1 INTRODUCTION

The research reported here examines the contribution of a psychological theory of behaviour to predicting reductions in car use resulting from mobility management to provide individualised information regarding alternatives to the car.

1.1 The Need to Predict Responses

Whilst the idea of reducing car use is not new, some mobility management measures, such as individualised marketing (i.e. information about alternatives to the car for journeys an individual makes) are. The late 1960’s and 1970’s saw the first real interest in road pricing and parking controls (Smeed, 1968) as well as car sharing schemes to reduce car use, which were introduced as a response to the oil crisis (Pratsch, 1974). However, as the crisis receded, so did the immediate need to reduce car use. Hence, such measures became unpopular with the general public and politicians. Provision for car use was largely managed through a predict and provide mechanism throughout the 1980’s. yet, the predict and provide policy has led full circle back to the need to reduce car use. The necessity this time, is borne of the negative consequences of excessive car use, especially congestion, pollution, accidents and severance. Unfortunately, many of these negative impacts of car use are either imperceptible or not perceived by car drivers as negative in the first place. Thus, projects to persuade the general public to reduce their car use were introduced in some areas. Many of these projects, wholly or partly constituting mobility management strategies, started out as publicity campaigns, focusing on the negative impacts of car use and/or available alternatives. Such publicity is sometimes referred to as travel awareness, and may take on the name of a specific campaign. Travel awareness does little more than raise awareness; changes in travel behaviour rarely follow. Consequently, individualised marketing has developed to target information that is relevant to the journeys an individual makes at individuals. However, many people remain unaware of a need to reduce car use and, perhaps more importantly, perceive alternatives to the car as too inferior to use. Thus, many modern projects to reduce car use are less successful than those implementing them.
would like. In some cases, this is because expectations are too high. As a result, there is a need to establish procedures that can predict responses to mobility management measures.

Such knowledge will enable transport planners to implement mobility management measures where they are most likely to be successful. It will also enable planners to assess the potential of mobility management measures against that of other interventions about which there is a more established body of evidence.

The research reported here used a psychological theory of behaviour to establish whether change in car use as a response to individualised marketing could be predicted using knowledge of individuals’ perceptions about car use. The theory used is the Theory of Planned Behaviour (TPB). The TPB was developed by Ajzen in the 1980’s (Ajzen, 1988). The theory predicts a target behaviour – in this case change in car use – and identifies beliefs salient to that change. Such knowledge could improve the design and implementation of individualised marketing by allowing those designing the campaign to target information at specific beliefs and through pilot studies identifying areas where the community may be responsive.

1.2 The Theory of Planned Behaviour (TPB)
The TPB states that behaviour is a result of intentions, which are based on a combination of attitudes, subjective norms and perceived behavioural control. TPB is illustrated in figure 1.

Figure 1 Theory of Planned Behaviour, Source: Figure 6.2, Ajzen, 1988
Intentions are our commitment to undertake an action (behaviour). The strength of intention is a factor of attitude, subjective norm and perceived behavioural control. However, perceived behavioural control can act directly on behaviour as well, thus a strong intention to undertake an action may not be carried through to behaviour. Attitudes are a disposition to respond favourably or unfavourably to an attitude object (behaviour, person, event or item). The favourable or unfavourable response results from an evaluation of the consequences of the response. The evaluation is based on underlying beliefs, such as cars cause pollution and pollution is bad for health. Holding such beliefs very strongly may result in the outcome of driving a car being evaluated as negative and thus cause the person concerned to intend not to drive. However, subjective norms and perceived behavioural control factors, which strongly favour car use, may have greater influence on the decision to drive or not.

Subjective norms are an individuals' “perception of social pressure to perform or not to perform the behaviour under consideration” (Ajzen, 1988). Again subjective norms are built on beliefs. Thus, if a person believes that significant others think they should perform a behaviour, this will contribute to an intention to do so. For example, believing that your children want you to drive may contribute to an intention to do so. However, the influence of subjective norms on intention may be out weighed by attitudes and/or perceived behavioural control which does not favour driving.

Perceived behavioural control is “the perceived ease or difficulty of performing the behaviour [in question successfully] and it is assumed to reflect past experience as well as anticipated impediments and obstacles” (Ajzen, 1988). Control factors are internal (information, skills, ability, emotion and compulsion) or external (opportunity and dependence on others). As with attitudes and subjective norms, perceived behavioural control is built on underlying beliefs. For example, believing that it is possible to get to work by catching the bus and believing that you can get to work on time (i.e. get to work successfully) by catching the bus may contribute to an intention to catch the bus to work. Again, the contribution of perceived behavioural control to intentions may be out weighed by that of the other antecedents of intention. The strongest intentions to perform a behaviour result from attitudes, subjective norms and perceived behavioural control all contributing positively and strongly to intention.

2 DATA COLLECTION

The data collection was divided into a number of stages. Firstly, an analysis of responses to a previous individualised marketing project implemented in Leeds in the North of England. Participants were asked whether they had maintained behaviour changes brought about by the project, whether their beliefs had changed as a result of information provided and what
they thought about the project more generally. This stage also established which questions to ask in the TPB questionnaire by asking participants of the previous individualised marketing campaign to select from a list, which attitudes, subjective norms and perceived behavioural control factors they felt were relevant to their decisions about whether to drive or not. Those that were important to most participants went forward to the TPB questionnaire used to measure attitudes, subjective norms, perceived behavioural control and intentions in the next stage.

The second stage of the data collection involved implementing an experimental individualised marketing campaign and collecting TPB data on attitudes, subjective norms, perceived behavioural control and intentions from the participants. The campaigns were implemented in Leeds and, for the purposes of comparison, Manchester, also in Northern England. Participants were recruited through their workplace. The design of the marketing campaign was based on that of previous campaigns to enable comparison, but was also informed by the information on perceptions of the previous project collected in stage one. Before and after data on travel behaviour was also collected through travel diaries for use in the TPB analysis.

3 ANALYSIS

The TPB analysis used multiple regression to predict intentions and behaviour, i.e. change in car use. Attitudes, subjective norms and perceived behavioural control were the independent variables used to predict intentions to reduce car use and establish which antecedents were significant in the formation of intentions to reduce car use. Attitude, subjective norms, perceived behavioural control and intentions were then used as the independent variables to predict behaviour, i.e. change in car use calculated from the travel diary data. Attitude, subjective norm and perceived behavioural control were used in the final regression as well as intention because they can have an influence on behaviour independent of that channelled through intentions. For example, subjective norms could be dissuading an individual from reducing car use. Where this influence is particularly strong, it may over ride a weaker intention to reduce car use. This influence is not illustrated in figure 1 because the paths shown are those, which cause a behaviour, not those preventing it.

The results of the analysis suggest that it is possible to predict response to individualised marketing using the TPB. It is also possible to identify the significant antecedents to reducing car use. Further to this, by comparing who responded to the experimental individualised marketing with the wider socio-economic profile of the workplaces involved in the project and previous marketing campaigns, it was possible to draw conclusions about who is most likely to participate and also reduce their car use. Nevertheless, some
differences in the significant antecedents to reducing car use were also identified between Leeds and Manchester. This suggests that whilst the TPB is useful for prediction purposes, the results from one analysis may not be completely transferable to another area, even where that area is similar in socio-economic terms (as Leeds and Manchester are). In other words, planners should not assume that everybody is the same.

4 CONCLUSIONS

These results suggest that pilot studies in towns and cities where an individualised mobility management programme is proposed could give an indication of the likely success of the suggested design. Further to this, the ability to identify which potential antecedents to behaviour change are significant and which are not, means that information relating to those with little impact can be omitted from a full scale project, whilst that pertaining to those which are most significant can be emphasised more. Whilst the need for pilot studies may seem cumbersome, this is likely to be because there is a tendency to think of work to persuade individuals to drive less as a cheaper and more publicly acceptable alternative to engineering and/or pricing interventions. In reality, an ill founded marketing campaign could be as unpalatable to the general public as pricing measures and create an attitude which is not predisposed to react positively towards future efforts to reduce car use. Additionally, it would not be successful in reducing car use, and hence would not provide value for money regardless of cost. Thus, it is as necessary to carry out research to understand the target market of an individualised marketing campaign as it is for any other marketing exercise.

REFERENCES

