

Centre for Transport and Society

Winter Conference

Programme and abstracts

16 December 2013

Celebrating 10 years of research and teaching



Programme

Time	Presenter	Title
10:00-10:15	Graham Parkhurst	Welcome/Introduction
10:15-10:45	Heather Jones	Understanding walking and cycling behaviour using life history interviews
10:45-11:15	Ben Clark	Examining the relationship between life transitions and travel behaviour change: New insights from the UK Household Longitudinal Study
11:15-11:30	Coffee	
11:30-12:00	Juliet Jain	Family Rituals 2.0 – the employers' perspective
12:00-12:30	Miriam Ricci	Mobility disadvantage, access to training and employment, and wellbeing: the case of Lawrence Weston in Bristol
12:30-13:30	Lunch	
13:30-14:00	Billy Clayton	The Parking Predicament: A behavioural comparison between Park and Ride and city centre car park usage
14:00-14:30	Adrian Davis/ James Coleman	The Traffic Choices project: An evidence-based approach to helping neighbourhoods identify cost effective local traffic management schemes to improve road safety
14:30-15:00	Tim Chatterton	Variations in car type, size, usage and emissions across Great Britain and relationships with socio-demographic characteristics
15:00-15:15	Tea	
15:15-15:45	Glenn Lyons	Valuing travel time savings in the face of worthwhile use of travel time
15:45-16:15	John Parkin	The impact of vibration on comfort and bodily stress while cycling
16:15-17:00	Wine reception	

Abstracts

Understanding walking and cycling behaviour using life history interviews

Dr Heather Jones. *Research Associate, Centre for Transport and Society*

Walking and cycling have been typically examined using cross-sectional approaches that focus on contemporary characteristics and conditions. The lack of a temporal research perspective constrains our knowledge of, and ability to promote, walking and cycling as life-long practices. Biographical interviews were conducted to gain a long-term view on behavioural trajectories. From participant's reflective reasoning of their past behaviour insights were drawn on change and continuity, and how changes in macro-contextual conditions might be distinguishing cohorts in their opportunities and constraints to be active through recreation and travel. Findings were synthesised into a conceptual framework that integrates the macro and micro level behavioural influences with concepts that address the temporal, gendered and inter-personal facets of trajectories. This offers a conceptual platform from which to theorise the longitudinal processes of individual trajectories.

Examining the relationship between life transitions and travel behaviour change: New insights from the UK Household Longitudinal Study

Dr Ben Clark. *Research Associate, Centre for Transport and Society*

Dr Kiron Chatterjee. *Associate Professor in Travel Behaviour, Centre for Transport and Society*

Dr Steve Melia. *Senior Lecture in Planning and Transport, Centre for Transport and Society*

Emerging research has established that significant changes in travel behaviour are likely at the time of major life events, especially those involving a change in household composition, employment status or residential or job location. However, there remains much to learn about the extent to which different life events trigger behavioural change and the conditions under which life events are more likely to trigger change. The UK Household Longitudinal Study (UKHLS) offers a previously unavailable opportunity to investigate this for a large, representative sample of the UK population. We have also linked UKHLS data to local spatial data, drawn from the census and other sources, to elucidate the effect of the spatial context on changes to travel behaviour in association with life events. Findings from an exploratory analysis of UKHLS waves 1 and 2 data are presented first. Transition tables establish a strong association between car ownership and commute mode changes and life events including: employment changes, residential relocations, retirement, child birth and changes in household structure. Results are then shown of logit models which relate the probability of a change in the number of cars owned and commute mode to the occurrence of life events, controlling for individual and household characteristics and spatial context. These show, for example, that urbanizing and ruralizing moves have contrasting effects on travel behaviour and having a new child in itself is not a significant influence on car ownership in the short term. Plans for the rest of the study are then outlined. This includes using data for a larger set of waves to examine the stability of travel behaviour and role of life events in disrupting stability.

Family Rituals 2.0 – the employers’ perspective

Dr Juliet Jain. *Senior Research Fellow, Centre for Transport and Society*

Dr Billy Clayton. *Research Fellow, Centre for Transport and Society*

Dr Marina Marouda. *Research Fellow, School of Tourism, Bournemouth University*

Professor Adele Ladkin. *School of Tourism, Bournemouth University*

Travel for work is set to stay for the foreseeable future despite the opportunities afforded by digital technologies to reduce travel. For many employees travel for work means staying away from home overnight, often on a regular basis. Family Rituals 2.0 aims to understand the impact of work related travel on family life, and explore how digital technologies can support family life while employees are away. As a multidisciplinary project it draws on ideas from mobilities, employment practices, family research, as well as concepts of rituals.

The presentation will set out the premise for the research, and will report on early evidence gathered from interviews with HR managers from eleven organisations representing a diverse set of sectors and company sizes. It will also indicate the next steps being taken to understand the experiences of mobile workers themselves.

Mobility disadvantage, access to training and employment, and wellbeing: the case of Lawrence Weston in Bristol

Dr Miriam Ricci. *Research Fellow, Centre for Transport and Society*

The presentation is about a research study exploring the relationship between mobility disadvantage, access to education and employment, and wellbeing in Lawrence Weston in Bristol.

Lawrence Weston is a post war estate in the north west fringe of Bristol, with significant pockets of deprivation and social exclusion. Access to work and skills is made particularly difficult by the lack of direct public transport services and poor walking and cycling links to neighbouring employment sites and key training providers.

The presentation will discuss the theoretical framework underpinning the study, as well as its objectives, research questions and methodological approach.

The research study is in its preparatory phase and is funded by SPUR, an internal UWE grant to support early career researchers.

The Parking Predicament: A behavioural comparison between Park and Ride and city centre car park usage

Dr Billy Clayton. *Research Fellow, Centre for Transport and Society*

Dr Miriam Ricci. *Research Fellow, Centre for Transport and Society*

Dr Eran Ben-Elia. *Senior Researcher/Lecturer, Tel Aviv University*

Professor Graham Parkhurst. *Director, Centre for Transport and Society*

Park and Ride (P&R) is regarded by many as an important element in an integrated transport policy package for achieving more sustainable urban mobility. However, over the past two decades there has been an on-going academic debate about the real benefits of P&R for achieving sustainable mobility goals – including car traffic and emissions reduction. This paper contributes to this debate by presenting the findings of a comparative study which conducted surveys of users of P&R sites and of city centre car parks (CCCPs) in the City of Bath, UK. Contrasting the behaviours of P&R users and CCCP users presents an original perspective on travellers’ considerations in urban parking choice. The differences between P&R users and CCCP users are mapped and compared statistically. The explanatory factors influencing parking location choice are examined and identified using a binary logistic regression model. The results suggest that socioeconomic factors including age and income, travelling alone or in company, as well as the relative availability of car park and P&R facilities are important explanations of parking choices. Without

the availability of P&R, many P&R users reported they would drive the entire length of the journey, although some indicated they would use an alternate mode for some or all of the trip. Regarding CCCP users, without the possibility to park in central locations, many would prefer to walk, cycle, or use public transport. These results highlight the ways in which parking policy can create tensions and trade-offs in efforts to achieve more sustainable mobility patterns. The implications for more effective integration of parking and public transport policy are discussed.

Traffic Choices: Developing a resource to aid community decision making on road safety in Bristol

Dr Adrian Davis. *Public Health support to City Development at Bristol City Council*

Dr Paul Pilkington. *Senior Lecturer in Public Health at University of the West of England*

James Coleman. *Knowledge Transfer Partnership Associate at University of the West of England*

Aim: To develop an evidence-based resource to aid community decision making on road safety in Bristol.

Background: Every year, each of the fourteen neighbourhood partnerships in Bristol is allocated money for small-scale traffic schemes. Residents in the community can attend partnership meetings and decide how the money is spent. Concern arose over the lack of evidence used in making decisions to solve issues such as crossing the road, or speeding. Furthermore, some residents became frustrated about the lack of information available on traffic schemes, and as a result, highways engineers within Bristol City Council were becoming overburdened with individual queries from members of the public.

Methodology: To facilitate the process by creating an evidence based reference website for small-scale traffic schemes. For common traffic issues (e.g. speeding, crossing the road) the website suggests schemes to address these safety concerns. Each scheme is accompanied by a description, advantages, disadvantages, cost and how effective it is at preventing traffic injuries. To provide injury reduction information, the project undertook a literature review of safety effects of traffic schemes using peer reviewed evidence and grey literature (e.g. TRL). The website uses plain de-jargonised language to be accessible to all those who may attend neighbourhood partnership meetings whilst also including 'advanced' information with justification and references for those pursuing extra information. To increase engagement with members of the public and help communicate common themes, three videos are used to summarise important information and draw users into using the website options.

Results: As the website is currently in the pilot stage, only preliminary evidence is available but piloting will be completed by November. Early indications show the website is very well received by neighbourhood partnership co-ordinators and the public. Feedback has commended a clear layout, and high quality of photos and videos.

Conclusions: The website could become a very useful resource in the decision making process for traffic schemes in Bristol's neighbourhood partnerships. If successful there is also potential for extending use beyond Bristol. In the longer term there is also the potential to apply the concept of an evidence based website to other topics around the built environment.

Variations in car type, size, usage and emissions across Great Britain and relationships with socio-demographic characteristics

Dr Tim Chatterton. *Senior Research Fellow, University of the West of England, Bristol*

Ms Jo Barnes. *Research Fellow, University of the West of England, Bristol*

Professor R. Eddie Wilson. *Professor of Intelligent Transport Systems, University of Bristol*

Professor Jillian Anable. *Professor of Transport and Energy Demand, University of Aberdeen*

Dr Sally Cairns. *Senior Research Fellow, Transport Research Laboratory and University College London*

Abstract

This paper is an early output from the EPSRC/RCUK Energy Programme project, MOT (Motoring and vehicle Ownership Trends in the UK). The MOT test record dataset recently released by the Department for Transport provides the ability to estimate annual mileage figures for every individual light duty vehicle greater than 3 years old within Great Britain. Vehicle age, engine size and fuel type are also provided in the MOT dataset and these allow

further estimates to be made of fuel consumption, energy use, and air pollution and greenhouse gas emissions per vehicle. The use of this data permits the adoption of a new vehicle-centred approach to assessing emissions and energy use in comparison to previous road-flow and national fuel usage based approaches. The MOT dataset currently also allows a spatial attribution of each vehicle to a postcode area, through the reported location of relevant vehicle testing stations, allowing this new vehicle data to be linked with socio-demographic data in order to determine the probable location of vehicle owners and consequently potential characteristics of the drivers.

The presentation will provide a broad overview of the types of analyses that are made possible by this data, with a particular focus on distance driven and pollutant emissions. The analyses provided are, due to space and time, admittedly cursory, however, a number of interesting patterns are already demonstrated by the data and these will be discussed. The intention is to demonstrate the very broad potential for this data in introducing a new viewpoint on transport emissions, and to highlight where further drilling down into the data could be useful. The findings from the work have important implications, not just for understanding the distributional impacts of transport related policies, but also for the targeting of messaging and interventions for the reduction of car use.

Valuing travel time savings in the face of worthwhile use of travel time

Professor Glenn Lyons. *Associate Dean, FET, UWE*

Professor Mark Wardman. *Professor of Demand Analysis, ITS, Leeds University*

A persistent consideration surrounding valuation of travel time savings in economic appraisal is the matter of how travel time is used and with what consequence. The conventional 'Cost Saving Approach' to valuing *business* travel time savings assumes that business travel time is completely unproductive. Whilst the seminal work of Hensher in the 1970s sets out a framework that allows for the productive use of travel time that clearly does take place in practice, it has rarely been adopted in official guidance. Being able to use travel time to engage in some worthwhile activity might also impact on the valuation of time savings for non-business trips. We might hypothesise that advances in information technology and travel conditions over time would have reduced the value of time savings for both business and other travellers. This paper examines available evidence and insight concerning how travel time is used and its extent of productivity. The paper draws upon value of time studies as well as wider social science studies of time use and frames valuing travel time savings as a 'wicked' problem, concluding that to be addressed it demands a collaborative rather than an authoritative strategy.

The impact of vibration on comfort and bodily stress while cycling

John Parkin. *Professor of Transport Engineering, University of the West of England*

Eugénie Sainte Cluque. *Student, London South Bank University*

This paper reports preliminary work to understand the nature of vibrations from riding a bicycle and how these may impact on human comfort and bodily stress.

There are two parts to the study. The first part comprises results from a survey of cycle users which investigates potential comfort and health factors resulting from cycling and shows that health issues during and after cycling are not uncommon. These issues predominantly concern hand/arm, knee and back pain, and that they are presumed by the respondents to be caused predominantly by rider position and the condition of the road surface.

The second part reports evidence on the nature of vibrations from riding a bicycle in different circumstances. This data has been collected in London on routes of different surface roughness using a bicycle equipped with an accelerometer which measures vertical acceleration amplitude. The data collected shows that workplace vibration Exposure Action Values are exceeded for a typical commute journey and, indeed, Exposure Limit V values may be exceeded. Collecting field data presents challenges in terms of the repeatability of the measurements and comparability between measurements and these challenges are being further considered in order to identify recommendations for more extensive experimentation.