Centre for Transport & Society

RESEARCH BRIEFING SHEET 006

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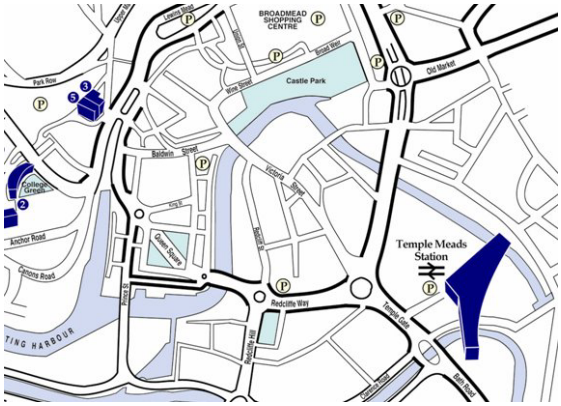
Navigating the city: supporting the unfamiliar traveller

Urban environments can be confusing or overwhelming for the unfamiliar individual. Cities often present complex networks of roads, streets, parks and pedestrian areas making it challenging for the individual to successfully or easily navigate the city and explore destinations or reach desired destinations. If people are unable to navigate the city successfully then their experience is compromised and the collective impacts for the city are likely to be adverse.



'Navigating the city: supporting the unfamiliar traveller' is a research activity which forms part of the five-year FUTURES research programme that began in April 2004. The aim of FUTURES is to investigate and promote the role of new technologies in achieving sustainable urban mobility. Within FUTURES, CTS is working with the Transportation Research Group at the University of Southampton and the Institute for Transport Studies at the University of Leeds alongside a number of stakeholder partners.

This research activity aims to improve understanding of the needs, capabilities, limitations and concerns of people in relation to travelling in the urban environment and reaching their intended destinations. In turn it is seeking to identify appropriate opportunities and advances that can be made in the provision of wayfinding assistance.

Background and Justification

Recently there has been considerable activity in the field of traveller information services. However this has mainly focused upon information relating to route, timing and cost of journeys. Less attention has been directed towards the provision of wayfinding services, that is, information that can assist the traveller in navigating their journey by themselves. Insufficient research has been conducted to ensure that current and future information provided for wayfinding is both useful (the information is what is needed by the traveller) and usable (the traveller is easily able to make use of the information).

Wayfinding has been described as spatial problem solving. It represents the variety of methods people employ to find their way from one location to another. Wayfinding is essential to any form of sustainable urban mobility and underpins the smooth and efficient movement of users through this system. It is relevant to all modes of movement – this research focuses upon walking, driving and public transport use.

Successful wayfinding helps people to conduct their journey without becoming lost, wasting time or feeling anxious or stressed. With sufficient guidance, people can undertake journeys on foot, confident that they are taking the correct route through an appropriate environment over a walkable distance. Better information to support navigation for car drivers has the potential to reduce lost miles, driver stress and risk taking. Access to, interchanging between and egress from public transport services can be disorientating and cause anxiety. This can lead to a loss of confidence in using public transport irrespective of the quality of the services themselves.

New technology provides, increasingly, the opportunity to collect, manage, process and disseminate information to the public. This is particularly true of the many-to-many capability of the internet and the means to receive information on the move afforded by mobile devices. It would seem, therefore, that new technology could have a major part to play in delivering (improved) wayfinding support to unfamiliar urban travellers. First, however, it will be necessary to better understand what support the public require and how to provide it. This is a key task for this research.

Objectives

The specific research objectives are as follows:

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- to work with leading urban authorities and service providers associated with wayfinding to advance the field of knowledge and application;
- to complete the review of wayfinding literature commenced in the FUTURES scoping study;
- to critically review existing electronic and paper-based systems purporting to assist (unfamiliar) travellers in navigating the urban environment;
- to probe the cognitive maps of travellers and urban dwellers by exploring how individuals communicate suggested routes and wayfinding advice to others and how that advice is judged and used; and
- to formulate guidelines on the provision of wayfinding support for pedestrians, public transport users and motorists.

Methodology

A literature review has been conducted covering all areas relevant to wayfinding, including architecture, psychology, transportation and computing. The review found a knowledge gap in research relating to wayfinding support. While much is known about the cognitive abilities of people as they find their way, there is less known about how people use wayfinding information in everyday situations.

A study of a sample of "directions.pdf" information sheets retrieved from the internet, a pilot questionnaire, and focus group discussion were undertaken to contribute to the design of a larger scale data gathering exercise. A survey questionnaire was distributed in the two case study cities, Bristol and Manchester, collecting details of respondents' experiences of finding their way to an unfamiliar destination in an urban environment. Analysis of these data highlights the techniques being used to wayfind, how useful these are and what respondents believe would further assist them.

Follow-up in-depth interviews were conducted with a subset of survey respondents to obtain greater detail of wayfinding experiences. These semi-structured interviews covered strategies used to wayfind, the wayfinding assistance used and its usefulness to the unfamiliar traveller. Discussion of wayfinding assistance included: new, or recent, technologies; signage systems; and map, written and verbal directions.

Key Findings

- Use of some wayfinding assistance has associations with traveller circumstances: gender, age and purpose of journey. There is a general preference among men for maps, while women tend to prefer written and verbal assistance. Young people, especially women, use A to Z maps and road atlases less than older age groups. Unfamiliar wayfinding for work associates with formal written assistance and using an A to Z type map, while those on social trips prefer to ask a friend or colleague.
- The survey found slow uptake of technology based wayfinding assistance. This has implications for those providing wayfinding services.
- Examination of attitudes towards abandoning an unfamiliar journey due to wayfinding difficulties produced three categories: 'always find it'; 'persevere'; and 'occasionally abandon'.
- Problems experienced during unfamiliar wayfinding can be categorised into three causal groups: complex layouts; simultaneous travelling and wayfinding; and comprehension of directions.
- Experiencing wayfinding problems during an unfamiliar journey can have negative consequences for third parties (wasted time, loss of custom, and loss of future custom) as well as for the traveller (stress, wasted time, loss of opportunity, and cancelled trips).

Further Research

The findings of this research will be used to investigate the creation of a 'wayfinding audit'. The focus of the audit will be to support professionals involved in wayfinding service provision in ensuring their services are of greatest benefit to their users. By applying these findings, the service provider can ensure that the information they provide corresponds with the preferences held by differing unfamiliar travellers, making it as easy as possible for unfamiliar travellers to locate their intended destination.

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