**Paths for All Autumn Workplace Step
Count Challenge 2015:**

A qualitative study of how the Autumn Step
Count Challenge influences participants'
active travel behaviour

Research Report for Paths for All

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Abstract

Introduction Lack of physical activity (PA) is a concern in the UK, with most working individuals being a high-risk population. The Step Count Challenge (SCC) is a walking based intervention aimed at helping people in workplaces increase their PA levels. Active travel presents itself as an attractive method to help individuals meet PA guidelines. Therefore the aim of the current research is to investigate how the autumn SCC influences individuals' choice to use AT and whether any behaviour changes are sustained over time. *Method* Qualitative data were collected using semi-structured interviews from an opportunity sample of participants who took part in the 2015 Autumn SCC and from the Transport Policy Officer for West Lothian (n=5, mean age= 41.5). Interviews were transcribed and analysed using thematic content analysis and a summary of individual interviews were also produced. *Results* Interview results from four participants revealed three had increased their AT as a result of the challenge with one managing to maintain this four months later and the other two seeing a decline. All of these participants also suggested future plans for increasing AT. One participant's AT behaviour remained static before, during and after the SCC. Results gathered on how AT was increased were consistent with results reported from the Transport Policy Officer for West Lothian. *Conclusion* The current research suggests that the SCC facilitates an increase in AT and offers the potential for positive behaviour change to be sustained by addressing numerous components of the ecological model.

Key words- ecological model, physical activity guidelines, workplace, walking

A decline in habitual physical activity (PA) accompanying modernisation presents novel health concerns (Sparling et al., 2000). The human species has evolved with PA being a prerequisite for survival (Sparling et al., 2000). Consequently our physiology requires an active lifestyle. However the majority of adults in developed countries are not physically active to a satisfactory degree associated with the increased use of cars and the proliferation of labour-saving devices (Prentice and Jebb, 1995; Proper et al., 2002; Stephenson *et al.*, 2000). Therefore it is no surprise that the growth of chronic diseases is rooted in the pervasive sedentariness of modern life (Booth et al., 2000).

This introduction will consider the relationship between PA and health, and highlight the potential for active travel (AT) to help individuals tackle the consequences of an inactive lifestyle. This will then be linked to current efforts from Paths for All to increase PA through the Step Count Challenge (SCC), narrowing to a specific focus on whether the Autumn SCC facilitates AT.

Understanding Physical Activity and the Health Benefits

PA is defined as bodily movement produced by skeletal muscles that result in energy expenditure (Caspersen, Powell & Christenson, 1985). It is important to note that PA is more than just exercise; it is about using the body in ways it was designed and improving well-being by strengthening that relationship (Das & Horton, 2012). An active lifestyle is therefore encouraged with individuals urged to incorporate active choices into their daily lives (Ståhl et al., 2001). The benefits of PA in health promotion and disease prevention are well documented by its dose-response relationship with all-cause mortality (Andersen et al., 2000; Lee et al., 2012). Current activity guidelines recommend adults engage in moderate-vigorous PA (MVPA) for a minimum of 150 minutes a week (accumulated in minimum bouts of 10 minutes) in addition to engaging in PA to improve

muscle strength at least twice a week and miminising time spent sedentary (Department of Health, 2011).

However in 2014 only 67% of men and 58% of women in Scotland met the MVPA guidelines (Gov.Scot., 2014). While this is a significant improvement from 2012-2013, it is partially attributable to a change in the guidelines from 5 x 30 minutes, allowing for individuals to accumulate larger bouts of activity at once. Furthermore independent of PA, sedentary behaviour (SB) often represented by sitting time also increases age-adjusted risks of all-cause mortality (Owen et al., 2010). Advancing research emphasises that breaking up long bouts of sitting with low-intensity PA has a greater effect on deleterious health consequences associated with SB than increasing MVPA (Owen et al., 2010). For this reason health concerns in Scotland could be more pressing than they appear.

Benefits of Active Travel

AT is an example of how movement can be encompassed into everyday activity to meet PA recommendations. It is an approach to transport focused on PA for example walking or cycling (Foley et al., 2015; Bopp, Kaczynski, Besenyi, 2012). Public transport should also be included because of the benefits associated with more standing and intervals in sitting time not present when using a car. Travel is a commonplace daily activity therefore it presents itself as an attractive public health strategy, contributing to increasing PA levels (Foley et al. 2015). Cycling and walking are both low cost activities accessible to most of the population and are relatively easy to build into daily routines (Panter & Jones, 2010). While public transport is not always as accessible as walking and cycling, it is an alternative for longer routes. Furthermore all forms of AT have wider

societal benefits of reducing traffic, congestion, air pollution and greenhouse gas emission (Panter & Jones, 2010). Despite this, in Scotland only 1% of journeys have cycling and 23% have walking as the main mode of transport, even though a quarter of journeys are less than 1km and half are less than 3km (Gov.Scot, 2014).

Research in the UK suggests AT is undertaken in addition to, not instead of recreational PA, emphasising its advantage for increasing overall PA (Foley et al., 2015; Jarrett et al 2012; Panter & Jones, 2010). Audrey, Procter and Cooper (2014) provide cross-sectional data demonstrating total weekday PA measured by accelerometers was 60% higher in those commuting on foot than by car, with no differences in weekend PA. Likewise Yang et al. (2012) reported that women completing 150 minutes or more of weekly AT accumulated an average of 8.5 more daily minutes of accelerometer-measured PA than those reporting no AT. This is supported by longitudinal research where changes in AT have been associated with increases in PA (Yang et al., 2012 and Foley). Furthermore the average journey time for walkers and cyclists is 25 minutes with mean MET values being 4.8 and 7 respectively. This suggests AT is of a sufficient duration and intensity to help individuals meet PA guidelines (Mutrie et al., 2002). However, investigating AT patterns in high-risk populations is a priority before extending to the population more generally (Owen et al., 2011).

Arguably, working individuals are a high-risk population. Modernisation is increasing the sedentary nature of work and alongside the increasing use of cars it is contributing to a decline in PA (Dugdill et al. 2008). 'Not enough time' is the most commonly cited barrier to being physically active (Dugdill et al. 2008; Strazdins et al., 2010). Indeed, the UK workforce tends to spend more hours at work than most other EU countries and have less paid leave/annum (Dugdill et al. 2008). This further emphasises travel, a necessary part

of the day as an appealing domain in which to increase PA. Therefore workplace programmes are particularly important when considering the imbalance between PA and SB during working hours.

A growing body of literature suggests the positive impact of interventions aimed at increasing workplace AT, however there is limited research investigating their effectiveness. The most informative study to date is Mutrie at al's (2002) research of Walk in to Walk Out, a self help intervention, delivered via written interactive materials, aimed at increasing AT in workplaces in Scotland. The intervention targeted individuals contemplating and preparing to use AT by suggesting ways of enhancing self-efficacy and emphasising processes of change, such as consciousness raising. Results showed a significant increase in the proportion of the intervention group who walked to work, but cycling was unaffected, suggesting the intervention is effective for walking but not cycling (Mutrie at al.,2002). Furthermore research with Australian health care workers suggests a combined social and individualised marketing campaign in the workplace can increase AT to work and at weekends (Wen, Orr, Bindon, Rissel, 2005). However, literature has struggled to isolate specific elements of these multi-pronged strategies which may have the greatest potential for developing efforts to increase AT (Nazelle et al., 2011). Additionally while both interventions proved to be effective, further UK based evidence is needed with a focus on the facilitators and barriers of maintaining AT behaviour.

The Ecological Model

The ecological model helps identify opportunities to promote AT by explaining how multiple factors operating at different levels can influence individuals' behaviour

(figure 1) (Sallis, Owen & Fisher, 2008). In order to increase participation in AT, efforts need to not only focus on the behaviour choices of each individual but also the complex network of factors which influence these choices. It is therefore proposed that interventions aimed at increasing AT are more likely to be successful if they address multiple levels at the same time (Sallis et al., 2008).
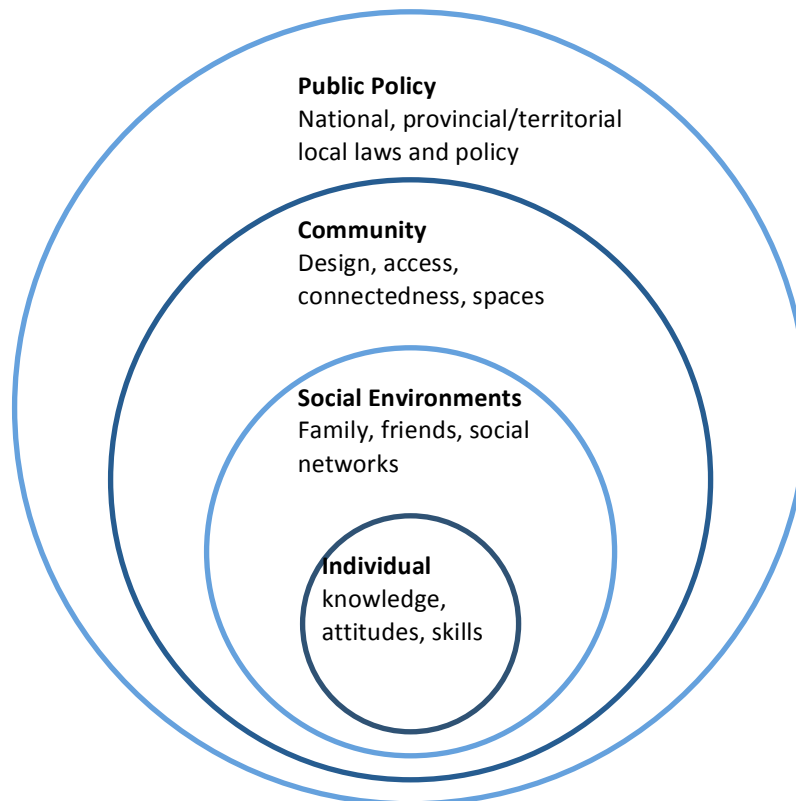
Public Policy
National, provincial/territorial
local laws and policy

Community
Design, access,
connectedness, spaces

Social Environments
Family, friends, social
networks

Individual
knowledge,
attitudes, skills

Figure 1: The ecological framework for understanding physical activity (Sallis et al., 2008).

Paths for All and the Step Count Challenge

Paths for All (PFA) is a Scottish charity that develops opportunities and environments for walking, cycling and other activities with the aim of making Scotland a more active, prosperous and greener country. It is the main body promoting walking in

Scotland, with one intervention being the SCC run twice annually. The Autumn SCC is a four week work place walking challenge. The challenge costs £5 per person with participants receiving an information pack underlining the benefits of being more active, an optional pedometer and access to the SCC website. Individuals receive a user account to record daily steps, share comments with team members and track progress on a leaderboard. Individual targets are provided based on data from week one and personal aims. Automated goals are delivered throughout the challenge with the intention of all participants meeting PA recommendations by the end. Individuals receive a congratulatory email when they achieve their best 'step' day and week, and may be prompted if they have not added data for a few days. Each team has a captain in charge of encouraging others and monitoring weekly step-counts. There is also an online blog for participants to contribute.

The SCC specifically targets the 2 central circles of the ecological model to encourage behaviour change. Therefore the purpose of the current research is to investigate whether the SCC effectively influences AT behaviour.

Research question

Does the SCC influence individuals' choice to use AT and are any behaviour changes sustained over time?

Aim

To collect qualitative data from participants of different workplaces regarding their experience of the SCC and how this may have influenced their AT behaviour. A

professional opinion will also be gathered from West Lothian's Transport Policy Officer about her research with SCC.

Objective

To use data gathered to look at the success of the SCC in influencing individuals' AT behaviour. The data will also be used to offer guidance for future challenges and what can be introduced to further encourage AT.

Method

Participants

Participants (n=4) were individuals who took part in the 2015 Autumn SCC. The sample contained two males and two females with an age range of 29- 47 (mean= 41.5) and none of whom lived in central Edinburgh. One additional participant (participant 5), the Public Transport Officer for West Lothian was also invited to take part in a different aspect of the study.

Measures

A semi-structured interview schedule was designed to gather qualitative information and encourage participant input, for example: "Did you learn anything new about how to travel actively during the challenge?" The schedule focused on individuals' experience of the Autumn SCC in addition to AT behaviour before, during, after and current levels and influences of behaviour at each stage.

A semi-structured interview was also used to gather information from West Lothian's Public Transport Officer about her research/involvement with the SCC. For example: "could you tell me a bit about your work with the Autumn SCC?"

Procedure

Ethical guidelines were followed during the research and checked by University of Edinburgh researchers. Paths for All initially approached work places that took part in the Autumn SCC specifying what participation involved. Four participants responded and their contact details were subsequently passed on to the researcher. All participants were provided with full information of what the research involved at least 24 hours prior to the interview. The researcher then met participants at their place of work to be interviewed.

Interviews were recorded on a digital device for transcription purposes only. Participants were fully debriefed after the interview and given the opportunity to ask any questions. The same procedure was used when interviewing West Lothian's Public Transport Officer however the interview was conducted over the phone. Recordings were transcribed for analysis and participants' names were not used in the reporting of the results to preserve confidentiality.

Analysis

All interviews were transcribed and analysed for common themes using thematic contents analysis. Additionally a summary of each participant, their SCC experience and their individual AT behaviour was produced using interview transcripts. A thematic analysis was conducted which grouped open ended questions into common themes surrounding AT behaviour using 6 phases (see table 1) (Coolican, 2014):

Phases of Thematic Analysis	Description of Process
1. Familiarisation with data	Actively read and re-read data to become familiar with the information gathered while looking for meanings, patterns and repeated phrases. This phase started during transcription but interviews were read more than once. At the end of this section initial start codes and a list of points of interest were noted down in addition to their source.
2. Produce initial codes	Coding began in this stage. Using the Microsoft Word review function, labels were added to transcribed scripts providing a brief summary of meaning elements of the data. All data were coded with equal attention documenting where and how patterns occur and any relations between codes. At this stage codes were produced around how data answer the research question.
3. Looking for themes among codes	After all codes had been identified, focus turned to combining these codes into themes that accurately portrayed data. At the end of this stage codes were group together to form first order themes.
4. Review themes	This stage looked at 'candidate themes' and they support the data and the overarching theoretical perspective. Themes were assessed to check for separation between them, within themes and whether data coding was consistent. Readjustments were made among codes and themes before considering separation and links between major themes and sub themes. A coherent recognition of how themes are patterned was obtained.
5. Defining and naming themes	Themes were refined and defined to produce a comprehensive analysis of what the themes contribute to the data. Each theme could be described in a few sentences. At this point higher order themes where devised containing sub-themes that linked together and clear names for the themes were evident.
6. Final report	Themes will be presented and related to the research question in addition to previous literature. The report not only presents a description of the data but also presents the data in a convincing manner to show how the findings agree and extend upon current literature. Difficulties encountered during analysis e.g. contradictions between themes will also be reported. A description of the results and their meaning help to develop an understanding ActivPAL data.

Table 1: Phases of Thematic Analysis (Alliott, 2016; Coolican, 2014)

Results

Results from the thematic analyses are a collective response of all four participants. A total of 39 raw themes were identified in relation to AT, these were condensed into three general themes: AT behaviour, facilitators of AT and barriers to AT, illustrated fully in Figures 1–3.
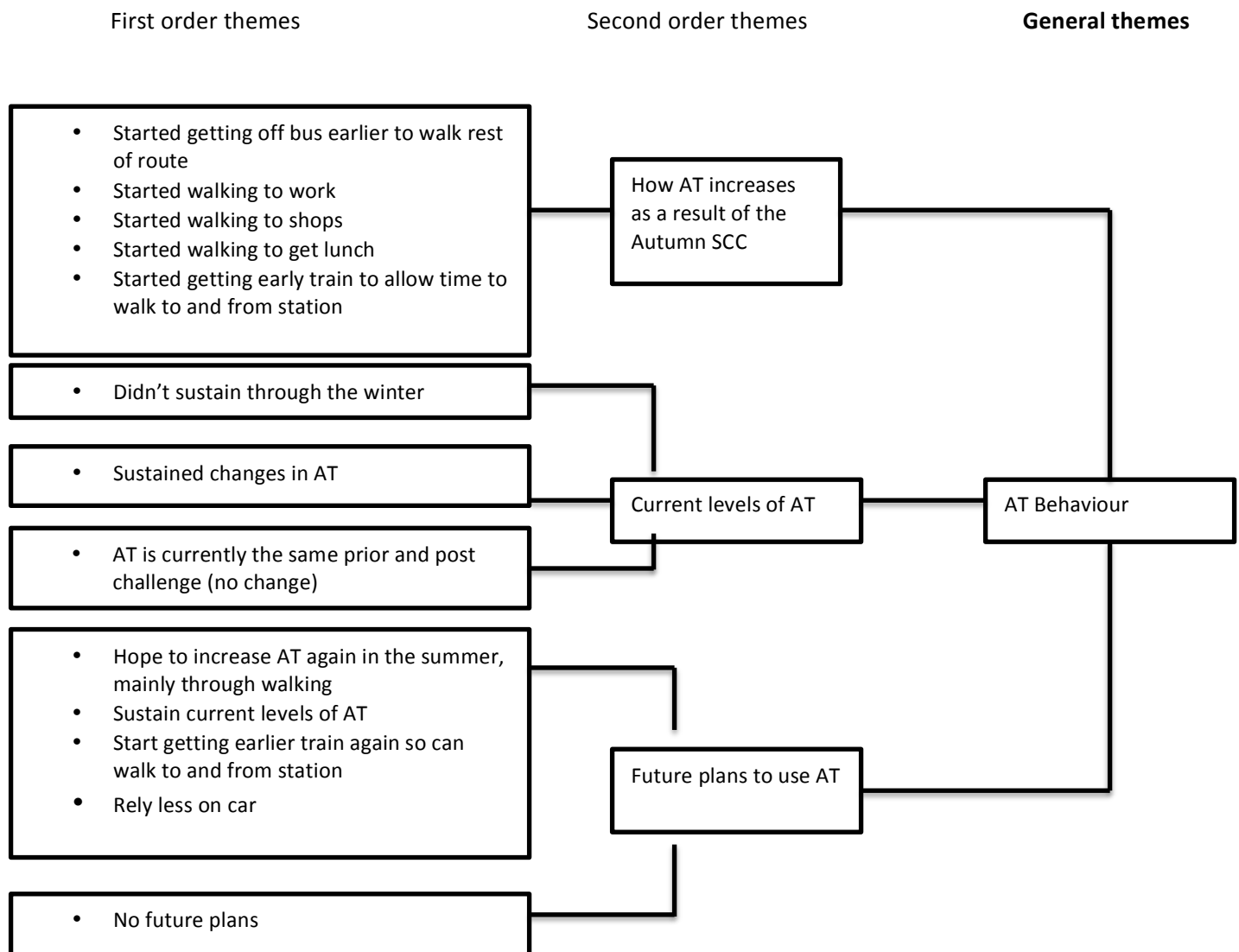
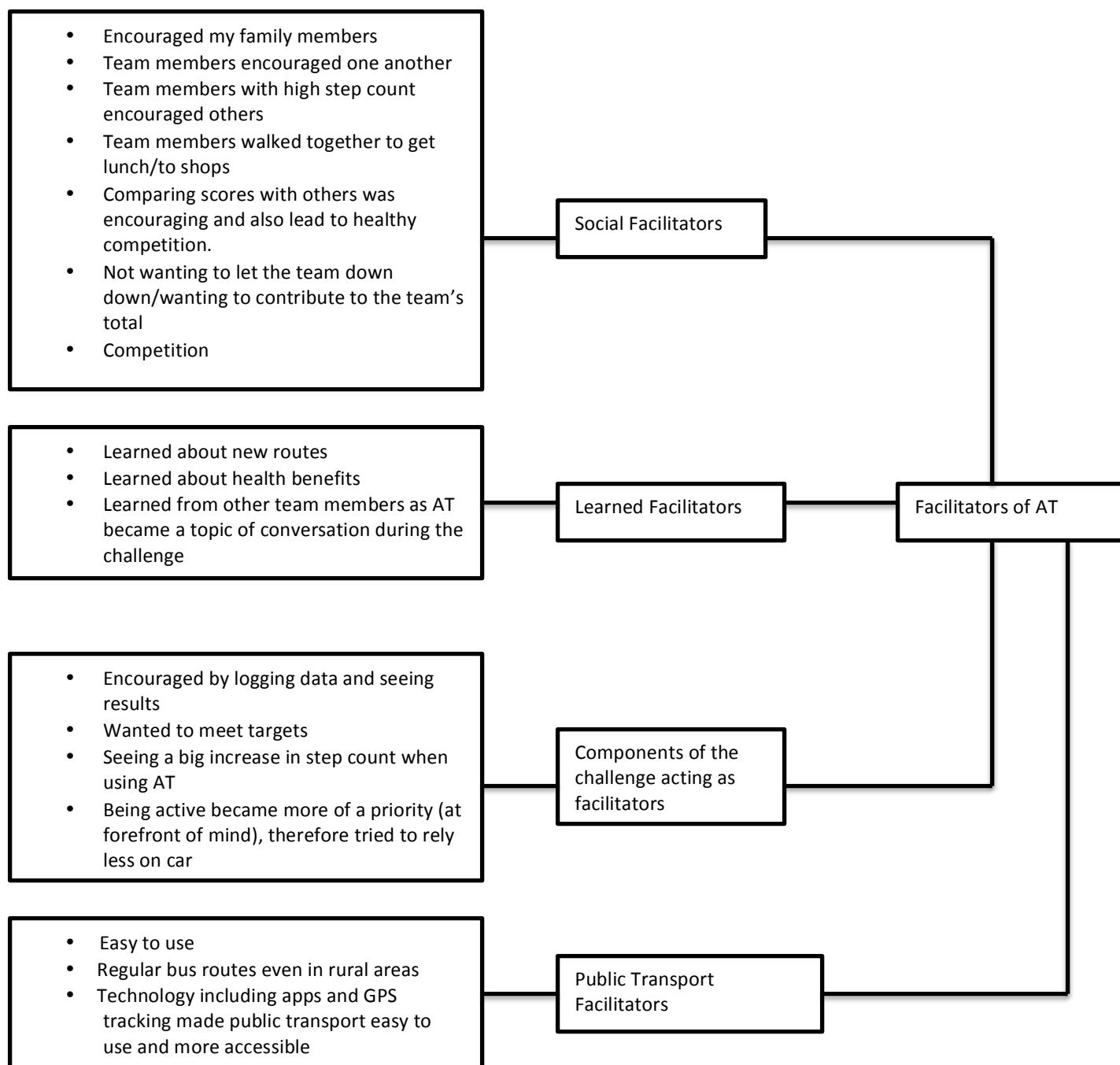First order themes   Second order themes   **General themes**

- Started getting off bus earlier to walk rest of route
- Started walking to work
- Started walking to shops
- Started walking to get lunch
- Started getting early train to allow time to walk to and from station

How AT increases as a result of the Autumn SCC

- Didn't sustain through the winter

- Sustained changes in AT

Current levels of AT

- AT is currently the same prior and post challenge (no change)

AT Behaviour

- Hope to increase AT again in the summer, mainly through walking
- Sustain current levels of AT
- Start getting earlier train again so can walk to and from station
- Rely less on car

Future plans to use AT

- No future plans

Figure 1 - AT Behaviour

- Encouraged my family members
- Team members encouraged one another
- Team members with high step count encouraged others
- Team members walked together to get lunch/to shops
- Comparing scores with others was encouraging and also lead to healthy competition.
- Not wanting to let the team down down/wanting to contribute to the team's total
- Competition

Social Facilitators

- Learned about new routes
- Learned about health benefits
- Learned from other team members as AT became a topic of conversation during the challenge

Learned Facilitators

Facilitators of AT

- Encouraged by logging data and seeing results
- Wanted to meet targets
- Seeing a big increase in step count when using AT
- Being active became more of a priority (at forefront of mind), therefore tried to rely less on car

Components of the challenge acting as facilitators

- Easy to use
- Regular bus routes even in rural areas
- Technology including apps and GPS tracking made public transport easy to use and more accessible

Public Transport Facilitators

Figure 2- Facilitators of AT

- Don't feel safe cycling on the roads
- AT decreases in winter when is gets cold and dark
- Feel unsafe walking in the dark
- Living rurally/not in city centre prevented individuals walking and cycling for travel
- Moved house

Environmental Barriers

Barriers to AT

- Set in routine and don't want to change it
- Don't have time
- Travel distance is too tiring
- Edinburgh is very hilly, AT is tiring
- Don't need to use AT because I am active in my leisure time
- Removal of monitoring and logging data decreased motivation

Personal Barriers

Figure 3 – Barriers to AT

In addition to identifying common themes, a summary of each participant's interview is reported. The summary is coded to show participants' reports of the themes displayed above. The final summary provides information from an interview with West Lothian's Transport Policy Officer (participant 5):

Participant 1

Participant 1 is a 43-year-old male who works between 14-21 hours a week. The Autumn 2015 SCC was the first time he had taken part in the challenge. A work colleague who received an email from Paths for All made the participant aware of the challenge. Prior to participating in the SCC he did a lot of walking due to the nature of his job and because of the attractive countryside near his home. He decided to take part in the challenge because the office thought it would be a fun thing to do together and found it really interesting and motivating to log and compare scores. Overall PA levels were reported to increase as a result of the challenge. Participating in the SCC also helped increase his wife's PA as they tended to go on walks together. When specifically considering active travel, participant 1 mentioned that as a result of the challenge he got off the bus earlier to increase his step count but does not use any other forms of active travel (How AT increased as a result of the Autumn SCC). The participant attributed this to being more aware of how many steps he was doing and wanting to meet the set targets (Components of the challenge acting as facilitators). Since the Autumn challenge participant 1 has tried to maintain getting off the bus earlier but hasn't sustained the same amount of steps, he feels it is easier when you are actively monitoring and logging data (Current level of AT). When thinking about his experience of AT in Scotland participant 1 reported it being positive, especially when considering he lives semi-rurally (Public transport facilitator). Furthermore he felt the outdoor access in Scotland made walking easy. The participant did not learn anything new about AT during the challenge. He has future plans to do more walking with his wife over summer and plans to take part in the Spring SCC (Future plans to use AT).

Participant 2

Participant 2 is a 47-year-old female who works 32 hours a week. The Autumn 2015 SCC is not the first time she has taken part in the challenge. Participant 2 was made aware of the challenge through a work colleague. Before participating in the Autumn SCC she did a fair amount of walking as she is a dog owner. She decided to take part in the SCC because she thought it would be a challenge and a good thing to achieve. Overall PA levels were not reported to increase as a result of the challenge because her PA is centred around the dog and walking is the only type of PA she engages in. However, participant 2 has not managed to sustain this level of activity through the winter months. When specifically considering AT, participant 2 mentioned this increased as a result of the challenge. She started getting off the bus a few stops earlier in order to increase her step count and tried to rely less on her car (How AT increased as a result of the Autumn SCC). Initially this was because of the competitive nature of the challenge and wanting to meet personal targets, she then also found it was quicker in areas with heavy traffic (Components of the challenge acting as facilitators) (Social facilitators). Since the challenge participant 2's AT has remained fairly similar, maybe with a slight decrease during the winter months (Current level of AT) (Environmental barrier). Her experience of AT in Scotland was generally positive and she found it easy to use, however having tried it in the past she felt cycling in Edinburgh was scary and unsafe (Public transport facilitators) (Environmental barriers). During the challenge she learnt more about the health benefits of walking (Learned facilitators). Participant 2 plans to start using more active travel during the summer months (Future plans to use AT).

Participant 3

Participant 3 is a 47-year-old male who works 35 hours a week. The Autumn 2015 SCC is not the first time he has taken part in the challenge; he has been taking part for 5 years and is always team captain. He decided to get involved because he and his colleagues thought it might be quite easy as a lot of them run marathons. They therefore initially decided not to include their private activities, but were quite surprised by the activity levels of others in the challenge. Participant 3's PA levels were fairly high before the Autumn SCC as he owns a very hyperactive dog and is involved in a buddy walking scheme as part of his job, additionally he swims a lot to help with back pain related to his diabetes. His PA levels did not increase as a result of the SCC and are currently the same. When specifically considering AT, participant 3 did not think the SCC helped increase his AT which is currently the same as before the challenge (Current AT levels). He gets the bus to work but otherwise doesn't use AT very much because he lives rurally. He has tried cycling to work before but found the journey was too long (Environmental barriers). His experience of AT in Scotland is very positive and he likes the technology available to monitor bus routes and times (Travel facilitators). Participant 3 does not feel he learnt anything new about AT during the challenge and has no future plans to increase his levels of AT (Future plans to use AT). He aims to take part in the Spring SCC if he can get a team together.

Participant 4

Participant 4 is a 29-year-old female who works 45 hours a week and commutes from Glasgow. The Autumn 2015 SCC is not the first time she has participated in the challenge. She heard about the SCC though a work relationship with Paths for All and thought it would be good to get involved. Participant 4 really enjoyed the data logging and tracking aspect of the challenge and found it motivating especially when comparing data from different challenges, times of the year and to other team members (Components of the challenge acting as facilitators) (Social facilitators). Prior to the Autumn SCC, participant 4's activity levels were fairly low, especially compared to summer levels, as a result she described the timing of the challenge as being "perfect for her". Participant 4 thinks she has managed to sustain an increase in activity since the Autumn SCC as it has been at the forefront of her mind (Components of the challenge acting as facilitators). However she had to make a conscious effort to think and plan how she would maintain PA levels e.g. walking with colleagues at lunchtime and walking to and from the train station (Social facilitators). When specifically looking at AT, the SCC encouraged participant 4 to start walking to work rather than using the car (How AT increased as a result of the Autumn SCC). As a result she was really shocked by how much her total step count increased. Since the SCC participant 4 had tried to maintain AT and overcome challenges such as moving to Glasgow and struggling through the winter months (Current level of AT) (Environmental Barriers). However she plans to start her commuting earlier so she can walk both to and from the station. Her experience of AT in Scotland was generally very positive and she thought walking and public transport in Edinburgh were great (Public transport facilitators). However, she thought cycling was the main barrier in Edinburgh, as the roads are very busy and unsafe but reported cycling for AT in Glasgow is much better (Environmental Barriers). During the Autumn SCC she learnt about new routes and parks through conversing and walking with colleagues who have better local knowledge (Learned facilitators) (Social facilitators). Participant 4 plans to start getting the train earlier so she can walk to and from the station and already has a team for the Spring challenge (Future plans to use AT).

Participant 5

Participant 5, Public Transport Officer for West Lothian discussed a research project looking at the Autumn SCC's impact on AT immediately after the challenge. Participant 5 saw the SCC as an opportunity to be involved with a challenge specifically targeting work places and one that includes walking and cycling. The project involved funding from Smarter Choices Smarter Places for 20 teams to take part in the challenge which included pedometers. Participation proved to be very popular with the challenge reported as over-subscribed. Prior to the research, participant 5 voiced concerns over whether participants would only increase leisure time PA rather than AT. However feedback from participants was very positive with reports that AT was increased as a way of building up step count. AT responses included:

- Discovering new walking and cycling routes to work or to the shops.
- Realising that AT is an option available to them.
- Raised awareness of not just relying on the car.
- The positive effects of being able to see from the pedometer how AT can dramatically increase step count.
- Targets gave participants a reason to be more active.
- Fun and engaging aspects of the challenge helped keep participants motivated.
- The SCC offered new learning experiences such as being linked to car sharing schemes, public transport timetables, cycle maps and walking journey planners.
- A lot of participants reported really enjoying the competition and challenge of meeting targets and found tangible figures from the pedometers very motivating.

Participant 5 reported that the SCC is probably the most popular activity that has been funded through Smarter Choices Smarter Places. This was attributed to the PA aspect of the challenge which participants enjoyed, helping them buy into the notion of sustainable transport. Furthermore methods used in the challenge increased the appeal of AT, which otherwise may have proved a struggle.

Off the back of this successful SCC project, new research involving Paths for All's bespoke work based challenge that can be done at anytime is currently underway in central West Lothian, involving around 380 participants. The research aims to have a specific focus by providing weekly information and tips regarding AT. Prizes are offered to participants who submit the best descriptions of AT journeys. Additionally participant 5 mentioned future aims to be involved in some sort of work-based challenge every year as well as trying to extend this to a community level.

Discussion

The development of evidence supporting AT as a solution to physical inactivity calls for knowledge to be gathered recognising how interactions between people, places, and the environment influence the initiation and maintenance of AT (Sahlqvist, Song, & Ogilvie, 2012). Therefore the current research is aimed at investigating the effectiveness of the Autumn SCC, a work place walking challenge at increasing and maintaining AT behaviour. The following discussion will present the results from this project in relation to participant 5's research and existing literature.

Active Travel Behaviour

Interview results were largely positive with three out of four participants reporting an increase in AT as a consequence of the challenge. This effect was supported by feedback from Participant 5, suggesting a large number of individuals in another research project with the Autumn SCC reported similar increases in AT. Four months after the challenge, one participant had managed to sustain an increase in AT with the remaining two seeing a decrease over the winter months. It should be noted that individuals still maintained a higher level than baseline after four months but not as high as during the challenge, therefore an increase in AT in still evident. Additionally all three of these participants had plans to increase AT in the future. The final participant reported no change in AT post SCC or four months later with no future plans to increase AT.

Participants reported numerous methods to increase AT including: starting to walk to work, walking to the shops, walking from work to get lunch, getting off the bus earlier

and allowing time to walk to and from the train station. These results are consistent with Murtrie et al's (2002) research where participants employed similar strategies to increase AT. It is important to note that in both studies walking is the only travel behaviour to increase. Some previous research has suggested that the journey to work is particularly resistant to change, with commuters viewing it as less flexible with respect to how and when they can take the trip, and how long it should take (Kingham, Dickinson, & Copsey, 2001; Wen et al., 2005). These findings agree with reports from participant 3 and may be one reason the SCC did not effectively increase his AT. However for the remaining participants this was not the case, with the work journey being the main area of behaviour change.

Facilitators and Barriers to AT

Numerous barriers and facilitators became apparent during the interviews which help explain patterns of AT as a result of the SCC. Understanding these characteristics is an important step towards maximising efforts to encourage AT (Nazelle et al. 2011). In recent years there has been a growth of evidence surrounding the association between AT and the environment such as urban form (Panter, Jones & Sluijs 2008). However this neglects the complex nature of behaviour explained by the ecological approach.

Facilitators

The multifaceted nature of facilitators identified in this research supports the ecological approach to AT (Bauman et al., 2012). Participants identified numerous components specific to the SCC which helped them increase their AT. These components were supported by reports from participant 5 and included being able to visibly see, log and monitor data which showed participants how much AT contributed to their step count

total. Incentive theory (IT), a behaviorist explanation of motivation offers an understanding of why participants found this aspect of the challenge reinforcing (Bernstein, 2010; Rani & Lenka, 2012). IT advocates that the most common incentive driving motivation to engage in an activity is reward, whether this is intrinsic or extrinsic (Bernstein, 2010; Rani & Lenka, 2012). Therefore being able to view a significant increase in step count as a result of AT acts as a tangible extrinsic reward. Furthermore immediate rewards have been shown to have greater reinforcing value, as a result, instant feedback from the pedometers provides a repetitive action-reward combination, which can help AT behaviour become habitual (Rani & Lenka, 2012). It could also be suggested that AT helped increase participants' self-efficacy by contributing to their step count, showing they are capable of achieving individualised step count targets set during the challenge. This shows how the SCC addresses individual factors at the core of the ecological model, such as attitudes, behaviours, self-concept and knowledge (McAuley & Blissmer, 2000).

Participants believed the challenge brought AT "to the forefront of their mind" making it more of a priority. This also addresses the individual level of the ecological model and supports previous intervention research that proposes an increase in awareness of AT can encourage positive attitudes (Wen et al., 2005). Leading on from this, participants mention a number of learned facilitators that encouraged AT including discovering new routes and learning about health benefits. This is consistent with literature suggesting an increase in knowledge is an effective component of behaviour change by encouraging a change in attitude towards AT (Wen et al., 2005). Furthermore participants indicated they learnt to be less reliant on their car, supporting Mutrie et al. (2002) who found learning healthy behaviours as a substitute for problem behaviours successfully increased AT.

The second layer of the ecological model explains how the social environment comprising of the relationships, culture and society with whom the individual interacts affect behaviour. The current research found that the SCC encouraged a positive social environment at work, facilitating AT behaviour. Similar findings have been found in previous literature proposing peer support is associated with increased odds of using AT (Panter et al., 2008). Furthermore team members combined AT with socialising which supports research suggesting this encourages AT behaviour (Panter et al., 2008). Linking back to IT, social reward could be an extrinsic motivator for engaging in AT behaviour. Additionally, social learning theory (SLT) explains how AT was encouraged through observing teammates' positive experiences of AT and how individuals with a larger step count helped motivate others (Bandura, 1977). Previous literature also suggests that at a macro level, a cultural shift encouraging AT would occur when a certain "critical mass" engage in the behaviour (Gatersleben and Appleton, 2007; Nazelle et al. 2011). This could be applied at micro level to the work environment signifying that an increase in AT may also benefit employees not taking part in the challenge.

It has been proposed that environments encouraging AT could have a sustained impact (Panter et al., 2008). This can be explained by behavioral economics (BE) which suggests an individual's likelihood to engage in AT relies on opportunity and motivation (Epstein & Roemmich, 2001). As previously established, the SCC can provide individuals with motivation but the opportunity has to be available too. Prior to the SCC all participants reported that the ease of using public transport in Scotland encouraged them to engage in this means of AT. While the use of public transport did not increase during the challenge what it did do was provide individuals with opportunities such as getting off the bus early

or walking from the train.

Barriers

Despite the majority of participants increasing their AT behaviour as a result of the Autumn SCC, one participant did not and others struggled to maintain the increase four months on. Reasons for this can be explained through suggested personal and environmental barriers to AT combined with BE.

A common theme with regard to cycling was a lack of opportunity due to safety, distance, and number of hills. Therefore even if participants had sufficient motivation to increase AT using cycling, the opportunities to do so are not perceived as easily available. While it is recognised that the challenge tackles walking, the hope was that sufficient information was provided to also encourage cycling. This is similar to the Walk in to Work Out research which also mainly addressed walking. Mutrie et al. (2002) suggest this may be due to characteristics such as limited separation of cyclists from traffic around Glasgow, which is also a probable cause for issues in Edinburgh. It was proposed that intervention material maybe more successful at increasing cycling in rural settings (Mutrie et al., 2002). This was not the case for the current project where most participants lived rurally. Instead, additional barriers such as distance were reported on top of inner city barriers. Furthermore, akin to previous research the winter season was a major barrier to the maintenance of walking as AT (Dalton et al., 2011).

Literature has suggested that individuals who maintain AT are those who developed coping strategies to overcome the barriers, for example buying waterproofs and a rucksack, and walking from work rather than to work when time pressure exists (Mutrie

et al., 2002). Such strategies were demonstrated by participant 4, who walked to and from work during the challenge but moved to Glasgow shortly after. However to overcome this she started catching the train rather than driving to allow her to walk either side of the journey.

Another barrier proposed by participant 3 was engaging in large amounts of leisure time PA resulting in lack of time and motivation to increase AT. This challenges previous research that AT appears to increase independently from leisure time PA, signifying there may be a cap on the PA level where the two remain independent (Foley et al., 2015; Jarrett et al 2012; Panter & Jones, 2010).

Suggestions for future Autumn SCCs

Cycling

The current research suggests the Autumn SCC can lead to an increase in AT, however this is only for walking. Therefore, in order to further increase AT the challenge may wish to tackle lack of cycling for transport. As supported by current findings, literature suggests safer cycle facilities can lead to an increase in cycle trips (Gatersleben & Appleton 2007; Martens, 2006; Wardman, Tight & Page, 2006). While the SCC can do nothing to tackle cycling facilities, they could provide information regarding Bikeability Training (the Government approved training scheme) to increase individuals' awareness and confidence of manoeuvering safely on the road. Furthermore other research advocates increasing facilities does not necessarily lead to more cycling, especially among those who do not usually cycle (Bergström & Magnusson, 2003). Employing the principles of BE it could be suggested that this is due to a lack of motivation (Epstein &

Roemmich, 2001). Therefore the SCC could be a key platform to help increase individuals' motivation to cycle.

Literature proposes a multi-strategy approach may be best due to a large variation in experience and attitude towards cycling (Gatersleben & Appleton 2007). Those who never cycle are shown to have the least positive view and see cycling as something others do but not themselves (Gatersleben & Appleton 2007). This opinion became evident when interviewing participants of the current research. Therefore improvements need to be made regarding the image of cycling to show that it is an option available to everyone. This could be tackled by posting regular blogs about positive cycling experiences from a range of individuals on the SCC website. Participants could be encouraged to send in blog posts by offering an incentive or a prize draw for the best AT cycling experience, a tactic employed in participant 5's research. This would aim to increase individual AT via SLT; if participants see someone like themselves enjoying cycling they might be more motivated to give it a go (Bandura, 1977).

However individuals who have tried cycling like participants 2&3 tend to attribute barriers to factors out of their control such as distance, hills and lack of cycle lanes (Gatersleben & Appleton 2007). Therefore these participants may be motivated by the development of a specific action plan (Prochaska et al., 1994). Strategies such as team members cycling together one day a week could become part of the challenge. While this may not be for travel purposes, the aim would be to help individuals overcome barriers associated with cycling as a group first. Social support and mentoring from more experienced cyclists in the group could help encourage the less experienced. This would hopefully have a knock on effect by increasing individuals' confidence to use cycling for

AT in the future. Barriers associated with living rurally could be minimised by introducing the concept of park and cycle, encouraging individuals who live rurally to still consider cycling an option.

Individuals who cycle to work have been shown to have a very positive attitude about cycling, even if they do not cycle regularly (Gatersleben & Appleton 2007). This could be because they experience fewer barriers than others or because they are more motivated to overcome them. Either way, in order for the SCC to increase cycling as a form of AT, the initial aim is to purely encourage individuals to start cycling. This would hopefully have a domino effect by encouraging others to do the same, with the ultimate aim of cycling becoming a social norm.

Maintaining AT

Some participants reported that maintaining AT after the challenge was difficult. A major barrier was that participants felt less motivated once the tangible rewards associated with competition and monitoring and logging data were removed. Therefore a possible solution would be to create a webpage that allowed participants to log and compare data after the challenge. Alternatively, participants who are less interested in the competition aspect could be pointed towards phone apps and fitness bands so they can monitor activity for personal achievement.

A future aim may be to maximise participants' intrinsic motivation. This would help participants maintain long-term AT behaviour after the removal of extrinsic rewards and prompt the development of effective coping strategies (Rani & Lenka, 2012). This would involve encouraging participants to attribute AT behaviour to factors within their control

and encourage self-efficacy (Rani & Lenka, 2012). For example, emphasising public transport as an alternative to walking in winter rather than taking the car proposes that individuals can still use AT despite seasonal barriers. This would demonstrate that behaviour is within their control. Additionally, suggesting alternatives that are easy for participants to complete will help them believe they are capable of overcoming seasonal AT barriers and possibly inspire them to develop coping strategies of their own.

Strengths and Limitations

The study offers a valuable in-depth report of personal AT experience, providing insight into interactions between people, places and the environment influenced by the Autumn SCC. Furthermore the research denotes the success of the SCC at increasing AT by pinpointing aspects of the challenge which facilitate positive AT behaviour in addition to acknowledging the barriers of AT and suggesting potential for future development.

However, the research also has numerous limitations. The small sample size heavily restricts the generalisability of the results as participants may not be representative of the target population (Coolican, 2014). Additionally, an opportunity sample was used, therefore self-selected individuals who volunteered to take part may have certain bias characteristics in common such as having positive experiences of the challenge. Therefore the results are only truly generalisable to that specific group (Coolican 2014). However participant feedback was similar to results indicated by participant 5 which were obtained from a larger sample size.

Self-report measures of AT are subject to inaccuracies, especially when considering information about AT prior to and during the challenge required participants to think

retrospectively over a period of four months (Panter, Jones & Sluijs 2008). Finally, while questions where not phrased in a leading fashion, the mere presence of an interviewer may have pressured participants to exhibit demand characteristics by answering questions in a certain way, for example emphasising an increase in AT (Coolican 2014).

Conclusion

While caution should be paid when drawing conclusions, the current research proposes that the SCC facilitates an increase in AT and offers the potential for positive travel behaviour patterns to be sustained. Furthermore the results provide a solid base directing future investigation into how the SCC influences AT behaviour.

Research into Practice

Autumn Step Count Challenge 2015

Does the Step Count Challenge (SCC) influence individuals' choice to use active travel? Are behaviour choices sustained over time?

Method

Participants (n=5)

2 females   2 males

4 participants who took part in the Autumn Step Count Challenge

Public Transport Officer for West Lothian

Data collection

Data were collected via semi-structured interviews regarding participants active travel (AT) behaviour before, during and 4 months after the autumn SCC

The Public Transport Officer for West Lothian was interviewed regarding another research project investing AT behaviour after the autumn SCC

Results

Participants who took part in the SCC reported the following

Prior to the Autumn SCC

All participants reported using public transport.

During the SCC

3/4 participants reported increasing their AT as a result of the SCC. However this was mainly via walking. The final participant reported no change in travel behaviour.

4 months after the Challenge

1 participant reported maintaining an increase in AT. 2 participants reported a decline in AT after the SCC, however levels were still higher than before the challenge. The final participant's AT was unaffected.

Main Facilitators Reported for Active Travel

Seeing a big increase in step count when using AT

Encouraged by logging data, seeing results and meeting targets

Encouraged by the competitive nature of the challenge and not wanting to let team mates down

Learnt about AT routes and facilities from other teammates

Main Barriers Reported for Active Travel

Cycling is too unsafe

AT is difficult to sustain in the winter months

Stopping logging and monitoring data decreased motivation to use AT

Living rurally

Result found in this research agree with finding reported by the Public Transport Officer for West Lothian

Future aims

How?

1 Increase the use of cycling for AT

→

Offer advice on bike ability training to increase knowledge of how to act safely on the road

Encourage cycling through blog posts of positive experiences reported by a range of other participants

Advice participants who live rurally on options to park and cycling part of a journey

Introduce a team cycling aspect to the challenge. This would encourage participants to overcome barriers to cycling as a group, hopefully having a knock on effect for participants use of cycling in the future

2 Help maintain an increase in AT

→

Create a web page where participants can still log and compare data after the SCC

Help participant increase their control over AT by suggesting effective coping strategies for barriers e.g swap walking for public transport in the winter instead of the car

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THE UNIVERSITY OF EDINBURGH

paths for all
A HAPPIER, HEALTHIER, GREENER, MORE ACTIVE SCOTLAND

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Appendices

Appendix 1 – Information sheet and concept form for participants 1-4

Dear Participant,

My name is Olivia Alliott and I am a student on the Applied Sport Science course at the University of Edinburgh.

What is the study about?

As part of a an academic course I am undertaking a research project with Paths for All. I am investigating how taking part in the Autumn Step Count Challenge may influence active travel behaviour. Active travel is an approach to transport focused on physical activity for example walking, cycling or using public transport.

What am I required to do?

You will be asked to participate in an interview regarding your experience of the Step Count Challenge and how this may have influenced your active travel behaviour. The interview will be recorded using a digital recording device and last about 15-20 minutes. The questions will be fairly open so please provide as much information as you are comfortable with.

What if I no longer want to take part?

Participation is entirely voluntary and you can withdraw from the study at any time. If you decide you no long want to take part you will not be required to provide a reason. You can also withdraw you data after the interview.

Who will see the information collected?

The information collected will be treated confidentially and only the researcher will be able to link data to specific individuals. Instead of using names a participant number will be used on all stored and presented data. Personal information about your experience of the Step Count Challenge will be recorded in the interview but no one will be able to identify who provided the information. The information collected will be used for the researcher's assignment and in a report for Paths for All. The findings may also be used in research publications or at conferences, however once

again your personal identity will remain confidential. Finally all data collected will be stored in a single password protected file only assessable by the researcher and will be destroyed four months after submission of the final report.

If you still wish to participate then please sign the attached consent form.

Your help is greatly appreciated.

Thank you very much!
Olivia Alliott

This information sheet is yours to keep. Feel free to ask me any questions you have about the study. You can contact me on oliviaalliott@hotmail.co.uk, s1219634@ed.ac.uk / 07870551923 or my supervisor, Ailsa Niven, on ailsa.niven@ed.ac.uk

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Institute for Sport, Physical Education
and Health Sciences

I, _____ (name) agree to participate an interview investigating how the Step Count Challenge influences active travel behaviour. I understand the study involves -

Taking part in a 15-20 minute interview that will be recorded for research purposes only.

Any questions I had have been answered to my satisfaction. I know that my participation is voluntary and that I can choose not to participate. I know I can withdraw at any time without negative consequences for me. I am aware that all data will be confidential and I have been informed of any possible risks of being involved in the study.

Signed (participant): _____Date: _____

Signed (experimenter): _____Date: _____

Appendix 2- Information sheet and consent from for participant 5

THE UNIVERSITY
of EDINBURGH

Institute for Sport, Physical Education
and Health Sciences

Dear Participant,

My name is Olivia Alliott and I am a student on the Applied Sport Science course at
the University of Edinburgh.

What is the study about?

As part of an academic course I am undertaking a research project with Paths for All.
I am investigating how taking part in the Autumn Step Count Challenge may
influence active travel behaviour.

What am I required to do?

You will be asked to participate in an interview regarding your research on the
Autumn Step Count Challenge and you role as Transport Policy Officer. The
interview will be recorded using a digital recording device. The questions will be
fairly open so please provide as much information as you are comfortable with.

What if I no longer want to take part?

Participation is entirely voluntary and you can withdraw from the study at any time.
If you decide you no long want to take part you will not be required to provide a
reason. You can also withdraw you data after the interview.

Who will see the information collected?

The information collected will be treated confidentially and only the researcher will
be able to link data to specific individuals. Instead of using names a participant
number will be used on all stored and presented data. Personal information about
your experience of the Step Count Challenge will be recorded in the interview but no
one will be able to identify who provided the information. The information collected
will be used for the researcher's assignment and in a report for Paths for All.   The
findings may also be used in research publications or at conferences, however once
again your personal identity will remain confidential. Finally all data collected will
be stored in a single password protected file only assessable by the researcher and
will be destroyed four months after submission of the final report.

If you still wish to participate then please sign the attached consent form.

Your help is greatly appreciated.

Thank you very much!
Olivia Alliott

This information sheet is yours to keep. Feel free to ask me any questions you have about the study. You can contact me on oliviaalliott@hotmail.co.uk, s1219634@ed.ac.uk / 07870551923 or my supervisor, Ailsa Niven, on ailsa.niven@ed.ac.uk

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I, _____ (name) agree to participate an interview investigating how the Step Count Challenge influences active travel behaviour. I understand the study involves -

Taking part in a 15-20 minute interview that will be recorded for research purposes only.

Any questions I had have been answered to my satisfaction. I know that my participation is voluntary and that I can choose not to participate. I know I can withdraw at any time without negative consequences for me. I am aware that all data will be confidential and I have been informed of any possible risks of being involved in the study.

Signed (participant): _____Date: _____

Signed (experimenter): _____Date: _____

Appendix 3- Interview script for participants 1-4

<u>Research Based Project Interview</u>

- Research questions – Does involvement in the Step Count Challenge influence an individual's choice to use active travel? Are these behaviour choices sustained over time?

Before the interview begins-
- Greet participant and introduce myself.
- Explain the nature of the interview – "The aim of this interview is to find out more about your experience of the Step Count Challenge and how this may have influenced your use of active travel." Explain active travel if participants are unaware of this term - Travel that can be considered physical activity usually walking or cycling but also the use of public transport.
- Make it clear that participants do not have to answer any questions that make them feel uncomfortable.
- Participants will also be made aware that they can stop the interview and can withdraw any information they provide at anytime.
- Check participants are happy with the interview being recorded.
- Confidentiality – "The interview will be recorded and used for transcription purposes only. Individual names and other personal information will not be attached to the interview and no information used will be traceable to you."
- Ask participants if they have any questions before the interview begins.
- Ask if they will sign informed consent form.

General questions about the challenge –

- Firstly just a little information about yourself –
  - Age
  - What are the approximate hours you work per week?
  - Have you taken part in the challenge before?
  - How would you describe your activity levels prior to the SCC?

- How did you hear about the SCC and why did you want to get involved?
- Could you tell me about your SCC experience?
- How do you think it was received by your workplace?
- Could you tell me about any changes in your activity as a result of taking part?
- Have you managed to sustain any increases in physical activity?
- How did you build physical activity into your daily life?

- Did you increase your levels of active travel as a result of the SCC? If so then in what way? If not then what are the barriers?
- What has your experience of using active travel in Scotland being like?
- Did you learn anything new about how to travel actively during the challenge?
- What are/were the barriers and what helped you?
- Can you tell me about your current levels of active travel? (If active travel behaviour has increased or decreased explore why).
- Do you have any future plans for using active travel?

- Ask the participant if they have any further questions and make sure they have my university email address for future contact.
- Thank the participant

Appendix 5- interview script for participant 5

Participant 5

- Introductions.
- Explain purpose of the interview.
- Check Deborah is happy to be recorded
- Confidentiality – "The interview will be recorded and used for transcription purposes only. Individual names and other personal information will not be attached to the interview and no information used will be traceable to you."
- Ask participants if they have any questions before the interview begins.
- Ask if they will sign informed consent form.

Interview-

Information about her job as Transport Policy Officer-

- I would like to start by asking if you could tell a little about your job?
- What does your role involve as Transport Policy Officer?
- What do you consider is most important about your role?
- Could you tell me about West Lothian's active travel plan 'Making Active Connections?'
- Why a bid to increase active travel?
- What projects are currently ongoing as part of the plan?
- Could you tell me about the success of current projects?
- What benefits have you already seen?
- Have you received any feedback from local residents?

Information about her project involving the SCC-

- Firstly could you tell me a bit about your work with the Autumn SCC?
- Why did you think the SCC is useful to invest in?
- What is your view on how the SCC influences active travel and how this ties in with Making Active Connections?
- What benefits do you think it provides participants?
- Specifically what were –
- o The main aim of you project?
- o Challenges?
- o Feedback from participants?
- o What conclusions did you draw?
- What information gathered from the research do you feel is most important?
- Could this be beneficial to future policies and interventions?

Appendix 6- Example interview transcription from participant 4

Research Attachment interview- participant 4 –

1. Okay so we are just going to start with a few introductory questions if that is okay?
2. Sure
3. Do you mind telling me how old you are?
4. Sure so I am 29
5. Okay perfect and what are the approximate hours you work?
6. Erm so 8.30-5.30 daily.
7. Okay fab
8. 5 days a week.
9. How how would you describe your activity levels before taking part in the SCC?
10. So before taking part you mean the very first time?
11. Oh sorry did you do it in Autunm?
12. Yes, so probably directly before that they probably wouldn't have been great erm I think I did the spring challenge so got into a good pattern there, I use to live in Edinbrugh so I use to be able to walk to work but I recently move to Glasgow and that has had bit of an impact on my activity because I was getting the train erm so I think probably just because of the time of year. The Autumn challenge I think it started in mid October, before that my activity was kind of drifting off a bit coming out of summer, weather not being great so probably not as good as they previously had been in the nicer weather.
13. Okay fab, thank you and how did you hear about the Autumn SCC?
14. Really though our partnership with Paths for All. We are kind of helping them support the digital platform and then is just felt like a really good thing for us to get involved with and get a team from storm. We were really keen because we were aware of it so being able to participate was good.
15. Okay great, and then can you tell me about your Autumn SCC experience?
16. Yeh so generally yeh it has been really good. I think because there I a bit of accountability and being able to enter the steps is always really interesting. Particularly I guess with the Autumn challenge that first time going into to log the data and noticing that is much lower than it would have been for what I was doing in the spring
17. Oh so comparing it?
18. Yeh I guess I just had a figure in my head and then looking at my tracker and thinking oh no that is a bit lower. So I think the time of year worked really well because naturally I was going in to a bit of a hibernation mode just because it is coming into the winter, darker night you know. I felt like it was dark all the time. Erm so it was good to have it at that point to kind of make you realise you behaviour is changing and having a bit more of an incentive to do it so I think that was kind of perfect for me in terms of that timing and the fact you had yeh the discipline of recording it and being able to monitor online to see the target and the team erm challenge aspect

asking "what have you done today" and all that and thinking we need to get out and that of thing. But it also just takes one person to be like "oh are we going out at lunch today" for you to be like yeh or you can say that and initiate something and if that is happening two or three times a week then really makes a difference to the overall picture. So yeh no overall its been really good erm yeh just really positive and even if sometimes when I am not achieving the targets it might I just means I will maybe make an extra effort the following week to just make use I am improving on it. So yeh it has been good.

19. Oh great, okay erm was it well received by your work place?
20. Yeh absolutely, we tend to have to same team erm so we probably need to think about maybe opening it up a bit further but yeh the people that are doing it are always really keen. Some of them are walking a huge amount now and they are kind of staying I don't know if I can go any further but then they can inspire the rest of us in our team.
21. Oh yeh great
22. Especially the ones with the dogs that are doing a lot anyway
23. Yeh because they will have to walk them. So have you managed to sustain an increase in physical activity since the Autumn Challenge?
24. Since autumn I think I have sustained it, I think because I have moved I am having to make a conscious effort because I can't really do as much active travel because I am relying on the train and then sometimes running and jumping on the bus instead of walking and building it in. I think overall I have been able to do that but it is more evenings and weekends and things like that and making sure I am getting out at lunch time and particularly, but I just it helps it become more prominent and making you think about trying to do more steps during the day and yeh.
25. Okay great so how do you build activity into your daily life? You said you are active on and evening and at lunch time.
26. Yeh so definitely lunch time I will get out and aim to do around 30 minutes but do a lap and pick up a sandwich and just to compensate because I use to have a better 30/40 minute walk each way to work so really missing that so trying to build than in again more likely in the evenings I will walk to the train station so again another 30 mins and then I am also trying to work from home a couple of days a week so just making sure I go out at lunch time and walk to the shops, things like that so generally just trying to do that. Taking the stairs as well has become a bit of a habit.
27. Oh fab. I am just going to ask a few questions about active travel – explained active travel-
28. Have your levels of active travel increase as a result of the SCC?
29. Erm generally yes because I guess that is what triggered me into walking to work rather than jumping in the car. Getting into that routine because otherwise I realised I could get to work and be in work all day and so about 2000 steps so that is a bit of a shock so I new if I walked to and from work I was getting up to at least 9000 if not more so that seemed like the easiest way for me to do it. Erm and it was a really nice start and end to the day. So yeh generally overall being able to go that and monitor

30. Okay fab, and can you tell me about your experiences of using active travel in Scotland?
31. Erm yeh I guess for walking I haven't come across many barriers I think Edinburgh is really good for that, I think yeh I was near Hollyrood park which was really good for walking and cycling that was brilliant have cycled in the city but I think the roads are quite busy and there are lots of areas that I would tend to avoid erm so I guess that the cycling could be improved. You know we are in Glasgow now and they have got really good cycling lanes.
32. Yeh I had noticed that
33. Yeh some of them are fantastic, some almost equal priority to cars which is encouraging and like there is a lot of good canal routs in Edinburgh an Glasgow which I think is good for cycling, I think, I guess that is more of a barrier although lots of people in this office do cycle but they are a bit bolshier than me.
34. Yeh I am the same.
35. But yeh generally really really positive in terms of the different assents.
36. Okay fab
37. Erm so prior to the SCC how often would you say you used active travel?
38. Erm it is hard to think, I think Yeh it would have been less definitely because I would have been more inclined to take the car um and I think that I you know over the last 3 years have got into habits of monitoring data and that had become more of a day to day habit so I just kind of you know. Prior to that I wouldn't have monitored my activity levels and checked every day. And then erm that kind of was related to my roles changing is storm health and realising that it is a key element and then for me I think the SCC has been really good in kind of forcing be to monitor and watching improvements.
39. Yeh
40. Which I probably am, it relative, but when you are part of a team and know so and so is doing double what I am doing it is really good that you can build in additional elements. So yeh prior to doing it, it would have been less. I would have be reliant on my car a bit more.
41. Do you think it was the same before the Autumn challenge?
42. I think I was probably doing a reasonable amount of activity before the spring challenge last year and then spring challenge kind of increased it I think that I maintained that over to summer and then coming into September, October I did notice that was drifting off and that is when the Autumn challenge helped because it was harder and harder to make those steps and that is why when I was logging them I was thinking "oh no they should be higher" I was sue to my routine and I think I wasn't building in as many walking in the evening and a shorter walk at lunch so I think yeh it would have picked up again.
43. Okay great, Can you tell be about your levels of active travel since the challenge and you current levels?
44. So my current levels are definitely less since the challenge in Autumn and that is because I am reliant, so even though I do use the train to get to work I do also drive from Glasgow so you are stuck in a car for 2 hours

autumn challenge and now I think the fact that I am using the train minimises some of that.

45. Okay great do you think that the SCC has though you anything new about active travel?
46. I think erm it did teach me new things but it but them at the front of my mind, so it made them a high priority and from some it would more be that I would walk rather than taking the car. I think maybe silly thing like because it was more of a topic of conversation you are leaning maybe different routes and learn about new areas on walks and discover new parks.
47. Okay fab
48. Just because some people have better local knowledge than I do so yeh I guess that is interesting to build up you knowledge to things that are available. So yes I guess it actually did.
49. Okay fab. Erm do you have any future plans for using active travel?
50. Yeh I mean my plan at the movement is to make sure I am getting and earlier train so that I have enough time when I get to Edinburgh to walk to Leith so sometimes if the train is delayed that doesn't work out. So that is what my plans are so getting into a better routine of walking to and from work and also to do more cycling for leisure.
51. Do you think you will do the challenge again?
52. Yeh definitely, we have a team signed up for spring so that will be good. Just in that route yeh.
53. Okay great thank you!

Appendix 7- interview transcript from participant 5-

1. Shall we start?
2. Yes okay
3. So I just have a few questions to start with about your job, please could you tell me a little bit about your role as transport policy officer?
4. Erm I have been in the post now for about a year and a half erm so relatively new to the local government but in terms of my post erm it is quite broad ranging and I have in consultation with colleagues focused on quite a bit in active travel since I have taken up the post, walking and cycling erm kind on the back on a successful funding application to substance community links that the council had a couple of years ago were are one of the best forming councils in Scotland in terms of attracting funding for walking and cycling infrastructure, through that programme at the time so that provided a bit of momentum for us to develop strategy and policy on promoting walking and cycling and again. So that is what I have spend a lot of my time on, particularly in terms of developing an active travel plan for West Lothian and also I have been involved in lots of other things so really all about sustainable transport, promoting car sharing through the lift share scheme in place, behaviour change programme devised to program and deliver that through starter choices smarter place part of transport Scotland which is where the SCC comes in erm I don't get involved so much with the public transport side of things because we do have a public transport unit um but I guess I get more involved in trying to promote the behaviour change side of that as oppose to planning services and latterly I have been involved in school throughout west Lothian because we don't have a school travel plan coordinator so I do some work with schools. Also I am increasingly getting involved with air quality work as well because obviously erm transport has a big role to play in that.
5. Yeh oh okay great, thank you, so what would you consider is most important about your role?
6. Erm I guess it is important to have someone in place who is kind of pulling together lots of threads erm I spend a lot of time communication with other officers and other teams other services as well, the community regeneration officers planning and colleagues. There are lots of different teams working on their areas and erm I guess I see my role is trying to pull together and provide a consistent framework and a direction for sustainable travel to make sure we are kind of picking that up in various things such as plans, policy and projects as well. But it is not just me who does that. I sit in a team of development management and there are others who are more involved with the planning side of things.
7. Okay great thank you and then I was wondering if you could tell me a little about West Lothian's active travel plan – Making active connections?
8. Yes I bit about it, so that originated in the cycling action plan for Scotland and erm one of the 19 requirements within that is for local authorities to prepare a strategic approach to erm cycling but also AT in gereral so

spring criteria for community links is to demonstrate what we have a plan and a strategic approach to this. Erm so that is kind of the hard nose side of it but the reality of it is that it is good practice to have a vision, to be clear on what your outcomes are and having a strategy in place to know if you are doing the right things to achieve what you need to know.

9. Okay perfect thank you, so what projects are currently ongoing as part of the plan?

10. Erm oh gosh, big question, I mean the infrastructure is just ongoing all the time and the projects team here are delivering projects that they have got community links funding for, we are always in a cycle of developing new projects and applying for funding so we are just waiting to hear from community links to see if we have got some funding for some other big projects coming up erm the schools side of it I work with loport center colleagues erm to support then where I can because they do bike ability training with schools and that is ongoing as well, you know regular contact in schools in relation to school travel plans side of things and lots of bits and pieces on that. We have got cycle parking going in at some schools next week. We also have sustrance funding for behaviour side of it. Smarter choices smarter places that whole program has been ongoing for the past year. We are now just in the final stages of finishing off some projects for that and there is just a long long list. We are also preparing some bits for more smarter choices, smarter places work for the coming year.

11. Oh great. Is a lot of it cycling infrastructure?

12. The infrastructure projects are walking a cycling yes but that is just the infrastructure side, obviously the behavioral change side is not related to that.

13. What does the behavioral change aspect involve?

14. Well for example we have been looking a bit at journey planners this year so we having been looking at walkabout.com, a walking journey planner for urban areas and that has now just been launched and that is in place so we are now trying to promote that. We have been working with sustrance to do a review of signage on the Livingston off road path network so we have a piece of work on that, that we are hoping to take forward and build on next year by trying to look at area where signage can be improved upon and enhanced and also kind of route planning, we have been erm we have offered walk once a week to primary schools, several schools are doing that right now. We are doing some mapping consultation, and AT mapping projects with external consultants erm to start papering local active travel network plans. We are developing an online tool as part of that which has been funded erm my smarter choices smarter places. Erm smarter choices, smarter places also funded all ability cycling projects which is the purchase of adaptive bikes for people with additional support needs and bike lending libraries. We have used funding from that to extend coverage of bit lending libraries in west Lothian erm what else. There are others but I can't recall, there is very large range; the Step Count Challenge is obviously one of those.

15. Okay great, just briefly could you tell me a bit about the success of maybe

16. On what sorry I missed the start of that question
17. Sorry, could you just tell me about the success of the projects and maybe the feedback from local residents?
18. Well that is kind of still ongoing, that is kind of part of the reporting process that we will be going on the smarter choices smarter places program so yeh I am not sure I can say anything concrete about that just for now. But evaluation is part of the programme erm so and we are being care to try and respond to what people have raised with us over the years as well erm because obviously as a council we get lots of queries in and people asking us to do things so I am kind building up a network of contacts through organisations and groups and individuals who have written to use about various things. SO an example of that might be that we got some sestran? funding to do a feasibility study on an active travel recorder on the A71 and erm that project the basis for that came about in sesplan and sestran work but also because we have ad a fair amount of queries from the public about work on that route for AT. So I would like to think we are responding to what people want.
19. Okay great and I was just wondering if I could ask you a few questions about your project with the SCC?
20. Yes
21. Erm could just tell me a bit about what your project involved?
22. Well erm in November time that that so when the Scotland wide SCC takes place. So obviously our smarter choices smarter places funding the budged is on a financial year base so it kicks off in April and ends in march erm which is a little bit of a challenge to be honest in term of behaviour change because it means by the time you get up and running you know I think some local authorities were looking at may or june time before everything was in place erm you know those are the kind of key months where you want to engage with people, because it is lighter warmer people will me more you know? A bit more open to walking as cycling and also with the schools as well it is very challenging to do much with schools because the heart of you programs the schools are all on holiday over the summer so erm the SCC we saw as an opportunity to do something specifically erm with work places because it was part of our program to work with work places in Livingston although we kind of broadened it out to other works places elsewhere and it gave us a bit of time to prepare for it. So I spent a bit of time looking around from challenges that we could do and what the alternative types of challenges are that were about there. Had a look some bike only but we were looking for something that included walking as well so walking and cycling and we used some of our smarter choices finding to purchase erm 1000 pounds worth of participation in the nation challenge which was about 100 places with 20 teams including pedometers as well just as a little bit of a tester, a pilot to see how it went and it was very popular and oversubscribed. We ended up having people still coming in at the end of it asking if there was nay places left and we were having to say we are sorry there isn't. So people took part in that and then a Livingston based team came top of the leader board for the whole of the SCC in Scotland so I

think in the feedback you got we did an evaluation survey which I think you have seen the results from is that right?

23. Yes only the participants willing to do a follow up.

24. Oh right okay I think Carl from paths for all has the information anyway because I think the only personal information is there is the email addresses from people who said they are happy for their details to be passed on for future research. So yeh we didn't get a huge response on the feedback survey I think we got about 20 replying, it was bout a quarter. Because in reality there was about 80 something people who took part because some of the teams had less than 5 people involved in it. But the feedback it in was very positive and typically people said that they did try to use AT for journeys as a way of building in their steps. Because I had a slight concern that it would just be people going out running or sort of leisure biking at the weekend or walking their dog but we did get feedback that people were trying to build AT into their day and a lot of people reported feeling quite positive as a result of the challenge and really seemed to like the challenge aspect of it and the pedometers and the power of counting, being able to bee a number and everything. I mean I look part just to test it out and it certainly had a big impact on me and I got a fitbit after it because I liked being able to see erm the numbers. It is a good kind of motivator.

25. Yeh a good target

26. Yer so as a result of that then we decided we would take ups Paths for All's bespoke work based challenge that could be done at anytime so then we have right now we are in the middle of a west Lothian only SCC and that has 380 odd people taking part in that just now so people that were doing it so yeh people everywhere with pedometers from work places erm the council, nhs, West Lothian collage, erm a few private sector companies as well.

27. Oh fab!

28. And we have specifically again put a focus on active journeys erm we are offering some prizes for people who submit some good descriptions of active travel journeys and we are giving then weekly information and tips on how to do it and putting quite a big emphasis on even you know if you try to travel by bus once a week or train. Even that corporates some walking or cycling and that will boost your steps. Can I just say as well there was an article on BBC news this morning about that and the research but says that people who commute by sustainable modes are healthier and physically fitter than people who commute by car which validate the approach we are taking on that.

29. Yeh I have mentioned that in my report

30. Yeh there is definitely research on that now. Big enough to be reported in the BBC. Anyway we are going to be doing a quick evaluation survey of people this time round as well so I am hoping that it will add to the evidence we have so erm I mean the administration if the West Lothian challenge has been a bit of a challenge I have to say erm but erm I think it has probably been one of the most popular activates that we have funded through smarter choices smarter places. Even though it has been a very

erm I guess I think of hope that the physical activity aspect of it and that challenge aspect of it made be a way to try and get people bought into the message of sustainable travel. More than if you had just said to them you know you should try walking and cycling because it is good for the environment which I am not sure resonates with people much.

31. No perhaps not, so was your main aim to look at the challenge as a public health intervention to see how effective it is?

32. Well we have a health improvement team who are working quite closely with, I mean they are sort of leading in the bike lending library and the all ability cycling and they do sort of weekly walks and they have a PA outlet (?) that has some maps showing walking and cycling routs and things like that erm from my point of view it is not part of my job to do public health interventions but I see that there is a link to it and a survey that we did last year to inform the active travel plan which we got about 150 responses to we asked people to describe in there own words what impact they though it might have on them is there were able to cycle more sort of every day journeys or build it into their day and they big message that came out of that was health they said that physical and metal health came out of that a lot of people say you know they thought it might make them feel more relaxed, they like spending time outdoors, a bit of a de-stressor kind of thing as well as obviously losing weight. Although there does seem to be some conflicting views on that because I was at a seminar recently and I think it was JMB or some consultancy and they seemed to be saying that health wasn't a motivator to make active travel choices

33. Okay

34. I am just not sure I agree with that but anyway

35. No I would have to say that I agree with you, surely that's one of the main motivators.

36. Well indeed it may not appeal to all but surely it most appeal to a lot you know? And increasingly even of someone is you know not worried about their way they may still increasingly even from their kids coming home with these messages from school they would think ohh maybe I should get out more you know I think it an agenda than is on the rise.

37. Of course okay thank you. Also why did you think the SCC was useful to invest in?

38. Erm for all the reasons I have kind of outlined. I wanted to get something that would appeal to people to get people engaged and I guess that is they key thing it has been a really good way to get people engaged in a message and a programme where otherwise we might have struggled.

39. Okay so what do you maybe aim to do with that in the future in terms of AT?

40. I would like to consistently do some sort of work based challenge every year and I would also like to try and extend that to communities because there are examples of this kind of thing being done in towns where there was one done in Dumfries and Galloway this year through smarter choices smarter places beat streets (?) or something like that I am not sure we are totally ready for than yet so I think kind of put that in the back burner and maybe think about that the year after next and because

know get all the school on board that kind of thing. I think that aspect of the challenge and the health erm side of it are things that I have learnt are quite, kind of resonate with people.

42. Erm I mean with the SCC particularly I suppose it would just be bits and pieces that came out of this survey you know some people said for example that they had round some new cycle routes that they didn't know existed before because we gave out erm cycle maps to everyone who took part in the autumn challenge. Unfortunately we didn't have enough to give out to all 400 this time but we did give out some but even that just finding a little bit of new information and maybe just encouraging them to try out a new walking or cycling route they hadn't done before say to work or to the shops that kind of taught them something new and made them think well you know maybe I didn't realise than was an option and now I know it is kind of thing.

44. Um and also it is just thing that they could see if they did travel actively for a specific journey that day they could see with their pedometer the impact that had on their step count erm you know and I certainly found that there were days when erm I traveled maybe cycled to work or got the train bike to work and my step count on those day was phenomenal compared to other days when erm basically just driving to work and staying sedentary all day so I is kind of things that you would intuitively know but having the evidence is important.

46. Yeh I would have to think about that. Yeh I think I would probably have to reserve judgment until we do the survey again with a larger number. I mean it is quite hard to draw conclusions from about 18 people erm it is not really a representative sample. So I would hope to try and get more validation of some of things the hints that seem to be coming out of that small sample size. The challenge did actually encourage them to travel actively as appose to just being active erm that perhaps it did teach them new things about active travel options of even sustainable travel options that were open to them that they did know before and maybe just raise their awareness of why they should not take the car everywhere.

48. I think that whether it is this challenge or any other challenge because there are lots of different models for these kind of challenges out there erm I think there is one love to ride or something but I do think it is potentially one of the most important things that we could try and do with erm the general public and with work places because you can try and just preach to people and talk to them about why they should travel sustainably and you know actually offer them something that is fun that they can actually see a tangible benefit from it by seeing their step count

are targets in these challenges as well that is actually encouraging then and giving them a reason to be more active and hopefully they are learning something new about it maybe by linking them to something like car sharing schemes, public transport time tables, cycle maps erm walking journey planners. Hopefully it is starting to introduce a little but of behaviour change even over a short period of time but that could potentially be sustained I guess. I so think these kind of challenges are very important.

49. Okay great that is all my questions thank you!