ENGAGING COMMUNITIES FOR SUSTAINABLE BEHAVIOUR CHANGE IN LIMERICK CITY

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Abstract

As *'Ireland's Smarter Travel Demonstration City'* Limerick is charged with piloting ways to convince its citizens to move around their city in a more sustainable way, in particular to walk, cycle and use public transport more. The project is funded by the Department of Transport with EU support and implemented by a multi-disciplinary team of University of Limerick (UL) researchers and Limerick Local Authority staff. Behaviour change programs tend to focus on a few behavioural change theories which gained ground in the 1980s. Many theories explain the behaviour change process in terms of several cyclical stages. Limerick Smarter Travel (LST) is adopting the '*Seven Doors Social Marketing Approach,'* which defines each stage in terms of the type of obstacle to be overcome. This model for behaviour change assigns different types of intervention according to the stage of readiness of the individual or community.

The LST team works with the community in the design of infrastructure principally walking and cycling routes. This facilitates a new type of participatory planning to meet the felt needs of the community. This generates goodwill and trust that further benefits the project. LST collaborates with the National Transport Authority (NTA) and works closely with An Taisce and with relevant disciplines within UL. LST is working with the Graduate Entry Medical School (GEMS) to link health and wellbeing initiatives with the project. LST has recruited 30 local champions to take on a '*20 Weeks of Change*' challenge to incorporate Smarter Travel into their daily routine and to measure the impact on their health and well-being. This element of the LST project offers huge potential to link with national health and education policy and broaden the vision for Smarter Travel.

This paper describes the development and implementation of community engagement, design, and education in Smarter Travel. LST is laying the foundations for long term change whose implications for local government practice, the built environment and the health and well-being of local communities will only become apparent over decades.

Introduction

As *'Ireland's Smarter Travel Demonstration City'* Limerick is piloting approaches to increasing the mode share for walking, cycling, and public transport in the city. The LST's winning bid was based on a successful collaboration between Limerick City Council, Limerick County Council, and UL. Since the 1960s, the prevalent approach in urban and suburban road and street planning and design has been to *'predict and provide'*. This has resulted in car dominated urban and suburban environments (Department of Transport, 2009). While the majority of the LST budget is allocated to necessary 'hard' infrastructure measures, the success of LST will be measured in human behaviour change. LST seeks to address the existing car culture (Cullinane, 2012) in Limerick, through building and sharing knowledge between stakeholders, designing innovative hard and soft interventions, and thereby encouraging behaviour change supported by improved cycling and walking infrastructure.

COSGROVE, CULLINANE: Behaviour Change
Limerick City

*5-6th September,
Trinity College Dublin*

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This project is implemented by a multi-disciplinary team of Local Authority Staff and University Design Researchers. The team composition ensures the project design is research based, grounded in local experience, and mobilises multiple local networks at all stages. LST is a laboratory for developing and testing innovative ways for a Local Authority to leverage locally available expertise and engage collaboratively with its citizens.

Behaviour Change Theories and Models

Behaviour change programs tend to focus on a few behavioural change theories which gained ground in the 1980s. Conceptual models of human behaviour such as Azjen and Fishbein's *Theory of Reasoned Action* (1975) have been applied across a wide variety of disciplines, including travel and road user behaviour (Cullinane, 2012) to examine how certain behaviours occur.

The *Theory of Planned Behaviour*, for example, is a theory about the relationship between attitudes and behaviour. The idea proposed by social psychologist Icek Ajzen (1991), aimed at improving the previous *Theory of Reasoned Action* model, developed with Fishbein (1975). The *Theory of Reasoned Action* is a model that defines the links between beliefs, attitudes, norms, intentions, and behaviours of individuals. According to this model, a person's behaviour is determined by his/her behavioural intention to perform it. This intention is itself determined by the person's attitudes and his/ her subjective norms (the perceived social pressure to engage or not to engage in behaviour) about the behaviour. Ajzen wished to improve on the predictive power of this theory by including perceived behavioural control, thus developing the *Theory of Planned Behaviour* (Ajzen 1991), as shown in Figure 1. The *Theory of Planned Behaviour* states that attitude toward behaviour, subjective norms, and perceived behavioural control, together form an individual's behavioural intentions and behaviours. Figure 1 below illustrates this theory, in relation to an individual's decision to drive to work.
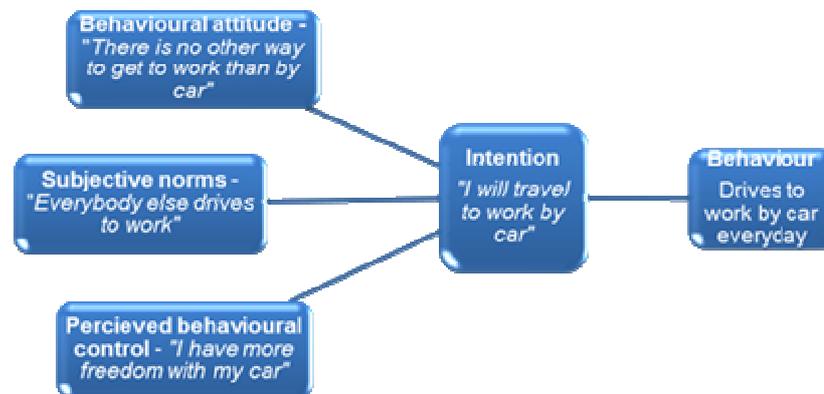

Figure 1   Theory of Planned Behaviour

Such Behaviour models seek to explain the underlying factors that influence human behaviour. However, external factors such as physical obstacles or cost barriers are not accounted for. These theories tend to be linear, and focus on change as a once-off cause and effect event. This can lead to a mistaken belief that a single intervention, such as the provision of a cycle lane, can lead to the desired outcome, an increase in cycling or walking in this case, within a short period (McKenzie-Mohr, 2011). Research demonstrates that behaviour change occurs in stages and progress through these stages can be described as spiral (Prochaska and DiClemente 1986). However, those theories that attempt to explain behaviour change show that change is a process that occurs over time.

Research demonstrates that behaviour change occurs in stages and progress through these stages is not linear; instead, it is described as cyclical (Prochaska and DiClemente 1986). This cycle involves adoption of the new behaviour, maintenance of that behaviour, deterioration, and repeated uptake of the behaviour over time. Theories that view behaviour change in terms of a cyclical process through which individuals move in stages, offer much potential for understanding travel behaviours, in particular how to encourage changes in this behaviour.

The model described in Figure 1 proposes factors that underlie human behaviour. Similar theories or models tend to focus on individual behaviour change rather than community behaviour change, which is what LST aims to achieve. While such models can never capture the full complexity of human behaviour, such models and theories of change can provide an initial framework for behaviour change intervention providing their limitations are accepted.

The Seven Doors Model

Different elements of the behaviour model will have particular significance as an individual moves through the process of permanent behaviour change. Improved second generation theories explain the behaviour change process in terms of several cyclical stages. Australian behaviour change specialist Les Robinson's 'Seven Doors Social Marketing Approach' (1998) is one such theory, which defines each stage in terms of the type of obstacle to be overcome. The '*Seven Door's* approach to social marketing also cautions against the assumption that merely providing information through awareness raising will automatically result in lasting behavioural change. (LST therefore is circumspect in its approach to marketing which it views as a useful information dissemination tool rather than as a tool for primary behaviour change). Robinson's approach is to identify seven steps to social change:

Predisposing Factors
1. Knowledge – getting the message out there, identifying key individuals/ communities
Enabling Factors
2. Desire – providing incentives or activating dormant desires
3. Skills – cycle training, public transport mapping
4. Optimism – Displaying the benefits, health and well-being, cost
Triggering Factors
5. Facilitation – completion of cycle routes, new mapping, etc.
6. Stimulation – public displays of who is engaging
Satisfying Factors
7. Reinforcement – rewarding

While Robinson's model can still be described as linear, it is more nuanced and does not focus on change as a once-off cause and effect event. Robinson identifies each step as an obstacle (relevant factor in behaviour model) that has to be overcome using appropriate communication and education strategies. He visualises each step, or obstacle, as "a door that must be opened" in the context of awareness raising in order to achieve lasting social change. Step 1 above allows for the identification of positively disposed people or groups within communities, and the relevant barriers to permanent behaviour change at each stage. Once positively disposed community groups such as An Taisce Green Schools, cycling clubs, or individual cyclists, are identified, initial communication can then be targeted. Then as barriers are identified in consultation with local communities, appropriate tools or interventions (soft and hard) can then be designed to overcome them.

A Behaviour Change Framework for Limerick Smarter Travel

A major insight offered by these "stage theories" of behaviour change, is the emphasis they place on **assigning different types of intervention to the stage of readiness of the individual or community**. The LST project utilises a multifaceted, community-based approach to intervention in which individuals at various stages of *'readiness for change'* can potentially be influenced. LST is therefore adopting an approach to behaviour change that focuses on sustained and regular communication.

Participation and Choice

However behaviour change through communication that focuses on target audiences and fixed determined behavioural outcomes without authentic community participation can infringe the ethical principle of free choice that underlies work in the community. According to a 1990 study (Chavis and Wandersman, 1990), community participation can contribute positively to improving the quality of the physical environment, enhancing services, preventing crime, and improving social conditions. Chavis and Wandersman (1990) note that a sense of community is *"the glue"* that can hold together a community development effort.

COSGROVE, CULLINANE: Behaviour Change
Limerick City

5-6th September,
Trinity College Dublin

Proceedings
of the
ITRN2013

Chavis and Wandersman state that community programs such as LST "*...foster membership, increase influence, meet needs, and develops a shared emotional connection among community members...can serve as catalysts for change and for engaging individuals and the community*" (Chavis and Wandersman, 1990). Putman (2000) supports this, stating that researchers in education, health, and urban poverty for example, have realised that success is more likely when community engagement is utilised to deliver related outcomes such as improved health, and reduced crime. Putman (2000) also states that social scientists have "*...unearthed a wide range of empirical evidence that the quality of public life and the performance of social institutions...are...powerfully influenced by norms and networks of civic engagement.*"

Ensuring Community Participation

Citizen participation in community development initiatives and projects doesn't usually occur by chance alone. It happens because certain principles of organisation are observed at an acceptable level to the participants. Citizens will voluntarily participate in a community activity when they:

- Have good knowledge of an issue or situation; and/or
- Feel comfortable in the action group;
- Have an appropriate organisational structure available to them for expressing their interests; and
- See positive benefits flowing from participation.

Further, citizen participation can be improved by:

- Demonstrating the benefits of participation;
- Providing appropriate means for citizen participation;
- Helping citizens find positive ways to respond to threatening or problematic situations; and
- Stressing obligations each of us have toward community improvement;

(Smith, 2012)

LST Behaviour Change Strategy

A Behaviour Change Strategy - has been developed for LST (Cullinane, 2012). The community based social marketing strategy comprises four strands: communities, schools, workplaces, and campuses involving appropriate hard and soft measures. Community participation and ownership of the project are vital for insuring the success of LST and time is required in the project planning stage to facilitate a community design process before infrastructure designs are frozen. All strands of the project including infrastructure design and soft measures such as workplace travel planning are led by community engagement. Community engagement is progressing across all four hubs of Corbally, Southill, City Centre, and UL/Castletroy. Actions have included community/ street events, distribution of cycle route bookmark-maps, website development, and social media information, community workshops, visualisations for public consultation and formal planning applications. LST's *'BeSpoke'* one week festival during National Bike Week reached over 10,000 Limerick citizens through attendance at events and recorded conversations.

LST is collaborating with the National Transport Authorities (NTA) Smarter Travel Workplaces and Campus programmes on these strands of the project. The NTAs programmes were developed for large employers only (250 employees +). However the collaboration with LST has allowed small and medium workplaces to be targeted also. All three third level campuses in Limerick (UL, Limerick Institute of Technology and Mary Immaculate College of Education (MICE)), are engaged and an MICE geography student is developing a campus smarter travel strategy in conjunction with LST as part of his final year project.

The following sections look in more detail at the Corbally hub, in particular at collaboration with the An Taisce Green Schools programme and with the UL Medical School.

Community Engagement in Corbally

Four 'hubs' which are significant trip generators form the framework for the demonstration project (Limerick Smarter Travel, 2010). A number of routes linking these hubs are prioritised for improvement. The first route to be brought to Planning Application Stage Part 8 as it was the simplest was located in Corbally. Consequently, the LST team of UL Graduates and LA staff commenced community engagement in Corbally. Corbally is a major residential suburb of Limerick City with 7,915 residents (Central Statistics Office 2012). Unfortunately, given the project programme community design workshops were not held prior to the Part 8 application. Instead, feedback from the public was gathered to inform the detailed and final design stages. These consultations revealed a variety of concerns relating to 'micro-infrastructure' issues, i.e. minor physical issues on roads, crossings, paths, and boundaries that were causing concern. It was realised that these issues offered a positive opportunity to LST to establish itself in the mind of the community as a public agency who could listen and respond effectively to community needs. Action on a number of issues is already in progress. LST continues to engage with the Corbally facilitating a new type of participatory planning.

Intensive community engagement with schools is on-going and coordinated with the An Taisce Green Schools project. An Taisce have contracted with LST to expand their Green Schools programme with the support of LST staff. The Green Schools process requires the participating school to complete three other themes (waste, water, and energy) prior to travel. LSTs collaboration with Green Schools now enables direct engagement with schools in relation to Smarter Travel without a minimum of three years previous engagement on other environmental themes. Scoil Íde in Corbally, with a population of almost 800 pupils hosted a '*Walk on Wednesday'* action day which resulted in 79% of students walking to school, from a baseline of less than 10%. Further work is planned with Scoil Íde in the new school term to ensure these efforts are sustained. Engagement with walkers and cyclists currently using designated routes is also on-going. A marquee was located along the actual proposed route upgrade to capture likely interested people. A large scale aerial view with a write-on transparent cover was placed inside the marquee as shown in Figure 2.

Figure 2   Route Design Community Participation

The LST project team used the event to begin network building by collecting contact details of potential champions, to answer questions from the public, and to invite the public to become involved in the design process of this route. The same '*write on map'* was also used for public consultation at Scoil Íde. LST will return with the marquee to obtain feedback following construction of the route. LST continue to utilise this method of engagement on other routes planned for improvements and upgrades within the study area. LST also undertook wider consultation in Corbally which included walking the route with locals, walkability audits with Scoil Íde students. LST also set up a working group in Corbally. Members of the public were invited to attend a public meeting to identify measures to reduce car dependency and to encourage walking and cycling for local trips in Corbally. This working group comprises local politicians, school teachers, resident committee group members, walking club members and a local public health expert. The outcome of this working group will be supported by a number of community pilots and infrastructure improvements to be put in place.

The pilots and micro-infrastructure improvements include walking bus initiatives via Scoil Íde which is underway, and improved pedestrian crossings which are at a detailed design stage. This project acts as a pilot for community based travel behaviour change for the Corbally community, which if successful, can be applied to the other zones/ hubs across the study area. It is recognised that time is required in project planning stages to facilitate a genuine community design process before designs are substantially developed such as for the redesign of the pedestrian crossing at Scoil Íde. LST continues to promote genuine social engagement in Corbally through continued liaison with our Working Group, Corbally Schools, and via continued public consultation, newsletters, and the LST website.

Community buy in, commitment to Smarter Travel, and a community Smarter Travel Champion (via the 20 weeks of Change campaign, discussed later in this paper) have now been established in Corbally prior to the implementation of the proposed pilots (i.e. walking buses) and infrastructure improvements. The community have been informed of, and contributed to all plans for Corbally. Consultation with individual Households in Corbally is to commence shortly. This component of the LST program will allow the team to engage directly with individuals in order to help individuals identify and choose sustainable transport solutions that meet their mobility and access needs for work, family, social, and recreational activities. Figure 3 summarises the work already completed in the Corbally hub, and the future plans for the other hubs.

Limerick Smarter Travel - Communities	Year 1 2013	Year 2 2014	Year 3 2015	Year 4 2016
	Hubs			
Tasks	Corbally	Castletroy	Southill	City Centre
Initial Community Engagement/ Introduction				
Community Workshops				
Community Working Group				
Micro-Infrastructure Projects - Site Survey				
Community Pilot Projects - Surveys				
Micro-Infrastructure Projects - Proposals for Consultation				
Community Pilot Projects - Proposals for Consultation				
Public Consultation All				
Micro-Infrastructure Projects - Final Design for Construction				
Community Pilot Projects - Final Study for Trialling Pilots				
Monthly Newsletters				
Tailored Travel Information Design				
Travel Planning - Update and Dispense Information				

Key:
- Complete
- In progress

Figure 3   LST Community Implementation Programme

UL Campus Smarter Travel

The University of Limerick is a corporate workplace partner and research partner in the LST project The Civil Engineering and Architecture schools are centrally involved in this project and in the overall LST project. Operating under the 'Campus' strand of the overall LST strategy and following a 20 week feasibility study, the UL Smarter Travel team (ULST) is currently contracted to UL Buildings and Estates to develop a detailed strategy for campus infrastructural improvements and travel behavioural change program for both students and staff. It is anticipated that about €1.5m of campus infrastructure improvements funded on a 50/50 basis will result within the life of the project. A detailed behaviour change strategy is taking shape which will integrate student engagement with existing UL initiatives such as the First Seven weeks program from September 2013. Various policy initiatives to encourage staff and students to use smarter travel modes are under consideration including an on-campus bike shop. Real time travel information has already been provided at the main campus bus terminus.

20 Weeks of Change

LST is building links with other relevant disciplines and bodies to link with and integrate other relevant initiatives into LST. Following a meeting between LST and health and health education related researchers and agencies. The UL Graduate Entry Medical School (GEMSs) and the department of Physical Education and Sports Sciences (PESS) and the HSE are now contributing to LST. Dr. Yoga Nathan, a public health specialist is coordinating this activity with the LST team. As a result LST launched the 20 Weeks of Change program in May of this year.

This is a campaign to show Limerick citizens that using smarter travel options can have a positive impact on health, well-being and, of course, their pocket. LST have recruited a group of 30 champions who have agreed to make a small change to their daily routine for twenty weeks, incorporating walking, cycling, car sharing, and/or public transport into their daily routine and in the process experience Limerick in a different way. Initially champions were recruited via an open call on Facebook and Twitter. These champions then recommended friends, neighbours, and work colleagues. The remaining champions were recruited via word of mouth, retweets and shares on Facebook, and referrals from various community groups around the city such as Limerick Local Hero's.

Figure 4   20 Weeks of Change Champions

Six champion profile videos are currently being produced. Four have already been completed and can be viewed via the following weblink http://www.youtube.com/LKsmartertravel. A short documentary compiling the experiences of the champions will be launched during European Mobility Week in September. In collaboration with GEMS, PESS, and the HSE, LST will be assessing the improved health and well-being of all the champions as they take on these changes. This element of the LST project offers huge potential to link with health policy and research far beyond the government's vision for Smarter Travel.

Lessons Learnt and Conclusion

This paper explores the consequences of supporting communities in understanding the benefits of Smarter Travel, and helping them design behaviour change solutions that will work for them. Some of the innovations that have emerged so far from the LST project include:

- University-Local Authority link: leveraging expertise beyond the Local Authority;
- Leveraging existing projects (e.g. An Taisce Green Schools, NTA workplace travel planning, National Bike Week, GEMS Public Health Research)
- Going out to communities in new ways (Marquee and write-on-map located on the route) with a new identity (LST fronted by UL graduates);
- Micro-infrastructure to build trust and confidence; and
- 20 weeks of change: champions with the health link.

COSGROVE, CULLINANE: Behaviour Change
Limerick City

5-6th September,
Trinity College Dublin

Proceedings
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Lessons learnt to date include the following:

- LST needs to be evidence based and understanding user requirements is vital;
- Grass roots communication is essential for authentic community participation;
- Face-to-face communication is essential;
- LST is a dynamic learning process which relies on communication, listening and understanding: methods and scope must be allowed to evolve with the project
- LST focuses on solving travel related community problems

LST is laying the foundations for long term change whose implications for local government practice, the built environment and the health and well-being of local communities will only become apparent over decades.

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