Research in behaviour change
Poster showcase

July 2012
Foreword

The following pages showcase a collection of posters on research in behaviour change currently being undertaken at the University of the West of England (UWE). The posters provide an overview of our work and demonstrate the breadth of disciplines involved, including transport, social marketing, public health and the built environment.

This collection primarily includes work presented at the ‘Heating up Behaviour Change’ symposium, held at UWE in May 2012. This event was organised through the ‘heat@uwe’ programme which is funded by the Engineering and Physical Sciences Research Council to enable, facilitate and communicate interdisciplinary research across health, environment and technology.

As this collection shows, the study of human behaviours and lifestyle changes for the public good is a truly interdisciplinary endeavour. It is highly relevant to many challenges facing society: in public health, healthy ageing, sustainable mobility and lifestyles, adaptation to climate change, and how we utilise the technological advances that can play a supporting role.

We hope you enjoy this collection. Please contact the individual project leads if you would like more information about their research, or contact us directly if you would like to find out more about the work of heat@uwe or how we can work together.

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Developing a multi-model approach to ‘behaviour change’

Dr Tim Chatterton has received funding for two years work with central government in the area of ‘behaviour change’. In 2011, he spent 12 months based in the Department of Energy and Climate Change on a fellowship looking at ‘individuals’ and communities’ energy behaviour’. He has subsequently been awarded an additional 12 months’ funding to extend the work in the project within DECC, and into Defra, DfT and DCLG in order to help promote a more efficient and co-ordinated approach to addressing climate and energy related behaviours.

Context

The current vogue for ‘behaviour change’ interventions as a light-touch alternative to regulation has prompted a range of reactions from various sectors of society. The recent political profile has posed the concept of behaviour change as something new and fails to recognise the significant history of work in this area within the fields of environment and public health.

The challenge set by DECC was to provide support for the department’s nascent social research/customer insight teams in developing an understanding of how current theories and evidence on behaviour relate to energy and climate change issues.

Approach

Following a department-wide survey to identify relevant activities, over 30 interviews were carried out with members of different teams within DECC to establish areas where the public play a significant role in policy implementation. These were categorised into five areas:

1. Technology deployment
2. Energy efficiency and micro-generation
3. Energy information
4. Communication of energy and climate change messages
5. The role of ‘communities’.

A literature review of pro-environmental (and other) behaviours was undertaken to establish the most appropriate starting point for developing a strategy for understanding and changing public behaviours.

Results

The review established there is little existing work specifically on ‘energy behaviour’. Most of the existing research considered wider issues of pro-environmental or sustainable behaviours.

It was also clear there is no such thing as ‘behaviour’. The term covers a huge and disparate range of activities that rarely have anything in common and are unlikely to be adequately explained by any single theory. Therefore, the choice was made to develop a framework for understanding energy behaviour through a range of theoretical ‘lenses’.

The theories chosen needed to be in contemporary use in order for policy-makers to be able link to relevant and on-going research. They also needed to cover the range of different activities that fall under the label ‘energy behaviour’ (such as installing insulation, turning off lights and appliances, turning down heating, etc).

The final theories/bodies of work chosen, were:

• Triandis’ theory of interpersonal communication - to represent the general rational/quasi-rational approach to decision making
• The Institute for Government’s MINDSPACE work - to demonstrate the government’s current ‘Nudge’ influenced social-psychology/behavioural economics approach
• The ‘values and frames’ view of shared values and attitudes exemplified by the recent work of WWF and Common Cause
• Theories of social practice – a sociological viewpoint in which ‘the individual is no longer the main unit of enquiry’ and the focus is put on societal ways of doing things.

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ESRC (RCUK Energy Programme) Social Science Policy Fellowship / ESRC follow-on funding
Timescale:
Feb-2010 to Feb 2011 and Feb 2012 to Feb 2013
Mapping behaviour change policy, theory and practice

Current political and theoretical rhetoric tends to champion behaviour change as a method for altering public and individual behaviour for the better. However, what constitutes behaviour change in terms of theory and practice is not easy to define.

This project aims to map current thinking and trends in behaviour change by identifying success stories, champions, protagonists, thinking and debates. The findings suggest that both hard and soft measures can be successful behaviour change interventions, that there is a greater need to understand behaviour change in terms of socio-political context, and that a move towards a more transdisciplinary model of behaviour change is needed.

Purpose and context
The project addresses the following key questions:

• What are the key trends and developments in behaviour change approaches (e.g. behavioural economics)?

• Which research areas are attracting funding from major funders (e.g. obesity, transdisciplinary research, research into habits formation, automaticity, etc)?

• What are the government’s behaviour change priorities, in terms of techniques, approaches and target behaviours?

• What direction will behaviour change research and practice take in coming years?

• What is the latest thinking on behaviour change mechanisms/approaches, e.g. What are considered to be the most successful approaches or combination of approaches?

Methods
A comprehensive literature review was coupled with interviews with key behaviour change theorists to generate knowledge on current thinking and debates. Trends in the theory and application of behaviour change were identified through reviews of research funding and grants awarded to behaviour change topics.

Results and outcomes
Behaviour change continues to be a key area in policy, practice and theory, especially with regards to the contexts of citizenship, health and the environment. The research to date has been able to categorise behaviour change into soft and hard measures.

Soft measures involve social marketing and segmentation approaches, in particular education, information and knowledge deficit and provision but also challenging social norms, encouraging reflection, commitment and pledging, and the importance of co-creating solutions. Hard measures involve legislation, enforcement and economics.

Such solutions need to understand the psychological perspective surrounding their deployment in order to achieve successful behaviour change. The role of technology in supporting these approaches is also crucial in managing behaviour change. A number of theories bring together key components of soft and hard approaches including the transdisciplinary approach.

There is a need for:

• more ideological debate about behaviour in general

• a better understanding of the populations under scrutiny

• an understanding of the socio-political context within which change occurs

• a move towards a true transdisciplinary approach rather than the interdisciplinary or multidisciplinary approaches that currently dominate.

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Timescale: September 2011-June 2012
Space in the sustainable healthy home

This study investigates the impact of policy, society and technology on the design of homes in the United Kingdom over the last one hundred years and how the design of these houses can accommodate current and future sustainable lifestyles.

Context

New homes being built in the United Kingdom today have been criticised for not providing space for basic living functions. We now have the smallest homes in Europe with very little storage space and small, multi-purpose rooms. So what impact will this have on our future behaviours in the home?

There is a clear symbiosis between the neighbourhood, the home and the individual. In order for people to lead healthy and sustainable lifestyles they need to have the facilities and space provided in their environment at both the neighbourhood scale and that of the home.

At a time of aging population, an increase in single-person households and a growing move towards home-working, understanding the influences that shape our built environment and behaviour is crucial. This project explores the major changes in our housing over the last hundred years and identifies social, economic, technological and political factors that have influenced these changes. Through this analysis we can discover patterns and make connections between how changes in standards, policy, technology and economics, combine to affect people’s behaviour.

Methods and approach

• Two literature reviews have been conducted, the first to understand the historic context of space requirements in the UK, and the second to understand the social, economic, environmental and technological factors that have influenced housing design and behaviours in the home.

• The literature reviews were illustrated as a series of timelines which mapped the key events, policy influences and technological advances that have affected housing and behaviour.

• A desktop study has identified the standard layout of a mid-terrace house over the last hundred years.

• Models of the standard mid-terrace house typologies were also constructed and, with the timelines, formed part of an exhibition at the Architecture Centre in Bristol.

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HEAT@UWE and SPUR3 (Early Career Researcher Grant)

Timescale:
June 2011 - June 2012
The contribution of ‘sustainable’ new developments to sustainable lifestyles: an evaluation of schemes in the UK

This project answers a seemingly simple question: do residents of new housing developments built according to sustainability principles behave in a sustainable way?

The research takes thirteen ‘sustainable’ housing (or predominantly housing with some other uses) schemes in the UK and investigates how sustainably their residents behave. The project is only interested in sustainable behaviours that are argued, in planning and urban design theory or policy, to be supported or enabled by the physical design of the schemes. We are finding that many of the commonly held beliefs about sustainable design and behaviours seem to hold true, but others do not.

Purpose
This project aims to answer the following question:

Do sustainable urban environments engender sustainable behaviour and lifestyles, and if not why not?

Methods
The case studies will include Grange Farm in Milton Keynes, Great Notley Garden Village in Braintree, Staiths South Bank in Gateshead and Greenwich Millennium Village.

The methodology will involve recording the physical features claimed to support sustainable behaviour in 13 case study developments, and then collecting information about the lifestyles and behaviour of residents from household questionnaires. Such behaviours include:

- residents’ home-based sustainable behaviours: including reducing energy and water consumption, recycling and composting of waste and supporting wildlife in gardens
- residents’ travel behaviour and car ownership
- residents’ ‘social sustainability’ behaviours, such as social participation and the use of local services, businesses and facilities.

The two data sets will be analysed to see if any physical features are associated with particular sustainable behaviours.

We drew up a master list of over 100 physical features claimed to have an impact on sustainable behaviour. Some features are relatively straightforward to identify and measure, such as cycle paths and pedestrian routes, but others are more subtle and qualitative. For example, urban designers often argue that the level of connectivity of the routes within a scheme can affect social interaction, and that building layouts can influence perceptions of safety and have an impact on social sustainability. We have had to develop ways to assess these types of feature. Likewise with sustainable behaviours, some are obvious, such as using less energy and water, but some are less tangible, such as taking part in local community groups, decision-making and formal and informal social activities.

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EPSRC, part of the CityForm Consortium, Sustainable Urban Environments Programme
Timescale
Completed funded project in 2007, analysis and dissemination ongoing
BAND: Behaviour and neighbourhood design – an investigation of walking as a social practice

This project seeks to understand walking as a social practice in order to inform neighbourhood design and social marketing practice. It brings together researchers from the Centre for Sustainable Planning and Environments and the Bristol Centre for Social Marketing to undertake qualitative research in a newly developed housing area in Oxford.

Purpose and context

We are seeking to:
• Gain a better understanding of how and why urban design and social marketing can support sustainable behaviours, which we will use to contribute to both theoretical and practical debates
• Test a number of intervention ideas that have been concept tested in a small pilot study and might be appropriate to effect behaviour change in different groups (and that can form the basis for one or more larger research bids)
• Develop theoretical understanding of how ‘hard’ and ‘soft’ measures can combine to influence behaviour change.

Approach

The research is being conducted in the Waterways development in Oxford. This is a relatively new mixed residential development near the city centre.

Researchers will be undertaking observations of the development, including completing observation schedules on walking activities. Observations are being undertaken in different walking settings:
• Dedicated pedestrian routes
• A small play area
• Residential streets (with shared surfaces for cars)
• A small park.

The researchers will also carry out focus groups with residents and in-depth interviews. These will explore walking as a social practice and combine questions and approaches from social marketing and built environment studies. The questions are structured around social practice theories.

Hence we will be questioning people about:
• Their walking habits – how much do they walk, where and why? For example, do they walk to work, or to exercise their dog, or to get out of the house with young children?
• What they think people who walk a lot are like – i.e. what sort of people walk for fun/fitness/to get to work, etc?
• Is walking for certain sorts of people but not for others?
• Do they need anything specific to enable them to walk?
• What are their feelings towards walking: does it make them happy, stressed, fearful?
• What makes walking easy or difficult?
• Whether or not they enjoy walking, and why
• What environmental measures might encourage them to walk more.

The research is ongoing so we do not have results as yet, though we have already learnt much about different disciplinary approaches to the research problem. We hope to use the results to be able to support more walking behaviours in new developments by understanding how environmental and other factors shape the practice of walking.

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EPSRC, via the HEAT@UWE Programme (Bridging the Gaps between Health, Environment and Technology). EP/H000380/1.
The SNACC project seeks to answer this research question: How can existing suburban neighbourhoods be best adapted to reduce further impacts of climate change and withstand ongoing changes? The research focuses on adaptations to the built environment, encompassing changes to individual homes and gardens up to larger neighbourhood scale adaptations.

The research aims to develop feasible adaptation scenarios for suburbs in the UK in the context of the challenges presented by climate change. The SNACC project takes a socio-technical approach which aims to build an understanding of the processes, agents and potential outcomes of suburban change to establish how adaptation can be directed towards a beneficial outcome for the UK’s existing suburban landscape.

It is widely accepted that existing built environments are both contributing, and adapting poorly to climate change. Suburban areas contain 80% of homes in the UK, highlighting the need to identify practical ways of adapting existing suburbs to cope with these challenges.

The project draws upon case studies of six neighbourhoods in three cities (Bristol, Oxford and Stockport). In these areas, key agents of change (e.g. home owners, elected members and planners) will help to determine successful adaptations.

The project team will use:

- modelling of climate change, house prices and adaptation outcomes
- tools that allow the participants to visualise what ‘adapted’ neighbourhoods will look like
- deliberative methods from social science including focus groups to generate a portfolio of adaptation strategies that are feasible and fully endorsed by stakeholders.

The research design, methods and range of collaborators reflect both the technical and socio-economic aspects of adaptation. The findings will be communicated to a wide network of policy, practice, public and academic beneficiaries. The outcomes will contribute to securing a sustainable future for the UK’s suburbs in the face of climate change.

Project Progress

The SNACC project was launched on 1st September 2009 and will run until September 2012. Work on Phase 1 to enable the research, has been progressed through five work packages.
Flooding issues, challenges and opportunities: a built environment perspective

Flooding management policy has shifted from reliance on engineering to an integrated approach recognising the need to make space for water and to engage stakeholders. This has led to the need for research that combines physical and socio-economic aspects of the built environment as carried out by the flood research team at UWE.

Purpose

This work aims to identify:

• measures to successfully reduce the impact of flooding in the built environment
• interventions leading to behavioural changes which improve adaptation to flood risk
• how we can remove barriers (informational, financial, emotional and timing) towards the uptake of adaptation measures
• lessons we can draw from developing countries in which localism is the ‘norm’
• the potential role for insurance to further incentivise and mobilise SMEs and households towards adaptation
• how the recovery process can minimise the impact of flooding on communities and lead to a more resilient built environment.

Approach

Members of the Construction and Property Research Centre combine built environment knowledge with expertise in environmental engineering, economics and finance, psychology, decision support and construction management. This core expertise is augmented through wider collaboration with academics and practitioners in flood modelling, urban planning, building design and health.

A variety of methods are employed. A particular strength of the research programme is the engagement with stakeholders including flooded households and communities.

Results and outcomes

The post-flooding reinstatement of residential and commercial property can typically take six months to complete, and as such the insurance industry has been widely criticised (for instance within “the Pitt report”). Therefore, we have developed standards and guidelines with insurers and restoration professionals that have helped to improve the experience of flooded households.

Insurance is seen to be critical in current and future flood risk management in the UK. The unique agreement between insurers and the UK government known as the ‘statement of principles’ is due to be withdrawn in 2013 with potentially severe consequences for those households who live in properties at high risk of flooding. Our earlier research into the cost and availability of flood insurance revealed that the competitive nature of UK insurance has tended to result in high availability and cross subsidisation of risk. As such, most households are heavily reliant on their insurance in terms of managing the risks associated with flooding including the repair and reinstatement of their home in the aftermath of a major flood event. However, with the end of the statement of principles, it seems likely that insurance might no longer be available leaving households exposed to the risk of flooding and other implications including a reduction in property values.

Maintaining the value of properties at risk of flooding can sustain communities in the floodplain yet paradoxically reduce the motivation to adapt to flood risk. Research revealed that the impact of flooding on property values in the current disclosure regime is temporary and highly variable.

Government policy is to move away from flood defences and towards empowering property owners to make property more resilient. The team identified the options, barriers and incentives for property level adaptation, and is currently assessing the cost-benefits.

The team is active in learning from the developing world regarding community approaches and the management of flood risk on a local basis. The team was a lead player in the recent World Bank publication Cities and flooding: a guide to integrated urban flood risk management for the 21st century (2012), having collected case studies of good practice from around the world.

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Timescale:
Ongoing
BeCAUSE: Behaviour change and agriculture in urban society and environments

Food production in towns and cities offers the potential to overcome current and future challenges associated with food security, energy use and the changing climate. BeCAUSE will assess how urban agriculture is being adopted in Bristol and produce insights into the barriers, risks and opportunities encountered by community groups.

Purpose and context
Growing your own food has been highlighted by Defra as one of the key indicators of a sustainable lifestyle (Defra, 2011). Previous research on urban agriculture has focussed on the health benefits, governance and community cohesion. However, the availability of good quality land for cultivation and tensions between land uses means that sites are considered for food production where the conditions may not be suitable without some form of intervention. BeCAUSE is pilot project which aims to determine the barriers and challenges of urban agriculture in Bristol, and how this behaviour could be further supported with improved knowledge communication.

Method
In the past urban agriculture has generally been confined to private gardens, allotments and city farms. However the problems of climate change and fuel/food security have led to a revaluing of urban spaces and their potential as a resource for food production. This is particularly true in Bristol, which has a well established food network, and an increasing number of community urban agriculture projects. These projects range from community garden schemes which lease green belt land from the local authority to community farms and guerilla gardening schemes, which squat on or acquire derelict or underused land to produce food.

The success of these projects is varied and often dependent on the knowledge of individuals, availability of information on appropriate agricultural methods and access to safe and secure land.

In addition, there is a wide range of information sources and guidance that an urban agriculturalist can draw upon (e.g. through networks such as guerillagardening.org). However there is less information on elements such as safe use of land for food production in urban soils that may have been negatively impacted on by previous or surrounding land uses. Similarly, the academic literature focuses on community engagement, social equity and healthy eating and lifestyles with only limited research on the safe use of land for ad-hoc food production.

BeCAUSE uses a socio-technical approach to examine the barriers, risks and opportunities encountered by different stakeholders involved with urban agriculture. Semi-structured interviews, informed by an extensive literature review will be undertaken with representatives of the urban agricultural movement. This will enable the project to develop an understanding of the practical challenges of urban agriculture in Bristol. In addition, the interviews will be used to examine the communication and enabling mechanisms utilised by these groups.

The outcome of this project is a comparison of the experiences of urban agriculturists, and an analysis of how lessons and guidance are passed between the groups.

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Timescale:
November 2011 - June 2012
Successfully giving up driving for older people

Driving cessation for many older people is associated with a poorer quality of life, leading to depression. What seems evident in this study is that some of the problems encountered by those who have given up may in fact be mitigated by the level of pre-planning that they undertake.

Summary

This project followed a group of older people through the process of driving cessation, from contemplation to giving up the car completely. It mapped the process, triggers, how information on alternative modes of transport was sought and how new transport and travel behaviour was integrated into their lives. It detailed the challenges faced and how these were overcome. It also explored how the process of giving up driving impacted upon subjective wellbeing aspects of quality of life as articulated by the participants themselves.

Methods

A total of twenty-one individuals who were contemplating giving up driving were traced through the process of giving up over a period of ten months. A five wave data collection phase involving iterative qualitative data techniques was employed (see diagram). Analysis involved matrix mapping of the data - a detailed version of thematic analysis.

Results and outcomes

Older people experience giving-up driving in different ways and this is seen to affect their quality of life beyond the car. Those that plan ahead, who accept and embrace a change in travel patterns, and flexibly change destinations of journeys have the prospect of a better quality of life beyond the car.

The importance of the locus of control cannot be overlooked, and for an individual giving up driving, remaining in control or allowing some control to be relinquished to family and friends is key. The role of the family is vital in raising awareness of the need to give up driving early on and perhaps in some instances reducing the need for as much (meticulous) planning through practical and emotional support.

The study also suggests that less habitual travel needs as well as multi-modality prior to giving up driving are also important beneficial behaviours. It was the ‘reactive’ group, those with little or no planning who were forced to give up driving due to ill health, who tended to be the most depressed about life beyond the car.

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Timescale: January 2009 - December 2010
MOT: Motor-vehicle ownership and usage trends in the UK

This is a three year project to develop new methods and insights into the spatial and temporal variability in car usage in the UK and its links to the energy and environment agendas through analysis of the MOT vehicle test record database.

Purpose and context

Efforts to reduce emissions from car travel have been hampered by a lack of specific information on car ownership and use. In 2010, the Dept. for Transport released a dataset containing annual MOT test records for private motor vehicles. By providing relatively comprehensive information about British car ownership and use, this dataset provides a key opportunity to address a number of issues in transport and energy debates by making precise links between car use, car type, changes over space and time, as well as links to a wealth of other existing data sets (including the 2011 Census).

Approach

The overall aim of the project is to transform the ways in which car use, related emissions, and energy use are quantified, understood, and monitored to help refine future research and policy agendas and to inform transport and energy infrastructure planning. Our vision is to achieve this through the following objectives:

1. Combine new sources of data to give a spatially and temporally disaggregated understanding of car ownership and use, and associated energy demand and emissions in Great Britain.

2. Develop new methodologies, datasets and research capability to understand the relationships between energy demand and emissions from car use, and a wide range of structural and social factors.

3. Describe and explain the linkages between different fuel uses, energy end-uses and energy service demands at the domestic level.

4. Develop a spatially disaggregated baseline of the energy demand from car use from which future scenarios can be developed and modelled.

5. Investigate a range of social and environmental justice issues in relation to income, fuel use and price, emissions of pollutants and exposure to impacts.

6. Use this understanding to track changes over time and space in order to evaluate the scale and distribution of the impacts of local transport policy interventions.

Outcomes

The new analysis capability will be tested through case study evaluation of local transport policies. By enabling car ownership and use to be examined at fine spatial and temporal scales, it should be possible to answer key questions for sustainable transport policies such as, "What difference have particular policies achieved to car ownership and use (compared with areas where these policies were not in place)?"

It will also be able to calculate figures for fuel use and emissions to contribute to the development of policies specifically targeted at the most energy intensive or polluting drivers or localities. We will also be able to link energy use from cars with domestic energy usage through household electricity and gas. This will allow us to build up a much better picture of energy and carbon footprints across the country.

The project commences in June 2012.

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Timescale:
3 years from June 2012
This research followed a group of novice cyclists who were provided with the opportunity to experience a transition from being non-cyclists to cyclists. The project simultaneously examined personal attitudes and perceptions and physical and physiological realities in an attempt to reveal the associations between the multiple factors affecting behaviour change.

Context

On average, 62% of trips in the UK are 5 miles or less with more than 80% of those being undertaken by car. This suggests there is scope for increasing the number of short cycle journeys which can be highly beneficial for both environmental and personal health reasons. However, individual behaviour is the result of complex interactions which makes changing behaviour challenging. Using cycling as the focus, this interdisciplinary, mixed methods field study attempted to compare subjective perceptions with objective physical and physiological measures and to understand the role of positive (i.e. real) experience on attitude changes and health benefits.

Methods

The study employed focus groups, social networking, GPS route tracking, and monitoring of health data. These methods were used to explore how subjective perceptions and attitudes towards cycling and environmental perceptions change over time in response to a novel, supported experience. Perceptions and attitudes were compared to objective measures such as distances travelled, inclines covered, weather experienced and changes in key health measures such as blood pressure, heart rate, weight, and lung capacity.

The study was undertaken in the first term of the 2011-12 academic year (September to December) with a follow-up survey carried out in March 2012. UWE students were recruited according to a number of inclusion criteria (live 3-5 miles from UWE, currently do not cycle to UWE and are ambivalent about cycling as a realistic travel alternative) and potential participants were screened using a simple questionnaire. Selected participants were provided with start-up resources including the free loan of a bike for the duration of the project, basic safe cycling and maintenance skills, route planners and social networking possibilities.

Analysis of results is currently underway. Whilst the project recruited and retained fewer participants than anticipated, the project is expected to provide a valuable insight into the perceptions of non-cyclists and how behaviours and attitudes are open to change through the experience of cycling.

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Timescale:
June 2011 - June 2012
Behaviour change techniques used to promote walking and cycling: a systematic review

The reporting of intervention content varies significantly, thus limiting our understanding of how intervention content is related to intervention effectiveness. Adopting a taxonomy of behaviour change techniques (BCTs) this systematic review aimed to classify the content of walking and cycling interventions into distinct and reliable behaviour change techniques.

Recent reviews of physical activity interventions have identified that the reporting of intervention content varies significantly, thus limiting our understanding of how intervention content is related to intervention effectiveness and preventing effective replication. A reliable 26 item taxonomy of standardised behaviour change techniques (BCTs) has been developed to aid consistent intervention reporting. In developing an evidence based intervention for the iConnect project*, this systematic review used the taxonomy to classify the intervention content of walking and cycling interventions into distinct and reliable behaviour change techniques and made recommendations for walking and cycling intervention development.

Methods

Controlled, individual-level walking and/or cycling intervention studies involving adults were systematically sourced. Following taxonomy instructions, reviewers familiarised themselves with BCT definitions prior to coding each manuscript. Two reviewers independently coded BCTs from the abstract, introduction or methods section of each manuscript. Relevant text was extracted and tabulated for evidence. BCTs were not coded if not explicitly stated in the text. After coding each manuscript, reviewers checked their coding against manuscript text to confirm interpretation and identify missed BCTs. Quality control of coding was implemented with 20% of interventions randomly selected and coded by two additional reviewers. Coding discrepancies were discussed and agreed.

Results and outcomes

41 walking and/or cycling studies met the inclusion criteria; 4 studies evaluated multiple interventions meaning that 46 distinct interventions were coded. The number of BCTs coded per intervention ranged from 0 to 12, with an average of 4.18 (SD = 2.84). Substantial heterogeneity was observed in vocabulary used to describe intervention content. ‘Prompt self-monitoring of behaviour’ and ‘prompt intention formation’ were the two most frequently coded BCTs. Kappa calculations revealed that inter-rater agreement of independent coding was moderate-to-good (kappa = 0.58), while average percentage disagreement was 16%.

This review is the first to classify the intervention content of walking and cycling interventions into distinct and reliable behaviour change techniques. Heterogeneity in intervention vocabulary resulted in difficulty coding intervention text according to taxonomy definitions, thus increasing the possibility of imprecise coding and drawing misleading conclusions. For example, while several manuscripts referred to ‘goal-setting’ it could not be included as a BCT because a specific definition was not provided. Group discussion to resolve coding discrepancies was therefore essential. BCTs utilised in the design of walking and cycling interventions specifically may not have been captured by this taxonomy, as it is not an exhaustive list.

Implications include:

• Future walking and cycling studies should ensure that all aspects of intervention design are reported in detail, using standardised vocabulary and guidelines.

• Prompts to self-monitoring and for intention formation should be included in future walking and cycling interventions, although further exploration of these and other BCTs is required.

*www.iconnect.ac.uk

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Funder and programme: EPSRC – Energy and Climate Change Programme
Timescale: May 2008 - June 2013
Understanding public attitudes to road user safety

Through the use of deliberative research methods this project highlighted that road user safety cannot be isolated from its social context but relates to attitudes, identities, lifestyle and values.

Purpose
This research aimed to:

i. Review and synthesise existing research on public attitudes towards road safety.

ii. Explore public understanding, attitudes and experiences towards road safety, getting beneath ‘top of mind’ responses.

iii. Explore how attitudes change in response to the provision of information about road safety issues and policies.

iv. Consider the relationship between attitudes and behaviour and to identify and explore the barriers and incentives to behavioural change which could result in improved road safety.

v. Inform post-2010 and wider road safety policy development.

Method
The study used a qualitative deliberative approach, engaging 228 members of the UK public in focus group discussions around road safety and risk. In four areas across the UK, six groups, with ten participants in each group, were selected to include different road user groups, life stages and attitudes to risk. Each group met on three workshop occasions.

The data was analysed using matrix mapping, a version of thematic analysis that involves assigning categories to the data a-priori whilst leaving scope for additional categories to be formed post-hoc.

Results and Outcome
Participants largely view themselves as car drivers and engage in behaviour that suggests they have rights of way over other users. This is enhanced by social norms and re-enhanced by other road user identities such as cyclists and motorcyclists who view themselves as vulnerable.

The research highlights the importance of taking into account road user identity (especially of car drivers), road culture and risk taking when designing interventions on road safety.

There is a consensus that car drivers see themselves as competent and safe road users and others as more risky and dangerous. Hence, support for interventions is largely accepted as necessary for ‘other’ road users.

Despite participants having multiple road user identities – from driver to pedestrian to cyclist and so on – participants’ views of the road were generally limited to one identity at a time. This detachment between identities has implications for the acceptance of different policy interventions. The primary view of roads was from the perception of the car driver and hence road user safety was largely seen in terms of aiding the driver to have a safe passage of movement. With a ‘survival of the fittest’ mindset, participants viewed the road space as ‘competitive space’. Pedestrians and cyclists, in particular, were seen to be encroaching on this space.

There is a need for the public to be more aware of and empathetic towards other road users, and also to re-establish norms that are guided by individual judgement, conventions and protocols, rather than a reliance on rights of way and laws.

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Department for Transport
Timescale:
November 2008 - November 2009
A social practice perspective on travel

In the UK, the majority of everyday journeys are made by private vehicle, which is inefficient and damaging to the environment. Traditional methods of changing travel behaviour focus on the individual. A social practice approach looks at changing wider society to enable people to change their existing travel habits.

Purpose and context

This research is part of the wider EPSRC/RCUK Energy Programme’s Disruption Project, focused on understanding the extent to which travel practices are as fixed as commonly assumed by both theory and policy. Disruption Work Package 6 is designed to enable implementation of the project findings through government policy at national and local levels.

The challenge is to use social practice theory to look at travel in a wider social context rather than focusing on individual behaviour change, and to consider whether these insights can be used to develop innovative new transport policies.

The way we travel is influenced through our environment, government policy and the social networks we keep. When these are disrupted, what lessons can we learn from these disruptions to change to more sustainable travel behaviour?

Approach and outcomes

A sociological approach is used to understand how and why people make their travel decisions. The research draws upon Elizabeth Shove’s work on how people use energy and environmental resources. Shove uses several metaphors to describe how people’s habits and routines have changed over time and are influenced by external factors. These include a ‘ratchet’ where the routines are irreversible and a ‘pinwheel’ where changes may be possible due to a number of differing rationales.

Similarly, transport and travel choices are influenced by a number of factors external to travel, such as: housing availability and price; the number of workers in a household; school choice; leisure habits; and the design of infrastructure focused on accessibility for the private motor vehicle rather than accessibility for humans. By understanding the influences of these factors it is hoped that it will be possible to enable government to make changes affecting transport across society or enable other parties to make these changes, rather than solely focusing on trying to create mass individual behaviour change and expecting people to make the change themselves despite numerous societal factors ‘locking in’ current unsustainable practices.

The project uses a triangulation approach involving:

1. Existing data from the National Highway and Transport Survey and the Local Sustainable Transport Fund project in the West of England, and Local Transport Plans
2. Qualitative analysis of the travel behaviours of selected groups
3. Case studies of where businesses and organisations have enabled people to change their behaviour.

The research is undertaken through a Ph.D. due for completion in October 2014.

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EPSRC/RCUK Energy Programme, Disruption Project

Timescale:  
2011 – 2014
Disruption: unlocking low carbon travel

Disruption is a three year project taking a fresh look at people’s mobility, including their travel and use of computers, mobile phones, etc. The aim is to create opportunities for change that will reduce energy use and associated greenhouse gas emissions from transport.

Context

Evidence suggests we will need to change our travel practices radically if we are to reduce carbon emissions from transport sufficiently to meet government and international targets. Technological developments such as hybrid and electric cars will, to some extent, allow us to reduce our carbon impact, but they can neither provide all of the necessary reductions nor do so quickly enough.

Transport policies and the policymaking systems that produce them have been based on and reinforce a number of cultural assumptions: most importantly that travel practices are very stable and that it is very difficult to change both people’s travel choices and policymakers’ ways of thinking.

Approach

Our travel practices – why, where and how we travel – are a function of the many choices that make up our daily lives; it is difficult to untangle them from our patterns of housing, employment, education, leisure and so on. Despite the common assumption that travel practices are fixed, there are actually many times when our everyday lives become disrupted and these events provide windows of opportunity where change becomes possible. Within a seemingly stable overall pattern of transport demand, we are often forced to rethink our usual way of carrying out our everyday lives, and organisations are forced to reconsider how they operate. These disruptions can occur at different levels, from the disruption of a broken leg that means a parent cannot drive her children to school, to the disruption from a volcanic eruption that leaves people stranded thousands of miles from home and businesses with key employees unable to fulfil their normal roles. It is the potential for these kinds of opportunities to lead to more permanent carbon-reducing changes that this project seeks to explore.

The research explores travel practices in a range of places and social contexts, with the understanding that these different contexts influence the ways we travel and how we reduce barriers to positive change.

We will study how disruption affects the choices people make and what this teaches us about the opportunities to change travel practices at different levels: for individuals and within families; in organisations that generate travel demand and impact on individual travel decisions; and within government where policy determines travel opportunities.

The project then brings together the different social actors, both ‘lay’ and ‘expert’ in a number of forums where they have the opportunity to ‘deliberate’ the different issues that will emerge throughout the research, and challenge each other about what needs to be done to capture the opportunities for change.

Lastly the project seeks to establish mechanisms for embedding these changes in everyday life, in organisational practices and in social policy, so that a substantial contribution to reducing carbon emissions from transport is achieved.

For more information on this project, see: http://www.disruptionproject.net

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EPSRC/RCUK Energy Programme

Timescale:
3-years from September 2011
Alternatives to private car use by mobile NHS professionals

This study evaluates the experience of the Golow scheme, which provides electric bikes and pool cars to employees of Avon and Wiltshire Mental Health Partnership (AWP). It explores the travel patterns of mobile NHS professionals more generally, and the influence of workgroup social norms on travel choices.

Purpose

This study addressed the following questions:

- What are the work travel needs and constraints of AWP’s mobile staff based in Bristol and how do they currently travel?
- What are the advantages and problems of the Golow cars and electric bikes?
- Has the scheme altered participants’ commuting, car ownership or travel patterns outside work?
- What factors explain the participation or non-participation of staff in the scheme?
- How do the costs of the scheme compare to the alternative of employees using their own cars for work travel?
- What are the implications of these findings for NHS trusts, other employers of mobile staff, and national transport policy?

Approach

The study used a combination of:

- an online survey (completed by 306 Bristol-based staff)
- telephone interviews of staff and managers
- a focus group of the ‘Zero Petrol Team’ which had switched almost entirely to electric bikes for work travel
- analysis of financial data [ongoing].

The survey data was analysed through binary logistic regressions with cycling for work, use of pool cars and use of electric bikes as the dependent variables. The interview and focus group transcripts were analysed thematically with the report integrating the two.

Results

Many of AWP’s staff work in multi-disciplinary teams, making frequent visits to clients’ homes. Private cars were the main mode for 60% for work travel, with 27% cycling, walking or using public transport. Most of the reasons for driving related to personal preferences rather than the nature of the travel itself, although many of the staff who mostly travelled by other means reported occasional needs for a car.

A quarter of survey respondents had used a pool car at some point. 30% of these people had reduced their commuting by car, with 5 people reporting that they had reduced their household car ownership as a result of the scheme.

Social norms within work teams influence modal choices and decisions to participate in the scheme. The attitudes of managers and colleagues were both significantly associated with the probability of using pool cars or electric bikes. Individual environmental attitudes were statistically insignificant, but had strong indirect associations.

There was evidence of local managers with pro-environmental attitudes acting as ‘pro-typical leaders’, changing the group norms in those groups where participation was high.

The collective use of electric bikes had strengthened the social identity of the Zero Petrol Team, with heightened awareness of other factors distinguishing their ‘in-group’. Consistent with earlier studies, this had increased staff motivation and was believed to have reduced sickness absence, and improved relations with clients.

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UWE (SPUR 3)
Timescale:
Final report, Summer 2012
Coroners’ records for action on road safety (CARS) in Wiltshire

This project examined coroners’ records to better understand the factors involved in fatal road traffic collisions among young drivers/riders in Wiltshire. Analysis of 34 cases of road traffic related death revealed six important themes: social driving, driving experience, interest in motor vehicles, driving style, emotional distress, and perception of driving ability.

Purpose
To examine coroners’ records (with a particular focus on qualitative data) to better understand the factors involved in fatal road traffic collisions among young drivers and riders (16-24 year olds) in Wiltshire, and to identify opportunities for prevention.

Approach
Qualitative data from 34 cases of road traffic related death in people aged 16 to 24 were extracted from the offices of the Wiltshire Coroner. This data included witness transcripts, police reports, and coroners’ inquest proceedings. The data was explored using thematic analysis. As the risk factors for road traffic collisions are well established analysis took a theory-led approach (initial categories were conceptualised prior to data coding). However, researchers were careful not to be restricted by these categories, allowing for additional themes to emerge from the data inductively.

Results
Six important themes emerged: social driving, driving experience, interest in motor vehicles, driving style, emotional distress, and perception of driving ability.

Social driving was a common feature of the cases; at the time of the collisions the young people were often driving to social events or driving ‘without destination’ with friends late at night. Most fatalities were associated with a dangerous driving style. This included driving at speed, tailgating other drivers, racing with friends, and dangerous overtaking manoeuvres.

Despite their young age, the data showed that many of the young people were fairly experienced drivers for their age. In particular, it was noted that many drivers had gained driving experience through their occupations and/or had a particular interest in motor vehicles. In terms of drivers’ perception of their own driving ability, there was a sense of overconfidence in their own driving skills. Many drivers had only recently purchased their present vehicle, so were relatively unfamiliar with it. A number of cases implied that at the time of collision, the young person had been mentally preoccupied (relationship issues, etc), which may have affected driving behaviour.

The research found that understanding the social context of a road traffic collision could provide important information for understanding why collisions happen and developing targeted interventions to prevent them. This would complement routinely collected data which focuses on the events immediately preceding a collision. One recommendation is to focus prevention activities on social groups, such as networks of young drivers in specific localities, taking a community development approach. This recommendation will be considered by the Wiltshire Road Safety Partnership.

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Timescale:
June 2011 – August 2012
Measuring the socio-economic impact of the Wellspring Healthy Living Centre’s Wellbeing Programme for low level mental health issues encountered by GP services

This project evaluated the impacts of the Wellbeing Programme of the Wellspring Healthy Living Centre, concerning low level mental health issues. The programme offers GP-referred patients 12 weeks of one-to-one support followed by 12 months of group support around a particular activity (such as Reiki). Socio-economic impact was measured through Social Return On Investment (SROI) and pre and post intervention interviews. Early data shows a decline in prescriptions and GP appointments (n=49, p=0.003) with potential total savings of £2772/quarter.

Purpose and context
The research focuses on vulnerable individuals with low level mental health who are highly dependent on GP services in a context where future commissioning of mental health services will be based on payment by results. The research is part of a broader Big Lottery initiative to develop socio-economic indicators to assess the impact of third sector delivery.

Wellspring clients often have multiple needs. They are highly vulnerable to any extra stress or ‘nudge’ that could precipitate them into higher tier and more intensive and costly interventions and support. The research seeks to ‘PROVE THE VALUE’ of the programme.

Approach
A mixed methods approach was used. A focus group and interviews with previous Wellspring service users and key stakeholders led to the development of a ‘wellbeing tool’. These indicators are shared with four other portfolio projects developing indicators to assess impacts of the third sector activities around employment and training, rural development, legal provision and social enterprise. This research informed understanding of impact around health and wellbeing.

Participants complete the wellbeing tool at three stages: at the onset (providing baseline data), at the end of three months of one-to-one support, and after nine months of additional group work. Ethical consent is obtained for the release of GP attendance and referral data and also prescription data. Additional data collection includes contextual factors, resources used, and health and wellbeing outcomes. Economic impact of the programme is assessed via a SROI analysis of one cohort of the Wellbeing Programme. Dissemination is initially through the Proving Our Value project led by the South West Forum.

Results
The programme is on-going. An examination of a previous cohort of GP referrals compared participant data over the periods three months before and three months after participation, yielding initial results:

- GP consultations reduced by 1.62 per person in the second period
- There were 77 fewer GP consultations in the second period, a decline of 33.8% (p<0.003, n=49)
- 16 beneficiaries had no contact with their GP post intervention – a potential saving of £2,772 for the quarter
- Prescriptions declined by 15% in the measured period, and 37 participants reported no change or a decline in the number of prescriptions
- As the research project unfolds it will drill down into prescription types and provide costings on savings to include in a SROI analysis of the economic impact of the programme.

Here is a quote from a referring GP:

‘The Wellspring project works really effectively with people just starting on drug or alcohol dependency. A guy came in who was your typical male alcoholic: he had lost his job, his relationship had broken down, he was smelly with no self-awareness. He told me that [a project worker] said he had potential and that got him going on addressing his problems and reaching wellbeing.’

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Research funded by Big Lottery and the South West Forum. The intervention itself was funded by the Tudor Trust and Henry Smith Charity.
Timescale:
September 2011-13
This project aims to develop and test a methodology for assessing health appraisal recommendations to gain a better understanding of the effectiveness of health-integrated appraisals in achieving better health outcomes. This knowledge will help planners and public health professionals ensure that they have effective and robust health appraisal processes.

**Purpose**

In 2010, a systematic review of the degree to which health was effectively incorporated into plan and project appraisal identified that whilst health impact assessments are frequently undertaken, there is little evidence to demonstrate to what extent the recommendations are incorporated in the final proposal or implemented on the ground. Neither is there evidence of whether the predicted health impacts are subsequently realised. This project explores the effectiveness of health-integrated appraisal recommendations on development proposals in influencing the design and delivery of a project, and to establish whether the health implications anticipated in the appraisal were realised.

**Approach**

The number of health appraisals being carried out on policies, programmes and proposals has increased over the last decade. These appraisals are carried out in a variety of ways and approaches. This project seeks to understand how effective the different recommendations made through health appraisals are in influencing the design and implementation of urban development projects.

The first part of the study involved a literature review to inform the development of a review methodology and further scoping of research aims and objectives. The literature backed up the lack of published evaluation and stressed the need to establish an evidence base on the effectiveness of health appraisals in order to improve practice, efficiency and legitimacy of health appraisals.

A methodology was then developed to review (retrospectively) the type and effectiveness of health appraisal recommendations for urban development proposals. The methodology identified:

1. The types of health implications and recommendations identified by the health appraisal (HIA or other appraisal)

2. How the recommendations were incorporated into the project design, and whether they were implemented when the project was delivered

3. If any measurement or monitoring of the impact of the implemented recommendations on health outcomes was proposed

4. The factors that prevented implementation (if the recommendations were not implemented) and at what stage in the process these factors occurred.

The methodology included a qualitative desktop review of the health appraisal report; in-depth interviews with the key individuals (report author/s, planning case officer); scrutiny of local datasets; and, where possible, a site visit to the implemented development.

In the final stage of the project, the proposed methodology will be tested on the identified health appraisals to identify the types of recommendations that were included and if responsibilities for implementation were identified. This pilot study will strengthen and support a bid for a research grant from the National Institute of Health Research (NIHR) Public Health Programme, which is the primary focus of this project.