ATTITUDES TOWARDS CAR OWNERSHIP

A report to the Nuffield Foundation on a survey funded by a Social Sciences Small Grant. Reference SOC 181/

T. M. Pharoah, MSc,MRTPI,MCIT

Department of Town Planning, Faculty of the Built Environment,

South Bank Polytechnic, Wandsworth Road, London SW8 2JZ.

NOVEMBER 1986

Contents

1. INTRODUCTION

This report presents the results of a survey of a sample of adults in London designed to explore attitudes to car ownership. The specific objectives are set out in section 2, while the results are summarised in relation to a range of spatial and social variables in section 3. The results have a direct bearing on the author's established programme of research into shared car fleets for residential neighbourhoods. The survey was designed to help identify specific neighbourhood types that offer potential for shared car fleets, or other alternatives to private car ownership. This aspect is discussed in section 4. Finally, in section 5, the survey method is evaluated in terms of the present survey, and also its wider relevance to social investigation. Appendices attached to the main report contain a more detailed discussion of the methodology (A), and the results (B), a bibliography (C), and a financial report on the project (C).

The author gratefully acknowledges the Nuffield Social Science Small Grant which made the survey possible. Thanks are also due to the Environmental Services Unit based at South Bank Polytechnic who undertook the survey, and to research assistant Trevor Yerworth who assisted in the design and supervision of the survey, and carried out the analysis on the Polytechnic computer, using the SPSS package.

The work is complementary to that undertaken with an earlier Nuffield grant (Soc/181-1317) which studied the operation and market potential of neighbourhood shared car fleets in the USA. One of the findings of that study was that 8% of the US population nationally, and up to 25% of urban populations, would be willing to join such schemes. While the present survey does not produce directly comparable data, it does provide an indication of where and to what extent joining shared car fleet schemes would be inhibited by attitudes to car ownership; namely the enjoyment of ownership itself and a consequent reluctance to give it up.

Before describing the survey itself, it may be helpful to the reader to recap on the shared car fleet concept, and the wider research programme to which the survey contributes.

Context and background

The way in which cars are paid for inflates demand and contributes to the problem of excessive traffic in urban areas. Firstly, car owners consistently underestimate both average and marginal costs and therefore perceive motoring to be cheaper than it really is. Secondly, the methods of payment for the ownership and use of cars, ie. large lump sums apart from petrol and oil,

create a direct financial incentive for car owners to undertake as many of their journeys as possible by car. A person cannot substantially reduce the costs of car ownership by making less use of the car, because the fixed costs are largely unavoidable.

To remove these distortions (and thus to study their effect) it will be necessary to make cars available on a "pay as you drive" basis, avoiding the fixed costs associated with individual car ownership. One promising way of doing this which has already been established in Sweden and the USA, is the concept of "shared" or "neighbourhood" car fleets (NCF) which the author is researching at South Bank Polytechnic (Pharoah and Yerworth, 1985).

The concept of NCF may be seen as an extension of the company "pool car" idea into the residential community, or alternatively as a flexible form of local car rental, offering hirings by the hour or minute. In such schemes, residents may subscribe to an organisation which manages a fleet of cars (kept locally) and have access to all of the vehicles in that fleet. The aim of NCF is to reduce per- capita demand for car use, and to improve the competitiveness of other modes.

The continuing research at South Bank Polytechnic is concerned not only with monitoring existing schemes, but also the setting up of an fleet in Richmond, with the co-operation of the local authority. This will be innovative in using a car cost metering system which avoids the need for manual booking of cars. At the date of writing the planning stages of this scheme - known as "Street Fleet" - are complete and sponsorship for its experimental implementation is being sought. In broad terms the survey reported here confirms the suitability of Richmond for such an experiment, in social and spatial terms.

2. OBJECTIVES OF THE SURVEY

The purpose of this survey is to test the widely held belief (and generally implicit assumption in most travel behaviour research) that people value private car ownership not only for its practical utility, but also as an indication of social status, and as a powerful expression of individual freedom, taste and style.

There would appear to be two main reasons why people own cars. Firstly, because of the convenience and accessibility a car provides as a means of transport and secondly, as an object of interest in its own right - either as a status symbol or as an "object d'art" . Something mechanical, satisfying the engineer; something beautiful satisfying the romantic and something that excites a sense of freedom and independence. A number of writers have written about the "non-functional" attractions that a car

provides, for example Pettifer, J. (1984) or Reser, J. (1980). However, little attempt has been made to quantify the degree to which this perception of the car exists among car owners in general. In view of the influence that such attitudes may have on the success of policies aimed at reducing car ownership and use, this neglect is surprising.

2. OBJECTIVES

GENERAL

1. To assess the degree to which people are attached to their cars over and above that of a convenient and accessible utility, and for this to assess the implications of these attitudes for transport policy, especially policies aimed at restraint on private car ownership and use.

2. To identify variations between different groups of people in their attitudes and behaviour towards car ownership and use in an attempt to predict potential profiles of neighbourhoods and groups most likely to consider alternatives to individual car ownership and use.

3. A subsidiary objective was to test a low cost sampling technique based on the "ACORN" classification of residential areas.

SPECIFIC

A. To find the neighbourhood types whose residents take the most and the least "pride" in their car ownership. This is in order to assess the potential for people to give up their car ownership if presented with a viable alternative.

B. To examine the relationship between attitudes to car ownership and travel behaviour in order to assess whether the frequency of driving or frequency of using and attitude towards public transport provides useful surrogate measures for people's attitudes towards their cars.

C. To classify neighbourhoods according to their attitudes to car ownership and to try and identify demographic factors which may influence these attitudes.

D. The concept of "unwanted car ownership" has been suggested by S. Plowden (1980). It expresses the observation that for some people the only reason for their owning a car is because there is no viable alternative to individual car ownership to meet their needs. The identification of possible groups of people who might exhibit such characteristics, and the quantification of the size of such groups within the overall population comprise a further objective.

E. To investigate the extent to which car ownership imposes a financial burden on the different population groups, and how this

relates to people's perception of their cars.

F. To investigate the reasons for people not holding a driving licence. This is used to explore the attitudes of non-drivers and possible future drivers.

G. To investigate the effect that access to a car has on a person's travel behaviour and their attitude towards car ownership.

3. METHODOLOGY

The questionnaire survey, carried out during July and August 1986, examined variations in attitudes towards car ownership and in travel behaviour within a sample of adults drawn from several types of neighbourhood in London. Prior to this survey a pilot survey was carried out (in 1985) to test the questionnaire design and survey method.

SAMPLE SELECTION

Although the survey was confined to the London area a small pre-test was also carried out in the north of Scotland (Caithness) to test the final questionnaire and provide a limited amount of comparative data.

The main survey was selected on the basis of 13 Survey Sites chosen to provide a representative cross-section of the types of neighbourhood found throughout London. The aim was to sample people from each of the residential neighbourhood groups in London described and identified by the "ACORN" classification system (C.A.C.I. 1983). "ACORN" - A Classification Of Residential Neighbourhoods - was designed by C.A.C.I. as a market research segmentation system which classifies people according to the type of area they live in. The basis of the classification is the 1981 Census small area statistics.

To create the classification the scores on 40 census variables were computed for each of the 130 000 Enumeration Districts in the Country and a cluster analysis technique was used to identify neighbourhood types which could most effectively summarise the varying scores of the 130 000 EDs. on the 40 census variables. This process identified 38 neighbourhood types.

A further clustering of the 38 types produced 11 neighbourhood Groups. A full description of each of these is contained in the appendix. These descriptions are based on a) the census profiles of each neighbourhood type as produced by the cluster analysis; b) mapping and observation of the spatial pattern and physical characteristics of each group; and c) information from market research surveys linked to "ACORN" which are gradually building up a growing database of the distinctive lifestyles of each neighbourhood type.

The central idea of "ACORN" is that a set of areas shown by the census to have similar demographic and social characteristics will, as a result, share common lifestyle features. If this assumption is valid "ACORN" can be a powerful technique in social

research whereby survey data can be analysed by reference to its neighbourhood group and generalisations then made across a wide spectrum of areas.

The South Bank survey was designed to enable cross-referencing with the "ACORN" neighbourhood areas in order to build up a picture of the sort of areas which give rise to the different attitude and behavioural characteristics of car ownership. This was achieved through a stratified sampling technique designed to give a reasonable number of responses in each of the "ACORN" groups found in the survey area. This was not always possible due to the practical difficulties involved in obtaining data for certain of the groups.

For convenience of administration it was decided to limit the survey to the London area, specifically a cross-section across Greater London from the Borough of Waltham Forest in the North-East to the village of Byfleet in the District of Woking in the South- West.

Unfortunately funds were not available for purchase of a list of "ACORN" neighbourhood groups in this cross-section so a manual technique of identifying neighbourhood groups was devised by the authors. From the authors knowledge of London random visits were made to EDs. throughout the survey area in search of areas physically resembling the nine "ACORN" groups described by C.A.C.I. found in London. Each ED. was then provisionally allocated to an "ACORN" group. The appropriateness of this allocation being subsequently checked by comparison with the 1981 Census data for a selection of key variables for that ED.

From those EDs. which corresponded well with the "ACORN" profiles and which were observed to be fairly homogeneous in their housing and social character (as determined by the site visits) a final selection of 13 survey sites was chosen to give a representative sample of the different "ACORN" groups (see map 1 and table 1 for details of these sites). Each survey site was made up of one or two EDs. and defined so as to give a cohesive physical area which could be practically covered by two surveyors.

SURVEY METHOD

14 surveyors were employed from the Polytechnic's Environmental Services Unit (a cooperative managed by and for unemployed students). The surveyors worked in pairs, dropping questionnaires one evening and returning to collect them on two evenings the following week. It was considered realistic to expect that a maximum of 70 questionnaires could be dropped by each surveyor in

the time available.

As many questionnaires as possible were to be given out within the selected survey site up to a maximum of 70 per person (140 per survey site). This avoided the need to randomly select households from a sampling frame such as the electoral register for each ED. In practice this achieved almost 100% coverage of each survey site as very few households were not given an opportunity to complete a form, and any person over 16 within each household contacted was invited to participate. This method obviously speeded up the time required to do the survey (and therefore the number of responses was increased) as much less time was spent by the surveyors in walking between survey units. In addition this clustering of responses made it easier to make conclusions about the potential of each area to change the car ownership and use patterns.

ADVANTAGES OF SURVEY METHOD

a) The stratified selection of the sample enables cross comparisions to be made with types of residential neighbourhood and tentative conclusions drawn about other neighbourhoods having a similar "ACORN" profile. A major problem in designing social surveys is that of identifying the population which your sample is to represent. This generally requires the selection of an appropiate sampling frame from which to choose a sample. In this case the population is represented by the sampling frame. This approach permits the use of statistical techniques to analyse the data if the rules of random sampling have been observed. However it was not possible in this survey as stratified samples at different levels of spatial aggregation were required.

For example, a survey of households within a ward or even a Borough or District can be conducted using the electoral register as a sampling frame. Alternatively, a survey of which EDs. or wards exhibit certain characteristics can be done using a list of all EDs. or wards within the required area as a frame. The problem arises when an attempt is made to devise a suitable sampling frame for sampling individuals scattered across several Borough boundaries, especially when it is required to stratify the sample frame into distinct neighbourhood groups. This requirement inhibits the use of a two-stage approach of randomly selecting EDs. and then randomly selecting individuals within those EDs.

The "ACORN" approach overcomes this problem by providing a tailor- made sampling frame listing EDs. by neighbourhood type for any required area or areas. A random sample of EDs. from each neighbourhood type could then be easily obtained.

b) The disadvantage of using "ACORN" listings as a sample frame is their excessive cost, especially where several areas are being investigated. The survey method used here of manually reconstructing an "ACORN" type selection of survey sites avoided the expense of purchasing a full sample frame listing. A search method was used which searched for suitable sites within each stratified layer. Once one was found the search moved onto the next stratification in sequence. This resulted in a much cheaper sample selection.

c) It enables a comparison to be made with population profiles derived from census data, avoiding the need for numerous profile questions in the questionnaire.

d) The method gave clustered samples eliminating the need for travel between sample units and gaining a very good indication of

the situation for each site.

DISADVANTAGES

a) Time consuming;

b) Not a random sample. However there was no discernible bias in the choice of sites as the initial selection was made by simply driving (randomly) within the predetermined cross-section of London and noting potentially suitable areas for each neighbourhood group on ED. maps. This attempt to minimise bias is important as one of the reasons of using an "ACORN" based method was to enable general conclusions to be drawn about each "ACORN" group, at least for the Greater London area. Clearly any such conclusions must be treated with care.

It is even more difficult to attempt to draw conclusions for London overall as not all groups (both "ACORN" and general social groupings like age or income groupings) were equally represented in the survey in proportion to those found in London as a whole. To assess the extent of this bias a comparison was made of the survey's profile data with the 1981 Census data for the Greater London area. The areas of comparison were age group, marital status, car ownership, those working, and mode of travel to work (see appendix for details of these comparisons). Unfortunately data on the overall distribution of "ACORN" groups within London was not available.

The main discrepancy between the South Bank survey and the Greater London data was in the age groups we surveyed. In particular the South Bank survey under-sampled the elderly (6% over 65 as opposed to 15.5% for Greater London) and over-sampled the 35-44 age group (23% compared to 15.4%).

The reason for this discrepancy is that the South Bank's survey was biased by the ease of getting a response from any particular individual. It was found that elderly people were generally suspicious of answering their door to strangers in the evening so few elderly people were included in the survey. In contrast young and middle-aged families were the most willing to cooperate so a higher proportion of these were obtained.

Some types of neighbourhood group were also particularly difficult to get responses from so these are probably considerably under represented (although precise data was not available on this). One such area was the poorest (high-rise) council flats where few of mugging prevented many from opening their doors. These people were also reluctant to cooperate when they did open

their doors'. Another area was at the other extreme- the high status areas around central London and Kensington. Many of these had security controlled access making surveying very difficult. Table 2 contains details of the response rates for each survey site.

QUESTIONAIRE DESIGN (figures in brackets refer to the question numbers in the questionnaire)

It was explained earlier that any attempt at quantifying attitudes is fraught with difficulties. To try and overcome this problem a multi-stage process was used to assess peoples' attachment to their cars. Firstly a direct question (19) on whether pride was taken in owning a car or whether the car was regarded simply as a means of travel. Secondly, a series of behavioural questions were asked in an attempt to corroborate the direct question and to enable correlations between behaviour and attitudes to be made so the reliability of attitude measurement by these pseudo-attitude surrogates could be evaluated. To do this a number of hypotheses about expected behaviour given different attitudes and circumstances were required. These will be explained in the next section. These behavioural questions included (i) how many accessories or decorations had been bought; (ii) how much D-I-Y work was done on the car; and (iii) how well the vehicle was maintained.

Thirdly, it was believed possible to assess peoples' attachment to their cars by looking at the sort of cars they drove (14). Factors here included (a) Is the car a mass-produced make or a specialised one? (b) Is it new or several years old (c) Is it a basic or top of the range model? (d) Was it bought new or second-hand? (e) Has it got a personalised number plate? (f) Has the vehicle a specialised function (eg. a van, camper, or 4-wheel drive model)?

It was decided to ask a question on the perceived financial burden of keeping and running a car (15). This was done primarily to provide a factor in identifying "unwanted car ownership" (Objective D) and to provide an indicator for examining the reasons for certain aspects of attitudes and behaviour (objective E). For example this proved a very useful question for explaining variation in the amount of D-I-Y work done on the car. Finally, it provided important information about the interest people might have in an alternative approach to car ownership which was less burdensome.

Objective B was approached by asking questions about how often people drove (7), how they travelled to work (8a), what use they

made of Public Transport (9), and how convenient this was for their journey to work (8b). These questions could then be cross-tabulated with questions on peoples' attitudes towards car ownership.

To explore objective F, people who did not hold a current driving licence were asked to give the reason why they did not (23), and to say whether they had any aspirations to do so in the future (24).

Finally, for objective G, access to cars was investigated by asking people with licences if they owned a car themselves 9130 and whether they had the regular use of any car of which they were not the registered owner (11,12). Question 12 also enabled respondents with company cars to be identified.

The full questionnaire is included in the appendix, along with a list of the variables used in the analysis and their corresponding value labels.

4. RESULTS

SUMMARY RESULTS

Table shows the absolute and percentage response for each ACORN group. It also shows the relative size of each ACORN group in terms of the percentage number of responses that group made up (The responses for each survey unit are included in the appendix).

RESPONSE BY ACORN GROUP

ACORN GROUP	AREAS REPRESENTED OF SAMPLE	NUMBER OF UNITS	TOTAL RESPONSE NUMBER RESPONSES	% OF (%) ALL GROUPS
B HANWORTH/ BYFLEET	3	129	61	15
C FULHAM/ BARNSBURY	4	156	56	18
D FULHAM (BROADWAY)	2	86	61	8
F CHINGFORD	2	73	52	8
Ga ISLINGTON	2	63	45	7
Gb SHEPHERDS BUSH	2	66	47	7
H DALSTON	2	70	50	8
I KENSINGTON	2	31	22	4
J HAMPTON/ CHINGFORD	4	167	60	19
K HIGHGATE	2	48	34	6
TOTALS	25	889	100	

Figure is a diagrammatic representation of the questionnaire showing the different filters in operation, the number of respondents answering each question, and the frequencies of the main replies.

After the data had been collected, the questionnaires were coded and input to the Polytechnic's mainframe DEC-10 computer. After a verification procedure 882 useable responses were obtained. These were then analysed using the SPSS (Statistical Package for the Social Sciences) computer package. The results which follow are discussed in the order of the specific objectives described earlier, with particular attention being focused on the variations between the different neighbourhood groups in order that profiles of the attitudes of each group to cars and driving may be drawn up.

OBJECTIVE A: HOW ATTACHED ARE PEOPLE TO THEIR CARS?

Overall, when car owners were faced with a choice between seeing their car either as something they positively enjoyed and took a pride in owning, or as something whose value was simply that of a means of travel, just over 50% chose the latter.

In terms of neighbourhood groups, those reporting the strongest bias towards the "utility" option were found in the newly gentrifying areas (Group C- 57%); the affluent suburbs (Group J- 57%); and the high status central areas (Group I- 58%).

These initial results appear to suggest that to the wealthy cars are relatively less of a status symbol than that of somebody living in a high rise council flat in Shepherds Bush who gets much more satisfaction in showing off his "old banger" to his friends and spends a lot of his time tinkering under the bonnet. The wealthy have achieved their place in society more through their career and home than their expensive car which is often seen as just part of the package. This is especially true when the number of company cars in this type of area is considered, as this reflects an attitude towards individual car ownership as being of less importance per se than that of having the use of a higher quality car which may be owned by somebody else. These people spend relatively less time and money on their cars in relation to their total income than those living in less well off areas. In addition those living in the high status central group (I) have less need for a car due to their better accessibility to Public Transport and places which they need to visit. This area also poses far more problems for driving in terms of increased congestion and the expense of and problems with parking.

Despite what has been said above, it is evident that many respondents from these affluent areas, especially those in Group J, had spent considerable amounts of money on acquiring and improving their car. It was believed that such behaviour revealed a perhaps, subconscious, pride in the car and should therefore be investigated as a surrogate indicator of attachment.

To do this a number of "indicators" were used to create a composite view of this aspect of a respondent's behaviour. These indicators were chosen to reflect a respondent's level of financial investment in his/her car. The indicators and the critical values at which "pride" was assumed to begin to be revealed are shown below:

INDICATOR VARIABLE CRITICAL VALUE
(see appendix for names)

A HIGH VALUE CAR VAR025 #4000

A RECENTLY ACQUIRED CAR VAR027 2 YEARS OLD

A CAR BOUGHT NEW VAR035 "NEW"

A CUSTOMISED CAR VAR046 4,5

==========

A 5 level classification of these characteristics was then computed based on the number of indicators each car owner had. The number of respondents in each category are shown in table .

LEVEL OF "PRIDE"	DESCRIPTION	NUMBER	%
0	NONE OF "PRIDE" INDICATORS	213	59
1	JUST ONE INDICATOR	85	24
2	2 INDICATORS	19	5
3	3 INDICATORS	11	3
4	ALL FOUR INDICATORS	0	0
TOTAL		328	91
THOSE NOT ANSWERING TO 1 OF QUESTIONS		32	9
TOTAL CAR OWNERS		360	100%

There is a good relationship between respondents who score high on the "levels of pride" indicator and those living in the affluent areas identified earlier as Groups C,I and J. Between them these areas contain 64% of respondents on level 3 and 74% of those on level 2. A fourth area to come out strongly on the "levels of pride" indicator is group B - also an affluent area. When B is included the four "affluent" areas represent 91% of respondents on level 3, 84% of those on level 2, and 79% of those on level 1.

It would appear from the analysis so far that it is possible to identify two distinct types of attachment to the car. Firstly there is the subjective attitude which at first sight suggests less attachment to their cars from the better off groups. Secondly, there is the type of attachment revealed through behaviour, in particular, behaviour associated with choosing a vehicle. This second type is strongly related to the respondent's degree of affluence which is to be expected given the way in which the "levels of pride" indicators were defined.

One approach to isolate the effects of affluence is to look at indicators which reveal attachment but are low in cost. One of these is the degree of customisation. This has been analysed separately as it represents a lower cost way in which to express pride in ownership then the "levels of pride" defined above. Respondents replies to question 20 "which accessories have you bought for the vehicle you own?" were coded separately for the first three responses (radio/cassette player, child safety seat,

and tow bar) but the rest (seat covers, extra lights, decorations and others) were combined into a "degree of customisation" index which was scaled from 0 (low) to 5 (high). (See Appendix for details of how this was coded.)

Overall 69% of car owners had a score of 0; 17% a score of 1; and 13% had higher scores. Confining attention to these higher scores a clear differentiation between areas is apparent. The poorest council and Samuel Lewis tenement estates plus the multi-racial area of Dalston show the highest degrees of customisation, (i.e. Groups Ga, Gb,H and D). These areas are very similar to those responding "I positively enjoy and take a pride in owning my car" to the subjective attitude question (20).

This analysis explains the fact that 60% of people claiming to take a pride in owning their own car do not own a new or expensive one. They cannot afford to express their pride in this way, but have to do it in other ways, like customisation.

A second way in which people can express pride without having to own an expensive or new car is by spending a lot of time in looking after it. This was investigated, firstly by asking what people actually did in terms of D-I-Y on their car and, secondly, by asking them to express an opinion on the state of maintenance of their car.

The amount of work done by an owner on his car himself would be a reflection of his pride in that car (21). This variable was analysed in relation to the respondents residential area and age. However, some ambiguity was evident in the replies to this variable. People might work on their car because they took pride in it, or because they could not afford to get it done by someone else. To investigate this problem this variable was also related to Q15 on the difficulty experienced in affording to run a car.

The following scenarios were hypothesised:

STATUS ACORN GROUP ATTITUDE D-I-Y

RICH J,I PRIDE IN CAR
GARAGE/
PRIVATE
MECHANIC
UTILITY

MIDDLE INCOME B,C,F,H,K PRIDE IN CAR D-I-Y

FINANCIAL BURDEN DO NOTHING

UTILITY GARAGE

POOR D,Ga,Gb PRIDE IN CAR D-I-Y

FINANCIAL BURDEN

UTILITY DO NOTHING

==========

FINANCIAL WORK DONE ON CAR (%) BURDEN	NONE ONLY	WASH/POLISH PLUS 1 OF THESE	SERVICING, MINOR, & MAJOR REPAIRS PLUS 2	PLUS 3
V. DIFFICULT	0	47	37	11	5
DIFFICULT	9	30	43	16	2
NOT DIFFICULT	19	36	30	13	2
VERY EASY	22	44	22	4	8

61% of respondents reporting that they found it difficult to run a car did some D-I-Y work. This figure was down to 53% for those respondents who found running a car very difficult suggesting that they found it harder to afford even to do D-I-Y, so presumably either they send the car to the garage in which case this could explain why they find it very difficult to run a car, or, which is more likely, they let the car steadily deteriorate. Those who found the car easy to afford did very little work on it, other than washing and polishing.

When an attempt is made to relate the amount of work done to the neighbourhood groups a confused picture emerges, with groups C, Gb, H, I, J and K doing the least amount of D-I-Y, and groups like D, F, and Ga doing a lot.

The reason for this confusion has been discussed above. It is necessary to look at the amount of D-I-Y work in relation to each areas response to the question on how burdensome running the car was.

The areas, not surprisingly, reporting the greatest ammount of difficulty were D, F, Ga, and H. These areas relate closely with those areas doing a lot of D-I-Y work on the car.

Conversely, those areas finding it very easy (highest percentages were in Groups I and J) did least D-I-Y work.

In conclusion, the investigation into the amount of work done on the vehicle as a surrogate measure of attachment was more problematic due to its strong relationship with the extent respondents found running a car to be burdensome. However areas D,

F and Ga come out strongly as poor areas where much D-I-Y work is done, indicating a strong attachment to the car in these types of areas.

A final surrogate indicator of people's attachment to their cars was the way in which they perceived their car to be maintianed. It is suggested that the respondents reporting that their cars were "perfectly" or "well" maintained display a greater degree of attachment than those replying "adequate" or "poor".

Overall, two-thirds considered their cars "perfectly" or "well" maintained. The greatest concentrations of respondents answering in this fashion were from areas D (78%), F (78%), Ga (78%), Gb (87%) and H (75%). Once again the less affluent areas would appear to be displaying a greater emotional attachment to their cars than those in the more affluent areas.

OBJECTIVE B: HOW DOES A PERSON'S ATTITUDE TOWARDS OWNING A CAR RELATE TO HIS REPORTED TRAVEL BEHAVIOUR?

This objective was investigated by comparing respondents' subjective attitudes (question 19) with various attributes of their reported travel behaviour. This was done to see if any distinctive differences in behaviour patterns could be identified between people who expressed pride in ownership and those who saw the car simply as a utility. The types of behaviour that were investigated were how often people drove; how often they used public transport and how they perceived its convenience; and what mode of transport they used for work. Only car owners were included in this analysis, so 346 is the maximum number of responses that could be analysed.

FREQUENCY OF DRIVING

Although no statistically significant relationship was found between people's attitude to car ownership and their frequency of driving there was a considerably greater number of people who drove very little who also saw the car as a utility (74% of those driving one day a week or less).

However, at the other end of the scale, those driving over four days a week, there is very little difference between the two groups -77% of those expressing pride drove over four days a week and 76% of those viewing the car as a utility. So there is very little evidence that a person's attitude to car ownership is related to their frequency of driving their car.

FREQUENCY OF USING PUBLIC TRANSPORT

Again the result of this analysis did not show a statistically significant relationship between attitude to car ownership and how many times people used Public Transport a week. However, a surprising trend emerged in which people expressing pride in car ownership appear to travel somewhat more by Public Transport than do those seeing the car as a utility.

5% of those expressing pride use Public Transport every day and 18% use it at least four days a week. The corresponding figures for the "utility" owners are 2% and 11%.

The same pattern appears at the other end of the frequency scale. While 82% of those seeing the car as a utility only used Public Transport one day or less a week this figure comes down to 76% for those expressing pride in car ownership. It must be remembered, however that the relationship attitudes and Public Transport use

was not statistically significant - in other words it was quite likely that any observed difference was purely the result of chance.

CONVENIENCE OF USING PUBLIC TRANSPORT (TO WORK)

This question was only asked of people who reported that they had to travel to work, so only 264 responses were analysed (People travelling to work who also owned a car). The relationship between people's attitudes to car ownership and their perceived convenience of Public Transport for their journey to work is the most significant of all the analyses in this section. It is significant at the 7% level.

Once again the results are somewhat unexpected. When asked "How convenient is Public Transport for your journey to work?" 24% of people who expressed pride in car ownership saw Public Transport as very convenient while only 13% of those who saw the car as a utility regarded Public Transport as very convenient.

Conversely, 23% of those expressing pride in car ownership found Public Transport very inconvenient but 33% of those who saw the car as a utility regarded Public Transport as very inconvenient.

MODE OF TRAVEL TO WORK

The result of this analysis does not indicate a statistically significant relationship. There appears to be very little difference between those expressing pride in car ownership and those seeing it as a utility in terms of their modal split. For example 72% of both groups drive to work. Relatively more people expressing pride in car ownership use Public Transport for the work trip but less people walk or cycle.

In conclusion it would appear that if frequency of driving or mode of travel to work are examined there is no discernable difference between the travel behaviours of those expressing pride in car ownership and those who saw the car as a utility.

However, when Public Transport is examined it would appear that proportionately more of those expressing pride in car ownership use Public Transport than those who see the car as a utility, and they also perceive Public Transport as being more convenient.

All these factors would lead to the conclusion that travel behavior does not act as a good surrogate measure of a person's attachment to their car.

OBJECTIVE C: IS IT POSSIBLE TO CLASSIFY NEIGHBOURHOOD GROUPS ON THE BASIS OF THEIR ATTITUDES TO CAR OWNERSHIP?

This objective has been implicit in much of the discussion under objective A. In that section it was stated that, in response to the subjective attitude question, those neighbourhood groups reporting the strongest bias towards the "utility" option were found in the newly gentrifying areas (Group c - 57%); the affluent suburbs (Group J - 57%); and the high status central areas (Group I - 58%).

These three would appear to form the basis for a high inome - low attachment grouping of areas. It was also pointed out that this group spent a lot of money on their cars, so we arrive at a first grouping of areas as follows:

GROUP I HIGH INCOME HIGH MOTOR EXPENDITURE LOW ATTACHMENT

Group B could also perhaps be included in this group although its position would be more marginal, especially in relation to its considerably higher level of attachment to the car.

A second group can be identified from the results of the "customisation" study. This is the low income - high attachment - low motor expenditure group which consists of area types like high rise council estates; newer, low rise council estates and tenement flats. The remaining areas form an intermediate group.

INCOME	CAR EXPENDITURE	ATTACHMENT	ACORN TO CAR GROUPS
GROUP I HIGH	HIGH	LOW	I,J,C,B
GROUP II AVERAGE/LOW	AVERAGE	AVERAGE	H,K,F
GROUP III LOW	LOW	AVERAGE/HIGH	D,Ga,Gb

For a further description of each ACORN type reference should be made to the appendix. In order to establish demographic factors which may underlie attitudes to car ownership, analyses were carried out into the age,sex and marital status of car owners to attempt to identify how these related to the way the subjective

attitude question was answered.

AGE

A significant relationship between age and attitude towards car ownership was found to exist with a heavey bias among people expressing pride towards the younger age ranges (70% of this group were under 45). This was paralleled by a more dispersed age range among those seeing the car as a utility. However, 66% of this group were between the ages of 26 and 55.

SEX

There was practically no difference between the sexes in their response to the question on their attitudes to car ownership - 67% of males expressed pride in ownership and 65% saw the car as a utility.

MARITAL STATUS

There was a significant difference between marital status and attitude to car ownership. A considerably higher percentage (77% as opposed to 67%) of the people who saw their car as a utility were married, while those single widowed and divorced expressed more attachment to their cars.

OBJECTIVE D: TO IDENTIFY AND QUANTIFY THE POSSIBLE EXTENT OF "UNWANTED CAR OWNERSHIP"

The idea of "unwanted car ownership" is not a new one. In 1974 the report from the Independent Commission on Transport entitled "Changing Directions" discussed it within the context of constrained travel choices. This describes the situation in which peoples' travel behaviour arises as a result of thewir having no choice between alternative modes of transport. A person living in a dispersed city may have to use motorised transport because there are no adequate shops or other facilities within walking distance. People who would like to walk or cycle may decide not to do so because conditions are disagreeable or unsafe. People who would rather use public transport go to the trouble and expense of running a car because they find public transport so unreliable and inconvenient. All these examples have obliged people to run a car because there travel behaviour is unwanted or forced upon them. The travel is wanted in the sense that it represents the best of the available alternatives, but it is wanted only because other possible alternatives, which would be prefered, are denied.

In each case the use of a car results from the negative results of previous decisions to own and use a car. Since one individual is powerless to alter the situation by not acquiring a car, it would appear to be in his or her own best interest to own and use a car.

A more recent recognition of this problem of " unwanted car ownership" was by Plowden, S. (1980). He says "the poverty of the available options often forces people to to choose in a way which is contrary even to their own wishes" (p21). The lack of research in this area is identified as a problem " There has been littlesystematic attempt to ascertain the extent to which they (the deterioration in bus services) have caused unwanted car use and even ownership" (p34).

Two surveys which did go some way towards investigating this phenomena were carried out in North London (Camden) in 1973 and 1975. In 1973 the Archway Transport Study Household Survey respondents were asked "If public transport were improved at the expense of longer and more difficult rush hour car journeys, would you accept the inconvenience it caused you personally?". 78% of those who used their car to get to work replied affirmatively or denied that there would be any inconvenience to them. This survey also obtained a number of quotes from respondents evidencing their personal constrained choices. For example " waiting forty minutes for a bus is not unusual.... I cannot afford to waste this time. This is the only reason I am going to buy a new car."

In the 1975 survey by the London Borough of Camden 33% of respondents who had the use of private transport agreed with the statement " I am forced to use private transport because public transport is so poor."

It is clear from the discussion above that "unwanted car ownership" is a concept very much in existence but very difficult to measure quantitatively. This section of the report makes a tentative attempt to identify a number of groupings of people which might contain elements of " unwanted car ownership"; and to calculate the size of these groups and what proportion of car owners they represented.

The first group to be identified were the elderly (defined as people over 56). These people often depended on a car for mobility but would probably prefer an alternative which guaranteed them mobility but without the cost and problems running a car involves.

The second group were people who use their cars a lot (suggesting dependence on them) but who report that owning a car is financially difficult for them, or whose cars reflect this by being either very old (+10 years) or very low value (under £1000).

The third group comprised people who drove to work (again suggesting dependence on a car) and who found public transport inconvenient for getting to work. Within this group are those who perceive that they have to own a car because no viable alternative exists.

The fourth group consisted of existing heavey users of public transport and/or people who drove their car infrequently. Although this group is probably not strictly in the " unwanted car ownership" category, it does identify a section of the population which is owning a very unproductive asset which would probably be in their best financial interest to sell. This group includes people who own a car for occasional convenience trips - they like to have a car available for these irregular trips but are not habitual car users.

Finally, one group of people who might be glad to get rid of their cars if a suitable alternative was available are those reporting inadequate parking space near to where they live.

SIZE OF GROUP % OF CAR OWNERS
1) THE ELDERLY (56+) 59 16%
2) PEOPLE WHO DRIVE

FREQUENTLY BUT WHO 190 53%
FIND CAR OWNERSHIP FINANCIALLY DIFFICULT
3) THOSE WHO DRIVE TO
WORK AND FIND PUBLIC 113 31%
TRANSPORT INCONVENIENT

4) THOSE WHO EITHER
USED PUBLIC TRANSPORT 109 30% A LOT OR WHO DRIVE
INFREQUENTLY.

5) THOSE SUFFERING FROM 135 38%
PARKING SPACE NEAR THEIR HOME.

OBJECTIVE E: TO WHAT EXTENT IS CAR OWNERSHIP A FINANCIAL BURDEN AND HOW DOES THIS RELATE TO ATTITUDES TO OWNERSHIP?

Overall 7% of car owners reported experiencing considerable difficulty and 33% reported some difficulty in affording to run their car.

The largest concentration of difficulty was found in the middle-aged groups (26-45), with around two-thirds of these people reporting difficulty.

The areas with the greatest amount of difficulty were groups D, F, Ga, Gb, and H which all correspond with the low income areas identified earlier. The highest concentration of respondents which reported considerable difficulty was in Group Ga (29%).

All these groups (except D) had over half their respondents expressing some degree of difficulty. Even some of the "affluent" areas expressed some difficulty. For example 44% in Group B and even 23% in Group J. These findings further strengthen the case for "unwanted car ownership" made in the previous section.

OBJECTIVE F: WHY DO SOME PEOPLE OVER 16 NOT HOLD DRIVING LICENCES? HOW CAN THIS AFFECT CAR OWNERSHIP PREDICTIONS?

People over 16 who did not hold a driving license did so for a number of reasons. The main reason which covered 37% of non-license holders was simply that they had no desire to drive. This reason was found particularly among the elderly. Clearly those people who gave this reason should be left out of any future ownership predictions.

Secondly, people did not hold a license due to the deterrent effect of the cost of car ownership (17%). This reason was found mainly among young people. Again, these people should not, "ceteris paribus" be included in future predictions of car ownership.

So, a total of 54% of current non-license holders are unlikely to become future car owners under the present economic situation.

Only 28% of non- license holders reported that they intended to learn sometime. This figure relates closely to the 25% of non-license holders who said they expected to become car owners in the future.

Not surprisingly, the responses to the question asking why they did not hold a license varied widely between neighbourhood types. The "no wish to drive" reply was most common in groups D (50%) and K (48%) and lowest in Groups H (25%), B (23%) and Gb (27%). This differentiation is most likely age related.

The "cost of ownership" reply was strongest in Groups D (17%), F (31%), Gb (27%) and K (28%). This probably reflects income and age related factors.

Finally those answering "no present need" or " intend to own sometime" were most strongly represented in Groups B (46%), C (36%), J (35%), and H (54%). This suggests income and age factors again. These replies are also reflected in future ownership intentions with a lot of people expecting to own a car sometime in Groups B (46%), and H (54%). Not surprisingly Groups C and J have much lower percentages (25% and 27% respectively).

OBJECTIVE G

HOW DO DIFFERENT LEVELS OF ACCESS TO A CAR INFLUENCE TRAVEL BEHAVIOUR? In particular, mode of travel to work and perception and use of public transport.

Levels of access to a car were defined on the following criteria:

I CAR OWNER (274, 63% OF EMPLOYED LICENCE HOLDERS)

II NON CAR OWNER USE OF SOMEONE ELSES CAR (86, 20%)

III NON CAR OWNER NO USE OF ANY CAR (75, 17%)

People owning their own cars obviously are the group most likely to drive to work. However nearly 30% of this group (who all work) use another mode. Level II people are also most likely to drive to work (45%) but public transport accounts for 27% and 22% cycle or walk. Level III people are in the main, users of public transport (65%) while 27% cycle or walk.

************Appendix A Methodology**************

A small scale survey which did attempt to quantify why people acquired their first or additional car was that by Town, S (1983). This was an interview survey of 58 people in Reading who had recently acquired a first or additional car. The method used by this survey was that of the unstructured interview. This limited not only the size of the sample possible, but the effective estimation of the importance of any particular reason for car acquisition among a wider population. A range of attitudes which people held toward the car were identified from regarding it as an important symbol of social status, and an expression of individual style, to the purely utilitarian view of the car as a means of travel, and to views of the car as an "unfortunate, or even evil, necessity."

The survey reported here, carried out by the author and others at South Bank Polytechnic differs from Town's in a number of respects. Firstly, the sample was much larger- a total of 889 useable responses were obtained. Secondly, with this size of sample it was possible to quantify the results and to make tentative generalisations about wider populations. Thirdly, Town's study interviewed only recent car acquirers so no information was obtained about people with a stable level of car ownership. The South Bank survey made no such distinction and surveyed all people over 16 (i.e of car driving age). Fourthly, due to the complexity involved in designing a methodology for measuring attitudes quantitatively the South Bank survey used pseudo-attitude questions on the whole, rather than direct attitude questions. These were based upon reported behaviour from which assumptions about attitudes could be made and correlated with more direct attitude questions. Finally, the end objective was different. In Town's study it was to deepen an understanding of the process by which the growth in car ownership takes place.

APPENDIX A: THE SURVEY SITES

As described in the text, the survey sites were chosen to represent the range of housing types found in Greater London. The selection was made using the "ACORN" system (C.A.C.C.I. 1983) as a guide, and in the profiles of each area given below the corresponding ACORN group is mentioned.

Area A.
An estate of Council multi-storey flats, mainly rented, near Shepherds Bush, about four miles west of Charing Cross. A high rise block was originally selected, but difficulties in obtaining responses led to the addition of an adjacent medium-rise block. The residents of these 1960's built flats live in households with below-average employment status, incomes and car ownership. There are some families with school age children, plus single person and elderly households. The Acorn equivalent is Group G, which describes difficult-to-let high rise blocks housing a high proportion of unskilled and unemployed workers, dependence on public transport, and poor local shopping facilities.

Area B.
A low-rise Council estate in Islington built later than Area A. Its demographic character and car ownership is similar to Area A, but it is a better-kept and more easily let estate which includes a higher proportion of families with children. Like Area A, residents depend on public transport, and the quality of both bus and Underground is good. This area has the added advantage of being close to the City (about 2 miles). Acorn Group G.

Area C.
An estate of Victorian Trust dwellings in the form of walk-up tenement flats near to Fulham Broadway Underground station. Charing Cross is just over 3 miles away. The majority of flats are privately rented by one- or two-person households without children. Car ownership is higher than Areas A and B, but still low at 30% of households. The flats are mainly small and lack amenities both inside and out, but are very conveniently located for public transport and local shopping.

Area D.
An estate of mock-tudor inter-war Council rented tenement flats near Highgate. The flats lack basic amenities like inside bath and w.c. and are rented mainly by elderly and single-person households. Car ownership at 11% of households is the lowest of the sites surveyed, thus creating heavy dependence on public transport. The area is, however, not conveniently located for either bus or rail. The ACORN group is F.

Area E.

A multi-racial area in Dalston, north London, consisting of terraced houses in mixed tenure, though with a majority owner-occupied. The age of residents if fairly spread, as is the size and character of households. There is a higher than average proportion of households of Afro-Caribbean origin, and also of single-parent families. Economic activity is fairly high compared to Areas A-D, and 40% of households own at least one car. The area is well served by buses, but the rail service to central London is poor for an area only 3-4 miles away. The ACORN group is H.

Area F.

An inter-war council estate of terraced and semi-detached houses in Chingford, on the fringe of north-east London, providing a more spacious layout than Area D, but with similar household characteristics in terms of age and socio-economic group. However, incomes appear to be higher, related to higher levels of economic activity. A third of the dwellings are now owner-occupied (bought from the local authority) and the car ownership rate is much higher at 52% of households. As with Area D, both shopping and public transport are inconveniently located, but this area is also more than twice as far from central London (Charing Cross 11 miles). The ACORN group is F.

Area G1.

A recently developed estate of family houses in Hanworth, outer south-west London, owner-occupied mainly by young families with children. Only a quarter of the residents were over 35 years of age at the time of the 1981 census. Most have non-manual occupations and may be considered to be relatively well-off and upwardly mobile. This is reflected in the high car ownership rate of 93% of households owning at least one car, though relatively poor public transport creates a degree of dependence upon the car. The ACORN group is B.

Area G2.

Very similar to G1, but located in Byfleet, beyond the Greater London boundary. Local public transport is limited. There is a rail link to Waterloo (20 miles), but Byfleet station is over a mile distant. Also ACORN group B.

Area H1.

This area of what local estate agents describe as "substantial period terraced property" typifies the increasingly "gentrified" older housing areas of inner London. It is in west Fulham, mid way between Hammersmith and Putney, 5 miles from Charing Cross. Despite relatively poor public transport (good buses but long walk to nearest stations) and few local shopping facilities, the area

has attracted the better-off service sector workers. One quarter of the households have children under 15. A majority of houses are owner- occupied but private renting accounts for over a third. Car ownership is about 50%. In physical terms the area conforms to ACORN group C, but its residents are better-off and of higher social status.

Area H2.
This area is socially similar to H1. Located in Barnsbury, Islington, it was one of the first older areas of inner London to attract the "gentrified" label, being close to the City and West End and well served by both bus and Underground services. Although Barnsbury is a very mixed neighbourhood, the area chosen for the survey mainly consists of terraced houses in owner occupation or private rent.

Area I.
An area of Chelsea which includes both "mansion flats" (from which responses were difficult to obtain) and expensive single-family houses. As with the equivalent ACORN group, which coincidentally is also I, the area may be described as a "high status, non-family" area. Only 8% of households have children under 15 years. Despite high incomes, car ownership at 52% is much lower than the other high income areas surveyed. Car ownership may be suppressed by the difficulties of parking and using a car in such a congested area close to the West End (Charing Cross two and a half miles), but also by a high proportion of residents over 60 years (37%). Although the housing is in mixed tenure, well over half are owner- occupied.

Area J1.
An area of affluent suburban housing in Hampton, in the south west extremity of Greater London. Nearly all the houses are large, detached with garages, built in the 1930s, and in owner occupation. 88% of households have at least one car, and many have two or more. The residents are mainly older professional people whose children are in their teens or have left home. There is a rail service to Waterloo (16 miles) but local bus transport is not surprisingly more limited than at the inner London sites. The area corresponds well to ACORN group J.

Area J2.
An area of fairly large mock-tudor suburban houses at Chingford on the north east edge of Greater London. Charing Cross is 12 miles distant. Although not as exclusive or spacious as J1, this area displays a very similar social and demographic character. Public transport quality is also similar, though parking is not so well provided for. It also corresponds to ACORN group J.

APPENDIX B: REFERENCES

C.A.C.I. "ACORN", 1983.

Dix, M. C. et al "Car Use, A Social and Economic Study", Gower, 1983.

Marsh, P. and Collett, P. "Driving Passion", Jonathan Cape, 1986.

Pettifer, J. "Automania", Collins, 1984.

Pharoah, T. M. "Neighbourhood car fleets in USA: report to Nuffield Foundation on grant SOC 181/1317" December 1985.

Pharoah, T. M. and Yerworth, T. A. "Shared Car Fleets in Residential Neighbourhoods", ESRC Seminar Paper, Glasgow 1985.

Reser, J. "Automobile Addiction: Real or Imagined", in Man-Environment Systems, Vol 10, Pt 5-6, p279-287(1980)

Town, S. W. "Reasons for Car Acquisition", TRRL SR808, 1983.