



Understanding
WALKING & CYCLING

Tim Jones
tjones@brookes.ac.uk

The
Oxford Institute
for Sustainable
Development
(OISD)

OXFORD
BROOKES
UNIVERSITY



“Walking and Cycling for Healthy and Sustainable Communities”

EPSRC

Part of £4M programme to develop 'cross-disciplinary research consortia in the area of walking and cycling'

Energy Programme



For a Low Carbon Future

Understanding
WALKING & CYCLING

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connect

Impact of **Constructing Non-motorised Networks** and **Evaluating Changes in Travel**

**VISIONS
2030**

For the role of walking and cycling in 2030



For the role of walking and cycling in 2030

Overview

1. The need to develop a better understanding of walking and **cycling**
2. Main objectives of the UWAC study
3. Study approach
4. Analytical and interpretative challenges
5. Summary: the anticipated impact

**The need to develop a better understanding of
cycling**

Cycling's potential

Cycling represents only 2% of all journeys travelled under 2 miles and 2% under 5 miles.

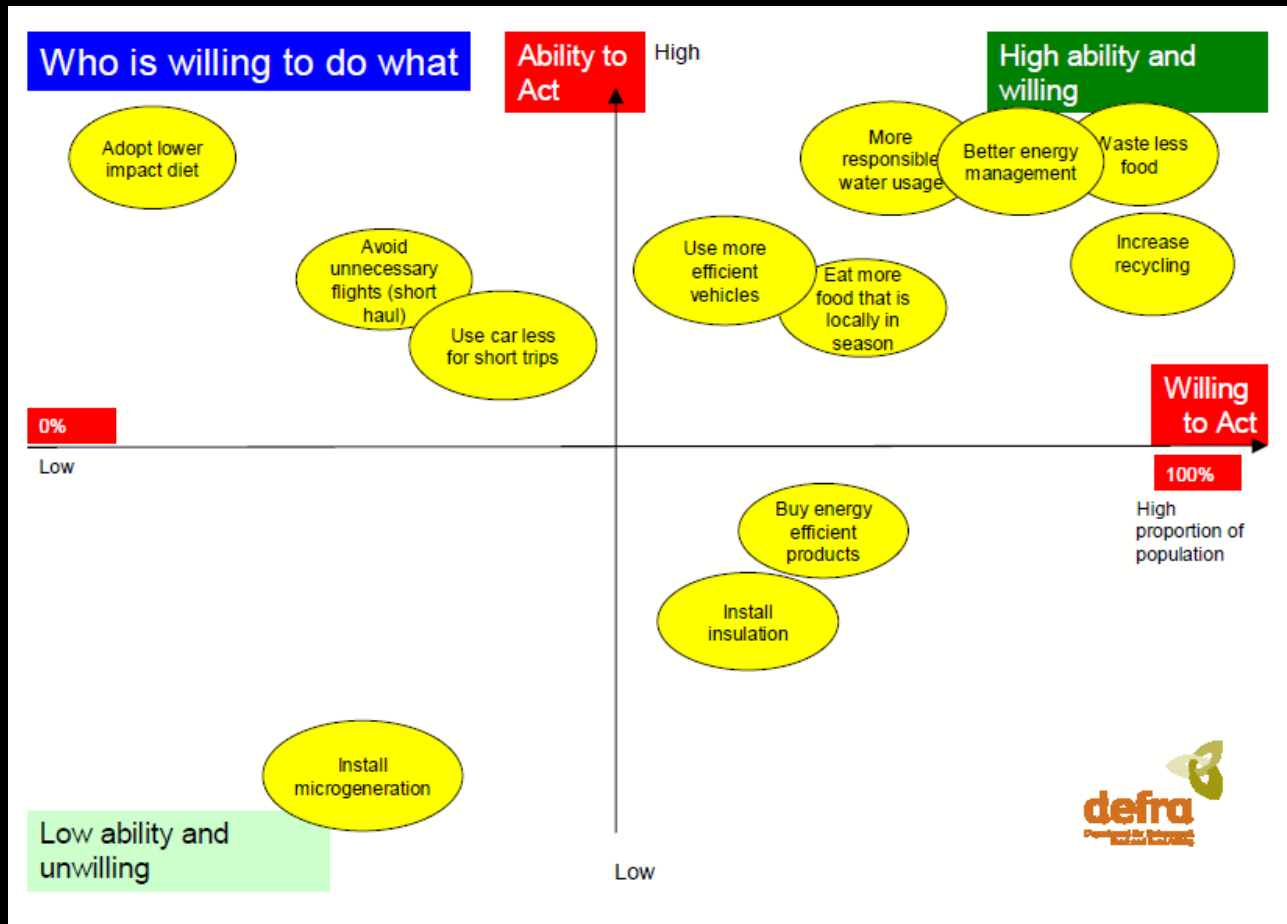
This compares with 35% and 51% (respectively) of all journeys over the same distances travelled by car.
(Mackett and Robertson, 2000)



Widespread agreement that...

...increasing the level of cycling for short journeys in urban areas could help to **reduce traffic congestion, improve the quality of the urban environment, promote improved personal health, and contribute to a reduction in carbon emissions.**

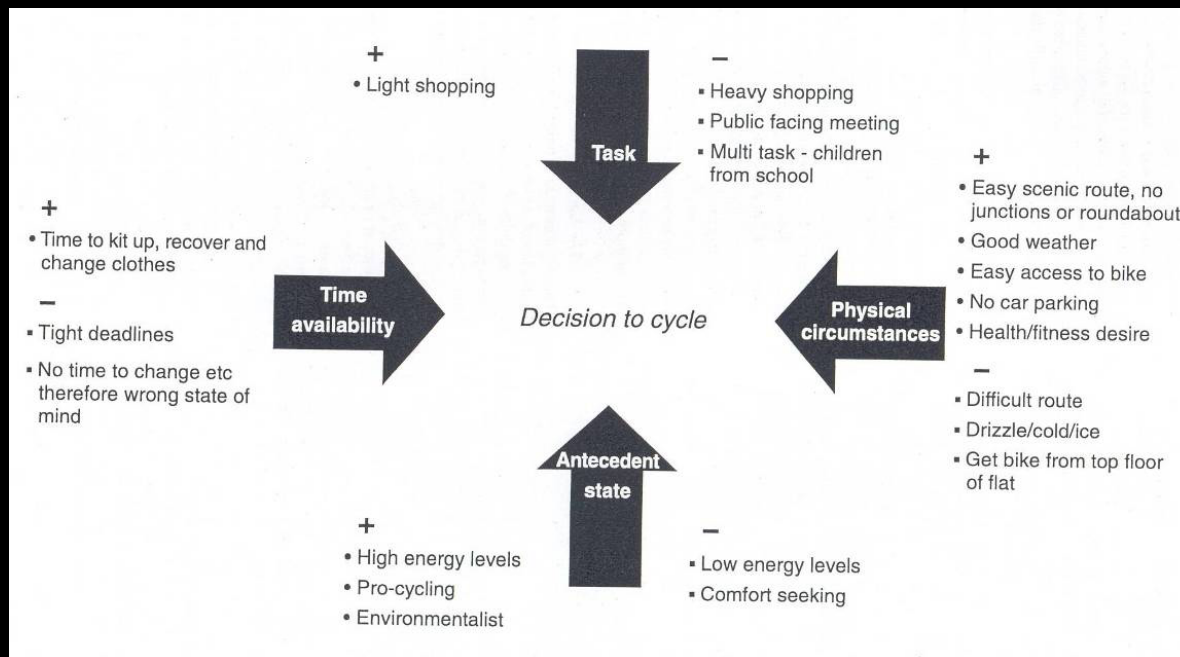
Figure 10.1: People's willingness and ability to act on 12 target behaviours including 'use car less for short trips' from Defra's *Framework for Pro-Environmental Behaviour* (Defra, 2008).



Limitations of existing research

1. Patchy understanding of the underlying reasons why more people do not cycle for short journeys.


- A full understanding of why people do (and do not) cycle is essential to the development of policies that can achieve more effective modal switch to sustainable travel.



2. Sparse evidence on the effects of interventions targeted at encouraging cycling.


- Policies and interventions to promote cycling are being developed which may lead to unintended effects and limited success.

Novices



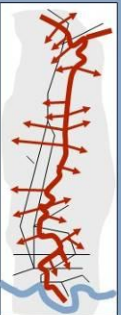
Traffic free route avoids main roads

Memorable



"Green corridor" through built-up area. Great entry to major city

Everyday Use



Spine route linking up numerous local routes

sustrans
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3. Bias towards quantitative modelling of travel behaviour which typically:

- includes only generalised personal characteristics (for instance, age, gender, household size etc)
- focuses at the level of the individual neglecting effects of situational household interactions set within a specific geographical context.

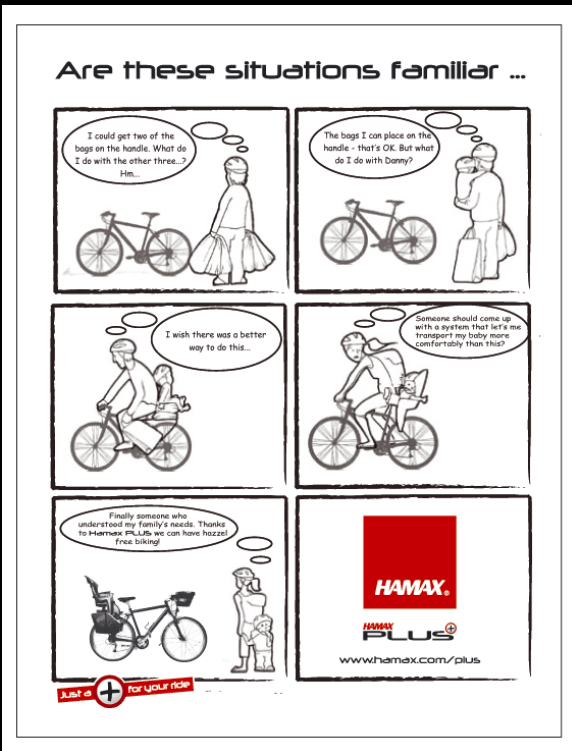


“While there is elegance in simplicity, we are regularly faced with complex underlying processes that are driving reality resulting in failures of our parsimonious models to explain highly heterogeneous behavior at the micro scale ...”

Walker, J. (2006) Opening up the black box: Enriching behavioral models of spatial and travel choices. *Journal of Transport Geography* 14, pp.396–398

UWAC study posits that ways in which travel decisions are made remain poorly understood

1. Failure to capture the micro-scale **complexity and contingency of household decision making** and associated travel strategies particularly in relation to **cycling**
2. The interaction of a wide range of individually situated social, economic, cultural, environmental and psychological variables (or **latent constructs**) need to be taken into account.



Behavior is a result of higher level constructs beyond easily observable socio-economic variables. Behavioral constructs along this vein include various attitudes, perceptions and capabilities such as spatial cognition, lifestyle, environmental consciousness, technical proclivity, and risk aversion.

Study objectives

To develop better **understanding** of the **complex** ways in which households and individuals make **everyday travel decisions** about **short trips** in urban areas

To develop a **'toolkit'** that helps planners and policy makers and others concerned with promoting more sustainable travel practices in urban areas to **target policies and interventions more effectively.**

Study approach

The UWAC research will...

1. Focus on **actual trips** rather than asking respondents to respond to hypothetical situations relating to modal change.
2. Situate cycling within the complex and contingent circumstances of **household** decision making and the **geographical context** where journeys take place.

Adopts a multi-method approach with emphasis on qualitative methods

‘We believe that without more widespread use of qualitative techniques in travel behaviour research, we will make little meaningful progress towards improving our fundamental understanding of travel behaviour’.

Clifton, K.J. & Handy, S.L. (2001) Qualitative Methods in Travel Behaviour Research. Prepared for the *International Conference on Transport Survey Quality and Innovation*, Kruger National Park, South Africa, August 5-10, 2001.

Develops from an inductive and interpretative standpoint

Not aimed at statistical representativeness. Instead aim to generalise about the nature of processes (to allow inferences and theory to be developed)

Initial questions to guide the research

1. How is cycling incorporated into everyday routines of families, households and individuals?



2. Do most individuals construct an identity of themselves and others as cyclists?



Initial questions to guide the research

3. How are decisions about specific cycling routes made?



4. How does cycling as everyday means of transport interact with other modes?



Initial questions to guide the research

5. How do specific interventions to promote cycling affect everyday decision making about short-distance travel?



6. How is the particular complexity and contingency of travel decision making best conveyed to planners and policy makers?



Case study areas



Population*	93,353	133,914	279,921	715,402
Index of Multiple deprivation **	185	135	23	114
Non-white British ethnic group (Eng ave = 13%)*	6%	5%	39%	11%
Connect2 intervention	Yes	No	Yes	No
Sustainable travel town?	Yes	No	No	No
Cycling Demonstration town?	No	Yes	No	No

*2001 census data

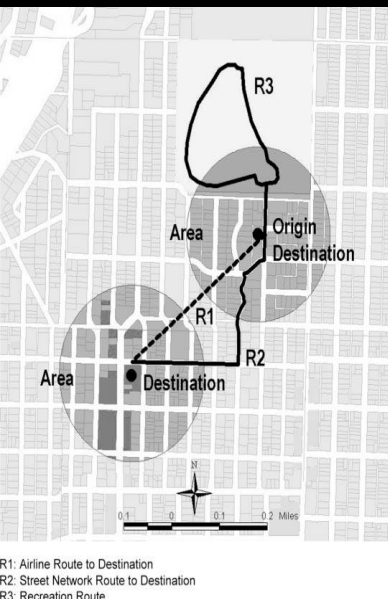
** English Indices of Deprivation 2007 rank of average rank, where 1 is most deprived and 354 least deprived

Survey of population

Questionnaire survey (c15,000) across four case study sites

Purpose is to gather background data on travel behaviour, attitudes and intentions and to identify households to participate in qualitative study

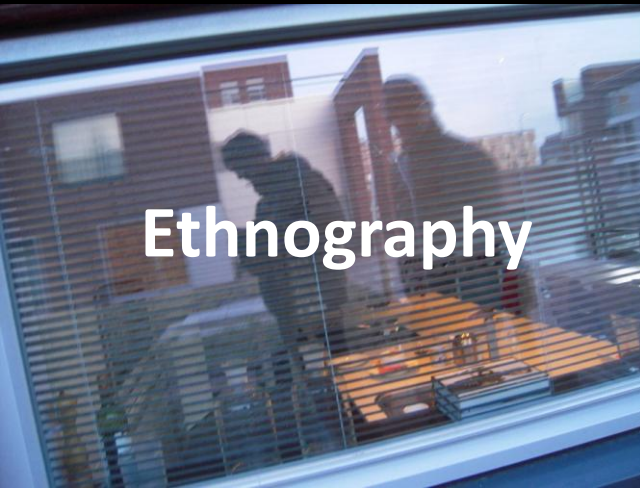
Analysis of urban structure



Measures of urban structure (land use and transport system characteristics).

Use of Multiple Centrality Assessment to investigate street patterns.

Qualitative Methods employed across 100 households



Total of 5 households in each location.

3 month study period in each location & up to 5 study visits.

Five investigative tools

1. Sit-down interviews
2. Observation
3. Mapping exercises
4. Mobility inventories
5. 'Go-alongs'

Potentially activity diaries/blogging.

Focus on household decision making

Total of 10 households in each location.

Household members interviewed twice with period of 6 months between interviews.

Current travel and change over time.

Total of 10 households in each location focusing on one regular cycle journey.

Route choice & experience whilst mobile and before & after the journey.

Analytical and interpretative challenges

1. Detailed analysis and interpretation of rich dataset of 'thick descriptions'.
2. Triangulation between methods.
3. Realising the potential to link narratives to spatial data (using GIS).
4. Possibility of bringing together a 'community of participants' to share & corroborate findings.

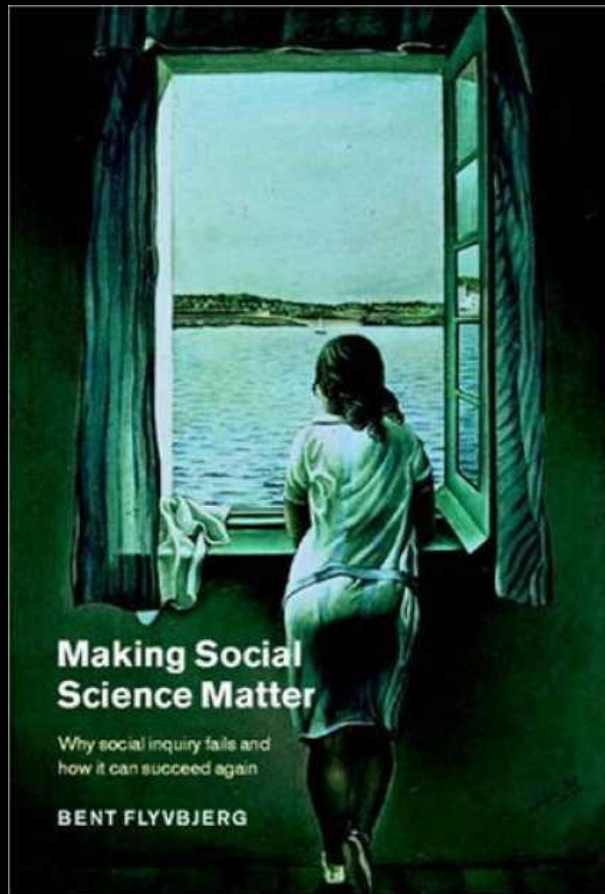
Summary: anticipated impact

In *Making Social Science Matter*, Flyvbjerg (2001, p166) argues that to re-enchant and empower social science we must do three things:

1. resist trying to emulate natural science's success in producing cumulative and predictive theory;
2. address problems that matter to communities at every scale; and
3. effectively communicate research findings to fellow citizens.

The UWAC study adheres to Flyvbjerg's logic and acknowledges the importance of context and complexity and the need to move beyond the analytical and technical towards a richer and more reflexive analysis of cycling (and walking).

Findings will help to facilitate radical change towards enhanced levels of everyday cycling (and walking).



THANK YOU

Tim Jones

tjones@brookes.ac.uk

& on behalf of the UWAC study team

Alison Chisholm (Department of Planning, Oxford Brookes University)

Helen Harwatt (Institute for Transport Studies, University of Leeds)

Dave Horton (Lancaster Environment Centre, Lancaster University)

Ann Jopson (Institute for Transport Studies, University of Leeds)

Colin Pooley (Lancaster Environment Centre, Lancaster University)

Griet Scheldeman (Lancaster Environment Centre, Lancaster University)

Miles Tight (Institute for Transport Studies, University of Leeds)

