



Contemporary lifestyles and the implications for sustainable development policy: Lessons from the UK's Most Car Dependent City, Belfast

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The rise in demand for car travel is fuelled more by the increased spatial separation of homes and workplaces, shops and schools than by any rise in trip making. Belfast is one of the most car dependent cities in the United Kingdom. A major household survey was intended to inform an understanding of the likely behavioural response to sustainable development policy initiatives. The survey was one of a series of linked tools within a wider EPSRC Sustainable Cities Project research project. Insights into consumer responses to the various policy measures considered in the overall project were drawn in part from the stated preference experiments included in the household survey. Initiatives included improved domestic energy efficiency, increased densification of housing, improved public transport and the introduction of traffic restraint measures such as road user charges. There were signs of some willingness to accept moderately higher densities on the basis that residents would be compensated by a lower than otherwise purchase price. The typical effect of introducing road pricing say at £1.00 per day equated to a reduction in property values of some 2.5% while the absence of any apparent statistical significance generated by the public transport variable reflects its current lack of credibility as an alternative to the car. While Belfast may not be wholly typical, it does offer a warning of the extent of the challenge faced by policy makers in more car dominated cities in the UK and beyond. © 2001 Elsevier Science Ltd. All rights reserved.

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Introduction

Much of the focus of interest in sustainability relates to the apparently inexorable rise in the demand for car travel and the ability/desirability to supply sufficient road space to meet demand (see Department of the Environment and Department of Transport, 1994; Department of the Environment, Transport and the Regions, 1998a). In the UK, total passenger travel increased by 227 per cent between 1952 and 1996, from 219 billion passenger kilometres to 717 billion

kilometres (Department of the Environment, Transport and the Regions, 1998b), and almost all of this growth can be attributed to travel by motor car. The total distance travelled by motor car in 1996 was more than ten times the total distance travelled in 1952. Most motorists would find it difficult to live without access to a motor car. In a survey of 1500 motorists (Liebling, 1998), about 80% agreed with the statement "I would find it very difficult to adjust my lifestyle to being without a car".

This rise in demand is fuelled more by the increased spatial separation of homes and workplaces, shops and schools than by any rise in trip making. However, the complexities of the links between the

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location of activities and the movement needed to underpin them is understood less clearly. A better appreciation of these links offers major implications for sustainable development policies, such as the release of housing land on the edge of cities versus reuse of brownfield sites and other areas with good public transport accessibility. However, these issues cannot be divorced from questions encompassing consumer choice and contemporary living standards.

The concept of sustainable development emerged from the Earth Summit in Rio de Janeiro in 1992, and concerns "development that meets the needs of the present without compromising the needs of the future" (World Commission on Environment and Development, 1987). The UK strategy for sustainable development, outlined in Department of the Environment, Transport and the Regions (1998c) has four main aims. These are: social progress that recognises the needs of everyone; effective protection of the environment; prudent use of natural resources; maintenance of high and stable levels of economic growth and employment. The research providing the basis for this paper focuses on sustainable development initiatives relating to transport, urban development and housing.

The phenomenon of tensions between the city structure and the motor car is not a recent one, but dates to the 1970s and before (see Owen, 1972; Hass-Klau, 1990). Much of the urban environment has been developed to accommodate the motor car, including the road network, filling stations and car parks. The case study area, Belfast, is one of the most car dependent cities in the United Kingdom, with arguably the country's most generous road network and parking provision. Previous research (Northern Ireland Transport Holding Company, 1992) compared transport conditions in Belfast with other European and North American cities. It was concluded that circumstances in Belfast were more akin to an American city than a European city. In addition, public transport subsidy levels and usage of public transport in Belfast had dropped dramatically to levels well below other European cities.

Motor car ownership in Belfast increased rapidly in the second half of the 20th century. For instance, the ratio of cars to people increased from one motor car for every 33 people in 1951 to one motor car for every eight people in 1965 (Beckett and Glasscock, 1967). For the 10 year period from 1986 to 1996, the number of motor vehicles registered in Northern Ireland rose by 36%, from 472,855 to 641,000 (Royal Ulster Constabulary Central Statistics Unit, 1997).

In some aspects of motor car ownership, availability and use, residents in Northern Ireland are more dependent on their motor cars than are the residents of other regions of the United Kingdom (see Table 1). Residents in Northern Ireland appear much more willing to spend their disposable income on new cars, despite the fact that average incomes are as little as 80% of the UK average. Of the 1997 motor car fleet

licensed in Northern Ireland, 16.3% were newly registered, much larger than the UK average (9.6%) and ten times larger than those licensed in Wales (1.6%). Although Northern Ireland has average car availability levels, it has the largest proportion of residents using private motorised transport in their journey to work (78.8%). The rapid rise in motorised transport in Northern Ireland has been much faster over the last decade than other UK regions. Indeed, as shown in Table 2, the index for Northern Ireland (142.1) indicates a rise almost double those experienced in England (123.6), Scotland (132.6) and Wales (124.1) over the last 11 years. It could be justified therefore that Belfast is the most car dependent city in the UK.

Accompanying increasing car ownership, the study area has experienced a massive outmigration from the urban core, common to most UK cities, although exacerbated by the "Troubles". In the 1970s and 1980s more than a quarter of the population in Belfast moved out of the city of Belfast into the contiguous suburbs and dormitory towns and villages. This is illustrated in Table 3. Although 28.7% of the population moved out of the Belfast District between 1971 and 1994, the City Region grew by 2.7%.

This paper will outline contemporary lifestyles in the Belfast Metropolitan Area using results from a household survey. The research was undertaken as part of an EPSRC Sustainable Cities project entitled "Potential for Co-ordinated Strategies in Transport, Spatial Development and Rational use of Energy use in Buildings". The aims of the Sustainable Cities project were to:

1. develop a framework of linked tools based largely on existing models and databases to analyse relationships between transport system design, urban structure/design of built form and the rational use of energy in buildings;
2. validate these tools for a range of policy scenarios;
3. assess the practical potential for achieving the goals of sustainability across the transport and built forms sectors through explicit consideration of consumer choice.

The household survey was one of the linked tools within the research project. Other tools developed as part of the Sustainable Cities project included a transportation model, an energy consumption model (Cooper *et al*, 2000) and residential location hedonic models (Adair *et al*, 2000). The GIS package Arcview was used to synthesise developed and validated models and databases at differing levels of spatial resolution.

Results from the transportation model provide a useful context. Estimates for a range of policy scenarios, representative of transport and land use policy initiatives designed to promote urban sustainability, are given in Table 4 for the years 1999 and 2030. The assumption of city-wide densification at 40 households per hectare outside the CBD could provide a

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