

Travel behaviour change and residential relocation

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Abstract

This paper explores the effects of the key event of moving home on people's travel behaviour, and in particular mode choice. Insights into choice, behavioural intention and outcome are explored by means of a set of qualitative interviews carried out with recent home movers. The interviews reveal instances of mode change for given journey purposes after the move. There is a high incidence of 'consideration' of mode options during the process of residential relocation, which suggest that mode choice habits are (at least temporarily) broken, even if there is no resultant change in behaviour. This may represent important implications and opportunities for transport initiatives targeting travel behaviour change.

The paper sets out a conceptual framework for representing and interpreting the process of residential relocation. This centres upon a timeline of points during the residential relocation process at which people could and do consider their mode choice options.

Keywords: key events, travel behaviour change, residential relocation, habit.

Introduction

Transport policy in the UK as in many other countries is faced increasingly with the need to address the mobility burden placed upon the transport system and society. Whereas once provision of further transport system capacity was the key to preventing or alleviating congestion this is no longer the case. A reorientation of policy has seen the importance of travel demand management (TDM) come to the fore. TDM seeks to achieve 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. Such change represents changing people's behaviour. Achieving such change can be seen in the following context.

Freedom of choice is a central tenet of UK Government policy. The Government's integrated transport policy seeks to provide the public with *choice* when making their journeys. It is the Government's wish that individuals are able to make (more fully) informed choices, and substantial advances in the development of travel information services are in progress to support this. Travel behaviour *change* requires that individuals periodically review their travel choices and outcomes. Research suggests that familiar, embedded behaviours (such as travel) can be habitual to the extent that change is inhibited or prevented (Verplanken, Aarts and van Knippenburg, 1997; Garling, 1998; Kenyon and Lyons, 2003). In order to be effective, transport policy now requires behaviour change. Change will be dependent in part on the viability of travel alternatives, but it will also be dependent upon circumstances being available in which individuals can consciously review travel options from an informed perspective.

"To what extent, and how does the process of moving home act as a prompt for an individual to review and potentially change their travel mode choices for different key journey purposes?"

The aim of this paper is to explore the above question, and also to consider why the answer might be important in relation to the preceding policy context. The paper begins with a brief look at the importance of habits as inhibitors to behaviour change – something, it can be argued, which is particularly relevant to changing *travel* behaviour. It then suggests that key events and their potential effect on weakening or breaking habits is little understood, and points to residential relocation as a prime example. The effects of a key event on travel behaviour, particularly mode choice, are considered by means of a set of qualitative interviews carried out with recent home movers. The importance of *consideration of alternative modes* during the moving process, particularly in terms of breaking habits, is identified and explored. Then a conceptual timeline of mode choice consideration during the residential relocation process is presented, before concluding with discussion of some of its implications.

Habitual travel

Habits may be defined as “a learned sequence of acts that become automatic responses to specific situations, which may be functional in obtaining certain goals or end states” (Triandis, 1977, 1980). Automatic responses are fast, unconscious and involuntary (Schneider and Shiffrin, 1973) and habits are generated through frequent repetition. People’s weekly routine of travel is often very repetitive, particularly with regard to the travel mode choice for the daily commute. Hence, mode choice takes on many of the characteristics of automaticity listed above, and therefore, it can be argued, is habitual.

Habits are a special form of goal-directed automaticity (Verplanken and Aarts, 1999), where the automatic response is triggered by a goal. When the goal of ‘going to work’ is activated, the habitual mode is used without any consideration of alternative possibilities¹. The presence of a mode choice habit therefore implies that consideration of alternative mode options will not occur. Mode choice *options* are not being considered, so any new information pertaining to such options (and changes in their relative attractiveness) is likely to be ignored, and behaviour will not change. This reasoning suggests in turn that habits must be broken before behaviour change can take place. This is not an easy task, although one that research does try to address. Ouellette and Wood (1998) suggest that two key conditions need to be met in order to break a habit: firstly a change to the situational context (which could include the individual’s goals); and secondly the behaviour becoming more conscious and deliberate.

Key events

Recent research suggests that key events may have a significant influence on travel behaviour (Krizek, 2003; van der Waerden, Timmermans and Borgers, 2003; Kloekner, 2004). A key event may be defined as a substantial change in an individual’s circumstances. We suggest that, in relation to breaking travel habits, the key event of a residential relocation could directly meet the two conditions outlined above and as such is worthy of further exploration. Alterations to proximity of activity centres caused by a move, and also alterations to the availability and viability of various travel modes will change much of the situational context. These changes are also likely to raise mode choice in an individual’s consciousness. If it is indeed found that habits are broken or weakened, then behaviour change interventions if targeted at such key events would not need to first overcome habits in order to take effect, and thus may have greater impact.

Examples of initiatives attempting to take advantage of this situation to create behaviour change are starting to emerge (Wundke and Ampt, 2004). However, there is very little empirical evidence to support the claims outlined above. Two studies appear to form the sum total of knowledge available. Van der Weerden et al, (2003), and Bamberg, Rolle and Weber, (2003), both look at travel mode choice after a house move, and their results suggests that substantial mode switch does occur. However, the focus is on the quantitative outcomes for mode choice rather than attempting to understand the *processes* that lead to such outcomes. There is a need to better understand the experiential aspects of residential relocation and in turn to reveal and understand what behavioural processes are at work. This study seeks to address this through a qualitative research approach.

Research Methodology

To gain qualitative, experiential insights into residential relocation and mode choice, eleven in-depth interviews of approximately one hour in length were carried out in the summer of 2004. Participants had responded to an article about the research, in either a local newspaper or on the university website. Both of these asked for volunteers who had recently bought a home in Bristol and would be willing to participate in an interview discussing their move and travel behaviour. It was decided, initially, to focus the research on owner-occupiers as research shows that renters and buyers have different priorities when searching for a house (Mulder, 1996), and owner occupation is the most common and encouraged way to live in the UK.

¹ Kenyon and Lyons (2003) have argued, based on qualitative evidence, that travel behaviour in relation to mode choice does exhibit automaticity. They observed that, whilst individuals make use of a number of different modes in their daily lives, for a given journey purpose such as commuting, individuals tend to have a *primary* and *default* mode choice. The former represents the automatic, or habitual, modal choice for the majority of journeys, the latter being considered when travel by the primary mode is ruled out – for example when the traveller would be drinking alcohol and unable to drive, or if the car were being serviced.

Table 1 shows a summary of the participants' characteristics relevant to discussion in this paper. A good mix of males and females, distance moved, and car-owners and non car-owner participants were recruited. All participants had been in their new home less than a year at the time of the interview. However the age of participants was biased to younger, first time buyers, and only one person from a family took part. With this small sample the aim was not to gain a representative picture of the home-moving population, but rather to gain key insights into the sorts of experiences relating to travel choices and underlying behavioural processes.

Table 1: Characteristics of study participants

Participant	Age	Sex	Car owner	Distance of move (miles)	Time since move at time of interview (months)
1	25	F	Y	<1	2
2	30	F	Y	12	9
3	38	F	Y	2	10
4	27	F	Y	11	11
5	28	M	N	22	1
6	26	F	N	2.5	2.5
7	58	M	Y	3	10
8	25	F	N	95	0.5
9	27	F	Y	4	8
10	32	M	Y	14	6
11	45	M	Y	365	8

Detail of participants' experiences of the residential relocation process and its effects (or otherwise) on their travel behaviour was sought. Mode choice before and after the move for various journey purposes was discussed to assess behaviour change. However, the emphasis in the interview was on learning from participants' experiences before and during the course of moving (and hence any behavioural intentions) rather than only of their choice outcomes beyond the move.

Interview discussion addressed a variety of journey purposes focussing on commute, shopping and leisure. Participants' reasons for moving, priorities when searching, and general experiences of the moving process were also discussed. A key request was for participants to mention any other factors they felt may have influenced their travel behaviour over the time period of their move. This was an attempt to verify causality (i.e. to confirm that any mode changes reported were attributable to the relocation rather than some other external cause). Only participant 10 identified such an external cause. This related to the 'natural' variation in his commute travel patterns between university term time and holidays. Prior to the move it had been term time, and post move it was the holidays so he had greater flexibility regarding the frequency and time of day of his travel to work. This was taken into account in the remaining discussion with him, and also during the analysis of this interview.

An attempt was made to establish whether or not the participants' mode choices prior to their move were habitual. This was necessary in order to show that any subsequent behaviour change indicated a broken habit. Participants were simply asked whether they felt their previous travel mode choice was habitual or not, the automatic nature of habits having been stressed to them. In the absence of any satisfactory measure for current habits, let alone previous habits, and due to the qualitative nature of the study, it was considered that this would provide an adequate appreciation of the pre-move context. All participants felt that their travel mode choice had been habitual, at least to some extent, particularly in terms of commuting which is to be the focus of the paper. Therefore, for the purposes of the following discussion of findings, it has been assumed that at the outset of the moving process their travel behaviours were habitual, i.e. that habits were there to be broken.

Findings

The interviews yielded a rich and varied source of information. This paper concerns itself only with that information which relates to mode choice. Particular emphasis is given to commute mode choice since this is generally the most regular and repetitive journey, and therefore the most likely to be or become habitual (it also remains the journey type most associated with peak period urban congestion

and hence of interest to transport planners and policymakers). The paper next considers the outcomes for participants' travel mode choice since moving house (and in particular whether any change occurred). Then an underlying process, as identified in the study, which can lead to mode change is explored - namely, the *consideration* of alternative modes. Finally a conceptual timeline of points of mode choice consideration during the moving process is put forward and explored.

Mode change since the move

Commute mode choices for participants both before and after the move were elicited during the interviews and are summarised in Table 2. The Table reflects the fact that individuals are both using more than one mode in combination to get to work but also in some cases do deviate from their normal practice of commute and use an alternative means of travel. Six changes to 'usual' means of travel and nine 'alternative' mode changes occurred among the 11 study participants. Such a substantial incidence of change lends support to the hypothesis that moving house is likely to induce travel behaviour change. It can also be seen that 'mode changers' tended to be those using public transport and slow modes before the move. Those commuting as car drivers tended to continue doing so after the move. This may be linked to the fact that public transport users are reliant on services being available (and providing suitable levels of service) and slow mode users reliant on distances being appropriate for walking or cycling. This availability of options is likely to change having moved home and to be a contributory factor in any mode switch. Car use is typically both less reliant on level of service (which relates to the quality of the road network, its management and the levels of traffic) and on commute distance.

The issue of mode change will be returned to later in the paper in the context of seeking to explain such changes in relation to participants' accounts of their experiences.

Table 2: Participants commute mode choice before and after moving (numbers refer participant IDs as allocated in Table 1)

Previous mode	Mode at time of interview						
	car	car lift	walk	cycle	bus	train	no travel
car	1, 2, 3, 7, 9, 10		2	9			
car lift	<i>11</i>	7		11			
walk	4	6	6		4	4	
cycle							
bus							
train				10	5, 8, 10		
no travel	2				8		3

Shaded cells = no mode change;
bold = usual means of travel;
italic = occasional alternative means of travel

Consideration of alternative modes

The previous section has shown that the majority of the study participants experienced at least some commute mode change after moving home. Focus on the outcomes, and explanations for these alone, can mask any underlying processes. Such processes may be extremely valuable in relation to understanding and influencing travel behaviour change. From interview analysis it has been identified that *consideration* of mode choice, and in the case of breaking habits, *consideration of alternative modes*, is a key factor in the mode change process. The evidence from participants to back this claim will be explored more thoroughly in the next section, after an explanation of the concepts has been provided. The role played by consideration of mode options in leading to behaviour change is illustrated in Figure 1.

Travel behaviour prior to the move can be either habitual or not. When the house move process starts, this may prompt consideration of alternative travel mode options. Alternatively this may not be prompted, and therefore no mode change would have resulted following the move. If alternative travel mode options *are* considered, then this *may* lead to a mode change occurring following the move.

While mode change cannot occur without consideration, it is not necessarily the case that consideration leads to mode change.

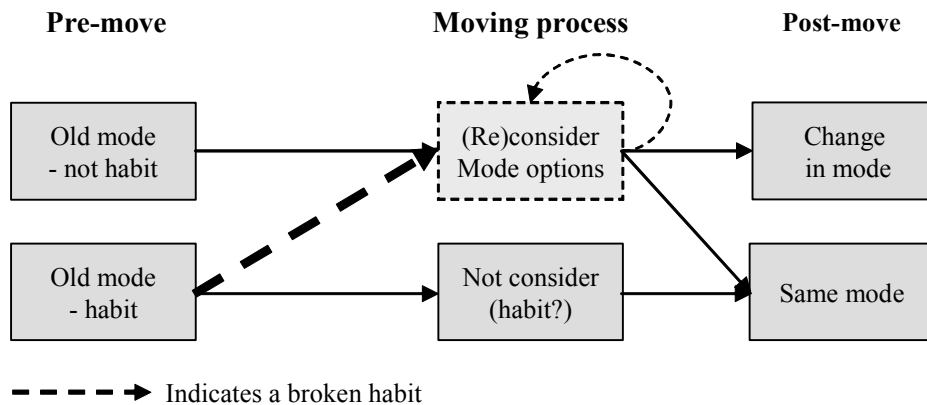


Figure 1: Consideration of alternative mode options and actual mode change prompted by a house move

The key point of interest in Figure 1 is where a previously habitual behaviour becomes considered due to the prompt of residential relocation (as indicated by the broken line). As outlined earlier, this suggests that the habit has been broken, at least temporarily, since the act of consideration implies that the mode choice is not automatic and controlled by habit.

There is some debate in the literature over just how automatic a behaviour needs to be in order to be judged habitual, with many authors holding the viewpoint that habits do not need to be entirely unconscious (Ouellette and Wood, 1998). This would mean that some consideration of the behaviour would not be incongruent with the presence of a habit. Thus the distinction is made in this paper between consideration of *alternative* modes and only reviewing whether the *habitually* used mode remains viable and satisfactory. The former it is argued would take substantial conscious effort and consideration, therefore clearly implying the absence of automaticity and habit. The latter, while also showing a lack of automaticity, suggest habit is merely weakened rather than broken and challenged. Further discourse and clarification in the literature concerning automaticity in habits would be welcome.

If, as discussed earlier, it is assumed that the pre-move commute behaviour of the study participants was habitual, then evidence that the residential relocation has at some point prompted these habits to break has already been shown in Table 2. A substantial amount of mode switch occurred, which cannot happen without consideration. Therefore this research finds that some mode choice habits have indeed been broken by moving home. This is an important finding as habits are notoriously difficult to break, and it suggests that there are commonly occurring events that can break habit, and facilitate and sometimes lead to behaviour change. (Mode choices prior to the move that were not habitual and automatic are of less consequence in terms of understanding and influencing behaviour change.)

Figure 1 illustrates that consideration of alternative travel mode options does not always lead to behaviour change. However, regardless of the post-move outcome, the occurrence of consideration is of key importance in terms of the behaviour change process and a greater appreciation of the times at which individuals are 'vulnerable' to considering travel mode options. The feedback arrow shown within the moving process in Figure 1 is to emphasise that mode options can be considered and reconsidered on more than one occasion – something returned to in detail later in the paper. Lack of behaviour change may reflect a positive and informed re-selection of the same mode and cannot be judged as an 'unsuccessful' outcome. Indeed it is helpful to recall that observations in the study concern behaviour in the absence of any intervention to promote travel alternatives or encourage behaviour change. A study only concerned with outcomes and not process would not have revealed this important phenomenon, as the following example illustrates. Table 2 shows that participant 3 continued to drive to work after her move, occasionally also working from home as she had done prior to the move. Attention to only these outcomes would suggest that the house move did not prompt

reconsideration of mode choice, as no mode switch occurred. However, the quote below indicates otherwise.

“If I was moving over this way, in theory I can cycle to work. My idea was that I’d get back into cycling.(it) hasn’t particularly happened yet.”

[Participant 3]

The move clearly prompted consideration of cycling to work - considered to the point of forming a vague intention to actually cycle in this instance. Ten out of the eleven study participants discussed consideration of alternative modes for at least one journey purpose. Thus it is a key finding of the research that moving home *does* prompt reconsideration of travel mode choice(s), and to a greater extent than observed changes in mode choice post-move would suggest.

Consideration provides the potential opportunity for behaviour change interventions to be targeted at a time where there is no habit in place to hinder effectiveness. Despite a willingness by participant 3 to change, no change occurred. However, perhaps with some help, this willingness and intention could have been converted to actual behaviour change. In order that interventions can be designed effectively, it is important to explore this ‘consideration’ more thoroughly. There is a need to understand *when* consideration occurs within the moving process and *what* influences the outcome. This is addressed in the following section.

A conceptual framework – the Residential Relocation Timeline

Analysis of participants’ discussion concerning their mode choices for various journeys revealed that reconsideration of mode choice could, and does, occur at *different stages* in the moving process. Accordingly we now put forward a conceptual framework for the moving process and consideration of travel choice therein. We have called this the Residential Relocation Timeline (RRT). The RRT is illustrated in Figure 2, showing the different stages of the moving process and seven possible ‘points of consideration’ identified from the interview analysis. Each of these points is now discussed further.

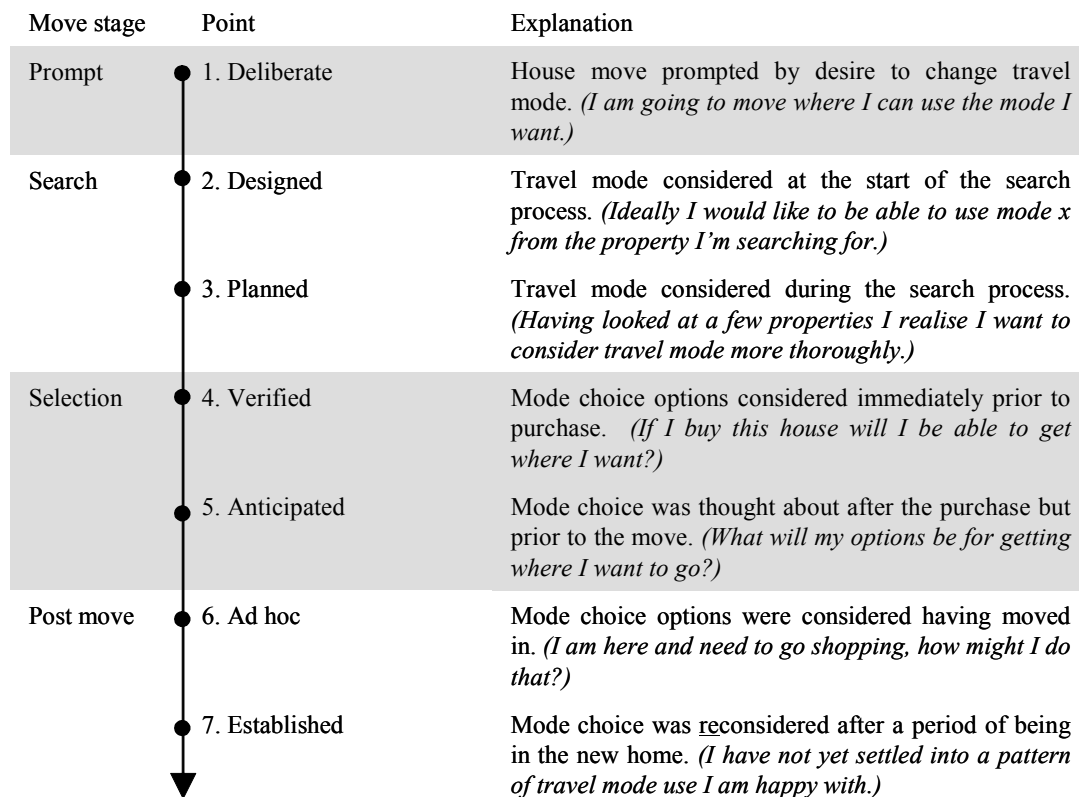


Figure 2: Residential Relocation Timeline - conceptual timeline of points at which mode choice could be considered during the house move process.

1. Deliberate consideration

The first point of consideration on the RRT occurs before the moving process has started. It entails travel considerations as a prompt to reconsider home location, rather than the influence of residential relocation on travel. Mode choice is reconsidered (for whatever reason), and a change in mode use sought. It becomes a point of consideration in the timeline when the desired mode is not feasible from the current residence, and this actually forms (at least part of) the initial prompt to start the relocation search process. Hence any subsequent mode change relating to the journey under reconsideration at this first point is *deliberate*. Only one of the study participants considered mode choice at the deliberate point.

“The expense of getting the train...financially it was an issue. I wanted to go back to cycling again. ...so. If anything, probably transport was the biggest factor in making us move cos we actually quite liked the house ... Just the wrong place for work.”

[Participant 10]

Consideration of mode choice at the deliberate point implies that attaining availability of alternative mode options will be the number one priority during the search and selection processes. Ensuring the new house is near a bus stop if bus is the desired mode, or moving near enough to cycle to work, as was participant 10's intention. In selecting a property, it is very common for compromises to become necessary, as rarely are all desired criteria found together at an affordable price. This said it seems likely that if mode choice was a or the primary determinant of moving home, the eventual new property would enable the desired mode(s) to be used. This was indeed the case for participant 10, who as can be seen in Table 2, cycled to work at the time of interview. It does not necessarily follow that mode choice considerations at other RRT points will see intentions result in the associated outcomes following the relocation. The priority given to having alternative mode options at any stage in the process plays a significant role in the outcome mode choice as shall be seen in discussion of later points.

2. Designed consideration

The designed point of consideration refers to the consideration of availability of mode options at the start of the search for the new home. If mode choice considerations have actually prompted the move, as in the deliberate point, then they would necessarily also be considered at the designed point. This consideration would be in conjunction with identifying all search priorities for a new property, for example, number of rooms, style of building, type of area and price. Such priorities may be idealistic or realistic.

Ideals

In many instances at an early stage, these considerations or priorities may take the form of ideals that are quickly eliminated as unfeasible in the current circumstances. This is a form of compromising. For example, participant 4 would ideally have continued living in the urban centre, where she was able to walk everywhere. However, buying in the centre would not have been possible due to the expense.

“at least 4 people in the office, if not more, everyday cycle, or walk. But then they don't own their house so... We had to make a choice somewhere, I couldn't afford a house in Bristol so, we need to make a compromise sometimes, and that's the choice we took really.”

[Participant 4]

The designed consideration of walking (to work), although an ideal, was quickly eliminated from the search as it was not feasible combined with the *higher* priority of buying a home. Therefore travel mode consideration had no direct impact on the actual search process for participant 6 at this particular point.

It is not just financial matters that can restrict ideals. Participant 5 would also have loved to be able to walk to work, and as he did not work in the centre this would have been financially feasible. However, he discounted this as an option due to his general dislike of the residential areas surrounding his workplace.

“Cos I don’t like any of the areas round university. They’re horrible. You know, I’m quite up for quality of life and the quality of life, apart from work, around this area’s not what I’d like. It’s, you know, none of my friends live round here. And, there’s no, probably no quite good pubs or anything, cinemas etcetera. And I think very much it’s kind of the place where you really need a car. Um... in order to be able to do anything. And I just didn’t even consider living here really, for more than about a split second.”

[Participant 5]

Thus compromises are already occurring before the search process has actually begun. Such unattainable ideals may nevertheless be significant insofar as providing insights into an individual’s propensity to change travel modes.

Reality

Designed consideration may not just include ideals. Many feasible mode preferences may be identified also. In such instances it is likely that these would form the basis for selecting areas in which to search for potential properties: in order to walk, distances need to be appropriate; in order to use the bus, the correct route must stop nearby. The only mode that is rarely location dependent is the car. Participant 5, having eliminated the possibility of walking to work, decided to focus on commuting by bus, only searching in areas within a 15-minute walk of a bus route to his work. Thus his property search was *designed* around his intended mode.

“I very specifically targeted houses that were on the 99 or number 70 route.”

[Participant 5]

Many other participants also considered their mode options at this point on the RRT, and designed their searches around this.

“a safe area 30 minutes walk, or 40 minutes walk from the centre of the city was crucial to me.”

[Participant 6]

“Because I, I don’t drive, then I had to be kind of on a bus, well yeah, really had to be on a bus route, or in cycling distance to work.”

[Participant 8]

“We were only looking in (a central area of Bristol), because we wanted to be in the city, for two reasons I suppose. One, to use the city, but also for accessibility purposes, being able to walk to quite a lot of things.”

[Participant 7]

Thus consideration of mode choice at the designed point generally guides the geographic areas in which the search process takes place; that is if the preferred modes are perceived as compatible with other priorities. There is no suggestion that everyone will consider their mode options at this point. That so many of the study participants did, could possibly be a reflection of the voluntary nature of the recruitment method. They may have been motivated to respond and participate by some existing interest in transport issues, and therefore be likely to consider their own mode choice at the earliest opportunity. Only further research will determine if this is the case or not.

3. Planned consideration

The third point of consideration on the RRT is also part of the search process, but occurs during, as opposed to at the beginning, of the search stage. Consideration of mode choice is prompted by some experience of the search process itself, possibly altering some originally held priorities or search criteria, transport related or otherwise. For study participants this was mostly connected to a realisation of the levels of traffic on the route from the more affordable residential areas of the city to their workplace; hence not strictly a consideration of alternative modes. Both participants 2 and 3 worked in the north of Bristol, however the area south of the centre is generally more affordable. For participant 2 it was the visits to prospective properties in the south of Bristol that prompted her reconsideration of how far she was prepared to commute to work, thereby increasing the priority she gave to proximity to workplace.

“ The reason why I didn’t buy in the south of Bristol was because of the very poor traffic conditions in Bristol. Just going there and visiting the house was already a nightmare, so that really put me off.”

[Participant 2]

Participant 3 describes how a similar realisation and priority modification actually lead to the consideration of alternative modes at this point:

“at first I started looking south of the river, because I thought it’d be cheaper. I’d be driving and I realised I’d be stuck in that traffic. If I was moving over this way [north Bristol], in theory I can cycle to work. I felt if I moved south of the river I would be really reliant on the traffic and my car, did I really want to be doing that? And then I realised that actually, the bit or area I was looking at down there is the same price as up here. Then I started thinking hmm I could do it.”

[Participant 3]

Neither participant 2 or 3 had considered their travel mode prior to this point. Other issues raised by the search process – perhaps the unreliability of a particular train service, or inability to find a house that meets all the search criteria – could also prompt consideration of mode choices at the planned point. Thus many participants were considering their mode options and planning for their availability, during the search stages of the move. For some participants these plans or intentions were seen through to action, and for others they were altered at later points of consideration, during the selection and actual move stages.

4. Verified consideration

The verification point, or fourth point on the RRT, is part of the property selection stage of moving home – occurring at the point when a property is being considered as a potential new home, but prior to any purchase decision. Availability and viability of an individual’s required mode options associated with the potential new home are considered. This could potentially lead to the rejection of a property if the requirements are not met. Having ruled out the possibility of walking at consideration point 2, participant 4 had a general desire for a variety of travel options to be available. Such a general aim could not guide the *search* process, but could influence the process at the verification point.

“I remember at the beginning when we still didn’t put the offer on or anything. We went from the house, we drove from the house to the train station. Cos I didn’t know the area, I asked (my partner) to do that to show me how easy it is.”

[Participant 4]

For some participants, the verification point was just to confirm earlier decisions or availability of options, as above. However, the verification point was the first, and only point of consideration for study participant 1. For her it was not to consider alternatives, but to check that her current mode could be maintained if she bought the property.

“I would say that definitely a parking issue came up. When I was looking at flats across more congested areas of Bristol, parking was a problem. And in this particular, flat it wasn’t.”

[Participant 1]

As mentioned earlier in the paper, such an example reflects a weakened rather than broken habit.

It is not just that potential properties could be rejected at the verification point. Previously prioritised travel modes and options may instead be compromised. At the design point participant 7 restricted his search to a central location as he wished to be able to walk to destinations. However, many problems with the actual purchasing of a property were experienced, particularly with gazumping. Eventually he was shown by his estate agent a property that met many of his criteria, but was on the edge of the city. Travel priorities were considered before making any decisions.

“(we were used to) being able to walk to quite a lot of things,... and coming to this (house) we realised we wouldn’t be able to do that.”

[Participant 7]

Eventually this house was purchased and he was not able to walk to everyday destinations. To what extent such compromise and change to priorities occurs cannot be determined from this study. Nevertheless this example aptly illustrates how much the final property selection (and resultant travel mode options) can deviate from a person’s original intentions. Verification is a key point in the selection of the property – something which will determine what mode choice options are available, and therefore the choice set of those that can be used.

5. Anticipated consideration

After verification comes the actual purchase of the property. At this point no more decisions about creating the possibility for mode options can be taken, as the home location is already decided. (This is not always strictly true. For example, a non-car owner could decide to purchase a car and hence introduce a new travel mode option.) However, the fifth point of consideration on the RRT occurs before the actual move takes place. This is where potential travel options for various journeys are assessed prior to the move. Consideration left until this point would imply that mode options are not of particular concern to the individual, but that the individual likes to plan ahead and assess how various journeys could be made.

The paper has focused on the journey to work. Non-commute journeys were generally less considered by participants at earlier points on the RRT. It is from this anticipation point forward that non-commute journey considerations appear to become more prevalent. For example, participant 5 considered that he would be able to walk to shops once he had moved house as he would be living in a central location.

6. Ad hoc consideration

Until the move has taken place it is not possible to see if the mode choice intentions exhibited at earlier consideration points will actually lead to the corresponding mode choice outcomes. For many participants, previous decisions were indeed carried through to action at this stage. Participant 10 did manage to cycle to work after his move, and participant 5 did get the bus to work as planned. In such situations there is no consideration of mode choice at the ad hoc point (at least for that journey purpose).

It has been found that decisions can change throughout the search and selection stages. They are also liable to change at this post-move, ad hoc point, as for various reasons alterations may occur once the move has taken place. Study participants’ experiences of this appear to have been prompted largely by the addition of car as an option for a given journey purpose. Participant 6 designed her house search and move around a desire to be able to walk to work, shops, and leisure destinations. This was an important priority for her as has been shown under discussion of the designed point. However, it can be seen in Table 2, in the mode change results section, that in fact she ended up getting a lift to work each day with her partner (although walking home).

“Having moved to here into a household where there is a car, I’m more likely to rely on it in instances where I, know from past experience that I don’t need it.”

[Participant 6]

She had not expected or planned for this change, it just happened ‘ad hoc’ once they moved in together.

“I knew I wanted to be in a place where I could walk to work. Just as I always have done. And that, I knew in the back of my mind that (my partner) would be moving in and he had a car, but, I didn’t really, take that into consideration.”

[Participant 6]

Apart from participant 6, other study participants did end up using modes for commute journeys that they had considered (and perhaps planned for) at earlier points. Even the most habitual car user in the study (participant 1), considered enough to check at an earlier stage that parking would not be a problem. Thus it is suggested that commute travel mode is in general considered prior to the selection process, and is extremely unlikely not to be considered until after the move.

The same however is not true for other journey purposes. As mentioned briefly under the previous consideration point, other journey purposes generally appear to be given more consideration at the later stages of the timeline (points 5 and 6). The key distinction between commute and non-commute journeys may be the specificity of the destination. For the majority of leisure or shopping destinations it is the activity that is important, not the place, so for example any shop, or any exercise class may be visited (notwithstanding difference in relative attractiveness of the activities available at different destinations). Thus plans on how to reach such activities do not need to be made so early along the RRT and indeed may not necessarily be considered until after the move on an ad hoc basis.

7. Reconsideration once settled

The final, settled point is where mode choice can be *reconsidered* after a period of being in the new property (and where reconsideration is associated with the home relocation as distinct from other motivations for reconsideration such as another key event occurring). This could occur if mode choices decided on and tried for a period prove not to be suitable, and so other options would then be considered.

The experiences of participant 4 demonstrate the existence of this final point on the RRT. Her move was from the centre of Bristol, where she had walked everywhere, to the edge of the city. After moving she tried a number of different modes to get to work in the centre. She does own a car, but was discouraged from driving to work due to lack of parking close to her work and the traffic. She tried the train for a few months and then decided she didn't really like it, so switched to the bus. Thus her main mode at the time of interview (11 months after relocating) was bus, and the others, which she still used occasionally, were alternative modes (see Table 2). This switch appears to be for no other reason than she had not yet settled into a routine since moving.

Discussion

It has been seen from the RRT that there are a variety of occasions throughout the move process at which travel mode choice can be considered. This is not to suggest that for all people in all relocation processes all points on the RRT will entail consideration of mode choice. The qualitative research which supports this conceptual framework does not allow more extensive assessment and understanding of how the population of home movers maps onto the framework. However, the study participants encompassed a variety and range of circumstances surrounding their move and mode choices. That the RRT has been able to adequately reflect all their experiences suggests the framework is robust. Nevertheless, the issues of generalisability remains – for whom and in what circumstances are the points of consideration relevant? There is also a need to develop further understanding of the factors that are influencing consideration at the various points on the RRT. What contributes to initial intentions, and the manifestation of such intentions as choice outcomes? What hinders the implementation of intentions, or causes intentions to change? These are all matters for further research to address, though some insights have already emerged from this study as discussed below.

It was noted earlier that journey purpose can influence the point at which mode choice is first considered. Notably, commute journeys seem to be considered much earlier than other journeys such as food shopping. Car ownership also emerges as a factor influencing when along the RRT mode choice is considered. This is associated with the need for suitable services to be available or appropriate distances to be involved if an individual is needing to consider public transport or slow modes respectively for their post-move travel options. This prompts a requirement for earlier planning and consideration during the house move process. The non-car owners in the study all considered their mode choice at the designed stage, whereas not all the car owners did so. There is a second area in which car ownership has an influence on the RRT, namely that of compromises. Car owners may wish to consider their mode options and plan for the availability of alternatives, for a variety of reasons. However, when faced with their full set of considerations for relocation such intentions can always be compromised on (see the example given earlier from participant 7 under verification point). For individuals without a car, dependent upon public transport and slow mode use, opportunities for compromise are much less, unless they decide to buy a car. Participant 6 highlights her experience of this below.

“the location to me was maybe the first priority, because however beautiful a flat was, I wouldn't have bought a flat that was more than an hours walk into town”

[Participant 6]

Thus car ownership has a significant influence on both the timing at which consideration occurs in the relocation process, and the importance given to maintaining availability of alternative mode options in the face of other competing priorities.

If more can be understood about the factors influencing the processes in the RRT then there should in turn be opportunities to better understand how policymakers might address initiatives to achieve travel behaviour change. This would specifically relate to the timing and nature of interventions likely to prove most effective in relation to residential relocation. If the importance of the availability of mode options (as indicated by this research) proves crucial, then one suggestion already is that interventions should perhaps focus on the search and selection stages, of the move. Once the move has taken place then the majority of the mode options available cannot be altered without a subsequent move. Thus mode use is restricted by the options available, and therefore may or may not allow for mode change to occur. Attempts to alter the priorities given to availability of mode options, particularly in any compromise situation, would perhaps have more potential to influence.

Concluding remarks

This paper has highlighted the current policy requirements to achieve travel behaviour change, and in turn the potentially significant barrier of habit in pursuing such requirements. Important prerequisites for breaking habits are a change to the situational context and behaviour becoming more conscious and deliberate. Residential relocation meets both of these and the qualitative research reported in this paper confirms that in many instances people are consciously considering the travel mode implications during the course of moving home. That some people change travel modes for particular journey purposes following a home move is perhaps not surprising, though this study joins precious few others in confirming this. What is of greater significance in relation to understanding travel behaviour and changing behaviour is the recognition that people are consciously considering the issue of mode choice at one or more points during the course of the moving process. This highlights a propensity for behaviour change.

The Residential Relocation Timeline conceptualised in this paper offers a new framework with which to conduct further research. Importantly, such research should allow better insights into processes and understanding rather than just outcomes and, through better understanding the processes, could offer guidance concerning how to influence these processes and in turn the behavioural outcomes.

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