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THE PUBLIC ACCEPTABILITY OF SUSTAINABLE TRANSPORT POLICIES: FINDINGS FROM THE BRITISH SOCIAL ATTITUDES SURVEY

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1 INTRODUCTION

The British Social Attitudes (BSA) survey has been carried out almost every year since 1983 by Social and Community Planning Research (SCPR). The survey is core-funded by the Sainsbury Family Charitable Trusts, with additional funding for particular modules from some government departments, the ESRC and other organisations. Individual adults at a stratified random sample of addresses drawn from postcode address file are approached for a face-to-face interview; this lasts, on average, just under an hour, with a follow-up self-completion supplement. Some questions are asked of the full sample; others are asked of random sub-samples of around 1400 respondents.

In 1993, with the growing prominence of transport on the public policy agenda, BSA for the first time incorporated a module of questions on transport issues funded under the ESRC Transport and the Environment programme. The 1994 survey also contained some questions on these issues, funded by the Countryside Commission. The data from the two years can be pooled so as to increase the sample size.

This paper is a follow-on from our chapter in the *British Social Attitudes: 11th Report* published last November (Stokes and Taylor, 1994) and amplified in our Universities Transport Studies Group paper (Stokes and Taylor, 1995). In these we concluded that:-

- There is a high level of concern about the problems of congestion and the environmental effects of transport, but that concern about congestion is not strongly correlated with concern about the environmental aspects. Rather, there are two distinct groups in the population - one concerned about congestion, another about environmental impacts - with different characteristics.

- Despite this concern, both public transport and roads continue to be placed way behind health and education as priorities for more public spending. This may be due, in part, to a realisation that there are different ways of solving transport problems, and that some ways of spending money may actually make the problems worse.

- There is a higher level of concern than there is support for various policy options. While traffic problems are widely recognised, many of the `new policy' options currently gain limited public support. The state of public opinion parallels, and indeed partly accounts for, the position of the present government, which appears to recognise that the introduction of measures to restrict road travel is inevitable, but has not (yet) changed policy to a great extent. Of course, the current debate about transport is relatively new, and the problems complex, and a government of any party would face the same dilemma.

- Support for different measures is varied and while it roughly conforms to models such as `people want others to limit their car use - but not to reduce their own', other factors also seem to be at work. There is a significant minority who are concerned by environmental aspects of transport (and some by congestion as well) who support policies which would seem to place limitations or costs on themselves.

- New transport policies gain greater support among those concerned about environmental aspects of transport than those concerned about congestion.

- Degree-level education has emerged as an important factor in support for `new' policies. Those with a degree are much more likely than the less well educated to support new policy options. This suggests that public education campaigns about transport problems may be of considerable value in gaining public acceptance of new policies.

- However, people are being asked to judge policy options such as road pricing where no one (not even the experts) has a good idea of the overall outcome - let alone how it would affect each individual. Given these kinds of uncertainties, but the high level of concern, the responses to these policy options imply that if the precise effects of these policy options were better understood and made known, the policies might be more popular than they currently are.

- Finally, although there are aspects of transport policy which show differentiation along party political lines, this area is somewhat more of a `clean sheet' than is the case in many policy debates. Although national elections are unlikely to be won or lost on the basis of transport policy, there may be much to gain by a party that can evolve a rational comprehensive transport policy that addresses people's concerns.

In this paper we explore these issues further, in some parts drawing on the 1994 data in combination with that from the 1993 survey, to increase the sample size. We focus on two questions in particular. First, how does support for new transport policies vary among the population? Here we use multi-variate analysis to measure the varying importance of a number of independent factors. Second, we pursue further when and how degree-level education may operate to dispose people more favourably towards new policy options.

2 WHICH TRAFFIC PROBLEMS CONCERN PEOPLE MOST?

Table 1 shows responses to a series of questions about traffic problems.

Table 1 - Seriousness of traffic problems (% of respondents)

	Very serious	Serious	Not very serious	No problem	Don't know
Congestion on motorways%	44	40	10	1	4
Increased traffic on country roads %	18	38	33	9	2
Congestion at popular places in the countryside	18	40	30	9	3
Congestion in towns and cities %	44	40	11	5	1
Exhaust fumes in towns and cities %	50	36	9	4	1
Traffic noise in towns and cities %	27	38	27	7	1

Very few people think that any of the above issues are no problem, although just over 40% think traffic in the countryside is not much of a problem, and about one third see no serious problem from noise. However for all issues over half think they are at least `serious'. Congestion on motorways and in towns and cities and exhaust fumes in towns and cities are all thought to be `very serious' by over 40% of respondents, and at least `serious' by over 80%. Interestingly traffic fumes emerge as slightly more of a problem than congestion in towns and cities - it has the highest proportion of people (one half) thinking it to be `very serious'. This may be attributable to the recent media attention to health risks from pollution caused by vehicle exhausts.

3 WHAT SHOULD THE GOVERNMENT SPEND MONEY ON?

Respondents asked a series of questions about whether the government should spend more or less money on each of several areas of transport policy. Improving local rail services is the option supported most widely, with local bus services close behind. Improving and widening existing roads is very much more popular than building new roads; indeed the balance of opinion on road building favours less rather than more spending. However, this is also the option where the highest proportion (one half) favour the status quo or don't know.

Table 2 - % supporting policies according to degree status and travel characteristics

	Local bus services	Road building	Local rail	Improving roads
Degree	76	11	81	37
No degree	51	20	54	44
Little transport[1]	51	18	57	41
Public Transport	60	15	57	40
PT + Car	58	18	73	43
Daily car	59	23	64	48
Daily car only	34	23	37	50

Of a wide range of characteristics examined (see also Stokes and Taylor 1994 and 1995), degree-level education differentiates views on government spending more than any other (see Table 2 above). Mode usage is also important, with daily car only users being notably less likely to support local bus and rail services, and - along with other daily car users - being most likely to support spending on road building and widening. Support for rail and bus services is strong from all those who travel frequently, except for those who use cars only.

4 HOW DOES SUPPORT FOR POLICIES VARY AMONG THE POPULATION?

In this section we focus on two key policy items. The first, about taxing car use more for the sake of the environment, represents a `tough' policy, which entails increased cost to the individual with no apparent direct personal benefit, for which we would expect limited support (as is the case). The second is a much `softer' option, about bus priority, which is more popular, suggesting that a majority accept that some change is necessary or inevitable.

Table 3 shows which groups with differing travel behaviour and social and political characteristics support the `tough' policy, and which groups do not support even the `soft' option. As many as 50% of those with a degree say they support higher taxes for the sake of the environment, while 37% of those in the highest income group do so; and likewise over 30% of males aged between 18 and 24, those using public transport more than weekly, those with a lot of political interest, and those classified as in the most `liberal' 25% of the population (in terms of their position on the liberal/authoritarian political values scale, Heath *et al* 1995). At the other end of the spectrum of public support, 31% of those who use a car daily and seldom use any other mode opposed even bus priority, as did 30% of those who said they have little or no interest in politics.

Table 3 - Support for various policies by various characteristics

		Sample size	"Car users should pay higher taxes for the sake of the environment"		"Buses should be given priority in towns and cities even if it makes things more difficult for car drivers"	
		n	% For	% Against	% For	% Against
Highest education qualification	Degree	*196*	50	29	82	10
	Higher	*295*	20	55	66	18
	A level	*246*	23	54	62	16
	O level	*453*	19	53	55	23
	CSE	*202*	17	55	52	23
	None	*783*	18	59	60	19
Age and sex	Male 18-24	*82*	30	35	54	23
	Male 25-44	*413*	28	50	64	20
	Male 45-64	*281*	24	58	64	20
	Male over 65	*171*	18	59	78	11
	Female 18-24	*112*	14	49	44	20
	Female 25-44	*506*	20	51	53	23
	Female 45-64	*347*	19	60	65	18
	Female over 65	*291*	18	53	64	14
Household income	<£6k pa	*508*	24	47	59	17
	£6-10k	*298*	16	54	60	16
	£10-18k	*485*	16	63	61	21
	£18-29k	*405*	19	57	59	22
	>£29k pa	*281*	37	45	69	19
Serious concern about ...	Congestion	*265*	18	59	56	24
	Pollution	*676*	28	45	70	16
	Both	*402*	28	48	68	16
	Neither	*863*	15	60	53	21
Travel behaviour[1]	Non driver	*865*	26	43	64	14
	Some car use	*482*	23	58	64	18
	Daily car + other	*546*	20	56	62	19
	Only daily car	*315*	11	70	49	31
	>Weekly PT user	*315*	30	42	68	14
	Daily car and PT	*87*	25	48	68	15
Household car ownership	No car	*606*	30	37	66	12
	One or more cars	*1602*	18	59	59	21
Social class (Goldthorpe)	Upper service	*250*	32	44	74	15
	Lower service	*347*	25	53	65	17
	Routine non-man	*504*	18	54	59	22
	Petty bourgeoisie	*183*	21	58	54	23
	Foreman-Tech	*197*	18	62	67	17
	Upper working	*173*	18	53	57	21
	Lower working	*472*	20	56	58	19
Employ-	Private company	*685*	18	53	61	16

ment	Nationalised	*48*	35	31	67	17
sector	Public employee	*274*	20	51	63	16
Political	Much interest	*334*	33	52	74	13
interest	Some interest	*324*	18	59	60	23
	Little or none	*304*	19	58	50	30
Party	Conservative	*727*	20	57	61	22
identifi-	Labour	*815*	23	51	62	16
cation	Liberal Democrat	*312*	23	51	63	18
	None	*161*	17	57	58	25
Left/right	Right 25%	*229*	24	60	59	22
values	Mid 50%	*458*	22	57	60	22
scale[2]	Left 25%	*229*	24	58	67	20
Liberal/	Auth 25%	*229*	19	64	64	21
auth'n	Mid 50%	*458*	18	63	58	26
scale[2]	Lib 25%	*229*	35	43	68	17

These findings suggest the following:

- There is much more variation in views for the `tough' policy than the `softer' one
- Degree level education is important to support for both the tough and soft options
- Men are more supportive of both options than are women, except in the oldest age group; women are more likely not to express support or opposition. Young men are less supportive of the soft option.
- High and low income people are more supportive of the tough option than those on middle incomes, but income has little impact on the soft option.
- Travel behaviour has a strong effect on attitudes, in predictable ways, and car ownership is also important
- Social class appears to have little effect
- Political interest has a marked effect on attitudes to both policies
- Party support has much less effect, though Conservative supporters are less supportive of the tough policy
- Left/right political values do not appear to differentiate attitudes to the policies, but those scoring highly liberal on the liberal/authoritarian scale are more supportive of both policies.

5 WHAT FACTORS INFLUENCE SUPPORT FOR POLICIES: MULTI-VARIATE ANALYSIS

In order to address the inter-correlation of some of the factors discussed in the previous section which seem to influence support for different policy options, we need to use multi-variate analysis. This allows us to establish which characteristics significantly influence attitudes to various new transport policy options, and which are more or less important. It evaluates the effects of a set of independent or explanatory variables on policy attitudes, and assesses the simultaneous effects of these explanatory variables. For instance, multi-variate analysis should enable us to establish whether there is a travel behaviour effect that is independent of car ownership.

One approach would be to select a couple of policy items (as in Table 3) to use in multi-variate analysis which we feel are particularly important or representative. The alternative chosen is to construct attitude scales; these are composite measures combining several individual items which tend cancel out some of the variations in response that may be due to extraneous factors such as question wording, context and so on.

As the first step in developing scales we carried out a factor analysis of the policy items in the 1993 questionnaire. The results indicate two broad dimensions to attitudes towards policies: a pro-public transport dimension and an anti-car dimension[3]. A factor analysis of the policy items in the 1994 survey confirms the existence of these two dimensions, suggesting that they are robust[4]. On this basis, we constructed two scales for 1993, one composed of questions about promoting public transport, the other composed of anti-car policy items[5]. The correlation between the two scales for 1993 is 0.44[6]. Thus the two dimensions are both over-lapping and distinct. Each scale has a range of 1 to 10, where low scores represent opposition to new transport policies, and high scores support. The mean for the anti-car scale is 5.49, and for the pro-public transport scales 6.84, demonstrating again that policies aimed at promoting public transport are more popular than those aimed at making car use more difficult and/or more costly[7].

This gives us two scales, each a composite measure of attitudes to new policy options, on which each respondent has a score. The next step is to carry out multi-variate analysis to establish the importance of various characteristics in explaining individuals' attitudes as measured by these scales. Since the dependent variables are continuous or normal, the appropriate type of model to use is linear regression.

We ran a series of regressions for each scale in order to investigate the significance of a range of relevant independent individual characteristics, suggested by the cross-tabulations, to attitudes towards transport policy. We included only those variables which are clearly independent of policy attitudes.

In the Tables (4 and 5) we report the *beta* for each independent variable (or set of variables), which is a measure of the relative importance of the independent variables in the model, and the *t* value which tests the significance of each[8].

Some variables were tested and found not to be significant, and are therefore omitted from the tables. In the anti-car model, none of the following had a significant independent effect: sex, age, economic activity status, social class, household income, housing tenure and place of residence. In the pro-public transport model the following had no significant independent effects on attitudes: age, economic activity status, employment sector, income, tenure and place of residence .

We can see that three individual attributes (of those examined) have a particularly significant effect on attitudes towards anti-car policies: level of qualifications, car ownership and travel behaviour. Generally, people who are better qualified, particularly

with A'levels or above, are more supportive of new anti-car policy options than are the less or unqualified. The effect is clearly largest for degree-level education. Respondents in car-owning households are significantly less supportive of anti-car policies, independently of how they actually travel. Those who mostly travel by public transport (solely or by car also), or by neither public transport or car, are much more supportive of anti-car policies than are those who mostly use cars (as drivers or passengers).

Table 4 - Results of multi-variate analysis for the anti-car scale

Variable (and omitted class)	Classes used in equation	beta	t value
Qualifications (No qualifications)	Degree	.26**	8.64
	Higher education below degree	.12**	3.89
	A'level	.14**	4.58
	O'level	.05	1.65
	CSE	.08*	2.57
Employment sector (Private company)	Nationalised industry	.06*	2.10
	Public sector	.01	0.03
Region (Rest of Britain)	Yorkshire and Humberside	-.07*	-2.43
Car ownership (No car)	One or more cars	-.13**	-4.03
Travel Behaviour (Car driver)	Car passenger	.08	2.29
	Car driver and passenger	-.03	-.86
	Car and public transport	.20**	6.68
	Public transport	.20**	5.86
	Neither car nor public transport	.15**	4.77
Proportion of variance explained (R-squared)	15%		*n*=1158

Table 5 - Results of multi-variate analysis for the pro-public transport scale

Variable (and omitted class)	Classes used in equation	beta	t value
Sex (Female)	Male	.08*	2.46
Qualifications (No qualifications)	Degree	.24**	7.93
	Higher education below degree	.11*	3.50
	A'level	.13**	4.26
	O'level	.03	1.09
	CSE	.05	1.65
Social Class Goldthorpe (Other classes)	Routine non-manual	.08*	2.54
Region (Other regions)	Northern England	-.06*	-2.14
Travel behaviour (Car driver)	Car passenger	.08**	2.34
	Car driver and passenger	.05	1.44
	Car and public transport	.23**	6.40
	Public transport	.21**	6.49
	Neither car nor public transport	.13**	4.32
Proportion of variance explained (R-squared)	10%		*n*=1189

* indicates coefficients significant at the 5% level.
** indicates coefficients significant at the 1% level.

There are smaller but significant independent effects for working in a nationalised industry rather than a private company, and for living in Yorkshire and Humberside. It is less clear these days what constitutes a nationalised industry, but this sector is likely to include rail and postal workers, and perhaps a substantial proportion of non-manual occupations. It may be their interest in the public services which disposes them to be relatively supportive of anti-car measures. As to region, it is not clear why residents of Yorkshire and Humberside should be more opposed to these policies than those in other regions, but noted that the clustering of the BSA sample may make regional analyses in particular less robust than others.

Turning to attitudes to pro-public transport policy options, we find that the same characteristics - qualifications of A'level or above, particularly degree-level, and mostly non-car (or mixed) travel, dispose people to be more supportive. We find those in the routine non-manual social class are more also more pro-public transport. This may be due to the concentration in this class of office and retail workers most of whom are female and many of whom probably travel by means other than car driving. Nonetheless, membership of this class has a small effect independent of characteristics such as sex and travel behaviour. Evidently men are somewhat more supportive than women of measures to promote public transport, as are residents of northern England - again we should be sceptical of this rather inexplicable result.

These results strongly suggest that two types of characteristics are important in shaping individual attitudes to new transport policy options: higher or further educational qualifications - especially degree-level, and car ownership and travel mode. Thus exposure to a liberal, enlightened intellectual environment through education on the one hand, and self-interest on the other - two rather contrasting sources - are at work. The importance of education and travel mode is strongly confirmed by similar analyses of the 1994 data.[9] These findings may give some guidance to those involved in the design and marketing of new transport policies.

However, we should note also the low proportion of the variance in attitudes accounted for by these factors; a great deal is left unexplained. As cross-tabulations and exploratory multi-variate analyses demonstrate, there are clearly associations between attitudes to new transport policies and other political attitudes such as the two dominant political values dimensions: left/right and liberal/authoritarian, and party identification. However, these types of characteristics cannot be used as explanatory variables in the way that prior and independent characteristics such as age or qualifications can be, because there is no clear direction of causality. Thus for example, certain attitudes towards transport may dispose an individual to support a particular party, but equally identification with a particular party might colour attitudes to transport policy. To examine these associations, different statistical techniques are required; this is the subject of continuing research.

6 WHAT DOES HAVING A DEGREE AFFECT MOST?

The previous section highlighted the importance of degree-level education and travel characteristics in accounting for attitudes toward policy. Given the significance of degree-level education, we explore this factor further by examining its importance to support for new policies within various sub-groups. Because some of the relationships may be non-linear, and because we wish to consider some factors such as political values which are not clearly independent of policy attitudes, we revert to using two-way tables; an alternative would be to use more sophisticated multi-variate techniques.

Table 6 isolates the effects of transport mode and degree-level education on attitudes toward policies, measured by the anti-car and pro-public transport scales. It shows clearly that for most travel groups having a degree has a large effect, although it does not exist for those who use cars most frequently. Other tabular analysis shows similar non-linearities in relationships such as the finding that men aged between 18 and 24 show variation in views according to their mode usage to a far greater extent than women in the same age group, or older men.

Table 6 - Effect of travel mode and degree on support for policies

	Anti-car scale		Pro public transport scale	
	Degree	No degree	Degree	No degree
PT > weekly	7.2	5.8	8.3	6.8
PT and daily car	6.0	5.8	8.1	7.2
Neither	7.1	5.4	8.2	6.6
Daily car	6.1	5.4	7.7	6.9
Only daily car	4.8	4.9	6.3	6.1

Table 7 shows for groups characterised by differing political values and party support how attitudes (using the two policy scales and the concern scale) of those with a degree differ from those without.

Table 7 - Effect of degree on support for policies, by various characteristics

			Car policy		PT policy		Concern	
		n	Degree	None	Degree	None	Degree	None
Lib/ auth values[2]	Authoritarian	*229*	5.1	5.3	6.8	6.7	7.2	7.2
	Mid	*458*	6.1	5.3	7.6	6.6	7.4	7.0
	Liberal	*229*	6.9	5.8	8.2	7.0	7.3	7.1
Left/ right values[2]	Right	*229*	5.7	5.4	7.0	6.6	6.9	6.6
	Mid	*458*	6.4	5.4	7.8	6.6	7.5	7.1
	Left	*229*	7.4	5.6	8.7	7.1	7.3	7.3
Party identif-ication	Conservative	*727*	5.3	5.2	7.2	6.7	7.2	6.9
	Labour	*815*	7.1	5.5	8.4	6.8	7.7	7.2
	Liberal	*312*	6.6	5.5	7.8	6.9	6.8	7.2

In general, having a degree has little impact upon concern about traffic problems, but has a large effect on support for both the more popular pro-public transport policies and the less popular anti-car measures. In brief:

- Among `liberals' and those in the centre, those with degrees are more supportive of new policies than those without but among `authoritarians', there is little difference.
- Among those on the left, those with a degree are likewise more supportive of new policies; on the right, degree-holders are more concerned about traffic problems than those without.
- Among Labour supporters, those with a degree are much more supportive of new policies than those without; the difference is smaller for other parties.

7 CONCLUSIONS

Our results suggest that degree-level education and both household car ownership and individual travel characteristics each have strong and independent effects on people's

views about transport policy options for the future. It is interesting that these two factors represent both a sociotropic effect that people with degrees (independent of their income) are more likely to support policies which might limit car use and an egocentric effect of mode usage [with habitual car drivers being more likely to be against policies which might predicate against car use],.

From a different angle, the level of concern shown about traffic fumes would seem to relate strongly to the increasing media attention given to the issue of traffic fumes and health. This again highlights the importance of campaigns and publicity in moulding opinions, particularly concern. However, similar media attention to the need to raise petrol prices to reduce energy use and the emissions causing the health problems might not be so successful. Media attention probably most strongly influences attitudes to the `easy' options - there may be a less `deeply-held' belief about these policies.

There are groups who have interesting attitudes. This analysis has highlighted young males aged between 18 and 24 as being particularly prone to the self-interest of their mode use in their attitudes, while young women are less prone. Unless this is a cohort effect rather than a lifecycle effect, it would suggest that measures aimed at young people in particular, encouraging them to continue to use public transport, walking and cycling (such as the extension of concessionary travel, and promotion of walking and cycling as `respectable' means of travel) might prove valuable in a number of ways.

In line with findings from other fields in the social sciences it appears that it is the time spent in the `liberalising' atmosphere of university which best explains the `degree effect', rather than higher intelligence, or `more education', or any other plausible explanation. Thus, while we regard campaigns such as Travelwise (now adopted by most counties in the South East and in some other areas) as useful for promoting a new personal evaluation of travel behaviour, and a change of values over the long term, the effects of such campaigns on attitudes may be limited. Perhaps more significant to a change of values in the longer term will be, first, environmental education from an early age and throughout the school system, and second, the broadening of higher education to a larger section of the population.

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[1] The classification of modes used has travel as a car driver "daily or nearly every day" and public transport "weekly" or more often to define use of a mode. EG "Car and PT" refers to someone who drives nearly every day or nearly every day, and who uses public transport at least once per week. This classification is used throughout the paper.

[2] We use attitudes to various statements to scale people according to a left-right political view scale and a liberal-authoritarian scale. The groupings of people here take the extreme quartiles of each scale. See Heath et al (1995) for further details.

[3] Fifteen policy items in the 1993 survey were entered in a factor analysis. (Seven other quasi-policy items were omitted either because they are not strictly about policy at all, or they are neither anti-car nor pro-public transport items, or because exploratory factor analysis suggests that they not part of either of these two policy attitude dimensions). Further details are available from the authors.

When constrained to two factors, the analysis resulted in an anti-car factor and a pro-public transport factor. One item (B2.38c - see below for wording), about both, loaded most on the anti-car factor but also had the highest loading on the pro-public transport factor of these variables, and is included in the latter scale to increase the number of variables. Further details are available from the authors.

[4] For the 1994 data, the following eleven policy items were entered in a factor analysis: questions B2.29a,b,d,e,f, B2.30a,b,e and B2.231a-d. When constrained to two factors, this resulted in a pro-public transport factor on which all of the relevant items loaded most highly, and an anti-car factor including all the anti-car items. The 1994 data is the subject of continuing research by the authors and will be reported more fully in a later paper.

[5] The items in the pro-public transport scale for 1993 are:
"For the sake of the environment, the British government should put a special environment tax on private cars and use the money to improve public transport" *5-point scale, strongly in favour to strongly against with mid-point neither in favour or against (B2.38c)*
"Thinking first about towns and cities. If the government had to choose ... it should improve roads" /... it should improve public transport" (B2.57a)
"And in country areas, if the government had to choose ... it should improve roads /... it should improve public transport" (B2.57b)
"Buses should be given more priority in towns and cities even if this makes things more difficult for car drivers (B2.61b)
"Britain should do more to improve its public transport system even if its road system suffers (B2.61f)" *5-point agree/disagree scale, with mid-point*

Factor analysis of the five items resulted in a single factor solution, with an eigenvalue of 2.18 explaining 43.7% of the variance. The Cronbach's (standardised item) alpha for the scale is .67.

The items in the anti-car scale for 1993 are:
"For the sake of the environment, the British government should ...
... spend public money on campaigns to persuade people to cut back on driving
... put up taxes on petrol each year for the next ten years to get people to cut back on driving
... restrict or ration the among of petrol that people are allowed to buy to make them cut back on driving"
5-point scale strongly in favour to strongly against, with mid-point (B2.38a,b,d)
"People should be allowed to use their cars as much as they like even if it causes damage to the environment" *5-point agree/disagree scale with mid-point (B2.56d)*
"For the same of the environment, car users should pay higher taxes" *5-point agree/disagree scale with mid-point (B2.58e)*
"Car drivers are still given too easy a time in Britain's towns and cities" *5-point agree/disagree scale with mid-point (B2.61d)*
"Here are some things that might be done about Britain's traffic problems. Please tick one box for each to say how strongly you would be in favour or against it.
Drivers charged tolls on all motorways *(B2.62a)*
Only vehicles with permits for essential business allowed in city centres in working hours *(B2.62b)*
Motorists charged for each mile they drive in city centres in working hours *(B2.62c)*
Much higher parking charges in towns and cities" *(B2.62d)*

Factor analysis of all ten items together produces a two-factor solution; six load on the first factor with an eigenvalue of 4.1, and four on the second, eigenvalue 1.1. The correlation between the two factors is .48. The single ten-item scale has an alpha of .84, to which all items contribute. The items loading on the two factors are not very distinct, but while the first group concern rather general policy notions such as the general priority given to car users, the second set concern more specific policy options, such as motorway tolls.

[6] For 1994 the anti-car scale comprised six questions: B2.29a,b,e,f and B2.31a and c. The pro-public transport scale, also six items, comprised: B2.29d, B2.30a,b,e and B2.31b,d. The correlation between the two scales is 0.51.

[7] The means for the two scales for 1994 are 4.75 for the anti-car scale and 6.27 for the pro-public transport scale, thus reiterating the finding from the 1993 survey data.

[8] Multi-category variables which may not be ordered, such as highest educational qualification, need to be coded as a series of 0/1 dummy variables to be used in regression. We need to create one fewer dummy variables than the number of categories of each independent variable, since the value of the omitted category is entirely determined by the other dummies. The omitted category serves as the reference category; the omitted category for each set of dummies is shown in parentheses in the tables.

[9] Analysis of the 1994 data is continuing and will be reported in a later paper by the authors.