel behaviour considerations during the process of residential relocation

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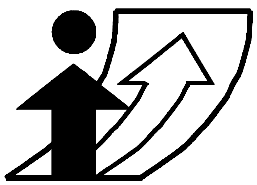
Conference paper
Session 1.7



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Travel behaviour considerations during the process of residential relocation

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Abstract

There has been an increasing focus in recent years in transport research, policy and practice on travel demand management as a means of addressing traffic congestion. In close association, the need to encourage travel behaviour change has grown in importance. A key impediment to behaviour change can be the lack of conscious consideration by an individual of the travel choices they make, i.e. habit. Breaking or weakening habits by bringing consideration of travel options back into an individual's consciousness is an important precursor therefore to behaviour change. This can occur when an individual faces a change of circumstances. Life events such as getting married, changing jobs, having children or moving house are perhaps exemplars of such change. This paper focuses upon the last of these – residential relocation. Through qualitative and quantitative research with individuals who have recently moved home, the paper examines the extent of behaviour change brought about and goes on to assess residential relocation as a *process* in order to establish when and to what extent during that process conscious consideration of travel issues is prevalent. Given the diverse nature of relocation experiences at the individual level, cluster analysis allows some more generic interpretations of 'consideration behaviour' types to be revealed. The paper concludes with a commentary on what implications the insights from this research might have for transport policy. In particular it considers the targeting of behavioural interventions intended to encourage positive behaviour change in circumstances of broken or weakened habits.

Keywords

Behaviour change, habit, residential relocation, churn

Preferred Citation

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1. Introduction

Daily travel behaviour, in particular mode choice, is frequently seen as habitual to the extent that any (prospect of) change is inhibited or prevented (Verplanken *et al.* , 1997; Gärling, 1998; Kenyon and Lyons, 2003). Promotion of change in travel behaviour is necessary to achieve the aims of travel demand management. These being to pursue a more rational and effective use of the transport system by changing the extent and nature of travel in terms of when, where, how and how much people travel.

Recent research has examined the notion of events throughout the life course influencing travel and potentially stimulating change in travel behaviour (van der Wearden *et al.*, 2003; Bamberg *et al.*, 2003; Klöckner, 2004). Key life events such as changing jobs or passing the driving test can provide both of the two criteria required for breaking habits as suggested by Ouellette and Wood (1998): a change in the situational *context* of the habitual behaviour, and an increase in *consciousness* of the behaviour (Stanbridge *et al.*, 2004). Research to date has largely focussed on examining the relative influences of a series of key events (e.g. gaining a driving license, moving home, moving work, purchasing a car) on travel behaviour (van der Wearden et al, 2003; Klöckner, 2004). Little examination of the processes involved in a single key event has occurred. Yet such examination could prove fruitful in improving understanding of precisely how a key event can impact upon travel behaviour and its associated habituality. This in turn may reveal opportunities for interventions to effect positive behaviour changes.

This paper considers a detailed examination of the process of residential relocation. It stems from a study which has used both qualitative and quantitative research methods to yield insights from individuals who have recently undergone a residential relocation. Such methods have allowed changes in behaviour arising from moving home associated with specific journey types to be identified as well as consideration of behaviour (and intentions for behaviour change). Underlying this, a principal focus has become the *process* of residential relocation as distinct from (only) the *outcome*. Qualitative research involved in-depth interviews with 11 recent home-movers. This informed a larger scale postal survey targeted once again at those who have moved home in the recent past. The qualitative research is described in detail in Stanbridge *et al.* (2004). This paper is principally concerned with the larger scale survey and seeks to examine the following five key questions:

1. To what extent is mode of travel for particular journey purposes affected following a residential relocation?

2. Is there an identifiable process associated with residential relocation in which to situate closer examination of habit and consideration of travel options?
3. Given such a process, at what points during that process are travel issues considered and to what extent?
4. Given the diversity of specific relocation experiences and the individuals involved, are there identifiable typologies of home-movers?
5. What implications arise from the empirical evidence for transport policy?

2. Research methodology

An initial qualitative phase was completed involving 11 interviews with recently moved households to gain information about their experiences. Topics discussed included reasons for the move, priorities during the search process and any changes to travel behaviour experienced. This was followed by, and informed, a survey developed to examine the issues raised across a wider cross-section of people moving home. A key feature of the survey was an effort to further explore and develop the conceptual framework which had arisen from analysis of the interviews (this is presented later). The survey also sought to probe for occurrences of mode switch associated with moving home as an indicator of travel behaviour change, and examine any related factors. Specific journey purposes were addressed by the survey in relation to household travel: commuting for all adults in the household (maximum of two adults in any eligible household); grocery shopping; travel to city centre; school run; and regular leisure journeys. These were selected as being the most frequently undertaken journeys, and therefore those likely to contribute substantially to (local) traffic levels and to be habitual in nature.

The Land Registry is a UK Government Executive Agency which maintains records of land ownership in England and Wales. Accordingly, it is able to identify changes in land ownership. Co-operation of the Land Registry provided a means of targeting a mailback questionnaire survey at residential addresses for which a recent change in ownership had occurred. The survey was geographically targeted at the city of Bristol. Bristol is located in the South West of England (115 miles west of London). It is one of the main urban centres outside London with a population of about 400,000. The City Authority identifies that average peak hour traffic speeds in the City are 26 km/h suggesting it is one of England's most congested cities. A questionnaire was distributed to a sample of approximately 1,200 addresses of eligible households in October 2005. Eligibility was confirmed through cover questions on the questionnaire that ensured that the recipients owned the property, had moved there in the last twelve months (to ensure adequate recall of the moving experience), and that the number of

adults living in the household was two or less (intended to avoid inclusion of overly complicated household structures such as those including more than two generations of a family or those with offspring of adult age). The questionnaires were designed to be completed by one adult household member on behalf of any additional household members, although information regarding all household members was sought. The incentive for returning the survey was a single prize draw of £250.

A total of 229 useable responses that met the above criteria were received, giving an estimated response rate of 20 per cent (this can only be estimated given the limited information concerning the households receiving a questionnaire other than knowledge of change of ownership). This level of response was achieved without the sending of reminders which were deemed to entail too much invasion of privacy and therefore not permitted by the Land Registry. Of the 229 responding households, almost half were childless couples (49 per cent), 30 per cent were single adults living alone, 4 per cent were single parents and 17 per cent were couples with children. Two of the couples, and three single person households were retired. Of the remainder, almost all adults accounted for in the survey were working either full or part time (whether single or part of a couple). The age range for ‘adult 1’ (the responding household member) was 22-74 (mean 38 years), and 58 per cent were male. The age range of ‘adult 2’ was 18-74 (mean 34 years). 75 per cent of the sample had moved a distance of less than 10 miles; meanwhile 10 per cent of the sample had moved a distance of over 100 miles. The four most popular reasons for moving across the sample as a whole were: to get on the property ladder; to move to a bigger home; to move to a nicer area; and for investment purposes.

3. Survey findings

This main section of the paper now presents an examination of the survey response data centred upon the key questions set out in the introduction.

3.1 To what extent is mode of travel for particular journey purposes affected following a residential relocation?

Conscious consideration or review of travel options may not lead to behaviour change since an individual may determine that the currently or previously enacted behaviour remains the preferred option. Nevertheless, the occurrence of behaviour change is a clear indication that consideration of travel options has occurred. Survey respondents were asked to indicate whether their household’s usual main mode of travel for selected journey purposes had changed following the relocation. Below we consider in particular the commute journey. The

commute is one of the most routinely undertaken journeys and arguably most associated with habitual behaviour. Additionally, external data on commute mode switches exists to allow comparison of the study sample of recent movers to a general population. Table 1 shows the main mode used for the commute both before and after relocation for all those adults in the sample households for whom a commute journey was reported both before and after moving.

Table 1 Main mode for the commute journey before and after the relocation (n=327) (shaded cells denote mode switch having occurred)

		Mode after							
		car	public transport	walk	cycle	Other	Total 'before' mode	Number changed mode	% changed mode
Mode before	car	174	4	11	9	3	201	27	13
	public transport	12	20	4	6	1	43	23	53
	walk	15	5	16	8	1	45	29	64
	cycle	4	0	3	25	0	32	7	22
	other	0	0	0	2	4	6	2	33
	Total 'after' mode	205	29	34	50	9	327	88	27

This reveals that over a quarter of the survey participants (27 per cent) had changed their main mode of travel for commuting since relocating. The change in overall mode split for the sample is appreciable with regard to public transport (33 per cent reduction), walk (24 per cent reduction) and cycle (56 per cent increase). Meanwhile, a two per cent increase in car use has resulted. The figures themselves will relate both to the specific nature of the respondent sample, respondents' circumstances and the relative attractiveness of transport provision across modes in Bristol (where traffic congestion is a well recognised problem and public transport services (which suffer the effects of congestion) are not seen by the public to be of high quality in general). Nevertheless an important point is that all these aggregate figures are lower than the amount of change occurring at the individual level (especially so for car use). In other words, the aggregate figures can mask the substantial degree of churn in behaviour taking place (and which reflects a prior conscious consideration of travel options). It would appear then that residential relocation is a trigger for substantial behaviour change (or at least change in use of travel modes) – and perhaps even greater consideration of possible change. Table 2 provides an overview of behaviour change across a set of journey purposes further reinforcing this – in fact 56 per cent of the survey sample households experienced a change in

the main mode used for at least one of the regular household journey purposes examined. However, to what extent is such a degree of behaviour change solely attributable to the home move?

Table 2 Extent of mode change by journey purpose following residential relocation (number of households undertaking journey both before and after moving shown in brackets)

Journey purpose	% changed mode
Work adult1 (n=208)	27.4
Work adult2 (n=119)	26.1
Children to school (n=40)	50.0
Grocery Shopping (n=193)	20.0
City centre (n=189)	33.3
Leisure (n=180)	22.8

In their analysis of the British Household Panel Survey (BHPS), Dargay and Hanly (2004) found that each year between 1991 and 2001, roughly 18 per cent of commuters changed their commute mode. (Such comparative data would presumably have included the occurrence of residential relocation for some households from one year to the next.) Comparison of this figure with the corresponding study sample figure underlines that residential relocation causes a greater degree of travel behaviour change than would 'naturally' occur in the general population. It should be further noted, however, that 'naturally' occurring behaviour change itself may be largely attributable to life events other than residential relocation and indeed that residential relocation may be associated with other life events such as having a child, changing jobs, retiring, etc.

3.2. Is there an identifiable process associated with residential relocation in which to situate closer examination of habit and consideration of travel options?

During the in-depth interviews with recent home-movers prior to the survey, it became apparent that a key factor involved in the travel outcomes of the home move was the extent of 'consideration of travel issues' during the search for and selection of the new home. This raises two key points: any consideration implies a breaking or weakening of habit; and raising of consciousness during a moving process may be more significant than the change in situational context itself following the move.

Habits are by definition non-considered behaviours. Therefore *consideration* of travel issues implies an absence (however temporary) of habituality. 87 per cent of the survey sample reported considering travel issues at some point during their move though only 56 per cent changed mode for at least one journey purpose. As noted above, consideration may not lead to change in behaviour but a review of travel options has nevertheless taken place. This high level of consideration would seem of great significance to policy interests associated with demand management. One or two qualifying points should be made. Recording behaviour change has focused upon mode choice – meanwhile, consideration of travel may also include other choices such as journey routes and durations for a given mode. Nevertheless, open-response feedback from the survey confirms that the vast majority of consideration is related, directly or indirectly, to mode choice. The strength of consideration may vary. At one extreme it could entail, for example, a cursory assessment of parking availability and distance to work. At the other extreme it might involve more detailed examination of different travel options based upon time, price or other generalised cost elements.

Consideration and habit weakening appears to occur during the search for and selection of the new home. This suggests that it is not the 'change in situational context' (Ouellette and Wood, 1998) of the relocation itself which prompts the weakening of any travel habits, as much as the 'raising in consciousness' (ibid) of travel behaviour due to the *anticipated* move and change in context. While any *effect* of the weakened habit (such as travel mode consideration) is unlikely to be evidenced (if at all) until after the physical relocation has taken place, it is at some point earlier in a *process* that it occurs in the mind of the individual. This is not to suggest that additional mode switches may not be prompted solely by the change in situational context, but it remains the case that many of the possibly more important journeys are likely to have been reviewed in advance.

This focus upon process rather than outcome in relation to habitual behaviour suggested a need to establish an outline of, or framework for, that process within which to examine more closely when and to what extent consideration of travel occurs.

Based upon insights from the in-depth interviews, a conceptual framework of travel consideration, named the Residential Relocation Timeline (RRT), was developed. The RRT, shown as Table 3, indicates a series of stages during the process of moving home when travel issues *might* be considered.

The RRT does not suggest that for any given household travel would be considered at *any* or *all* of the illustrated stages. It indicates the possibilities. Consideration at a particular stage

does not imply that consideration would occur at the following stages. The RRT does not attempt to imply that travel considerations are the only, or even the most important, factors under review during the process of a residential relocation. Indeed previous research suggests that travel is largely not the main priority during a move (Hunt *et al.*, 1994; Molin and Timmermans, 2003). However, the interest in the context of the present study is not principally in the relative importance of travel issues in the resulting choice of new residential location but, other (non-transport) issues aside, in the potential for residential relocation to be an important juncture for bringing about travel behaviour change.

Table 3 The Residential Relocation Timeline (RRT) stages

	Stage	Example of possible travel consideration
Prompt	1: The prompt for the move	*I wish to reduce my commute time.*
Search	2: Search criteria (deciding on what sort of property is being sought)	*I need a house on a bus route to work.*
	3: Selecting areas to search	*Which areas are within cycling distance of work?*
	4: Viewing properties and areas	*I now realise that I could not move to this area as congestion is too high.*
Selection	5: Before making an offer on a property	*If I buy this house will I be able to travel where I want?*
	6: Offer accepted on a property, but before moving	*What will be the best way to travel to work?*
Post-move	7: Moving and settling in (physical relocation)	*Which are the easiest shops for me to get to?*
	8: After some time in the new home	*My car has broken down, how will I travel to work now?*

The RRT was conceived based upon the experiences of a limited number of interview participants. An important purpose of the household survey was to establish whether the RRT framework was equally valid and meaningful to households with a broader range of relocation experiences. To this end, the survey included the question “How well do you feel the stages as

described in this questionnaire fitted with your experiences?" Responses were in the form of both a 1-5 rating scale (1 indicating not and all, and 5 indicating very well) and an open space for comments. 79 per cent of the respondents considered that the stages fitted their experiences at least moderately well (3 or greater on the scale). 43 per cent of respondents indicated that the stages fitted well or very well. Examination of feedback from those who considered that the RRT had fitted their experiences less well, revealed the main reason for this response was that the nature of their relocation process meant that a larger number of stages were either combined or skipped.

That the majority of respondents were comfortable with relating to the RRT stages was important because the RRT itself was used as a means of structuring the main element of the questionnaire which examined at what stages in the moving process consideration had occurred.

3.4. When does most consideration occur?

A number of different means of gauging at what point along the RRT consideration occurred were built into the questionnaire design. Firstly, respondents were asked to indicate for each of the stages whether travel was on their mind at that stage (see Figure 1). Respondents were also asked to indicate for which of all the stages travel was *most* on their mind (see Figure 2). Where travel issues were considered, free-text response was invited to provide further details.

Notable from Figures 1 and 2 is that Stage 3 ('Selecting areas to search') is the most prominent across relocating households in terms of when travel is considered to any extent and when it is likely to be most seriously considered. Open responses describing consideration at this stage highlight that it is characterised by accessibility concerns – ease of reaching places of employment (e.g. "*We wanted to be within a commutable distance to work*"), childminders (e.g. "*Had to be near childminder and work*"), shops, fitness centre (e.g. "*Wanted to be in walking distance of my gym and shops*") etc. Consideration of such issues was not confined to Stage 3 but was most strongly associated with it. Different modes allow different distances to be travelled in a reasonable time (walk vs car vs cycle), and any reliance on public transport requires its availability to begin with. Accordingly, specific mode preferences were frequently mentioned at Stage 3, e.g. "*we had to ensure distance travelled to school was walkable for a teenager*", "*looked at areas on bus route*", or "*I began to think about travel distance to work, how far the property was from work and possible routes, congestion etc., possibility of cycling to work"*. Survey responses reveal that some participants had already decided their preferred modes of travel prior to selecting areas in which to search for a new home. Others had ideas or travel aspirations without yet having

established strict preferences. Some individuals did not consider travel at this stage. What is clear is that travel choices can often be the subject of significant attention at a relatively early stage in the residential relocation process.

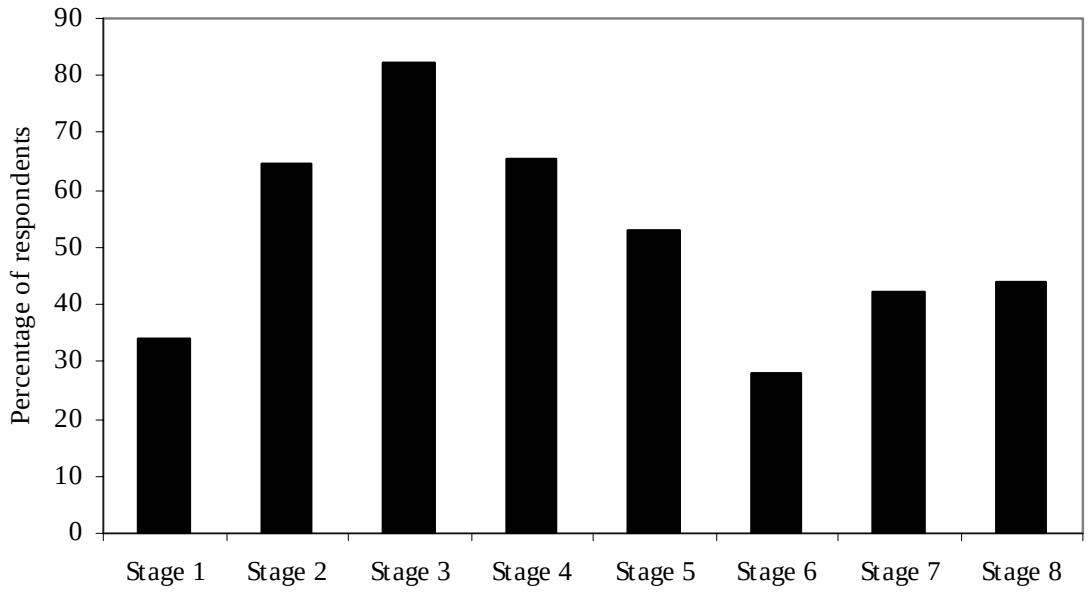

Figure 1 Proportion of respondents confirming 'Yes, travel was on my mind at this stage'

It can be seen that Stage 6 (after selecting property, but prior to moving) is where least consideration of travel issues occurs (evident in both Figures 1 and 2). Many respondents reported having already planned all their travel by this stage so further consideration was not deemed necessary. Those who did consider travel issues at Stage 6 generally took the opportunity to seek public transport information and plan routes to work and to other destinations as they had not already done so, e.g. "*I began to think about possible cycle routes to work and other areas of Bristol that I use*" and "*looked at map and worked out possible route to work - realised would have to get up 5 minutes earlier each morning"*.

Stages 2, 4 and 5 do not appear across the response sample as a whole to be as significant in relation to the strength of the consideration of travel issues (Figure 2), albeit that many people are considering travel to at least some extent at these stages (Figure 1). This may be as a consequence of the greater focus of attention associated with Stage 3.

Compared to all the other stages, Stage 1 has a higher proportion of people who gave any consideration to travel issues also indicating that travel was most on their minds at this stage. Thus it stands out both as an important stage (Figure 2) and a stage where travel is given

relatively little attention across the sample as a whole. This is likely to relate to a number of cases where travel issues (amongst others) were themselves a prompt for the decision to relocate. The survey examined prompts for the move by means of a tick-box response question, with 'to be nearer work', 'to be nearer family', and 'to be near a school' the options related to travel issues. A total of 14 additional options (e.g. bigger house wanted), plus 'other' were available, and participants could select as many as they wished in response. 26 per cent of the study sample reported at least one of these travel options as prompting their move. However for the participants reporting Stage 1 as the stage where travel was most on their mind, this figure rose to 66 per cent.

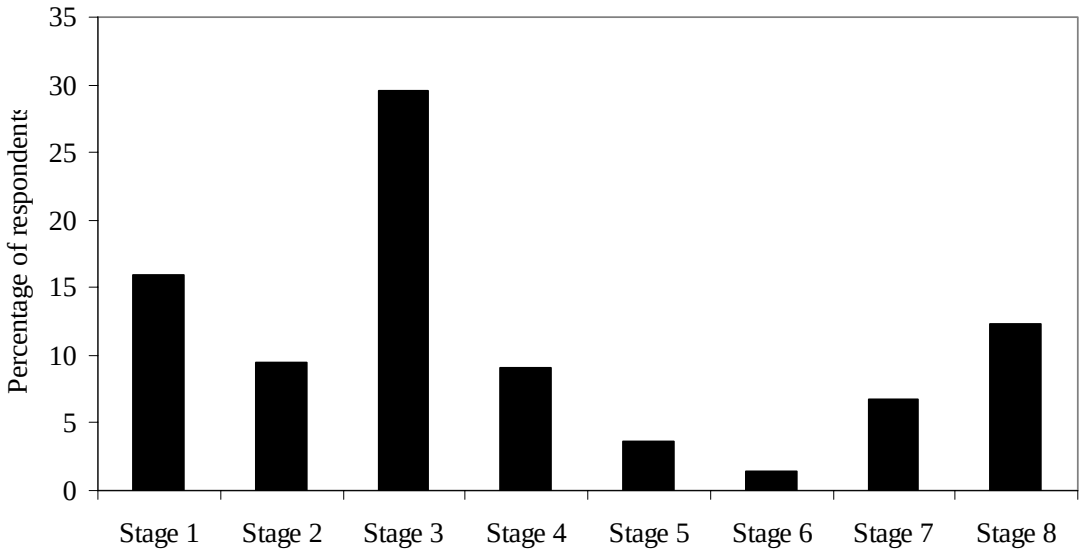

Figure 2 Proportion of respondents selecting a given stage as being when travel issues were '*most* on my mind'

Perhaps of most significance, alongside Stage 3, is the final stage (Stage 8 – 'After some time in the new home'). For 12 per cent of the survey respondents, Stage 8 was when travel issues were most on their mind. As expected, many of these households reported external changes, mainly changes in job locations that had, separately from the home move, prompted re-consideration of travel. Many others, however, experienced no such changes, instead reporting dissatisfaction over experienced post-relocation journeys not meeting with expectations (especially in relation to journey duration) – e.g. *"Realised didn't actually drive routes to work from new house before moving in rush hour. Busier than expected"*. In many instances this prompted a change in mode as illustrated by the following quotes: *"I began to cycle to work in the centre to avoid traffic"*; *"Due to price, poor service, lateness, infrequency, and state of buses, person one has decided to cycle to work, p230"*; *"Bought a car because*

the bus was too expensive, unreliable and smelt"; *and "Bus takes too long into town; partner now drives in and gets an extra 40 minutes in bed"*.

Such individuals might have benefited greatly from earlier (more in-depth) consideration of the likely travel impacts of their relocation decision. Issues such as traffic levels in rush hour and bus times and prices could arguably have been checked prior to the selection of the new property. Of course, for some individuals, travel would have remained a lower priority than other consideration in their residential relocation process prior to Stage 8. As such, greater knowledge about the travel implications of their relocation decision might not have altered that decision. For some, more in depth travel research prior to property selection did indeed prove worthwhile - e.g. "*I am very thankful I made the decision to live close to city centre. Traffic in Bristol is very congested. I travel from* [area close to centre] *to city centre for work. It takes a lot of strain off me as I absolutely LOATHE driving*" (respondent's emphasis).

As an aside, feedback concerning Stage 8 is rather illuminating in relation to public transport. There has been a tendency to see endeavours to attract people to use buses being hampered by the problem of non-users having ill-informed perspectives of what public transport is like thus perceiving the experience of bus use to be worse than it is in practice. Yet Stage 8 points towards a willingness amongst some people to try using public transport, only to find that their perceptions or expectations *exceed* the quality of service that they encounter in practice such that they revert to using other modes.

While Stage 3 stands out as a point in the process of residential relocation from which greatest potential for travel behaviour change may stem, Figure 2 provides a reminder of the diversity of home-moving experiences and priorities. The points where travel consideration occurs vary across the population of individuals who have relocated their homes. Analysis was therefore undertaken to establish whether meaningful typologies of home-movers in terms of travel consideration might nevertheless exist.

3.5. 4. Given the diversity of specific relocation experiences and the individuals involved, are there identifiable typologies of home-movers?

A hierarchical cluster analysis was performed on the participants indication of whether or not travel issues were considered at each stage (as illustrated in Figure 1). Therefore eight binary responses (one for each stage – considered/ not considered) were included'. This was to

examine for typologies of travel consideration in home-movers[1]. A five-cluster solution was identified from the analysis and, in line with examining the makeup of each cluster, the clusters were given labels. Table 4 shows for each of the five clusters the percentage of respondents in that group considering travel at each stage. This Table frames the interpretation of the clusters, as outlined below. In addition to this a series of Chi^2 tests were performed to examine relationships between the cluster division and additional variables in the study such as distance of move, number of areas viewed and impact of the move on availability of travel options. Only those variables demonstrating a significant relationship are remarked upon.

Cluster 1 – minimal considerers (n=66) - There was very little consideration of travel issues within this cluster and any consideration that did occur was predominantly at Stages 2 and 3. 33 cluster members did not consider travel at any stage during their move. This cluster had collectively moved the shortest distance - 75 per cent of individuals having moved less than 3 miles and 33 per cent having moved less than one mile. This minimal distance of move was frequently cited in the open answer responses as an explanation for lack of consideration of travel issues. Another reason for little or no travel consideration was multiple or distant work location/s for which detailed planning would have little consequence. Additional comments included the focus on other priorities such as a nice house or good school. This cluster also indicated that the RRT stages fitted the relocation experience least well out of all of the clusters.

Cluster 2 - Maximal Considerers (n=50) - Cluster members are likely to consider travel issues at several stages through the process of relocation. This cluster contains members who have

[1] The 'average linkage between groups' method was used on the simple matching distances to combine the data into clusters. This repeatedly takes the two cases with the most similar scores to combine them until the data are in one cluster. This process can be illustrated with a dendrogram or tree diagram (see Cramer (2003) for more information). Subjective inspection of the dendrogram structure was employed to choose the optimal cluster solution for the data. This was combined with inspection of the response frequency tables for 'considered at this stage' (of which Table 4 is an example) for various cluster solutions to determine which one provided the clearest distinctions in the data. In addition, a general rule was applied that a meaningful cluster should consist of at least 10 subjects. The dendrogram highlighted five participants with response profiles entirely dissimilar to any other response profiles (or each other). As this section of the research was aiming to examine general typologies rather than encompass all details these five participants were removed as outliers. With these removed, the process outlined above then revealed a 3, 5 or 7 cluster solution. For the 7 cluster solution two of the clusters contained less than 10 cases. Three clusters was considered too restrictive in a balanced reflection and simplification of the diversity of residential relocation experiences.

moved further and viewed a higher number of areas. The RRT is found to fit well with their experiences. Though households in this cluster are inclined to be travelling more miles following their relocation, they are more likely to believe that their availability of travel options has improved.

Table 4 Cluster membership and percentage of respondents in each group considering travel at each stage

	1: Minimal Considerers	2:Maximal Considerers	3: Prompted early planners	4: Post move considerers	5: Early Planners not prompted
Stage 1	5	60	100	6	14
Stage 2	24	68	75	35	76
Stage 3	33	88	90	59	94
Stage 4	0	96	65	6	93
Stage 5	5	94	0	0	70
Stage 6	3	70	0	24	16
Stage 7	6	96	30	82	13
Stage 8	6	78	30	100	21
n	66	50	20	17	71

Cluster 3 - Prompted early planners (n=20) – This cluster is characterised by early considerers for whom travel issues have contributed to prompting the move. By Stage 5 future travel is planned and minimal further consideration is required. Cluster members tend to have viewed lots of different areas in search of their new home.

Cluster 4 - Post move considerers (n=17) – For individuals associated with this cluster, consideration occurs largely at Stages 7 and 8, after the move has taken place, with limited consideration occurring at earlier stages prior to the home move itself. This cluster appears to be more susceptible to the physical change in context needed to prompt consideration of

travel. For cluster members, time to travel to work is seen to have increased but so too has the availability of travel options. Cluster members are inclined not to have been familiar with the area into which they moved.

Cluster 5 - Early planners not prompted (n=71) - Similar to Cluster 3, but travel issues have not prompted the move. Consideration of travel issues takes place at the earlier stages. By Stage 5 travel is planned and minimal further consideration is required. Cluster members tend to have moved a shorter distance and experienced no change in transport availability at their new location though their time for travelling to work has decreased. They consider the RRT to have fitted very well with their experiences.

Such typologies may prove instructive in seeking to better understand how to develop and target initiatives intended to (further) encourage consideration of travel issues and thus in turn encourage (positive) changes in travel behaviour itself. In moving now to the final part of the paper, attention turns to summarising what insights have emerged from the study and considering of what value they may be to transport policy endeavours to influence travel demand.

4. Concluding discussion with policy implications

In answer to the research questions posed at the start of this paper, the following can now be said, at least for the survey sample examined. A substantial amount of travel behaviour change (as evidenced by reported changes to travel mode for specific journey purposes) results following residential relocation (even though three-quarters of relocations are over a distance of less than ten miles). Behaviour change points to a likely even greater amount of consideration of travel behaviour (and possibly behavioural intentions). To examine this crucial stepping stone of conscious consideration that overcomes (temporarily) habituality, the significance of relocation as a process as distinct from only an outcome has been established. In turn the Residential Relocation Timeline (RRT) has been shown to be a helpful means of depicting that process and facilitating closer examination of it. It is found that extensive consideration of travel occurs throughout the stages of the timeline – a timeline which, importantly, extends beyond the completion of the physical move itself. With regard to *when* during the process the breaking of habit and conscious consideration of travel issues is most prevalent, three stages can be identified: travel consideration as part of the prompt for the relocation itself; travel consideration associated with locating viable areas in which to search for a new property; and travel consideration associated with forced or prompted reappraisal of travel options once post-relocation journey experiences have been encountered.

Notwithstanding the diversity of residential relocation circumstances, home-mover characteristics and experiences, it seems possible to identify reasonably meaningful *typologies of individuals* and their associated relocation descriptors.

Where consideration of travel issues occurs the psychological barrier to behaviour change of habit is not present, since by definition behaviours that are considered are not habitual. This can lead to some behaviour change, but weakened habit does not guarantee behaviour change. The consideration may be too weak to have an impact, or alternatively continuation of the current behaviour could be positively re-selected as the preferred option. This said, weakened habit is a prerequisite to behaviour change. As such, residential relocation, and the substantial degree of conscious consideration of travel that surrounds it, should be of interest and relevance to policy agendas which seek to bring about change in order to reduce or redistribute travel. Such policy aims to encourage methods of travel (or lack of it) that are more sustainable or less economically, socially and environmentally harmful.

There has been substantial investment in transport in recent years in the UK with stated policy aims to encourage greater use of public transport, walking and cycling and in tandem reduce reliance on the car. Yet in theory the public can stay largely ignorant of improvements to travel alternatives resulting from investment if they remain embedded in habitual behaviours and lack the inclination or motivation for conscious consideration and reappraisal of their behaviours.

Alongside other countries, the UK has pursued for some while initiatives to promote behaviour change but these have often been quite general in nature taking the form of informational campaigns seeking to encourage the public to become more aware of their travel behaviour and to take action to consider changing it. These have often fallen on deaf ears. At the other extreme, targeted campaigns such as TravelSmart have enjoyed recognised success in providing ‘travel counselling’ to households and communities leading to small but significant changes in behaviour. However, such targeted campaigns can be expensive to implement. Somewhere in between these extremes are interventions such as those embodies in organisational travel plans where incentives may be offered to pursue certain behaviours.

Intervention associated with residential relocation may represent a new form of initiative able to be much more targeted than general travel awareness campaigns and more effective than ‘travel counselling’ as seen to date in bringing about at least greater consideration if not higher levels of (positive) behaviour change. Such intervention may be purely informational in nature in terms of assisting individuals in (re)considering their travel options. It could be

more persuasive in seeking to actively promote the availability of attractive or acceptable travel alternatives. Alternatively, it may be more incentivised in nature – for example providing a relocating household with discounted travel on public transport for a period following their relocation (comparable with the discount on purchases for recent movers that a major DIY chain currently offers its customers in the UK). However, crucial to the success of any such interventions would be their timing.

The point of greatest consideration along the RRT has been identified as Stage 3 when households are selecting areas to search. It would seem appropriate that any intended interventions should be targeted at least at this stage.

A complementary aim of an intervention at Stage 3 could conceivably be to attempt to influence the final choice of relocation itself. In other words to encourage the selection of a location that enables much of the required routine travel to be completed without the use of a car or as much reliance on motorised modes in general. It would not be presumed that such an aim could necessarily render consideration of travel more important than other relocation considerations like an attractive house and garden. Instead the aim could be to encourage greater consideration of travel in situations where various locations otherwise satisfy the other considerations. Information and guidance would be required – possibly delivered via estate agents trained to provide such information. Advances in data availability and processing are making possible computer analysis facilities that could provide indications of suitable property locations based upon a household's accessibility needs. Indeed in the UK, accessibility planning is now a key theme in shaping local authority transport planning and associated funding awards from Central Government. Software developed to support accessibility planning which is GIS-based may readily lend itself to the creation of information for residential relocation advice. Experimental work drawing upon the UK Government's multi-modal door-to-door journey planner (Transport Direct) is also examining how isochrones of travel for a given postcode location in the UK can be produced.

The likely success of any of these measures is unpredictable. Given the already severely constrained choice in much of the UK housing market – limited largely by cost but also availability, the process is unlikely to be straightforward. Nevertheless, the following quote from a survey respondent underlines the potential: "*If I had known the traffic problems/ road works/ jams, I would have re-assessed the areas to live in.*"

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