The Privatisation of Transport: a Case-Study of Two Rural Villages

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Synopsis

This paper describes travel and energy use in rural villages in two rural villages. Cultural factors influencing travel and options for policy innovation are assessed.

Abstract

Environmental problems are caused by people's desires for mobility via private cars. Cars, with low occupancy, use a high level of energy per person/kilometre in comparison to other modes of travel. Walking, cycling and public transport require less energy, but, with the exception of walking, are less popular.

This paper shows how energy use in rural personal travel is polarised: 25% of the households use 40% of the total energy, whilst another 25% use just 10% of the energy. The impact of this polarisation of energy use in transport is discussed in relation to environmental impact, higher levels of dissatisfaction with levels of car use by high energy users and perceived loss of opportunities for making friends caused by some types of car use.

These findings suggest that lifestyles are now largely based upon the opportunities arising out of the use of cars which is tantamount to the privatisation of transport (i.e. a reliance upon a household-based provision of the means of travel). Lifestyles determine high and low energy use, but are themselves constrained by cultural factors and infrastructural provision. Thus it is argued that policy implications can involve innovative approaches, but there success will depend largely upon factors - such as costs, in time and money, and the availability of alternatives - that facilitate some lifestyles and constrain others. The scope for change using existing services and provision are assessed, in terms of the needs generated by differing lifestyles of high and low energy using householders in the villages.

1.0 Introduction

Both the villages studied have expanded dramatically in population in the last thirty years. The survey and interviews revealed that central to many of the respondents perceptions is the sense of migration, attendant new houses, jobs and other opportunities. These largely positive attitudes to transience and the malleable nature of '-community' inform attitudes to travel and its provision. Culture, in addition to transport infrastructure, will be discussed as an important determinant of travel needs and behaviour.

1.1 Background

Chalgrove and Cholsey, the two villages used in this study, are in South Oxfordshire. Both villages have major roads going through them, or on their outskirts. The mode of transport used the most in both villages is the private car: 96% of households in these villages owned cars. The villages have different types of public transport infrastructure. Chalgrove has a limited bus service that operates approximately hourly during morning and evening peak periods, and two hourly at other times in the day. The buses, which go through Chalgrove to Oxford in one direction and a town called Watlington in the other, stop at about seven o'clock at night. Cholsey has a rail-

way station, with trains about every half an hour and an approximately hourly service to Oxford, to a local market town called Wallingford and to Reading.

Much of the housing in Cholsey (population 3,428) was built between the two world wars, by the local councils, so the housing estates are substantial, and somewhat more uniform in appearance than those of Chalgrove (population 2,832). Neither Chalgrove nor Cholsey have the 'exclusive' or picturesque charm of some nearby villages and towns, but both places are perceived as desirable as indicated by the fact that house prices are as high or higher than those for comparable properties in parts of the City of Oxford (Root et al 1996a).

Both villages are sought after as residential locations and have broadly similar socio-economic profiles (Root et al 1996a). Not only is the City of Oxford, with its prosperous 'sun belt' economy within about fifteen miles for each village, but Reading, London and other towns and cities are within reach as commuter destinations. Official levels of unemployment are consistently below UK and Oxfordshire averages, at about 4% for both villages[1] (op cit).

1.2 Scope

This paper examines travel by a sample of residents in the villages of Chalgrove and Cholsey. The respondents are of interest because they typify a pattern of 'counterurbanised' lifestyles that are becoming more and more common in parts of the UK and elsewhere in Western Europe (Champion 1989).

The residents surveyed travelled approximately twice as far in 1996 as they did in 1978, increases in travel that are similar to national average increases of distance travelled in this period (Root et al 1996b). The doubling of distance travelled does, however, pose serious threats to the physical and social environment (Whitelegg 1993). It is part of the purpose of this paper to explore, using those in the study as examples of wider trends, the roles of lifestyles and changing employment patterns in determining levels of travel and potential for change.

2.0 Methodology

One of the objectives of this study of Chalgrove and Cholsey was to examine the travel patterns and needs of young adults. A team of six interviewers visited households identified from the Electoral Register and sometimes by local contacts, as likely to have residents in the 16-29 age group. (This banding was picked to coincide with *National Travel Survey* categories). Interviewers visited in August 1995, and if the household did contain a 16-29 year old person and if those concerned were willing, each member of the household was left a form to complete, which consisted of a day's travel diary and a questionnaire. The questionnaire contained 35 questions about employment, costs of transport and who in the household pays them, control of household finances, attitudes to cars and other forms of transport and opinions about public spending priorities, including transport. The questionnaire was reproduced in Root et al. (1996a).

All the travel diaries were put onto a database, in all 1,692 individual journeys. Two hundred and seventy nine people filled in travel diaries and questionnaires. Information was gathered fairly evenly from both villages: from Chalgrove 145 people (52% of the sample), and from Cholsey 134 people (48% of the sample) returned and completed questionnaires (Table 2-1). The sample was almost equally divided between the sexes. Information about the socio-economic groups of individuals from the two villages is given in Table 2-2.

Like all self completed questionnaires, the questions had different response rates. Thus there is always the concern that those who elected not to answer a question may bias the results in an unknown way. In addition, each respondent will have put his own interpretation on the questions which need not correspond to the intended meaning, thus again making interpretation of the data ambiguous.

The data in the travel diaries relate to one weekday's travel in the summer. Thus, the implications of the reported travel patterns should be seen as "pointers" rather than firm evidence. However, it will be noted than many of the findings in the study are similar to those reported elsewhere which suggests that despite the limitations the data may have captured the main features of the rural villages.

Table 2-1: Sample by age group in Chalgrove and Cholsey

	Age					
Village	Under 12	12-15	16-29	30-59	60+	Total
Chalgrove*	1	7	50	82	3	143
Cholsey	4	20	38	69	3	134

* two missing cases from Chalgrove

Table 2-2: Socio-economic groups in the sample in Chalgrove and Cholsey

	Village	
Socio-economic group	Chalgrove	Cholsey
Number of employed people		
Professional & managerial	11 (*16*)	25 *(34)*
Other non-manual & skilled manual workers	46 *(67)*	40 (*55)*
Semi- and unskilled workers	12 (*17)*	8 (*11)*
Number of unemployed people		
Student	11	12
State Benefit/ Pension	6	6
Housewife	5	3
Other (including no response)	54	40
TOTAL	145	134

Percentages are given in brackets

The classification of trips by mode has been simplified to concentrate on those which occurred most often. All travel by car has been included in the “car” class, so, for example, hitch-hiking and “friend’s car” were grouped as travel by car except for the purposes for assessing effects car of car ownership when only owned cars and company cars were included.

Results were judged to be of statistical significance at the five per cent level or less. Where results did not meet this criterion but were too close to be ignored the p value is given in the text.

The sample size used in this paper allows for the means for total individual mileage to be estimated to within 15% with 95% confidence and the total household mileage to be estimated to within 13.5% with 95% confidence. However, these estimates make no allowance for non-sampling errors, and so these figures indicate the best expected precision.

Data was processed using the software SPSS and, in the cases of small samples, the software package STATXACT which has been specifically developed to deal accurately with statistical calculations on small samples.

In addition to the questionnaire, a number of interviews were conducted in the two villages, including six focus groups. Four of the focus groups were of adults, two of young people and one of those of sixty years of age or older.

3.0 Current Travel Patterns

The miles travelled by different modes in the two villages are shown in Table 3-1. The journeys are the totals of distance covered by all those who filled in their travel diaries and those who travelled on the 'travel day'. Data are added together for all journeys.

Cholsey residents have access to a better public transport service and travel further by 'environmentally friendlier' modes (bus, cycle or train) more than twice as far than in Chalgrove (10.5 miles/person and 4.0 miles/person, respectively).

Table 3-1: Miles by mode of transport

Mode	Chalgrove	Cholsey
Car	3,192	2,601
Company car	606	447
Friend's car	353	135
Bus	198	383
Walk	172	179
Minibus	123	13
Cycle	77	154
Hitchhike	49	---
Motorcycle	45	---
School bus1	8	---
Taxi	8	7
Train	---	669
Underground	---	10
Total miles	4,830	4,598
No. of people in sample	145	134
Average no. of miles travelled/person	33	34

Notes: — no recorded journeys; numbers have been rounded

[1] An atypical figure, as most of the research was carried out in August, when schools were shut.

But the opposite is the case for aggregated 'car modes': Chalgrove residents travel 20% further by car than Cholsey residents (28.6 miles/person in Chalgrove compared with 23.8 miles/person in Cholsey). More miles were travelled in company cars in Chalgrove than Cholsey[2], and similarly more miles were travelled by those accepting lifts with friends. Lift-giving is affected by gender. Just over twice the number of lifts to household members were given by women (27 by women and 12 by men). Women gave nearly three times as many lifts as men to non-household members (11 by women and four by men).

Table 3-2, which lists the modal averages of distances travelled shows that people go furthest by train, car and bus. The average journey lengths by car and bus indicate the predominance of journeys to Wallingford from Cholsey (two or three miles) and to Oxford from Chalgrove (eight or nine miles).

There is some evidence to suggest that the percentage of those who used both modes of transport from each village (3% in Chalgrove and 8% in Cholsey) is different[3].

Table 3-2: Length (miles) per single journey by mode of transport

	Chalgrove Average	Cholsey Max.	Average	Max
Bicycle	1.0	11.0	0.5	15.0
Bus	9.0	14.0	2.0	138.0
Car	8.0	169.0	3.0	135.0
Taxi	4.0	4.0	2.0	3.0
Train			11.0	50.0
Van	3.0	84.0	3.0	46.0
Walk	0.2	8.0	0.5	4.5

3.1 Energy Use

The impact of the findings on energy use has been estimated in Table 3-3. These figures include journey length with mode and passengers as the main variables[4].

Table 3-3: Estimated energy use and mode of transport

		Estimated energy use	
Mode	MJ/passenger mile1	Chalgrove (MJ/day)	Cholsey (MJ/day)
Bus	0.83	164	318
Car	3.21	10,245	8,349
Company car	3.21	1,944	1,435
Cycle	0.10	8	15
Friend's car	1.60	564	15
Hitchhike	1.60	78	N/A
Minibus	1.15	141	15
Motorcycle	3.13	141	N/A
School bus2	0.83	7	N/A
Taxi3	1.15	9	8
Train	0.89	N/A	595
Underground	1.08	N/A	11
Walk	0.25	43	45
TOTAL: MJ per day		13,345	11,006
Average miles per person		33	34
No. of people in sample		145	134

[1] Estimations based on figures by Banister in Breheny, M. J. (1992: 165). Car occupancy is assumed to be one for car drivers, but 2.0 for car passengers. Buses and trains are assumed to be 33% full electric trains. Both diesel suburban and Intercity trains use more energy. Similar figures but give a lower MJ figure for cars, are given in Hughes (1993).

[2] An atypical figure, as most of the research was carried out in August, when schools were shut.

[3] 'Other private' is the category used, as taxis are assumed to be diesel fuelled.

The environmental gain made (2,300 MJ per day, 16,000 MJ per week, 839,500 MJ per year) amongst those sampled in Cholsey is probably as a result of the existence of rail use. The energy use in Chalgrove is 0.0191 MJ/mile/person/day and 0.0179 MJ/mile/person/day in Cholsey. If the 679 miles travelled on trains had been undertaken by car, then the energy use for Cholsey would rise to 0.0204 MJ/mile/person/day.

The data relates to individual journeys. Although all modes of transport were used in estimating transport energy use, the dominant contributor to energy consumption is the car. Thus energy use for transport is, in practical terms, synonymous with energy used by cars in this survey.

3.2 High and low energy users

Household energy consumption was estimated following Root *et al.* (1996). Forty per cent of the total energy consumption associated with travel was consumed by 25% of households, while 25% of lowest energy using households used only 10% of the total energy (Figure 1-1). Thus, the quarter of the households that travel the most are responsible for four times the energy use - and probably pollution - of the quarter that travels the least. If our sample had included pensioners, the range would probably have been extended. Even so, this is a substantial variation between households with similar age profiles in two similar villages in South Oxfordshire.

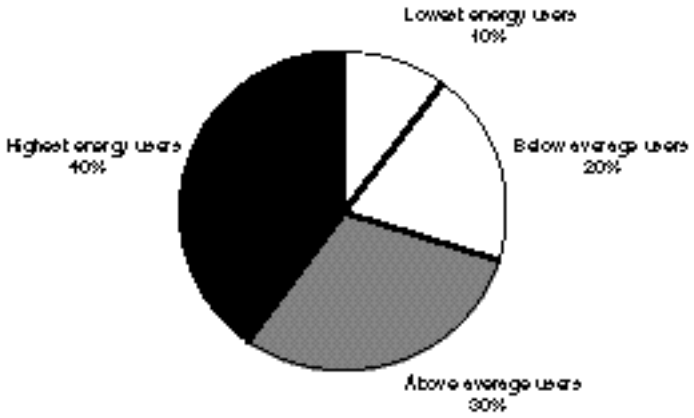

Figure 1-1: Estimated reported energy consumption by household in two Oxford shire villages, 1995.

The segments each contain 25% of the households, and their size shows the proportion of the total energy for travel expended.

Looking at the extreme ends of the distribution, however, the decile of households which used least energy were defined as “low” energy users and the 10% of households that used most energy were defined as “high” energy users. A summary of the characteristics of the two contrasting decile household types is given in Table 3-4.

Thus, high energy households were economically more active, better off and all owned cars. They travelled over ten times as far as the low-energy users, but, because of the different modes used, the ratio of energy used was nearly double this (1:19).

These differences in car ownership, age and earning power resulted in different methods of travel and the frequency and distance travelled (Table 3-5). The high energy users are travelling further by all methods, except by bus and cycle, than the low energy users. The low energy users do more walking trips than by car, though, of course, for substantially different distances. In both groups, half of all journeys are by car.

Trips to work and at work were a greater proportion of trips for the high energy households (31%, 1,583 miles) than the low energy households (10%, 35 miles). Conversely, shopping trips represented 11% of the journeys made by high energy households and 29% by low energy households. Additionally, no managers resided in low-

Table 3-4: Description of responding rural households in the high and low energy groups in two Oxfordshire villages, 1995

	Low energy group	High energy group
Respondents per household	2.2	3.5
Total reported miles travelled (all households)/day	269	2,722
Total energy use (all households)/day (MJ)	400	7,700
Percentage of respondents earning over £20,000	0	17
Percentage of respondents in full-time work	44	59
Modal age group of respondents	30-59	30-59
Percentage of households with at least two cars	90	100
Number of households	10	10

Table 3-5: Daily use of selected travel modes by respondents of low and high energy use rural households in two Oxfordshire villages, 1995

	Total number of trips		Total distance travelled (miles)	
Mode	Low energy	High energy	Low energy	High energy
Car	29	99	79	1,818
Walk	59	70	37	95
Bus	11	5	87	28
Pedal cycle	14	11	11	4
Train	2	12	28	25

energy using households; the association of distance and income was observed nationally by Stokes (1995).

Although high energy households used buses less than low energy households, overall they travelled more miles per person by public transport (mainly train). This reflects the level of economic activity of these households rather than usage for environmental reasons.

3.3 Environmental Impact

There was a difference in men's and women's responses to the idea that their quality of life suffered from the time spent travelling (37% of men and 25% of women). This difference may reflect the fact that men travelled, on average, 31 miles per day by car and women 17 miles.

Seventy-eight per cent of respondents said it was important to conserve fossil fuels. Fifty per cent thought that the quality of rural life was threatened by car use and 55% agreed the health risks associated with car pollution required action to reduce car use. However, most respondents did not associate health risks from car pollution with the quality of life in the countryside (only 30% of respondents linked these two aspects).

3.4 Community Life

There is also widespread public concern over the loss of community through the prevalence of the car for some journeys. For example, respondents made a connection in interviews between car trips to school and the loss of friendships made 'at the school gates' as follows:

> Betty: I found it [picking up children from school on foot] quite an enjoyable experience, because that was the time you would meet up with other people and walk down - it was all part of the community life, and you got to know people, walking. You don't get chatting to people in your car.
> Carol: You met at the village school gates, didn't you?
> Betty: Very much so.
> Bob: When mine were little anyway, we lived in a village at Benson, and that's where my wife met all her friends, picking the children up from school.
> John: Absolutely.
> Carol: At the school gates. But you don't if you're in a car. You sit and wait for them to come out.

Other research has collaborated these comments, showing that the quality of life is adversely affected by traffic levels. For instance, the number of social interactions on a street is inversely related to the amount of traffic using it (Whitelegg 1993).

3.5 Lifestyles

It is the argument here that lifestyles analysis creates new opportunities for research into transport choices and opportunities for change. Following Giddens (1991) lifestyles are defined as:

> (...) routinized practices, the routines incorporated in habits of dress, eating, modes of acting and favoured milieus for encountering others: but the routines are reflexively open to change in the light of the mobile nature of self-identity.

Lifestyles are constructed in particular 'lifestyle sectors' - time/space slices of an individuals activities (Turrentine 1994). Aspects of this time/space division were found in relation to time use, for example. Time was equally precious to high and low energy users and it was the waste of time that was resented most in relation to public transport (Root et al 1996b).In this study, with the dominance of the car, there is considerable scope for these lifestyle sectors to be 'de-localised'; separated across time and space.

Table 3-6: Level of choice of transport mode for journeys by occupation in two Oxfordshire villages, 1995. (% of trips which could have been made by car but the traveller used another mode)

Occupation	Bicycle	Walking	Train	Bus	Overall
Managerial	-	100	100	-	100
Professional	100	100	100	67	96
Skilled manual	93	82	100	-	85
State benefit/pension	100	77	-	-	81
Skilled white collar	100	77	62.5	78	78
Housewife	-	63	-	50	62
Unskilled manual	0	46	-	-	39

Those respondents without a car experienced difficulties. A third of all respondents said that there had been a job they had applied for, but did not, because of the difficulties of getting to the workplace. Those who, in the focus groups, had to rely on buses talked with anger and frustration of the difficulties and problems it imposed on their lifestyles. Levels of choice tended to be smaller for those not in professional or managerial groups (Table 3-6).

Opportunities for change are constrained by the spatial location of the villages in relation to amenities and workplaces. Scope for modal switches or travel reduction are also reduced by dominant lifestyle factors. In Chalgrove and Cholsey it is not possible to live a 'normal' lifestyle without access to a car. Despite adequate local shops and other facilities, and some opportunities for local employment (Root et al 1996b) most people in the village go

elsewhere for their paid work, shopping and leisure activities (Ibid). For those with access to a car, living such a de-localised lifestyle causes few difficulties. 'We have no alternative' said one teenage girl of her car use, a statement that was substantiated by the infrequency of buses in Chalgrove.

3.6 Dissatisfaction with Lifestyle

The attitudes of respondents from high and low energy households were compared (Table 3-7). Attitudes of household members reflected some quantitative differences between the households but health and fuel conservation were considered important by both groups.

Table 3-7: Attitudes expressed by the respondents of low and high energy use households in two Oxfordshire villages, (percentage of those responding in each type of household)

	Low energy users	High energy users
Agreed that lack of time encourages car ownership	50	93
Agreed that health risks require less car use	79	81
Agreed on importance of conserving fossil fuels	74	81
Want money spent on public transport rather than roads	53	75
Agreed that a car is essential for work	27	72
Unwilling to pay more for motoring costs	50	55
Unwilling to use a car sharing scheme	44	37
Agreed that a car is essential for shopping etc	53	52
Quality of rural life is threatened by car use	22	45
Quality of life would improve with less travel	11	34
Modal time to wait for bus (minutes)	10	10
Modal time to wait for trains (minutes)	10	10
Modal time to wait in traffic (minutes)	Have to wait; no choice	Have to wait; no choice

Socio-economic differences may help to explain some of the differences in attitudes. The high energy users were, perhaps predictably, more likely to agree that the car is essential for work and less prepared to pay extra for their motoring. They recognise that they use the car more partly as a result of pressure on their time. They were more aware of the damage the car does to the rural environment and of the health risks associated with car use. These high energy users were more responsive to the idea of car sharing, would like money spent on public transport rather than on roads and are more likely to believe that their quality of life would be improved by less travel. These travellers are not very happy with their lifestyle and are aware of its negative impacts on them and the environment.

The respondents in low energy using households were equally likely to believe that the car is essential for shopping and would tolerate similar travel delays as high energy using households, confirming that using a car for some activities is of equal importance for both high and low energy users.

It would appear that desires to live in particular areas and aspirations and actualities towards particular lifestyles can operate independently of, and as an inhibitor on otherwise 'rational' responses to dislike of high levels of car use. The wish to live in the country and work in cities is one such example of an area where lifestyles will potentially contradict change in transport goals.

4.0 Conclusions

The evidence presented in this paper suggests that high energy users are more sceptical about the car than low energy users, and more willing to try car-sharing schemes and to agree that money should be spent on public transport rather than roads. Such attitudes are unsurprising given the propensity for high-energy users to belong to the groups rich in economic and 'cultural' capital (i.e. social status evidenced through qualifications, taste etc) that often innovate and lead social change (Bourdieu 1979).

There is evidence from elsewhere that public concern about the environmental impact of transport is mounting. Thirty-six percent of the population in England and Wales considered traffic congestion and related problems as their chief environmental concern[5]. Stokes and Taylor (1994) reported a continuing increase in concern over road travel and damage to the countryside which rose from 25% to 33% between 1990 and 1993.

However, the members of the high energy group, perhaps foreseeing the consequences for themselves in terms of higher taxation are more reluctant than the low energy users to accept the idea that they should pay more for motoring. One problem that this raises is that issues of transport services have largely become disconnected from ideas of how they are paid for. The mechanics of tax collection - at a national level, via local government and as part of travel, e.g. in vehicle excise duty or tax in petrol, have become, or maybe always were, remote from the idea that they provide more bus services or more roads. Enabling more people to see the connection between tax and public services is important.

However, another conclusion can also be drawn. The upward trends in distance travelled are showing no sign of slowing. It is possible to speculate that although this survey revealed substantial differences in travel between men and women, a large part of such differences will be reduced as if there is greater equality in employment opportunities and if responsibility for children and other dependants becomes shared more equally between the sexes. There is likely to be, therefore, even more pressure on the environment and on community life through greater use of private cars. There is likely to be small scope for improvements through attitudinal change alone. Different infrastructural options such as better integrated land-use and transport planning and better infrastructure for pedestrians and cyclists, traffic management in various forms (such as local authorities having the power to impose lower speed limits) and better public transport - need to be explored. The importance of this discussion is becoming, almost daily, more obvious.

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Endnotes

[1] In order to register as unemployed, evidence of availability for work including evidence of child-care arrangements has to be produced. Those who are married with a spouse who is emnployed do not receive benefits, hence as many as a third of those who are unemployed do not register as such (Oppenhiem 1993)

[2] More people with company cars might move to Chalgrove, as they do not need public transport.

[3] Statistical significance p=0.068.

[4] Some other factors, such as fuel economy, are omitted.

[5] Personal communication, Central Statistical Office 1996.