GREEN TRAVELLERS? EXPLORING THE SPATIAL CONTEXT OF SUSTAINABLE MOBILITY STYLES

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ABSTRACT

The promotion of environmentally sustainable transport (EST) amongst individual citizens has become a major priority for national and local authorities seeking to tackle congestion, environmental pollution and traffic noise. At this level, a range of models and approaches has been developed for understanding travel behaviour, amongst them the 'mobility styles' paradigm, in which researchers have applied segmentation techniques to explore the presence of different attitudinal and behavioural population groups, that might be targeted to influence behaviour change. Such an approach has become mainstreamed in the United Kingdom (UK), where social marketing approaches, based on segmentation, are being adopted to promote environmentally responsible 'lifestyles'. However, in recent years the rationale for promoting sustainable travel options has shifted towards the issue of global climate change, thus expanding the role of personal travel choices from the local to the global environmental context. Climate change evidently presents a new set of challenges for travel behaviour researchers because of its complex and sometimes contested scientific basis. However, this paper will argue that climate change also presents a major challenge for those attempting to promote behavioural change using a single mobility styles approach because of the ways in which it transcends the spatial and motivational contexts for travel behaviours. Using data gathered as part of a UK Economic and Social Research Council (ESRC) project on sustainable travel, the paper will demonstrate the conflicts that emerge when exploring daily travel behaviour and travel practices for short-breaks and vacations. This is problematised through using a single mobility styles approach, which is based on daily travel behaviour. Through analysing a survey of 1561 individuals, the paper will demonstrate how 'home-based' daily mobility styles that are defined by sustainable travel behaviours and commensurate green attitudes are in contrast to vacation travel, where individuals often adopt the least sustainable option as their travel choice. The

paper will argue that the discord between daily and vacation travel raises important questions for adopting a single mobility styles or 'lifestyles' approach for promoting behaviour change. Indeed, the paper asserts that the complex combination of climate change as an issue with the emotive issue of vacation choice raises questions over the ability of policy makers to persuade even the most sustainable local travellers to make more sustainable choices when on vacation. It will be argued that as spaces of conspicuous consumption, vacations enable individuals to justify and rationalise less environmentally responsible behaviours and that they represent 'the last piece of freedom' in modern life, largely untouched by regulation and a sense of conformity that characterises daily practices.

INTRODUCTION

Travel and transport pose major challenges in the context of existing socio-environmental dilemmas (Knowles et al., 2009; Becken and Hay, 2007) that transcend geographical scales from global to local contexts. Although the nature of these socio-environmental dilemmas is complex there is now considerable emphasis being placed on the connections between individual travel mode choice, behaviour and global environmental change (Becken, 2007). As Chapman (2007) has illustrated, these emergent discourses have placed emphasis on the role of the transport sector in contributing to carbon emissions that many natural scientists believe cause climate change and global warming. Chapman's (2007) analysis also highlights the numerous complexities involved in attributing greenhouse gas emissions to different modes of transport and the relative impact of these modes in terms of distance, passenger load factors, embedded energy and fuel type. Accordingly, the links between travel mode choice (at the individual and social group scale) and environmental cost (often viewed at the global scale) are both complex and in some cases, heavily contested.

Set within this evolving framework of data generation and interpretation on climate change and travel this paper aims to explore the ways in which travel researchers have explored the issue of environmentally sustainable transport and attempts to engage citizens to change their travel behaviour. In so doing, the paper will use the issue of global climate change as a framing device to critique contemporary understandings of travel behaviour through the lens of the 'mobility styles' paradigm. The paper will argue that whilst mobility styles may be useful tools for segmenting individuals or social groups in terms of their travel behaviour in specific contexts, there has been little attempt to plot travel choice across these contexts and thus to explore the ways in which individuals adopt different travel mode choices in alternative environments, such as those for daily, leisure and holiday travel.

Understanding the ways individuals explore travel mode choice in different contexts is increasingly important given the dominance of public policy on promoting environmentally sustainable travel in 'daily' travel environments (in and around the

home) as compared to the lack of emphasis on 'tourism and leisure' environments, where arguably travel practices are just as embedded as those for daily travel and yet may be considerably more damaging and much harder to change.

The paper is structured by the following sections. First, the paper will explore the meaning of environmentally sustainable travel, examining the emphasis that has been placed on the car versus other travel modes. Second the paper will explore the emergent policy discourses in western democracies that has placed greater emphasis on 'citizen-consumers' as agents for change in environmental management. Within this context, the third section of the paper will examine the research in transport and travel studies in mobility styles and the ways in which scholars have attempted to understand the behaviours, motivations and barriers for more sustainable travel mode choice. Finally, the paper will discuss the problems that this approach, without an emphasis on context, can pose in terms of implementing policies for behaviour change in wider travel and transport contexts. Using data gathered from the quantitative element of an Economic and Social Research Council (ESRC) project in the United Kingdom, the paper will illustrate the ways in which participants discussed issues of climate change and both daily and tourist travel and how 'daily' mobility styles compared with tourist travel behaviour. In so doing, the paper will argue for a re-configuration of the mobility styles debate to embed notions of context into conceptual theorisations of sustainable mobility.

ENVIRONMENTALLY SUSTAINABLE TRAVEL

Sustainable transport and sustainable travel are two terms that have come to dominate the intellectual landscape of travel research in recent years (Knowles et al., 2009). However, the definition of sustainable travel (and transport) is complex and has often been used to define environmentally positive travel behaviour. Nonetheless, as the European Conference of Ministers of Transport (ECMT, 2004) concluded, sustainable transport incorporates a range of issues (Box 1).

BOX 1   CHARACTERISTICS OF A SUSTAINABLE TRANSPORT SYSTEM (Source: ECMT, 2004)

Theme	Characteristic
Social	Allows the basic access needs of individuals and societies to be met safely and in a manner consistent with human and ecosystem health, and with equity within and between generations
Economic	Operates efficiently, offers choice of transport mode, and supports a vibrant economy
Environmental	Limits emissions and waste within the planet's ability to absorb them, minimizes consumption of non-renewable resources, limits consumption of renewable resources to the sustainable yield level, reuses and recycles its components, and minimizes the use of land and the production of noise

This definition from the ECMT therefore places emphasis on the three main dimensions of sustainability – social, economic and environmental. However, as noted previously, research and measures within the field of sustainable transport are often focused on environmental concerns (e. g. EEA 2007, OECD 2000a, Geurs and van Wee 2000). On the one hand, this could be a reflection of the immediate and ascertainable nature of ecological threats and their current and future impact on human well-being, combined with the common presence in media (currently dominated by discourses on climate science and global warming). On the other hand, environmental effects can often be seen as easily measurable and assessable to public awareness rather than complex social and economic factors (OECD 2000b, Steg and Gifford 2005).

Within this broad environmental framework, there have been attempts to create conceptual and methodological tools for examining what constitutes 'sustainable' and 'unsustainable' forms of transport and, critically, travel mode choice. Dependent on travel purpose, most research projects compare share and intensity of the means of transport generally considered least sustainable with used alternative transport modes. For daily travel like commuting, shopping or leisure trips, these analyses often distinguish between car use on the one hand and public transport or bicycle use and walking on the other. For less frequent long distance trips like tourist travel, the distinction is often between air travel and other transport modes; an additional aspect is the consideration of travel distances.

Despite these clear distinctions, evidence is less conclusive when comparing travel modes by distance and passenger loadings, in particular the distinction between high speed rail and air travel over long distances (Banister, 2008). However, despite these problems of definition, it has become accepted in travel behaviour research that in most cases a distinction is drawn between car use on the one hand and other forms of daily travel (such as walking, cycling, tan and bus use) (Steg and Gifford, 2005) and between air travel and all other travel modes for leisure and holiday travel (Dickinson and Dickinson, 2006).

CITIZENS, CONSUMERS AND BEHAVIOUR CHANGE

If the promotion of sustainable travel has been viewed widely as an environmental initiative, the means by which to attain the goal of sustainable travel (or at least move towards this goal) has conventionally been viewed as one dominated by the relationship between the state, regulation infrastructure and technology (Banister, 2008). However, since the late 1980's the approach of public policy towards numerous social and environmental issues has begun to shift towards greater reliance on individuals, as citizens and consumers, as the vehicles for socio-environmental change (Clarke et al., 2007). This reliance on individuals as agents for social change is closely aligned to the broader political and economic shifts in western democracies, which have placed greater emphasis on neo-liberal economic policies and the invocation of 'choice' as a

mechanism to increase public engagement (Giddens, 1991). In so doing, policy makers have created a discourse in public policy that moulds the responsibilities of 'good citizenship' with the underlying assumptions and necessities of ever-increasing consumption by individuals (Slocum, 2002). In the context of travel, this enables discourses of sustainable travel to emerge that do not challenge the need for travel or indeed question the trend towards hyper-mobility (Banister, 2008). Rather, in a citizen-consumption context, sustainable travel is framed around the issue of reducing the impact of rising levels of travel demand, thus placing emphasis on citizen responsibilities to find ways to reduce impact through behavioural change and shifts in mode choice.

In a broader socio-environmental context, the development of the citizen-consumer paradigm (Clarke et al., 2007) has led to fundamental shifts in the ways that policy makers address environmental dilemmas such as climate change, energy security, water management and resource use. It is notable that in the United Kingdom's most recent sustainable development strategy (DEFRA, 2005), the first substantive chapter (of only four) is entitled 'Helping People Make Better Choices', thus cementing the notion that consumer choice is central to achieving environmental sustainability.

Yet within this context there has been a lag between an understanding that individuals have a role to play and an appreciation of the complexities of pro-environmental behaviour (Jackson, 2005). As authors such as Burgess et al. (1998), Hobson (2002) and Agyeman and Angus (2003) have highlighted, conventional approaches to understanding pro-environmental behaviours have tended to utilise rationalistic and linear models of behaviour change that have assumed knowledge as the major driver in promoting change. However, the gap between academic and policy-oriented approaches to behaviour change has begun to narrow recently (Jackson, 2005; DEFRA, 2008) and policy makers have begun to place greater emphasis on the complexities of pro-environmental behaviour and, most critically, to include travel behaviour in conceptualisations of pro-environmental action. This has become particularly critical given travel's role in producing greenhouse gases that are blamed for promoting global climate change (Chapman, 2007), in particular reliance on the private motor car and air travel.

Although there are numerous approaches that have been adopted in practical contexts, the major driver for UK policy on environmental action has been the emergence of segmentation as a tool for understanding and promoting behaviour change (DEFRA, 2008; Peattie and Peattie, 2009). This has been couched in theoretical work surrounding social marketing (French et al., 2009), which seeks to combine specific behavioural goals with consumer segmentation and specific marketing 'mixes' targeted at these segments. In summary:

"Social marketing … underscores the importance of strategically delivering programs so that they target specific segments of the public and overcome the barriers to this segment's engaging in the behavior" (McKenzie-Mohr, 2000, p. 594).

Accordingly, DEFRA (2008) has developed a segmentation model of the UK population that comprises seven pro-environmental segments based on socio-demographic, behavioural and attitudinal characteristics. It is through this conceptual lens that future UK behaviour change policy will be focused and the essential assumption underlying this approach is that marketing, a basic tool used by those seeking to increase consumption in most contexts, will be used to try and shift or possibly *reduce* consumption in a pro-environmental context (Peattie and Peattie, 2009).

MOBILITY STYLES AND TRAVEL MODE CHOICE

The social marketing perspective and notably the segmentation approach adopted in wider UK environmental policy is partly reflected in the wide body of literature that has adopted a mobilities approach (Freudendal-Pedersen, 2009; Urry, 2007). As Freudendal-Pedersen (2009, p. 3) argues:

"As opposed to transportation research, mobility research takes its point of departure in recognising that mobility is not only about distance covered. The potential to be mobile is equally important in understanding mobilities' impact on society"

In so doing, mobility research places significant emphasis on cultural, sociological and psychological factors that frame travel behaviour and go beyond the conventional notion that travel was solely concerned with moving from point A to point B, but rather travel is an important practice in and of itself (Banister, 2008).

The translation of the mobilities paradigm into research on sustainable travel largely follows the same trajectory that is pursued by authors such as Urry (2007) and can be viewed as a shift from approaches dominated by transport planning and engineering to ones based on wider social and economic dimensions. As Banister has noted (2007, p. 75):

"The sustainable mobility approach requires actions to reduce the need to travel (less trips), to encourage modal shift, to reduce trip lengths and to encourage greater efficiency in the transport system".

Indeed, Banister (2008) draws a critical distinction between transportation planning and mobility approaches by emphasising the mobility's perspective on speed. In conventional approaches, the goal of transport planning was and is viewed as the elimination of congestion and thus the freeing up of roads, railways and other transport modes to permit reduced travel times between points. In the sustainable mobility paradigm the goal of reduced speed is viewed as a primary objective so that 'reasonable' travel times, reliabilities and ultimately reasonable experiences can be achieved.

Within this context, there has been growing emphasis on policy and academic research on the ways in which individuals, as citizen-consumers, can be encouraged to adopt more sustainable travel modes through exploring the wider context of their mobility. As Freudendal-Pedersen (2009) has pointed out, the types of scholarship that have developed in this field since the 1990's range sociological, cultural and psychological understandings of mobility, but one dominant approach adopted by many researchers has been an attempt to explore the extent to which the wider social context of mobility can be examined through the lens of lifestyles research (Anable, 2005). Through such research, the notion of 'mobility styles' has emerged as a pivotal approach to examining the motivations and barriers for the adoption of more sustainable travel modes.

Examples of the mobility styles approach are numerous, but tend to have common origins in a social-psychological understanding of travel behaviour (Anable, 2005) that places emphasis on the attitudinal and / or behavioural differences between individuals which can be used to distinguish between clusters or groups of travellers (Anable, 2005; Dallen, 2007; Götz et al., 2003). In Anable's (2005) research with National Trust visitors in the United Kingdom, she identified four car-owning and two non-car owning groups with attendant names such as 'complacent car addicts' and 'car-less crusaders'. Such labels are based on an analysis of the social-psychological characteristics of each cluster that provide a 'snapshot' view of the group in question.

The value of such approaches is that through exploring the characteristics of identifiable groups of individuals, the motivations for travel behaviour and the potential levers for creating modal shift can be exposed. Indeed, as indicated previously a 'mobility styles' perspective is one amongst numerous segmentation approaches that has been developed by environmental social scientists in recent years to explore the ways in which we might identify and classify 'sustainable lifestyles' and develop social marketing strategies to create behavioural changes (Darnton and Sharp, 2006).

CONTEXTUALISING AND SPATIALISING SUSTAINABLE TRAVEL: CONCEPTUAL AND METHODOLOGICAL APPROACHES

The recent growth in segmentation as an approach for understanding and promoting behaviour change both within and beyond sustainable travel therefore has the potential to greatly enhance efforts to encourage modal shift through targeting policies at certain 'types' of individual through specific messages tailored to particular lifestyle needs and aspirations. However, two challenges can be identified that present problems for those seeking to apply the notion of segmentation and social marketing to the promotion of sustainable travel. First, the context for promoting sustainable transport has arguably shifted over recent years from a focus on the reduction of congestion and local-level air pollution, to wider debates concerning issues of climate change and the impact travel has on carbon emissions (Banister, 2008). Second, as this context has shifted, the

geographical focus for sustainable travel has also widened from concern with local and daily travel, to wider concerns of how leisure and holiday travel affects climate change (Dickinson and Dickinson, 2006). Accordingly, researchers exploring a 'mobility styles' perspective need to be ever more aware of the shifting contexts and spaces of 'sustainable travel' as climate change re-orientates the debate away from simple and single-issue local transport problems to the complex and multi-layered implications of daily, leisure and holiday travel.

In this wider context, climate change therefore poses significant challenges to the ways in which mobility research conceptualises travel behaviour and the development of policy. Critically, researchers need to question whether segmentation presents the most effective way of understanding people's attitudes and behaviours towards travel in these wider contexts. For example, we need to question whether classifications of sustainable travel are appropriate when they are based on attitudes and behaviours towards localised, daily travel practices. Indeed, Barr et al. (2010) have argued that segmentation may mis-represent the propensity of individuals to lead 'sustainable lifestyles' when research focuses only on specific contexts (e.g. particular forms of pro-environmental behaviour) and particular geographical scales (e.g. the home). Yet sustainable travel in a contemporary setting necessitates an engagement with debates concerning issues such as climate change, which are naturally reflected in travel practices at all scales.

The remainder of this paper explores these issues through analysing data collected as part of an Economic and Social Research Council (ESRC) funded project entitled 'Promoting Sustainable Travel: a social marketing approach'. This research aimed to explore the role of segmentation as a technique for understanding travel behaviour and the role such techniques can have in promoting model shift amongst individuals. The research was based in and around the city of Exeter in the United Kingdom. Exeter has a population of 119,000 (National Statistics, 2010) and is the county town of Devon, a predominantly rural county in the South West of England. The city is also surrounded by several small market towns, including Crediton and Cullompton and a much wider rural hinterland. The sampling framework applied during the research sought to take advantage of the different forms of built environment in and around Exeter and therefore five study locations were selected based around the following: high-density, medium-density sub-urban, low-density outer-urban, commuter settlement and rural centre.

In each study location a number of research stages were undertaken to collect both qualitative and quantitative data. First, two focus groups were undertaken with members of the public in each study location to explore their understandings of sustainable travel, climate change and their motivations and barriers for adopting more sustainable modes of travel. This stage of the research was entirely exploratory and aimed to explore the range of discourses in the population concerning travel behaviour and sustainability. The focus groups also provided a means of identifying and classifying questions for the second stage of the research. In this second stage, a survey of 400 households was undertaken in each area to quantitatively explore travel attitudes and behaviours as the

basis for segmenting the data into a series of lifestyle groups. The fourteen-page survey explored travel behaviours for daily travel, leisure and holiday travel (both to and within the destination) alongside a series of attitudes towards public transport and private travel modes. The survey also gathered information on environmental values and socio-demographic data and were delivered by the 'contact and collect' methodology where a researcher calls at a selected address and delivers the questionnaire to the householder, collecting in two to three days later by arrangement. Households were selected on the basis of a systematic random sample generated from the Royal Mail address database.

The third stage of the research was based on exploring some of the practical issues raised by the research and sought to examine how individuals reacted to a series of policy measures for encouraging sustainable travel use. In each study location, a further focus group was convened, alongside six in-depth interviews across the whole sample. The qualitative data collected in these meetings was intended to explore the responses of individuals to three travel scenarios, which were designed to reflect policies based on exhortation (the current dominant policy approach), financial incentives / penalties (such as road pricing and incentives to use public transport) and regulation (the introduction of personal carbon budgets, restrictions on travel).

The data were analysed using a variety of quantitative and qualitative techniques including textual coding and content analysis (for qualitative data) and principal component and hierarchical cluster analysis (for quantitative data).

RESULTS

The results on which this paper is based will mostly utilise the data from the second stage of the research, notably the quantitative survey data from 1,561 individuals. In line with the aims of the paper, the analysis will explore the role and value of segmentation as a technique to examine the differences between daily travel behaviour and sustainable lifestyles in a broader context.

Data preparation: factor and cluster analyses

The survey achieved a response rate of 78%, resulting in 1,561 usable questionnaires for analysis. These data were manipulated using the SPSS data package and after calculating descriptive statistics for the dataset, the data were prepared for hierarchical cluster analysis by aggregating the attitudinal data collected in the questionnaire. Using Anable's (2005) approach, all attitude items were placed into a principal components factor analysis to explore the statistical relationships between the attitudinal variables and the potential for identifying a smaller number of variables for use in further analysis (Bryman and Cramer, 2006). The factor analysis revealed 14 factors with eigenvalues over 1.0 and examination of a scree plot confirmed that this was the most appropriate

solution. Table 1 provides details of the factor labels given to each new variable and the highest loading item from the questionnaire.

The factors demonstrate a number of key themes emerging from the analysis, notably constructs relating attitudes towards different forms of travel mode, environmental sustainability, environmental values, measures to change travel behaviour and motivating factors. It is interesting to note that the factors distinguish between the different spatial contexts of travel behaviour, notably daily travel attitudes and those associated with the importance of holiday-taking and the environmental implications of holiday travel. These results indicate that there are similarities in the ways that individuals respond to attitudinal items related to daily and tourism-related travel, respectively.

On the basis of these data, the summed items for each factor were used as the basis for a hierarchical cluster analysis (Wheeler et al., 2004). Cluster analysis is a technique that aims to identify similarities between individual cases in a dataset by initially pairing two cases with the most similar profile across the variables imported into the analysis. This pair is then paired to the next most similar cases in a process that continues until there is just one 'cluster' remaining. Accordingly, the key issue becomes how many clusters should be selected for interrogation, a process known as 'cutting' the dendrogram (Wheeler et al., 2004), which is a graphical representation of the pairing process. In this case, four clusters were defined and will be examined in more detail in the following sections.

Travel attitudes

Given that the segmentation analysis was based on attitudes, this section will explore the ways in which the clusters can be examined through an analysis of the attitude factors for each cluster. Data presented in Table 2 provides the mean scores for summed items based on the principal components factor analysis for each cluster. In the majority of cases, higher scores reflect stronger agreement with the factors in Table 1, although some scales were re-coded to reflect a pro-environmental direction.

TABLE 1   FACTOR ANALYSIS OF ATTITUDINAL DATA

Factor	Item with highest loading	Highest loading eigenvalue	% contribution to solution	Cronbach's Alpha
Positive public transport attitudes	Using public transport is a satisfying experience	.736	18.98	.867
Measures – support for regulation	Increasing fuel charges to cut car use	.786	7.16	.864
Walking and cycling attitudes	Walking and / or cycling is convenient	.750	5.56	.834
Environmental benefits of sustainable travel	Walking and / or cycling helps to tackle issues like climate change	.728	4.21	.843
Benefits of car use	Using a car is convenient	.787	3.08	.832
Positive holiday environmental attitudes	I don't worry about the environment when I make choice about my holiday travel*	-.746	2.95	.762
Ecocentric values	The Earth is like a spaceship, with limited room and resources	.732	2.33	.704
Moral obligations and responsibility	I feel morally obliged to walk or cycle	.617	2.13	.836
Measures – support for incentives	Financial incentives to use public transport	.691	1.98	.707
Technocentric values**	There are no limits to growth for countries like Britain	.681	1.75	.538
Pro-car attitudes	Car driving is affordable and good value	.669	1.61	.659
Holiday and pro-travel attitudes	'Low cost' airlines have provided people with better opportunities to travel regularly	.592	1.56	.483
Support of public transport on holiday	I try to avoid using public transport when I am on holiday*	-.846	1.46	.705
Influence of social norms	Most of my friends and relatives use public transport regularly	.690	1.39	.540
Total explained variance			**56.2**	

* Some items in this scale were recoded to provide a 'pro-environmental' direction in the data and to provide more consistency for further analyses. However, not all scales are pro-environmental and were not altered if they were internally consistent

** This scale has been re-coded so that higher scores indicate a pro-environmental position

TABLE 2   ANALYSIS OF ATTITUDINAL FACTORS BY CLUSTER

Factor name	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Kruskal-Wallis test
N	524	383	135	113	
Positive public transport attitudes	27.11	23.05	32.82	32.80	271.7**
Measures – support for regulation	18.83	12.85	17.93	24.55	453.8**
Walking and cycling attitudes	33.07	29.95	33.69	37.62	208.2**
Environmental benefits of sustainable travel	31.23	25.54	28.39	35.59	467.6**
Benefits of car use	24.74	26.90	22.99	22.61	234.8**
Positive holiday environmental attitudes	18.04	14.90	17.90	23.50	403.7**
Ecocentric values	20.07	17.78	18.11	22.25	202.4**
Moral obligations and responsibility	11.22	8.64	12.06	14.80	355.7**
Measures – support for incentives	19.81	16.84	18.01	22.23	331.1**
Technocentric values*	10.79	9.20	9.00	11.60	243.2**
Pro-car attitudes	11.77	13.97	12.34	9.66	255.8**
Holiday and pro-travel attitudes	14.73	15.49	14.19	13.29	101.9**
Support of public transport on holiday	6.72	6.19	6.88	8.04	121.8**
Influence of social norms	6.65	5.95	9.21	7.47	304.1**

All factor scores indicate agreement with the factor name, except for *
* This factor was recoded so that a higher score indicates a pro-environmental viewpoint
** $p < 0.05$

Analysis of these generalised scores presents a useful overview of the attitudes expressed by respondents in each cluster, all of which illustrate statistically significant differences between the groups. The following trends can be identified:

- Individuals in cluster 1 expressed a variety of attitudes towards travel, which varied according to the factor being examined; they tended to be less positive about the benefits of using public transport and were likely to agree with many of the benefits of using the private car. However, in many ways individuals in this cluster displayed positive attitudes towards more sustainable forms of travel, viewing the benefits of environmentally sustainable travel and walking and cycling particularly positively. Indeed, they tended to hold positive environmental values. With regard to holiday travel, they were inclined to place importance on the value of taking holidays and the ways in which 'low cost' airlines have

benefited them, although they also appeared to recognise the significance of sustainable holiday travel;

- Individuals in cluster 2 generally scored the lowest for each of the scales constructed, with particular outliers being their negative views towards public transport, their lack of support for regulation, negative attitudes towards sustainable holidays and lack of moral obligation to help the environment. They also tended to be most in favour of the benefits 'low cost' airlines have brought in terms of holiday travel;
- Members of cluster 3 tended to be very positive concerning public transport and also walking and cycling. However, they tended to express either ambivalent or negative environmental attitudes. In particular, they were less likely to be positive concerning the environmental benefits of sustainable travel and tended to hold fairly negative environmental values. Indeed, they appeared not to hold positive attitudes towards sustainable holidays and were generally positive towards the car as a means of travel;
- Finally, members of cluster 4 tended to respond very positively to all items, in particular the environmental benefits of sustainable travel, positive attitudes towards sustainable holidays and a strong moral obligation to help the environment. They also held very positive environmental values.

The attitudes demonstrate numerous significant differences between the clusters and provide a useful context for a more detailed examination of the groups based on socio-demographic and travel behaviour variables.

Demographic profile

As part of the profiling of these four clusters, an analysis of demographic factors was undertaken and Table 3 provides a useful snapshot of the social background of the respondents, which can be summarised as follows:

- Cluster 1: a largely middle-aged group with the second highest level of car ownership in the sample; the group was towards the higher end of the occupational scale, with the second highest number of retired people. There is fairly even spread across political allegiances, with a tendency towards voting Conservative;
- Cluster 2: with the highest male membership of any cluster, this group was also largely middle aged and has the highest car ownership in the sample; there was a tendency towards middle-ranking occupations and a dominance of Conservative political allegiance;
- Cluster 3: this cluster had the lowest male representation and was also the oldest age profile; there was a tendency for members of this cluster to own the fewest cars and bicycles; members of this cluster also tended to be retired and be Labour voters;

TABLE 3   **DEMOGRAPHIC PROFILE OF THE SAMPLE DATA**

Characteristics:		Cluster 1	Cluster 2	Cluster 3	Cluster 4	Test statistic*
Gender of respondent	Male	43.2%	48.9%	35.7%	48.2%	7.6**
Age of respondent	16 - 19	1.8%	1.4%	4.6%	1.8%	0.83
	20 - 29	12.0%	12.7%	16.0%	7.3%	
	30 - 44	29.4%	26.0%	22.1%	31.2%	
	45 - 59	25.6%	27.1%	19.8%	31.2%	
	60 - 74	25.6%	24.6%	24.4%	21.1%	
	75 and over	5.6%	8.3%	13.0%	7.3%	
Number of cars in household	None	6.4%	3.5%	17.1%	15.2%	35.2**
	1	50.6%	49.1%	52.7%	55.4%	
	2	32.9%	36.2%	27.1%	25.0%	
	3 or more	10.1%	11.2%	3.1%	4.4%	
Number of bicycles in household	None	34.1%	39.5%	42.0%	28.6%	14.1**
	1	19.6%	19.9%	19.1%	16.1%	
	2	20.0%	23.1%	14.5%	20.5%	
	3 or more	26%	17.5%	24.4%	34.8%	
Occupation of the main breadwinner	Professional	24.1%	17.1%	11.3%	41.7%	50.9^
	Managerial	10.4%	12.9%	6.5%	10.4%	
	Skilled non-manual	11.6%	11.2%	9.7%	12.5%	
	Skilled manual	16.9%	25.9%	19.4%	8.3%	
	Unskilled non-manual	5.2%	7.1%	8.1%	10.4%	
	Unskilled manual	4.0%	2.9%	6.5%	0%	
	Retired	20.1%	17.6%	30.6%	14.6%	
	Student	4.0%	1.8%	6.5%	2.1%	
	Not working for medical reasons	2.4%	1.2%	0%	0%	
	Unemployed	0%	0%	1.6%	0%	
	Home maker or carer	1.2%	2.4%	0%	0%	
Party that would be voted for if there was a General Election tomorrow	Conservatives	26.6%	35.3%	17.6%	20.8%	85.7**
	Greens	4.4%	.3%	3.1%	12.3%	
	Labour	15.7%	7.9%	16.8%	18.9%	
	Liberal Democrats	15.1%	6.6%	8.4%	16.0%	
	Other	3.6%	5.2%	.8%	.9%	
	Would not vote	8.0%	12.6%	10.7%	8.5%	
	Prefer not to say	26.6%	32.1%	42.7%	22.6%	

* Chi-Square statistics were used to compute most test results, although Kruskal-Wallis tests were used for ordinal data (numbers of cars, bicycles and motorbikes, age of respondent and household income)
** $p < 0.05$
^ This Chi-Square test is reported significant but the test is invalid due to more than 20% of expected values being under 5.0.

Note: 'Prefer not to say' was not used in the analysis of political affiliation

- Cluster 4: this cluster tended to comprise younger middle aged people and also had lower car ownership than members of clusters 1 and 2. There was also a

higher level of bicycle ownership. The cluster was dominated by professional workers and there was a fairly even split of political allegiances, although this group were most likely to vote Liberal Democrat and Green compared to the other clusters.

These profiles demonstrate a useful description of the ways in which the attitudinally-defined clusters present differing social profiles. Table 4 displays the distribution of cluster membership across the five study areas for the research and demonstrates some significant differences according to the residential environment:

- Members of cluster 1 were fairly evenly spread across all five locations, although there was a tendency for members to live either on the outskirts of Exeter (St. Loyes ward) or in the rural centre of Crediton;
- Members of cluster 2 were more likely to live in the commuter settlement of Cullompton and much less likely to live in the high-density ward of Polsloe or the medium-density district of Pennsylvania;
- Members of cluster 3 were much more likely to live in the city wards of Pennsylvania and Polsloe;
- Members of cluster 4 likewise were most likely to live in the city wards of Pennsylvania and Polsloe, alongside a small tendency to live in Crediton. It is noticeable how few members of this cluster lived in the commuter settlement of Cullompton North ward.

These profile further provide evidence for differences between the attitudinal clusters based on demographic profile and demonstrate that clusters 1 and 2 were most likely to live outside of Exeter in lower density wards, whilst members of clusters 3 and 4 were those most likely to populate higher density, city-centre wards.

TABLE 4 STUDY LOCATION BY CLUSTER

Ward	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Total
Pennsylvania, Exeter (medium density)	18.3%	19.3%	25.9%	28.3%	20.5%
Polsloe, Exeter (high density)	17.9%	16.4%	25.2%	26.5%	19.1%
St Loyes, Exeter (low density)	22.5%	20.4%	17.8%	13.3%	20.3%
Cullompton North (commuter settlement)	20.2%	23.2%	17.0%	10.6%	19.9%
Crediton, St Lawrence (rural centre)	21.0%	20.6%	14.1%	21.2%	20.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square = 29.3 ($p < 0.05$)

Daily travel behaviour

These demographic profiles set the context for the four clusters identified in the analysis. However, of most interest is the way in which these data map onto daily and holiday travel behaviour. Table 5 provides data concerning the daily travel behaviour of members of each cluster. Daily travel behaviour was defined as travel undertaken for daily, or at least weekly, purposes. The data in Table 5 have been divided into several categories, notably travel for shopping, getting to work, travel whilst at work, taking children to school, local leisure travel and visiting friends and relatives.

The data in the table provides several interesting points to note for each cluster:

- Cluster 1 is characterized by high levels of car use for most purposes. This is particularly the case for shopping trips and visiting friends and relatives. However, there is also a tendency amongst this group to use walking as an important alternative to the car, particularly in the case of taking children to school and traveling whilst at work;
- Cluster 2 was characterized by high and very high levels of car use for nearly all purposes. Walking was the main alternative mode of travel, particularly whilst at work but also for taking children to school (although this is far less than for cluster 1);
- Cluster 3 was characterized by much lower levels of car use amongst its members, with bus and coach travel being a popular alternative for local leisure journeys and, to a smaller extent, for shopping trips;
- Cluster 4 members also had lower levels of car use, but in certain instances were more likely to rely on the bicycle for getting to work, local leisure journeys and visiting friends and relatives.

These data enable us to construct a valuable travel behaviour profile of the four groups identified by the cluster analysis, which are broadly related to two basic groupings. First, those in clusters 1 and 2 tended to rely on the motor car for the majority of their daily travel and these groups also tended to live outside of the city centre built environment, in either low density or commuter settlements.

Second, those individuals in clusters 3 and 4 tended to rely less heavily on the motor car, either using public transport or walking and cycling as their main travel mode within city centre medium-to-high density environments. Accordingly, the attitudinally-defined clusters present a relatively clear picture of daily travel behaviour, with clear distinctions between the four clusters and major differences between two groups of segments.

TABLE 5   DAILY TRAVEL BEHAVIOUR BY CLUSTER

Travel mode and behaviour		Cluster 1	Cluster 2	Cluster 3	Cluster 4	Chi-Square*
Shopping	Car / Motorbike	74.0%	88.6%	62.4%	51.4%	81.3**
	Bus/Coach	6.4%	3.0%	13.6%	12.6%	
	Train	.2%	.5%	0%	1.8%	
	Bicycle	.4%	0%	2.4%	2.7%	
	Walk	19.0%	6.8%	20.8%	31.5%	
	Other	0%	1.1%	.8%	0%	
Getting to work	Car / Motorbike	60.7%	77.1%	47.3%	40.0%	46.0**
	Bus/Coach	7.1%	5.5%	17.6%	12.9%	
	Train	1.5%	2.0%	1.4%	2.9%	
	Bicycle	5.6%	2.0%	6.8%	15.7%	
	Walk	24.3%	11.5%	24.3%	28.6%	
	Other	.9%	2.0%	2.7%	0%	
Traveling whilst at work	Car / Motorbike	50.5%	58.8%	39.3%	36.4%	11.3**
	Bus/Coach	4.5%	2.0%	8.9%	5.5%	
	Train	1.0%	1.4%	5.4%	10.9%	
	Bicycle	1.0%	1.4%	3.6%	1.8%	
	Walk	34.7%	27.0%	35.7%	40.0%	
	Other	8.4%	9.5%	7.1%	5.5%	
Local leisure journeys	Car / Motorbike	69.8%	83.3%	48.8%	40.4%	98.9**
	Bus/Coach	11.2%	7.1%	29.8%	17.4%	
	Train	2.0%	1.1%	5.0%	7.3%	
	Bicycle	2.0%	.6%	2.5%	9.2%	
	Walk	14.3%	7.3%	14.0%	25.7%	
	Other	.6%	.6%	0%	0%	
Visiting friends / relatives locally	Car / Motorbike	71.3%	82.3%	54.4%	45.9%	71.7**
	Bus/Coach	5.0%	1.9%	16.8%	8.3%	
	Train	1.0%	.6%	4.0%	1.8%	
	Bicycle	1.2%	.3%	1.6%	9.2%	
	Walk	21.0%	14.9%	23.2%	34.9%	
	Other	.4%	0%	0%	0%	
Taking children to school	Car / Motorbike	37.7%	60.9%	42.5%	22.2%	24.6**
	Bus/Coach	.6%	3.0%	2.5%	0%	
	Bicycle	.6%	0%	5.0%	8.3%	
	Walk	60.4%	35.3%	50.0%	69.4%	
	Other	.6%	.8%	0%	0%	

* Chi-Square statistics are based on recoded categories to avoid expected values below 5.0. Recoding is based on comparing car travel with all other forms of travel mode.

** $p < 0.05$

Cluster profiling: attitudes towards travel

Having identified the attitudinal, demographic and travel-mode basis for the clusters, it is now possible to assign labels to each cluster on the basis of the data presented:

- Cluster 1: Aspiring Green Travellers. These are individuals who hold relatively strong pro-environmental attitudes but who still largely rely on the car, although they will use alternative modes, especially walking, when possible. They tend to live in lower density environments and come from a middle-to-high occupational background;
- Cluster 2: Addicted Car Users. These individuals tend to use the car as their main mode of travel for most journeys and tend to live in low-density and commuter settlements. They tend not to hold pro-environmental attitudes and to be politically conservative;
- Cluster 3: Reluctant Public Transport Users. Although this group may appear 'green' from a behavioural perspective, they tend to hold fairly negative pro-environmental attitudes and in some instances are positive about car use. They tend to travel by public transport for several type of journey although they may not view this as an 'environmental' behaviour. They tend to be from older, retired groups who have less access to private motor transport;
- Cluster 4: Committed Green Travellers. These individuals tend to be very pro-environmental in their attitudes and have relatively low levels of car use, relying also on walking and cycling, although less so on public transport. They are the most politically liberal and 'green' and tend to come from largely professional and managerial occupations.

The cluster profiles therefore present a useful set of profiles that clearly segment the sample into four groups based on travel attitudes and exhibiting some major differences in travel behaviour, residential environmental and demographic background. The paper now turns to the issue of examining these profiles within the broader context of holiday and leisure travel.

Holiday and short break travel

A major concern of this paper is the exploration of links between daily and longer-term travel behaviour in the form of tourism and leisure travel. As the data in Table 5 demonstrate, there are clear differences between the four clusters according to their daily travel behaviour and it may be a reasonable expectation that such differences might be reflected in tourism and leisure travel if the clusters are to be regarded as significant 'lifestyle' segments that can be used for promoting more sustainable forms of travel. Indeed, as the clusters are themselves derived from attitudes towards travel, we might anticipate that there will be clear relationships between daily and less frequent travel.

TABLE 6   HOLIDAY AND SHORT-BREAK TRAVEL

Characteristic	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Test statistic*
Label	Aspiring Green Travellers	Addicted Car Users	Reluctant Public Transport Users	Committed Green Travellers	
Holiday of >=4 nights in past year? Yes:	73.8%	78.0%	63.0%	79.6%	13.6**
Number of holidays (mean)	2.29	2.48	2.38	2.4	0.46
Mode of travel to destination:					8.99**
Car / Motorbike	46.7%	44.7%	44.3%	40.9%	
Bus/Coach	4.2%	4.2%	15.2%	6.8%	
Train	6.9%	4.2%	5.1%	10.2%	
Boat	2.1%	1.4%	1.3%	4.5%	
Air	39.1%	44.0%	34.2%	37.5%	
Other	1.1%	1.4%			
Mode of travel at destination:					16.12**
Car / Motorbike	55.9%	59.4%	38.0%	42.9%	
Bus/Coach	16.3%	16.2%	29.1%	17.9%	
Train	4.4%	1.4%	5.1%	7.1%	
Boat	2.2%	1.1%	3.8%	2.4%	
Bicycle	.5%	.4%	1.3%	4.8%	
Walk	17.7%	17.3%	20.3%	19.0%	
Air	1.1%	2.5%	1.3%	3.6%	
Other	1.9%	1.8%	1.3%	2.4%	
Short break of <= 3 nights in past year? Yes:	63.2%	57.8%	53.5%	56.8%	5.6
Number of short breaks (mean)	2.6	2.64	2.7	2.84	0.13
Mode of travel to destination:					22.9**
Car / Motorbike	76.0%	76.8%	60.6%	61.3%	
Bus/Coach	4.0%	3.3%	15.2%	3.2%	
Train	12.9%	8.5%	16.7%	29.0%	
Boat	.6%			3.2%	
Bicycle	.3%				
Walk	.3%		1.5%		
Air	5.2%	10.0%	6.1%	3.2%	
Other	.6%	1.4%			
Mode of travel at destination:					15.9**
Car / Motorbike	58.5%	66.2%	45.0%	41.7%	
Bus/Coach	6.0%	6.9%	23.3%	8.3%	
Train	5.0%	3.9%	5.0%	10.0%	
Boat	.6%	.5%		1.7%	
Bicycle	.9%	2.0%	3.3%	3.3%	
Walk	25.5%	15.2%	23.3%	31.7%	
Air	.6%	.5%		1.7%	
Other	2.8%	4.9%		1.7%	

*Chi-Square statistics were used to compute these statistics, except for the data on number of holidays, where the Kruskal-Wallis test was used. Recoded Chi-Square categories compared car / air travel with all other modes.

** $p < 0.05$

Table 6 provides data for each cluster according to travel mode choice for travel to and within the destination for a holiday of 4 nights or more and short breaks of three or fewer nights. The results reveal some interesting trends. First, all groups tended to rely heavily on the motor car or air travel to reach their destination for longer trips. Although there are differences between the clusters, over one third of members of all groups (who had taken a holiday during the past 12 months) used air travel as their main mode of travel to the destination and this is particularly significant when it is noted that individuals in cluster 4 ('Committed Green Travellers') were most likely to take a holiday of four nights or more (79.6%, with 37.5% stating they would fly).

Indeed, in comparison to the major differences between car use for daily travel behaviour (Table 5), there were only slight differences between the clusters for using the car as a main mode of travel to the destination for a holiday of 4 or more nights. Accordingly, the data for 'travel to the destination' for holidays indicates that there was much less 'distance' between the clusters than for daily travel and that vacation travel was relatively similar across all of the clusters; with the notable exception that those in cluster 3 ('Reluctant Public Transport Users') had a higher tendency to use the train. This has important implications for exploring sustainable mobility styles in terms of non-daily travel given the relatively high impacts associated with vacation travel, particularly by air (Chapman, 2007). Indeed, the results appear to demonstrate a significant narrowing in the gap between the four clusters in terms of their travel mode choices.

In terms of travel for short breaks, differences between the clusters are more pronounced than for longer holidays and the trends are not the same as for daily travel. There was a higher tendency for 'Reluctant Public Transport Users' (cluster 3) to use the motor car for travelling to the destination, whilst 'Committed Green Travellers' (cluster 4) tended to use the train to travel to their destination in nearly one third of instances. By contrast, 'Addicted car users' (cluster 2) largely used the car or flew, with 'Aspiring Green Travellers' (cluster 1) having the same level of reliance on the motor car, with a slightly higher tendency to use the train instead of the aeroplane to reach their destination.

A second theme from Table 6 is the way in which the differences between the four clusters become more pronounced when travel at the destination is examined (both for holidays and short breaks). There is tendency for all groups to rely more on walking and public transport, with members of cluster 3 ('Reluctant Public Transport Users') being particularly dependant on this travel mode. However, it is notable that members of the most environmentally committed group (cluster 4) tended to use a wider variety of travel modes within destinations.

These results provide mixed evidence that the attitudinally-defined 'lifestyle' groups defined in Table 2 have resonance when explored in a tourism and leisure context. From one perspective, the broad trends exposed for daily travel can be traced in the data provided in Table 6; 'Committed Green Travellers' have a slightly weaker tendency to fly

and 'Addicted Car Users' tend to use air travel slightly more often than other groups. However, from another perspective, the data indicate that those expressing strong environmental commitments are more likely to adopt carbon-intensive travel modes for travelling to holiday and short-break destinations. Nearly 80% of 'Committed Green Travellers' used air or car travel to reach their destination for holidays, whilst 'Aspiring Green Travellers' had the same level of car use for short break trips as 'Addicted Car Users'. Indeed, in nearly all instances, the 'Reluctant Public Transport Users' were those least likely to travel by air and motor vehicle.

A travel paradox? Travel, leisure and climate change

The differences between daily and non-daily travel provide an intriguing problem for researchers seeking to explore sustainable mobility styles across lifestyle contexts. Of major concern is why carbon intensive modes such as air travel and reliance on the private car should be similar across the four clusters for holiday travel, despite the differences evident in the four groups both attitudinally and demographically (Tables 2 and 3, respectively). Attitudinally, both the 'Committed Green Travellers' and 'Aspiring Green Travellers' have very positive environmental attitudes and we might expect that these would carry across into their travel behaviour in alternative contexts, particularly for the most committed group. However, although the general trends in these data present a fairly clear picture, it is worth exploring the components of the factors in a little more detail to examine both the level of agreement with specific statements that comprised the factor scales and also the differences between the clusters based on these items.

Table 7 presents the statement wording for items contained in various factors used in the analysis (see Table 1), in addition to a single item on climate change. First, it is noticeable how strong individuals in clusters 1 and 4 feel that climate change is a threat to them and their families. This is also replicated by their general level of environmental concern. Accordingly, individuals in these two groups, particularly those in cluster 4, demonstrate very high levels of concern regarding environmental issues. Second, when the final set of items is examined, which largely relate to the environmental benefits of daily forms of sustainable travel, there is also very strong agreement for individuals in clusters 1 and 4. There seems to be little doubt that walking, cycling and reductions in car use are beneficial to climate change and that sacrifices will need to be made by individuals to reduce impacts on the environment. However, a third point to emerge from the data demonstrates lower levels of agreement with pro-environmental statements when the 'Positive Holiday Environmental Attitudes' factor is examined. Whilst clusters 1 and 4 generally have higher levels of agreement than for clusters 2 and 3, the differences are not as great and agreement is generally much lower. For individuals in cluster 4, this is particularly notable when the statement "I prefer to avoid highly polluting forms of transport like air travel when I go away" is considered. Indeed, those in cluster 1 show a weaker agreement with this item than for those in cluster 3. Accordingly, there seems to be more ambiguity amongst environmentally concerned clusters when issues

of climate change and shifts in behaviour for holiday travel are concerned than when compared to daily travel. Some of the reasons for this potential 'gap' are explored in the 'Holiday and pro-travel attitudes' factor, where the environmentally concerned groups are the most likely to feel that 'low cost' airlines have offered more opportunities for people to travel regularly. Indeed, individuals in cluster 1 ('Aspiring Green Travelers') were also likely to agree that taking holidays and short breaks were important to them and that a faster travel mode was preferred. Nonetheless, those in cluster 4 ('Committed Green Travelers') were largely unopposed to the idea of putting taxes on air travel to reduce environmental problems.

CONCLUSION: SPACES OF (SUSTAINABLE) MOBILITY

This paper has explored data gathered from residents in the South West of England to explore the potential differences between travel mode choice for daily and holiday and leisure travel within the context of climate change and sustainability. Given the prominence associated with identifying and using 'lifestyles' as a segmentation-based approach for understanding consumer choices, the paper has argued that we need to appreciate the different contexts and spaces in which activities such as 'sustainable travel' are promoted.

The initial results presented in this paper provide three issues that researchers of 'mobility styles' need to consider and which policy makers need to take into account when developing social marketing approaches for behaviour change. First, using the clustering approach based on previous research (Anable, 2005) yielded four main groups of individuals that were distinct in terms of their daily travel behaviour, demographic and attitudinal characteristics. In general, individuals in the two 'environmentally concerned' groups were supportive of changes to daily travel behaviour to reduce environmental impacts and tackle problems such as climate change. However, a closer examination of the attitudinal data revealed that when climate change was explored in a holiday and leisure context, there was less agreement concerning the need to take action. This was closely related to a second major point, which was that behavioural changes in the holiday and leisure context were much less accepted than those for daily travel. Despite statements of high levels of environmental concern and believing that climate change was a threat, individuals showed less commitment to avoid highly polluting forms of transport when they went on holiday. Third, it is notable that whilst the segmentation analysis identified groups such as 'Committed Green Travellers' based on the attitudinal characteristics of the sample, the individuals travelling in the most environmentally responsible manner were those who generally did not agree that using public transport was particularly 'green'. The 'Reluctant Public Transport Users', who were mostly older and retired were therefore likely to have a lower environmental impact than the 'Committed' group, despite their ambivalence concerning environmental issues.

TABLE 7   MEAN SCORES FOR ITEMS WITHIN SELECTED FACTORS RELATED TO HOLIDAY TRAVEL AND ENVIRONMENTAL ISSUES*

Label	Cluster 1 Aspiring Green Travellers	Cluster 2 Addicted Car Users	Cluster 3 Reluctant Public Transport Users	Cluster 4 Committed Green Travellers
Climate change				
Problems like climate change are a threat to me and my family	3.79	3.15	3.54	4.35
Holiday and pro-travel attitudes				
'Low cost' airlines have provided better opportunities for people to travel more regularly	4.00	3.87	3.63	3.89
Putting taxes and constraints on air travel is negative and reduces freedom of travel choice	3.22	3.77	3.35	2.32
Taking holidays and short breaks is important to me	3.77	3.88	3.60	3.73
When going on holiday, I try to use the fastest mode of transport to get there quickly	3.74	3.97	3.61	3.35
Positive holiday environmental attitudes				
[+]I don't worry about the environment when I make choices concerning my holiday travel	2.85	2.43	2.87	3.93
[+]I am unlikely to change my holiday plans in response to issues like global climate change	2.68	2.20	2.59	3.78
I think about how I can reduce environmental damage when I go on holiday	2.78	2.40	2.93	3.73
I am very concerned about environmental issues	3.76	3.20	3.58	4.50
I prefer to avoid highly polluting forms of transport like air travel when I go away	2.78	2.35	2.93	3.62
A 'personal carbon budget' would reduce the amount you travel using high-polluting travel modes	3.19	2.31	3.01	3.95
Support of public transport on holiday				
[+]I try to avoid public transport when I go on holiday	3.51	3.30	3.41	4.12
I like to use public transport when I am on holiday	3.22	2.89	3.47	3.91
Environmental benefits of sustainable travel				
Walking and / or cycling will help to tackle problems like climate change	4.12	3.36	3.81	4.65
Using cars contributes to problems like climate change	3.85	3.15	3.51	4.45
Walking / cycling reduces environmental impacts	4.38	3.91	4.02	4.75
Using public transport will help to tackle problems like climate change	3.46	2.51	3.28	4.20
[+]Cars don't have a very negative impact on the environment	3.91	3.17	3.32	4.42
We will all need to make sacrifices in our lifestyles to reduce environmental problems	4.05	3.40	3.81	4.60
Using of public transport reduces environmental impact	3.80	3.03	3.55	4.46
[+]Reducing car use is not an individual's responsibility	3.67	3.01	3.10	4.04

* All items recorded statistically significant differences between the clusters using the Kruskal-Wallis test
[+] Items have been recoded to reflect a pro-environmental direction for the factor

These findings raise a number of issues concerning the spaces of travel behaviour and the ways in which individuals relate to contemporary environmental issues. These data appear to demonstrate acceptance of 'sustainability' and even climate change as rationale for adopting sustainable travel behaviour for daily modal choice, but this is less marked for holiday and leisure travel choices. Indeed, the quantitative data hinted at some of the potential reasons for this – a feeling that 'low cost' air travel has provided the possibility of travelling more frequently, faster and cheaper. Indeed, taking holidays also appears to be something that is more embedded into lifestyle choices.

These quantitative findings do present evidence to at least partially support authors such as Barr et al. (2010) and Dickinson and Dickinson (2006) that have argued there are differences between the ways individuals interpret environmental issues for travel behaviour in different contexts. Indeed, the qualitative research undertaken for this project indicates that holidays and their role in understanding climate change may be very different than for daily travel mode choice, and therefore requires an alternative approach to 'mobility styles' as a way of progressing understanding and policy. As one respondent from a focus group in the research stated:

> "Holidays are holidays, you know … although it's a catch 22 because flying is the worst form of, you know, pollution that there is. But, it's also the thing that you've looked forward to most of the year and you don't really get to do that often. So, it's quite hard." (Male, 35)

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