

## **REDUCING THE NUMBER OF SHORT TRIPS BY CAR**

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### **1. INTRODUCTION**

This paper has been written as part of a project entitled 'Potential for mode transfer of short trips' carried out for the Department of the Environment, Transport and the Regions at the Centre for Transport Studies at University College London (UCL) in partnership with Steer Davies Gleave (SDG). The overall objective of the project was to contribute to reducing the amount of car travel by examining why people used their cars for some short trips which they have made and what measures might influence them to change to the various alternatives. In this work a short trip is taken to be one of less than five miles.

The objective of this paper is to illustrate the nature of the problem being addressed, and then to examine why people used their cars for those short journeys and what factors people say would cause them to switch to the various alternatives.

### **2. THE NATURE OF SHORT TRIPS**

Table 1 shows the number of journeys per person per year of different lengths by each mode for the years 1995/97, taken from the National Travel Survey (NTS) (Department of the Environment, Transport and the Regions, 1998). It can be seen that of the 1052 trips made each year, on average, 741 (70%) are of less than five miles, 472 (45%) are of less than two miles, and 294 (28%) are less than one mile. Of course, by definition, short trips contribute proportionately less than long trips to the total distance travelled, but they are a very important element of the transport scene.

Of the 741 trips of less than 5 miles, 370 or 50% are by car. Putting it another way, 58% of all car trips are less than 5 miles in length. Of the trips of less than one mile, 48 (16%) are by car. Of these very short trips of less than one mile, 236 (80%) are walked. Of the trips of less than five miles, 291 (39%) are walked. Thus, many short trips are walked, but the vast majority of them are less than one mile in length and very few are over two miles in length.

Car is the dominant mode in all distance bands from one mile upwards. Bicycle hardly features at all. Only 17 out of 1052 (2%) of all trips are cycled, but most of these are less than five miles long. The third most popular mode for short trips, after car and walking, is local bus, with 6% of the market (45 trips). Thus it can be seen that not only are short trips a very important feature of the transport scene, but that they are dominated by the car, except for very short trips of less than one mile for which walk is important. For trips between one and five miles in length, local bus is quite important, but bicycles seem to be little used as a mode. There seems to be scope for reducing the number of short car trips, with these other three modes offering alternatives that are viable in the sense that some people already use them for trips in this range of lengths. However, apart from walking for

very short trips, there seem to be factors that prevent the use of modes other than the car for short trips.

**Table 1 Trips per person per year by distance and main mode: 1995/97.**

	Under 1 mile	Under 2 miles	Under 5 miles	5 miles and over	Total
Car	48	159	370	267	637
Walk	236	280	291	-	293
Bicycle	5	11	16	1	17
Local bus	3	15	45	16	62
Other	1	4	17	20	43
Total	294	472	741	313	1052

Source: *Focus on Personal Travel including the report of the National Travel Survey 1995/97*, Department of the Environment, Transport and the Regions (The Stationery Office, London).

As Table 2 shows, the number of short trips by all modes is decreasing while the number of long trips is increasing. This reflects the general increase in trip lengths following from the decentralisation of activities and increased use of the car. In other words, some short trips are being replaced by longer trips. However, the number of trips by car for all the trip lengths shown is increasing. Car use is increasing more rapidly for short trips than for long ones with an increase of nearly 12% over the period 1989/91 to 1995/97 in short car trips compared with a growth of just over 7% in longer car trips. Trips of less than one mile by car are growing even faster. This emphasises the need for action about such trips.

**Table 2 Trips per person per year by distance, 1989/91 and 1995/97.**

	1989/91			1995/97			% change in car share 1989/91 - 1995/97
	All modes	Car	Modal share by car	All modes	Car	Modal share by car	
<1 mile	319	46	0.14	294	48	0.16	13.2
<5 miles	793	354	0.45	741	370	0.50	11.9
5+ miles	298	237	0.80	313	267	0.85	7.2
Total	1091	592	0.54	1052	637	0.61	11.6

Source: *Focus on Personal Travel including the report of the National Travel Survey 1995/97*, Department of the Environment, Transport and the Regions (The Stationery Office, London).

Having illustrated why it is necessary to do something about the number of short trips by car, the rest of this paper will focus on the project to analyse the nature of short trips in detail and suggest what policy actions are likely to be successful in reducing the number of short car trips.

### **3. METHODOLOGY**

Survey work has formed a substantial element of this project. These were conducted by SDG and involved a two-stage procedure in five areas selected on the basis of the type of area and the topography. The latter was significant because it might affect perceptions about cycling and walking. In each of the five areas of London, Leeds, Ipswich, Hereford and Dorset, 500 addresses were selected at random. Full responses were obtained from 1121 households, giving a response rate of 48% when invalid addresses were excluded. Data were collected about all their trips over two days. These data were examined and a selection of people who had made short trips by car were interviewed in depth about those trips to see what alternatives to using the car were seen. This part of the interview involved prompting by the interviewer to ensure that the respondents considered a full range of alternatives including changing mode, travelling to somewhere different, travelling at a different time by combining the trip with another one, asking someone else to achieve the purpose of the trip in the course of one that they were taking or in some other way such as home delivery.

The data have been put into an Access data base and analysed at UCL. Considerable effort has been put into considering how to address the issues of determining which short trips could be switched to an alternative. There are a number of complex issues: for example, the reasons people gave for using their cars were coded by SDG from unstructured text written by the interviewers, since it was not practical to offer a predefined list of alternatives. People often gave several reasons why they used their car. For example, a person might say that they used their car because they needed to take their child to school and because it was convenient. Of these two reasons, the first seems to be more important because it meant that the car had to be used for the trip under the present circumstances, whereas the use of the car because it is convenient is a much more general statement. Similarly, respondents often identified several alternatives. This is perfectly reasonable, but people may not be equally likely to switch to the various alternatives. The actions required to make them transfer to the alternatives were also identified. Again there could be more than one of these associated with a particular alternative. This all makes the analysis complex, so much effort has gone into trying to structure the data in a way that makes it easy to interrogate but which retains the subtleties embedded within it. This paper was written at a time when the analysis was proceeding, and so the results shown below should be regarded as preliminary.

### **4. WHY DO PEOPLE USE THEIR CARS?**

The first issue to be addressed is the reasons why people use their cars for short trips. Table 3 shows the reasons given by the respondents for using a car for their journey for 2162 short car trips covered in the in-depth surveys. It should be borne in mind that the reasons have been coded from unstructured answers and so are paraphrasing what they said and that respondents could give more than one answer.

Table 3 shows the 20 reasons people gave to explain why they used their cars, ranked in descending order. The reasons these have been classified into 10 groups, which have in turn been put into four groups to facilitate analysis at various points in the spectrum between detail and generalisation.

The most common reason for using the car was the length of the journey. This implies that it was perceived as too far to use conveniently alternative modes such as walking. The second most popular answer was shortage of time. In some cases, the person could have used an alternative had he or she been better organised. Several of the reasons given, such as having items to carry or shopping, mean that the car was being used because of the nature of the trip. A number of trips involve taking other people: children, elderly or ill people, which meant that the car was convenient. Indeed in some cases the person being taken might not have been able to travel in any other way. A few people use their cars to take their dogs out: they drive somewhere pleasant where the dog can run freely in safety. These escort trips have all been grouped together.

In some cases the car was used simply because it was the most convenient way to reach their destination. Other people used their cars because the weather was poor. The implication is that they would have travelled by some other means had the weather been better. Others used their cars because the area which they have to travel through was unpleasant or dark. Clearly those who used the car because it was dark imply that they could manage without it if they could travel in daylight, but in at least some cases, they had to travel after dark because they had to get to work at night, which means that they could only manage without their cars if the nature of the trip was changed, for example, by finding another job. There are some people such as doctors and social workers, who need their cars at work: clearly they need to take their cars there, so these have been classified as having no alternative. However, some people refuse to consider any alternative because they are only prepared to travel by car.

Table 4 shows the reasons for using the car allocated to the four groups shown in the final column of Table 3. Only 5% of the reasons cited implied that there was no alternative, either because they need to take their car for use in the course of their work or because they refuse to consider any alternative. For about 46% of cases, a car was used because of the nature of the trip. Only by changing the nature of the trip would it be possible not to use the car. For example, a shopping trip where the car was taken in order to carry back heavy shopping could be replaced by a phone call and a home delivery by a van going to several homes, or a child being taken to school by car could travel with a friend who was also going by car, thereby saving one of the two car trips.

**Table 3 Reasons for using the car identified in the surveys.**

Why did you use your car?	Number	Classification to 10 reasons	Classification to 4 reasons
It was a long way	722	Trip length or convenience	Convenience
I was short of time	448	Time constraints	Temporary
I had heavy items to carry	303	Nature of trip	Nature of trip
I was taking a family member or friend	271	Escorting people or animals	Nature of trip
The weather was bad	260	Bad weather	Temporary
I was shopping	246	Nature of trip	Nature of trip
It was convenient	202	Trip length or convenience	Convenience
It was dark out	199	Dark or unpleasant	Nature of trip
I was on a social trip	181	Nature of trip	Nature of trip
I needed the car for a further trip	159	Linked trips	Nature of trip
I needed my car at work	137	No alternative - good reason	No alternative
I was taking children	113	Escorting people or animals	Nature of trip
I was taking an elderly or ill person	68	Escorting people or animals	Nature of trip
A friend offered me a lift	59	Trip length or convenience	Convenience
It was an unpleasant environment to walk through	57	Dark or unpleasant	Nature of trip
I felt unwell	55	Health reasons	Temporary
I love my car	27	No alternative - bad reason	No alternative
I was taking the dog for a walk	10	Escorting people or animals	Nature of trip
A friend lent me a car	8	Trip length or convenience	Convenience
There are car parking facilities at work	5	Trip length or convenience	Convenience

**Table 4 Grouped reasons for using the car from the surveys**

Grouped reason for using car	Number	%
No alternative	164	5
Nature of trip	1607	46
Convenience	996	28
Temporary	763	22
Total	3530	100

In 28% of cases the car was used because of its convenience in a broad sense. Some of these were trips where the car was being used because of the length of the trip. It may well be that some of them were four miles long, which is further than most people are likely to be prepared to walk, and there might be no bus service and person might not have considered using a bicycle. In other cases, there is almost certainly scope for reducing car use. The final category is 'temporary', which covers trips where the car was used on that occasion, but might not if the same trip were made again. In some cases the car was used because the weather was bad. On a day with better weather the person might walk. On the other hand, there may well be trips covered in the first stage of the survey not made by car which would have been if the weather had been worse. In other cases, people used the car because they felt unwell. On another occasion they might feel able not to use the car, but other people would feel ill, and so would use their cars. These trips seem to be ones where use of the car may be justified. The ones where there is most likely to be scope for change are those where the car was used as a matter of convenience, where it is a matter of encouraging the use of alternatives, particularly for very short trips, and others where it is the nature of the trip that has led to the use of the car. In these cases it is a matter of seeing whether the reason associated with the nature of the trip that caused them to use the car, can be addressed in some other way.

## **5. THE ALTERNATIVES TO THE CAR**

The next issue to be addressed is the alternatives to using the car for the journey being considered. This information was obtained by probing by the interviewers and produced a complex range of answers. Of course, it was perfectly possible for the respondents to give more than one answer since there could be several alternatives. The purpose of the question was to get the respondents to identify the possible alternatives, and where possible to indicate what would have to happen to make them adopt that alternative. Some people might continue to use their cars, but in a more efficient way. Others, as indicated above, might be using their cars for reasons which make it impractical to consider alternatives. Others simply refuse to consider any alternative to using their cars. The following typology describes the range of alternatives:

continue to use car:

refuse to consider any alternative ('I love my car');

car required for a car-related activity, for example at work;

already using the car efficiently:

car sharing;

linking trips to the maximum possible;

- use the car more efficiently:
  - making a shorter trip;
  - making a linked trip;
- person is a car passenger with no control over decisions;
- cease using the car:
  - change to an alternative mode:
    - for the same trip;
    - for a shorter trip;
    - for a linked trip;
  - someone else carry out the activity in the course of his or her trip;
  - avoid giving a lift to the person who was being escorted;
  - not make a journey:
    - but have a home delivery of goods;
    - but make a phone call;
    - but work from home by telecommuting, and so on.

It can be seen that there is a wide range of alternatives. At the time of writing this paper the classification of all the trips using full typology had not been completed. It is possible, however, to look at the number of possible mode changes. These are shown in Table 5. This includes multiple responses. The table shows both the total number of choices identified and the first choice alternative for car users.

**Table 5 Alternative modes identified in the surveys.**

Mode	Total		First choice	
	Number	%	Number	%
Walk	1426	41	1167	63
Bus	1305	37	521	28
Cycle	355	10	82	4
Taxi	267	8	46	2
Train or tube	73	2	9	0
Public transport - not specified	62	2	18	1
Motorcycle	8	0	0	0
Tram	2	0	0	0
Total	3498	100	1843	100

It can be seen that when all the choices are considered together (that is, the respondents' first choices, second choices and so on, all added together) the most popular alternative was walk which was identified in 40% of cases. Bus was identified nearly as many times. Cycling was the third most popular choice, but was only identified in 10% of cases. Taxi was fairly popular as an alternative. Train or tube was only mentioned in 2% of cases because they are unlikely to be appropriate for most journeys of less than 5 miles. In 62 cases an unspecified form of public transport was mentioned. It is likely that many of these were bus, in which case the numbers of times that bus and walk was identified were about equal. Motorcycle and tram were of negligible importance.

When only the first choice alternatives are considered, walk dominated even more at 63%, followed by bus at 28%. Cycle was first choice in only 4% of cases, and taxi in only 2% of cases. Given that walk needs few facilities to make it possible this seems very promising. On the other hand, the fact that many people use their cars when they realise that walking is a feasible option raises the interesting question of what has to happen to make them adopt the alternative. This issue has been addressed in the surveys in the short trip project, as shown in Table 6, which shows for car drivers what has to happen to make them switch to the alternative modes, not to travel or for someone to travel on their behalf. The modes shown here include bus, walk, cycle, taxi or other public transport which includes train, tube, tram, and public transport not defined more precisely. Motorcycle has been excluded because of the very small numbers. The table includes multiple answers, both in terms of the number of alternatives respondents could identify and the number of factors associated with each (that is, respondents could say walk, bus and cycle, and they could give more than one factor that would have to happen to make them adopt that choice, for example, better weather and a safer environment in order for them to walk). The numbers are rather smaller than in Table 5 because that included both car drivers and passengers. The most popular alternative with car drivers is bus, followed by walking, cycling and taxi. The alternatives of not travelling or someone else carrying out the objective of the trip of behalf of the respondent come next, followed by undefined public transport. Of the factors that would have to happen, the highest value is for 'nothing specific', which was mainly for walking: in other words, there is not a particular factor stopping people from walking rather than going by car, which makes it rather difficult to do anything about it. 'Nothing specific' was also the largest factor cited as having to happen for more cycling to occur.

The single factor that would have most effect on any one mode is the 673 responses that say improving bus services would make them use buses more. It seems very unlikely that all of them would actually switch from car to bus, but it shows where the respondents' thinking lies when asked to consider alternatives. The other factors have far fewer responses. The next most popular was improving the weather, which is rather difficult to do, but it is quite significant for both walking and cycling. 165 responses reflected the convenience of using the car to take dependents, and that the alternatives would have to improve in this respect if they were to be used instead of the car. A number of people recognised that they would need to improve their own organisation if they are going to use an alternative to the car, particularly to walk because it takes longer than going by car. Cost is a major factor deterring some people from using taxis. Of course, taxis are cars, but it is quite possible that some people could manage not to own a car if they could afford to use a taxi occasionally. In many cases, if they gave up their cars they would save enough money to pay for many taxi rides, but if they perceive taxis as being too expensive to use, this will affect their travel behaviour. Walking and cycling have to be made safer for many people to switch to these modes or public transport which is usually accessed on foot. For walking, this usually meant personal security, particularly after dark. For cycling, it meant road safety. A number of people travelled by car because they were offered a lift. Were they not offered a lift they would find an alternative or not travel.



**Table 6 What has to happen to make car drivers switch to the various alternatives, based upon results from the surveys.**

What has to happen?	Bus	Walk	Cycle	Taxi	Not travel	Someone else travel	Undefined public transport	Total
Nothing specific	149	451	89	55	10	2	15	771
Bus services have to improve	673	2	0	0	0	0	20	695
The weather has to improve	12	140	43	0	0	0	0	195
Escorting dependents become easier	66	63	9	7	0	18	2	165
My own organisation improve	6	122	18	6	3	4	0	159
Buses or taxis become cheaper	20	0	0	128	0	0	0	148
Walking or cycling become safer	22	103	11	0	2	0	4	142
Not be offered a lift	28	39	2	2	16	20	0	107
Local shops have to improve	11	25	8	3	19	27	0	93
Public transport has to improve	64	0	0	7	0	0	16	87
Cycle facilities have to improve	0	0	62	0	0	0	0	62
I have to travel elsewhere	9	25	2	0	3	0	0	39
Train services have to improve	0	0	2	33	0	0	0	35
I have to buy a bicycle	0	0	30	0	0	0	0	30
I have to cancel trip my trip	2	13	2	2	9	0	0	28
Facilities at work have to improve	0	2	4	0	2	0	0	8
Telecommuting become available	0	0	0	0	7	0	0	7
<b>Total</b>	<b>1062</b>	<b>985</b>	<b>282</b>	<b>243</b>	<b>71</b>	<b>71</b>	<b>57</b>	<b>2771</b>

The other factors were all mentioned less than 100 times each. They include factors to do with improving other forms of transport (public transport in general, train services and cycling facilities), improving facilities at specific locations (local shops, and the provision of changing facilities at work), and changes in personal behaviour (travelling to a different destination, buying a bicycle and cancelling the trip). Finally, seven people suggested that they might telecommute if facilities became available.

Clearly a wide range of factors has been identified which the respondents claim would make them possibly switch to the alternatives. The one that could be subject to public-policy action is improving bus services, and this appears to be the biggest factor. (Of course, this says nothing about what type of improvement to bus services or how effective it would be). It is difficult to identify possible policies that would encourage people to walk more: poor weather and poor personal organisation are the biggest specific obstacles to walking and neither are easy for the government to change. The fact that no specific factor was identified for about half the cases where walking was mentioned suggests that publicity, for example increasing awareness of health issues, might be useful. Cycling was a much less popular alternative than walk or bus: the main specific factor that would increase its use would be better cycling facilities. Taxis would be used more if they were cheaper or if train services were to improve, that is some people would switch from using their cars to rail with taxi as the access mode.

## 6. CONCLUSIONS

A number of conclusions can be drawn from this work:

According to the National Travel Survey:

over 70% of trips are less than five miles in length, and half of these are by car;

the car is used by 16% of trips of less than one mile;

walking is popular for trips of less than one mile, but is rarely used for trips of over three miles;

cycling is used for less than 2% of trips in Britain, and most of these are less than five miles long;

bus is used for 5% of short trips, and 7% of all trips;

the number of short trips is decreasing, but the number by car is increasing.

From the surveys carried out in the project on short car trips:

alternatives to the car can be identified for most short trips by car;

only a very small number of people are not prepared to consider alternatives to the car for short trips;

cars are used for some short trips because of the specific nature of the trip, and that characteristic would have to be met in some way if an alternative were used (for example, taking children easily or home delivery of heavy shopping);

in some cases, cars are used simply for the convenience they offer relative to other modes;

escorting children, the elderly and the sick is the reason why many people use their cars for short trips;

for many people, there is no specific factor that deters them from using the alternatives;

car drivers claim that the biggest single factor that would encourage them to use an alternative is improved bus services;

there are some factors that deter people from using alternatives to the car such as bad weather and poor personal organisation that are not amenable to action by the government.

These conclusions have been drawn from the preliminary work on the project on short trips by car. Further analysis should produce even more useful results that will help to identify why people use their cars for short journeys and what action can be taken to reduce car use for these trips.

## **7. ACKNOWLEDGEMENTS**

This paper has been produced by Professor Roger Mackett of University College London under a contract placed by the Department of the Environment, Transport and the Regions. Any views expressed in it are not necessarily those of the Department.

The author would like to acknowledge the assistance of Ms Aoife Ahern and Dr Sandy Robertson in the production of the results from the surveys.

## **8. REFERENCES**

Department of the Environment, Transport and the Regions (1998) *Focus on Personal Travel including the report of the National Travel Survey 1995/97*, The Stationery Office, London.

