



The Car in British Society

Working Paper 4: Conceptual Components

April 2009

Peter Jones

CONTENTS

1. Introduction
2. Factors Influencing Car Travel Choices
3. Wider Socio-economic factors
4. The 'Car Dependence' Score Card
5. Degrees of 'Car Dependence'
6. Dynamics of 'Car Dependence'
7. Mechanisms for Reducing Car Use
8. Consequences of Car Restraint

1. Introduction

This working paper reports on the main conceptual components informing a scoping study on car dependence in the UK funded by the Royal Automobile Club Foundation. It was designed to help inform the teams thinking on this subject following initial data analysis and literature review work for the study.

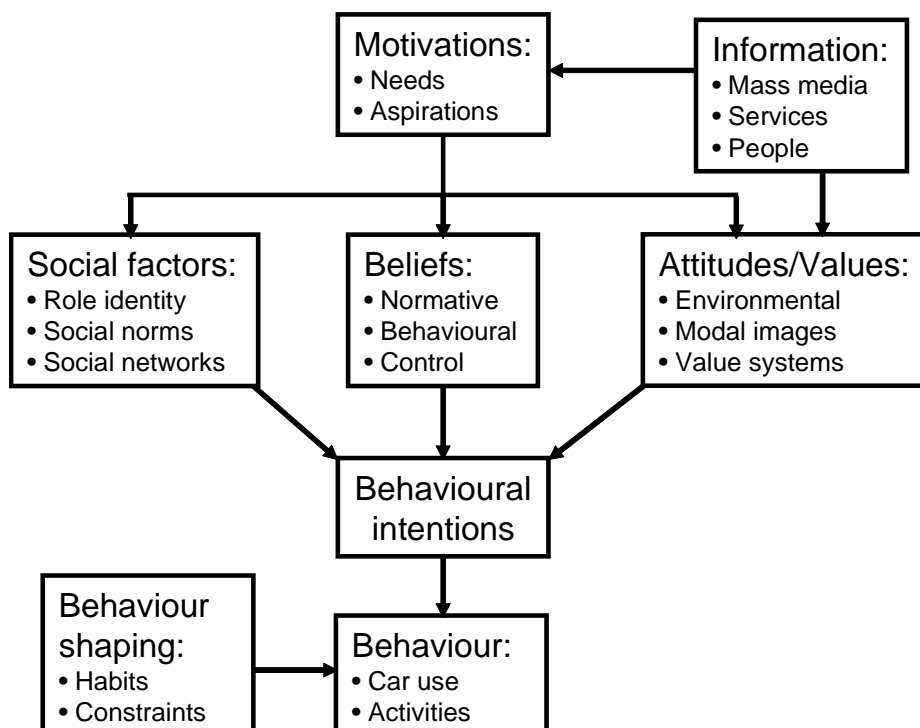
The study draws on a very broad range of literature and concepts. Rather than attempting to combine all this material into a comprehensive conceptual framework, we have produced a set of seven 'conceptual components' which set out some of the different aspects of our approach. These cover:

1. Factors Influencing Car Travel Choices
2. Wider Socio-economic Factors
3. The 'Car-dependence' Score Card
4. Degrees of 'Car Dependence'
5. Dynamics of 'Car Dependence'
6. Mechanisms for Reducing Car Use
7. Consequences of Car Restraint

A copy of the main report for the study and the other accompanying working papers which inform this can be downloaded from the RAC Foundation website at www.racfoundation.org.

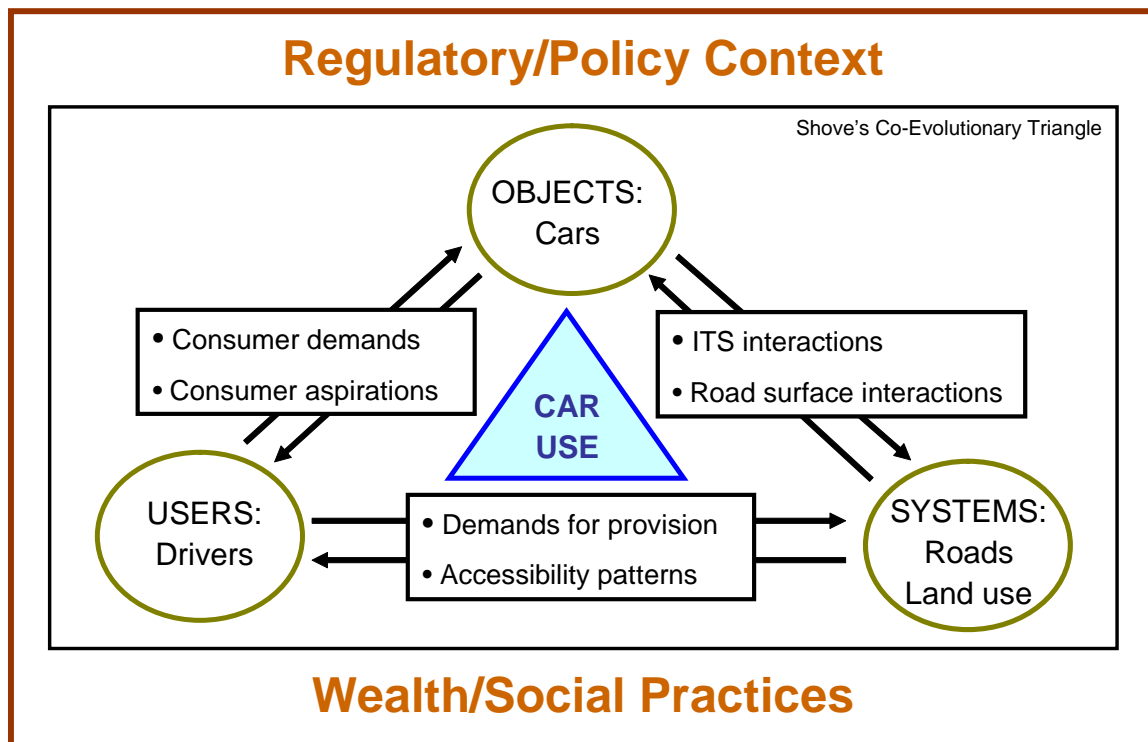
2. Factors Influencing Car Travel Choices

A wide range of factors potentially influence individual car travel choice process. These processes are generally initiated as a result of some kind of motivation, relating either to personal or cultural needs, or aspirations to achieve something. Information can both trigger a choice process and help to inform its execution.



The step between motivation and the establishment of an intention to undertake a particular car-related behaviour is mediated by a wide range of subjective factors, including beliefs, social factors, attitudes and values. There are further factors which mediate between behavioural intentions and revealed behaviour, including objective constraints and habits. Various models have been proposed to account for the ways in which these factors contribute both to behavioural intentions and realised travel behaviour.

3. Wider Socio-economic Factors



Most observed behaviour patterns (such as car use) arise from the interactions between three main cultural components:

- The primary Objects of consumption, in this case movement involving various kinds of motor vehicles;
- The Systems within which these objects operate, in this case road networks and land uses that are trip attractors, with associated parking provision; and
- The Users and consumers, in this case primarily car drivers

Interactions are typically two-way, and the evolution of patterns of car use is shaped by various changes and leads and lags in the state of these factors and their interactions over time. This whole process is framed by two broad considerations:

- i. The regulatory and policy context. For example, regulations affecting vehicle standards and design (Objects), patterns of driving behaviour, such as drink driving and seat belt wearing (Users) and controls at the System level (e.g. speed limits, road design standards, material specifications, parking regulations and road user charging).

- ii. Wealth/social practices, which affect the amounts of resources at people's disposal, and their willingness to allocate them to facilitate certain kinds of behaviour patterns.

Again, there are interactions at this outer level; for example, between transport provision and economic productivity, and between system regulation and political acceptability.

4. The 'Car-Dependence' Score Card

	Benefits	Disbenefits
To users	<ul style="list-style-type: none"> • Freedom to travel where & when desired • Cheap travel at point of use • Access to wider range of goods and services • Ease of movement (for passengers & goods) • Sense of power & identity 	<ul style="list-style-type: none"> • Costs of car purchase and maintenance (if on low income) • Stress of driving • Lack of physical exercise • Chauffeuring requirements • Traffic accidents
To society	<ul style="list-style-type: none"> • Expands labour and customer markets • Facilitates greater diversity of skills and activities • Important manufacturing and service sector 	<ul style="list-style-type: none"> • Congested road networks • Contributions to local air and noise pollution • Contribution to CO₂ emissions • Car-based developments preclude non-car access

The use of cars in daily life has a wide range of advantages and disadvantages, both at the level of the individual user and for the society/the economy as a whole. Examples of these are summarised in the above table.

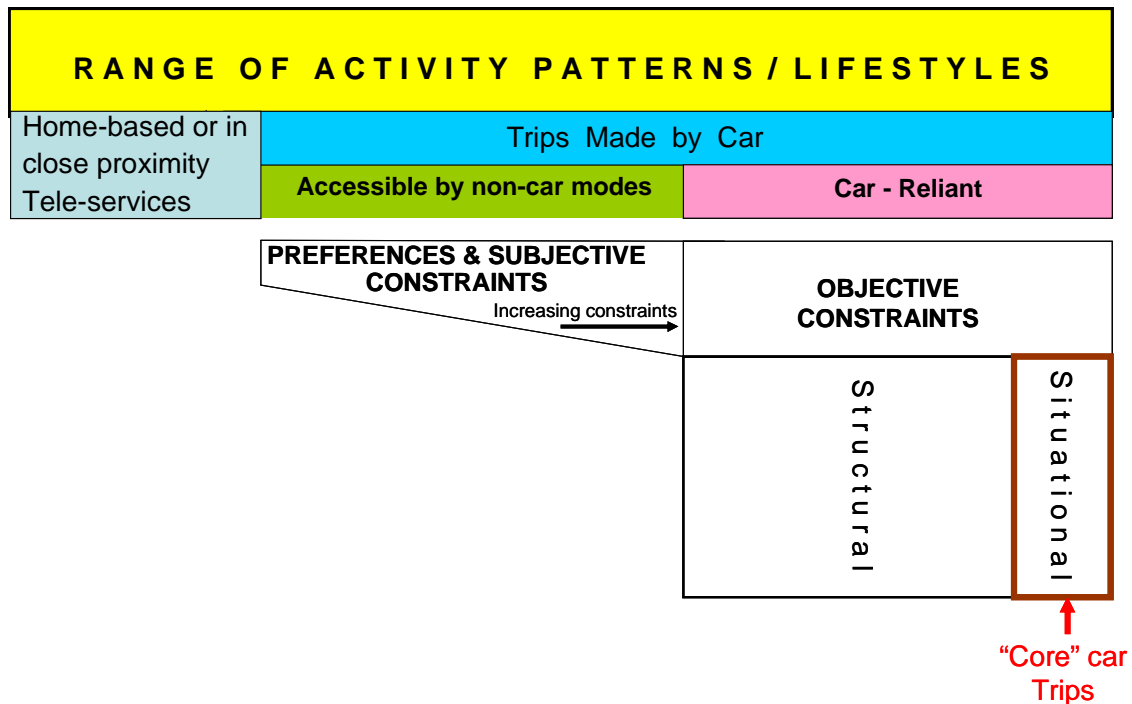
Individual car users benefit from car use in two ways. First, in a physical sense, of being able to access a wider range of goods and services, at any time of day or night, and in a way that is usually very convenient, and relatively cheap at the point of use. Second, they also benefit psychologically, from a sense of freedom and from obtaining a sense of status and identity, and a sense of power.

Conversely, they may disbenefit financially from relatively high costs of ownership and use (particularly among poorer households), and some suffer stress while driving and may experience traffic accidents, as well as lacking informal opportunities for physical activity. Finally, car users often act as chauffeurs for other family members, particularly children, which can seriously constrain their own travel/activity opportunities.

Society benefits from the widespread availability of car-based mobility, as this expands both labour and customer markets (except perhaps in the central/inner areas of large cities), and facilitates a greater diversity of skills and activities. The car industry also represents an important manufacturing and service sector within the UK economy.

On the other hand, high levels of car use also bring collective disbenefits, locally in terms of congested roads and air and noise pollution hotspots, and globally in terms of increasing CO₂ emissions. High levels of car use have also encouraged residential, commercial and public sector developments that are not readily accessible by non-car modes, thereby inducing a degree of car reliance, and reducing the opportunity set for those without access to a car.

5. Degrees of 'Car Dependence'



Collectively, the population engages in a very diverse range of activity patterns and lifestyles. One important group of the activities that people take part in are carried out at home, or in close proximity to home where they can be conveniently accessed on foot; some others can be accessed from home via tele-services, but the large majority of activities usually require travel further from home, using some mechanised form of transport.

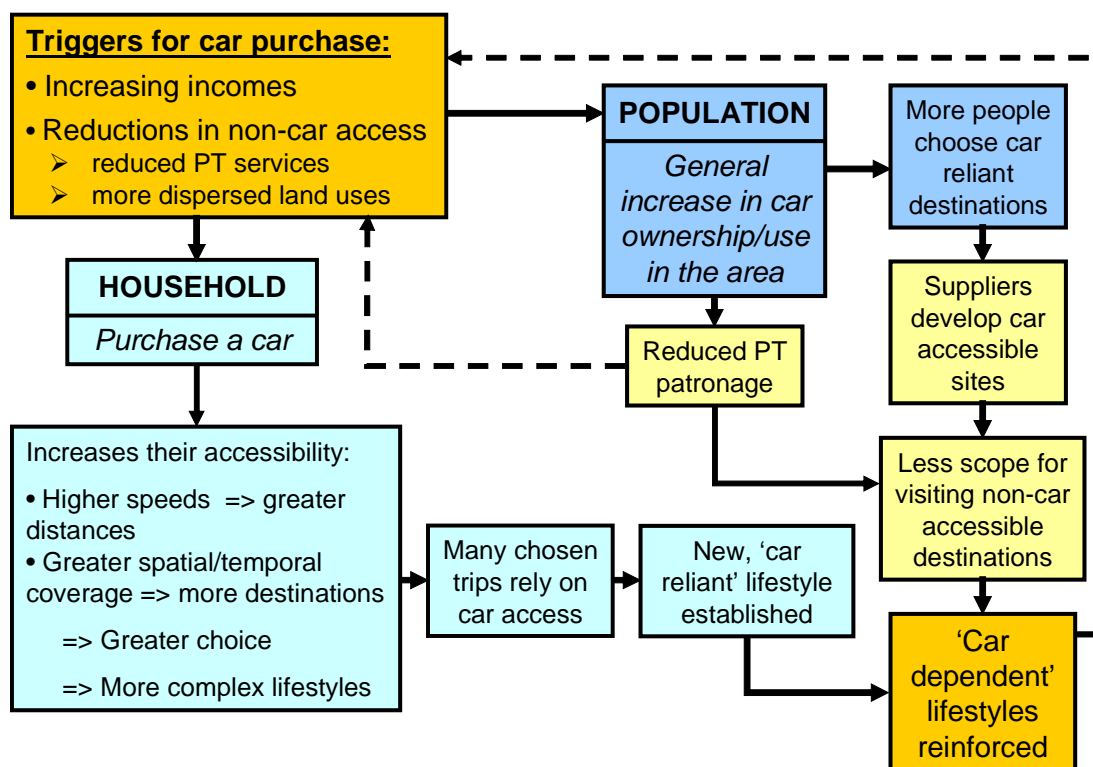
Among car using households, except in large urban areas, these mechanised trips are mainly undertaken by car. In a number of cases, these trips could be made by non-car modes, and the reasons for car use are generally subjective in nature. For example, lack of information about public transport services (routes, timings and fares), image concerns about using public transport, or personal preferences.

In many cases, however, there are currently no reasonable or practicable transport alternatives to car use that can sustain the kinds of activity patterns and lifestyles that people have built around their daily use of the car.

Looking more closely at the kinds of factors that lead to car reliance, these fall under two general headings:

- (i) **Structural constraints:** patterns of service provision and land use location that require people to access locations at times when there are no suitable public transport services – but where, in principle, many of these issues could be removed or reduced through improved public transport service provision or the re-timing or re-location of land use services; and
- (ii) **Situational constraints:** reflecting the requirements of the traveller or trip itself, such as the need to carry large or heavy items, or to transport people with mobility restrictions. Here improved public transport or more accessible land uses would not remove car reliance, and some form of door-to-door transport is likely to be required. This group represents ‘core’ car trips.

6. Dynamics of ‘Car Dependence’

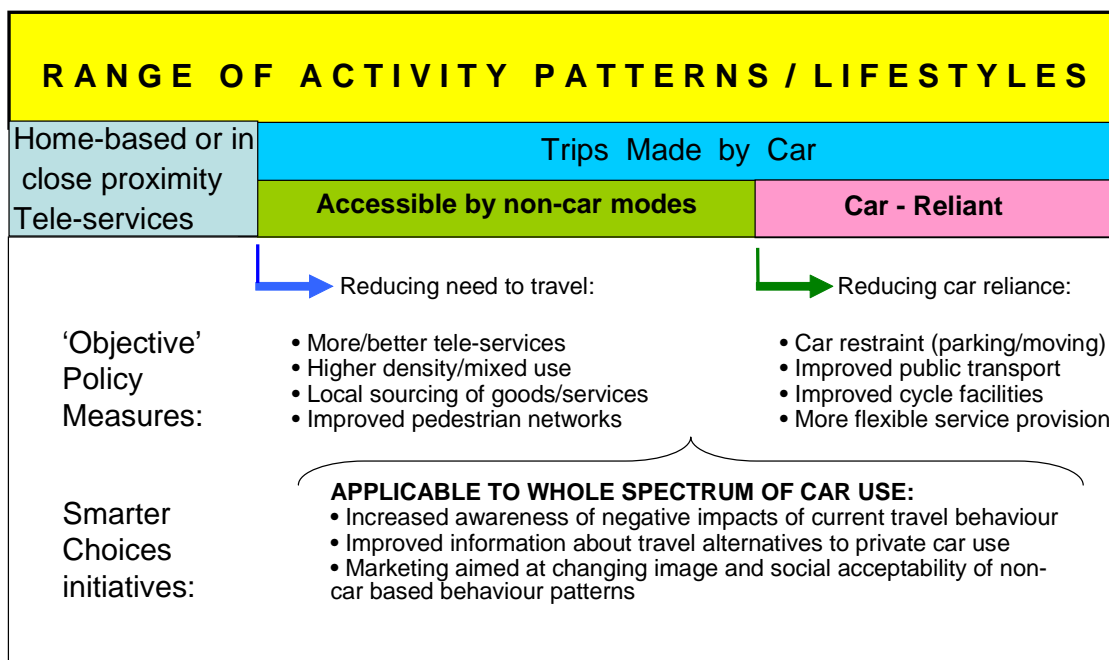


Increases in car ownership are triggered by rising incomes (‘carrots’) and declining accessibility by non-car modes (‘sticks’). For an individual household, acquiring a car not only makes travel for existing purposes faster and more convenient; it also gives household members a much greater range of destination choices, both over time and space, and can lead to new forms of activity/travel patterns that are strongly car-based. As a consequence, over time a car reliant lifestyle is established, but often still with considerable scope for using non-car modes and destinations, if required or preferred, in the short term.

At an aggregate level, however, general increases in car ownership in an area (associated with the same 'carrot' and 'stick' triggers) and associated switches of current trips to cars, can result in reductions in public transport service levels, and the location of new developments at out-of-town sites that are cheaper to develop and are often only accessible by car. When this happens, what were largely voluntarily chosen car-reliant activity/travel patterns gradually become car-dependent lifestyles in which the new behaviour patterns can only, in the main, be maintained by travelling by car.

There is thus a 'ratchet' effect over time, and households become locked into travelling by car. They are thus relatively unresponsive to many policy measures designed to encourage modal shift, and to sudden increases in the price of fuel. Equivalent evolving and mutually reinforcing patterns of reliance are not uncommon in other areas of major technological advance, from freezer ownership to the mobile phone and the development of the internet.

7. Mechanisms for Reducing Car Use



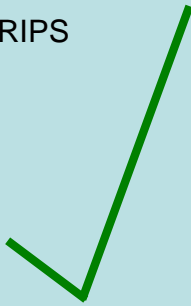

Building on Conceptual Components 4 and 5, we can identify various mechanisms for reducing car use, some involving improving the attractiveness of alternative transport modes, while others seek to directly constrain car use by reducing the attractiveness or availability of that mode.

Looking first at 'objective' policy measures, there are several measures that can be taken to reduce the need to travel, and so increase the proportion of activities that can be carried out at/from home or in close proximity. These are listed above, and their implementation would involve a wide range of agencies, from 'More/better tele-services' [telecommunications], 'Higher density/mixed use [planning], 'Local sourcing of goods/services' [commercial and voluntary organisations] and 'Improved pedestrian networks' [transport planners]. This policy area is relatively underdeveloped.

Measures which would increase access by non-car modes of transport tend to focus more specifically on the responsibilities of transport planners and public transport operators ('Car restraint', 'Improved public transport', 'Improved cycle facilities'), but some also involve other organisations which provide commercial and public sector services ('More flexible service provision'), since by retiming, relocating or co-locating services, it may make it easier to serve them by public transport.

In addition, there is a whole set of 'subjective' or Smarter Choices initiatives, which can help both to reduce the need to travel and encourage modal shift, through better information and marketing. Their implementation tends to be led by local authorities, public transport operators and some service providers at particular sites. However, they concentrate on the more marginal car trips that are susceptible to change – the 'low hanging fruit' – and so are likely to be less effective at achieving major reductions in levels of car use.

7. Consequences of Car Restraint

RANGE OF ACTIVITY PATTERNS / LIFESTYLES		
Home-based or in close proximity Tele-services (a)	Trips Made by Car	
	Accessible by non-car modes (b)	Car - Reliant (c)
<p>UNAFECTED TRIPS</p>  <p>NO IMPACTS</p>	<p>BUT:</p> <ul style="list-style-type: none"> • More limited range of destination choices and activity patterns/lifestyles • Knock-on effect on other household members • Likely increases in travel times • Possible increases in travel costs • Loss of freedom and security • Possible health benefits 	 <p>FOREGONE TRIPS</p> <p>UNKNOWN IMPACTS???</p>

Conceptual Component 4 broadly grouped activity patterns/lifestyles into three groups: (a) those elements which do not require motorised travel, (b) those which, while made by car, could be made by other modes, and (c) those which are completely car reliant.

Were very severe car restraint measures to be introduced, then Group (a) activities would be unaffected and Group (c) activities would be impractical and would have to be completely foregone. We know relatively little about the composition of these latter activities and associated trips, but for some households foregoing these activities/trips is likely to require major adjustments in activity patterns and their broader lifestyles, at very considerable social and economic cost.

Restraining car use in circumstances where there are modal alternatives (Group (b)) means that it should be possible to largely maintain broadly similar activity patterns and lifestyles, but there are likely to be various kinds of costs that are incurred, from some limitations on activity timing and location, to increased travel times and costs. Psychologically, some people are likely to feel a loss of personal freedom and security. One potential offsetting personal benefit might be that increasing levels of walking and cycling would be expected to lead to health benefits.