



# Climate change and the air travel decisions of UK tourists

Andrew Hares\*, Janet Dickinson, Keith Wilkes

School of Services Management, Bournemouth University, Talbot Campus, Poole BH12 5BB, UK

## ARTICLE INFO

**Keywords:**  
Air travel  
Climate change  
Tourism

## ABSTRACT

Whilst much effort has been made to communicate to the public the importance of reducing carbon footprints in the home, one area where emissions are growing rapidly and little attempt has been made to increase consumer understanding of the impacts is holidays, particularly those involving air travel. Using focus group research, this paper explores tourists' awareness of the impacts of travel on climate change, examines the extent to which climate change features in holiday travel decisions and identifies some of the barriers to the adoption of less carbon-intensive tourism practices. The findings suggest that many tourists do not consider climate change when planning their holidays. The failure of tourists to engage with the climate change impact of holidays, combined with significant barriers to behavioural change, presents a considerable challenge in moving the tourism industry onto a sustainable emissions path. The findings are discussed in relation to theoretical perspectives from psychology and sociology.

© 2009 Elsevier Ltd. All rights reserved.

## 1. Introduction

Tourism is a highly energy-intensive industry and has only recently attracted attention as an important contributor to climate change through greenhouse gas (GHG) emissions. It has been estimated that tourism contributes 5% of global carbon dioxide emissions (UNWTO, 2007). Studies show that transport may be responsible for over 90% of tourism's overall contribution to global climate change (Gössling, 2002), with air travel dominating these emissions. Gössling and Peeters (2007) conclude that in an average holiday or short break involving air travel, 60–95% of its contribution to global warming will be caused by the flight. The growth, and predicted future growth, in international tourism is a major concern. International tourist arrivals grew to 903 million in 2007 and are forecast to increase to 1.6 billion in 2020 (UNWTO, 2008). International tourism is largely dominated by developed countries. The current tourism trend in these industrialised countries has been described as hyper-mobility (Høyer, 2000) and is characterised by the taking of several short-breaks and longer holidays every year. Global growth rates of air travel have been in the order of 5–6% per year in the period 1970–2000 and are predicted to continue growing at annual rates of 5% until 2020 (Gössling and Peeters, 2007). Estimates suggest that carbon dioxide emissions from air travel could rise to more than 15% of total carbon dioxide emissions from all sources by 2050 (Dubois and Ceron, 2006).

The tourism sector needs to progressively reduce its GHG contributions if it is to move onto a sustainable emissions path. Aviation

has been identified as the most important area for reducing these emissions (Peeters et al., 2006). There have been a number of potential changes proposed for reducing the impact of air travel on climate change. These include technological changes, market-based changes and behavioural changes. Emission reductions from technological changes to aircraft engine design could be in the order of 20% by 2050 (Penner et al., 1999), with further potential reductions coming from improvements in air traffic management and operational efficiency. However, even if these emission reductions are achieved the impacts will not be that significant, as the forecasted growth in air travel demand will far outpace the predicted technological efficiencies. There are also limitations with the impacts market-based changes could have on emissions from air travel. Market-based changes, such as taxes on jet fuel or aircraft emissions, are hugely unpopular with the airline industry and politically very difficult to enforce due to the 1950 resolution by the International Civil Aviation Organisation to exempt fuel for international air travel from taxation. Research suggests that even if taxes on jet fuel were introduced, they would have to be very high in order to have a serious impact on the demand for air travel (Olsthoorn, 2001; Tol, 2007). The third of the options, behavioural change, is considered to have the most important role to play in leading to reductions in GHG emissions from air travel associated with tourism (Gössling et al., 2007).

As part of a wider study, this paper reports the findings of exploratory focus group research designed to investigate the role that climate change plays in the holiday and travel decisions of UK tourists. The paper has three objectives: to explore the levels of awareness amongst UK tourists of the impacts travel has on climate change, to establish the extent to which climate change

\* Corresponding author. Tel.: +44 (0) 1202 965387; fax: +44 (0) 1202 515707.  
E-mail address: [ahares@bournemouth.ac.uk](mailto:ahares@bournemouth.ac.uk) (A. Hares).

considerations feature in holiday travel decision-making processes, and to investigate the major barriers to UK tourists adopting less carbon-intensive travel practices.

## 2. Climate change and tourist behaviour

Until recently, there has been very little research undertaken to investigate whether tourists are aware of the impacts that their holidays and travel have on climate change. Several studies report low awareness of the impact of air travel on climate change (Becken, 2007; Gössling et al., 2006; Shaw and Thomas, 2006). In the UK a number of quantitative studies have examined public attitudes towards air travel (Department for Transport, 2002, 2006a, 2008). In the most recent (Department for Transport, 2008) study, 66% of total respondents said they believed that air travel harms the environment, with 44% of these respondents specifically mentioning climate change and 64% saying they would be willing to pay more for air travel in order to reflect the environmental harm. In a quantitative study, that asked directly about climate change, 62% would take fewer flights to reduce impacts (Lorenzoni and Pidgeon, 2006).

For most people, an understanding of climate change is brought about by the media where people are exposed to a variety of conflicting and unreliable views (Becken, 2007). Outside tourism, there are issues generally with climate change action and people have little faith their actions will make a difference, most individuals finding it difficult to disentangle themselves from high carbon lifestyles (Bickerstaff et al., 2008). Becken (2007) suggests that tourists distinguish between tourism travel and everyday life taking more responsibility for climate change in the latter. This could be because people feel they have earned the right to fly and take holidays (Barr et al., 2008). Becken (2007) argues travel has symbolic meaning and people value the freedom, or, as Shaw and Thomas (2006) suggest, it is seen as a 'right'. There is also evidence of a variety of denial mechanisms that are employed to avoid taking action (Lorenzoni et al., 2007; Stoll-Kleemann et al., 2001).

When it comes to understanding behavioural change, a wide range of conceptual theories have been developed, utilising various social, psychological, subjective and objective variables in order to model consumer behaviour (Jackson, 2005). These theories of behavioural change operate at a number of different levels, including the individual level, the interpersonal level and the community level (Halpern et al., 2004). A number of theories have been designed specifically to examine pro-environmental behaviour, whilst more general consumer behaviour theories have also been used to predict behaviour in a climate change context. Many studies have investigated an inconsistency between people's attitudes and behaviour (Barr, 2004; Blake, 1999; Kollmuss and Agyeman, 2002). This inconsistency is commonly referred to as the attitude-behaviour gap and is particularly prevalent when examining behavioural change related to environmental issues (Nickerson, 2003). Anable et al. (2006) consider this attitude-behaviour gap as one of the greatest challenges facing the climate change agenda. Therefore, identifying these barriers to action is a critical step in facilitating behavioural change.

Other perspectives on the attitude-behaviour gap have emerged from the sociology of consumption, particularly from social practice theory. Spaargaren and van Vliet (2000) argue that social psychological models stress the importance of people's adherence to values and beliefs but are weak on the ways individual action is framed by structures in society. Randles and Mander (2009), for example, question whether behaviour can be causally derived from attitudes at all. They argue that behaviour is socially constituted through a combination of individual agency (beliefs, norms and values regarding action) and interaction with the resources available (physical structures and social rules). The resulting social

practices create a "propensity for 'lock-in' and ... an inherent resistance to change" (p. 95). Similarly, Adey et al. (2007, p. 785) suggest that "aeromobility is now embedded in the global fabric". Such approaches (re)contextualise behaviour decisions rather than isolate them from the rules and resources which structure actions.

Kollmuss and Agyeman (2002) conclude that the question of what determines pro-environmental behaviour is such a complex one that it cannot be visualised through one single framework or diagram. Anable et al. (2006, p. 64) concur with this view and state that there is no "grand unified theory" that provides a definitive explanation of behavioural change; hence the purpose of this paper is not to apply any particular one of these behaviour theories. Instead, the analysis reflects on theoretical perspectives, offered by psychology and sociology, in relation to the barriers to behavioural change presented by focus group participants.

## 3. Methodology

Despite the potentially high-risk scenario for the tourism industry and the global environment, relatively little research has been undertaken with respect to tourism and climate change (Becken, 2007; Hunter and Shaw, 2007). Furthermore, much of the research on transport and tourism has been grounded in quantitative geography traditions focused on price elasticity and space/time considerations. However, more recently work has emerged that seeks to develop a nuanced understanding of society's desire for travel (see for example, Adey et al., 2007; Randles and Mander, 2009). Exploratory focus group research was employed here as it has the potential to highlight important factors and variables that are not evident in the limited tourism and climate change literature and to facilitate a better understanding of how air travel is embedded in tourist practice. It can be argued that focus groups offer a more natural environment than that of individual interviews, as participants are interacting with other people, just as they do in real life (Krueger and Casey, 2000). The literature also suggests that group interaction will lead to a wider range of views, as participants seize and develop on the comments of other group members (Bryman, 2008). Group discussion can result in participants defending and more fully explaining their views, thus providing a greater insight into their thoughts and beliefs. However, there is scope for group bias. To minimise potential group bias individual tasks were integrated with group discussion.

Four focus groups were conducted in Bournemouth, UK. The number of participants in each group ranged between 7 and 10, with 34 participants in total taking part. Each group was relatively homogeneous and the participants were recruited from pre-existing groups. The first group consisted of students (Student Group), the second group consisted of parents with young children (Family Group), the third group consisted of working professionals (Professionals Group) and the fourth group consisted of relatively affluent retirees (Retired Group). The aim was not for a representative sample or to make comparisons between groups, but to cast a wide net to embrace a diversity of understandings and experiences of travel. Whilst potential participants were not screened prior to selection on their income or travel habits, the intention was to recruit people with differing socio-demographic profiles. The Family Group was recruited from a relatively economically deprived area of Bournemouth and, along with the Student Group, contained relatively less affluent participants. The Professionals and Retired Groups contained relatively affluent participants. The results of the focus groups revealed that not only were the participants in the Professionals and Retired Groups regular travellers (more than one overseas trip a year), so were most of the participants in the Student Group. Participants in the Family Group were less frequent travellers, but all had taken at least one holiday in the last 2 years and

all but one of the participants had taken at least one overseas flight in this period.

It has been argued that participants should receive adequate information on the focus group during recruitment, so that they are able to give their informed consent to take part (Bloor et al., 2001). Potential participants were told that the focus group discussion would be about climate change and people's everyday lives. Mention of holidays and travel were deliberately avoided in the recruitment process so as not to create a connection in the participants' minds between holidays and climate change if one did not already exist. By disclosing that climate change was the main theme of the group discussions, the researcher was aware that this could potentially lead to social desirability bias. In addition, there was the possibility that the participants may be more interested in, and knowledgeable about, climate change than the population in general as they volunteered to take part. However, failure to disclose this information would not only have raised concerns regarding covert recruitment methods, it may also have resulted in the recruitment of participants who felt misled and were then unwilling to discuss climate change.

The focus group design consisted of largely open questions and tasks that proceeded from the general to the more specific as follows:

- (a) Understanding of climate change (open question).
- (b) How lifestyles might impact on climate change (task).
- (c) Ways holidays might impact on climate change (open question).
- (d) Important factors when planning a holiday (task).
- (e) Climate change as a factor in holiday decisions.
- (f) Barriers to behavioural change.

The focus groups were undertaken during summer 2008 and lasted between 1.5 and 2 hours. Each was recorded using digital voice recorders and then transcribed verbatim. Codes were generated inductively from the raw data, rather than deductively from theory and previous research (Boyatzis, 1998), though the material was strongly influenced by the questions asked in the focus groups. Techniques outlined by Ryan and Bernard (2003) were used to discover themes in the data. These included searching for repetitions in the data sets, and searching for similarities and differences by making systematic comparisons across the data. The following two sections discuss the findings of the main focus group themes and relate them to relevant theory.

## 4. Holiday travel and climate change

### 4.1. Understanding of climate change

The most dominant understanding of climate change was related to changes in weather patterns that participants had personally observed in their lifetime. In particular, milder winters, with very little snowfall over recent years, and wetter summers. Many of the participants were unsure about what climate change is and some were sceptical it was taking place. There was some uncertainty about the human contribution to climate change through the production of greenhouse gases.

*"A lot of controversy at the moment... whether or not global warming is actually caused by human activity or whether there's a counter argument it's actually caused by solar flares and things like that... there seems to be a lot of completely opposing views"*  
Male 4, Professionals Group

There was also confusion between climate change and holes in the ozone layer. Consistent with other recent studies (Anable et al.,

2006; Randles and Mander, 2009), whilst general awareness of climate change was quite high, with almost all the participants being familiar with the terms 'climate change' and 'greenhouse gases', in many cases they did not have a strong understanding of either the causes of climate change or the role that humans, including themselves, are having on the levels of GHGs being released into the atmosphere.

When asked how their lifestyle impacted on climate change, flying was the third most common response (Table 1). After discussing the items on their lists, participants were then asked to make a list of any things they did to reduce their impact on climate change. Many of the participants said that they did these things as much for financial reasons as environmental reasons. Although flying was the third most acknowledged impact on climate change, not one participant mentioned that they do anything to address this in terms of flying less or using alternative transport modes. The other contributions, which related to home life rather than holidays, were all to a certain extent countered (Table 1). The Low-Cost Hypothesis (Diekmann and Preisendörfer, 2003) suggests that environmental concern influences behaviour primarily in situations connected with low cost and little inconvenience for individuals. It is, therefore, unsurprising that the participants in this study report high levels of recycling activity (considered a low-cost and low-inconvenience domain) but do not report any reductions in their air travel (considered a high-cost and high-inconvenience domain).

In the discussion on holidays and climate change, travel to and from the destination was identified as having the biggest impact on climate change, with particular reference made to flying. However, the most common view expressed in the Retired Group was that their holidays do not have any impact on global climate change. They acknowledged that air travel does produce GHG emissions, but considered the impacts of their own individual actions to be inconsequential and thus a negligible effect on climate change.

### 4.2. Climate change and holiday travel decision-making

The five most important factors considered by participants when planning their last overseas holiday were:

1. Price/cost
2. Weather
3. Family and friends
4. Minimal travel time
5. Activities

In all the groups, price/cost (except the Retired Group) and minimising travel time were important, which reflects the traditional transport geography analysis (Davidov et al., 2006). In total, across the four groups, more than thirty different factors were mentioned as important elements considered when planning holidays. Even though climate change was clearly the main topic of discussion, not one of the participants identified climate change, or even environmental concerns in general, as a factor they consider when

**Table 1**

Top five contributions to climate change and mitigation measures identified by participants.

Contributions to climate change	Mitigation measures
1. Car driving	Walking or cycling
2. Electrical appliances in home	Minimising electricity leakage
3. Flying	
4. Heating home	Minimising electricity leakage
5. Consumption/disposal of waste	Recycling
	Do not use plastic bags

making decisions about their holidays. In a focus group context there is potential for group bias, however, the consistency of this finding across all four groups suggests group bias did not play a role. This questions whether climate change is conceptually linked to tourism at all. One of the dominant psychological models used in the environment and behaviour field is that of the Theory of Planned Behaviour (Ajzen, 1991). In this model attitudes need to be specific to the behaviour in question to bring about affect. This would appear not to be the case and it is suggested that climate change is not in the attitudinal set of tourism decisions for many people. This questions studies that suggest people are prepared to modify their flying behaviour in response to climate change.

As climate change was not mentioned in the previous discussion, each group was specifically asked whether climate change considerations featured in their thoughts and decisions when they planned their holidays. All but two of the participants said that they did not think about climate change at all even though flying had been widely acknowledged as contributing to climate change earlier in the focus groups.

*"I don't think about it at all... to be honest I never care"*  
Male 5, Student Group

*"I might mention it or I might think about it or joke about it, but really when it comes down to it if I am doing things that are good for the environment like not flying too often its primarily because of the cost basically... I could dress it up as being about climate change but it's the fact that I can't afford flights that are particularly damaging to the environment rather than anything else"*  
Male 2, Student Group

*"I think people are just not aware of it, only people who are active in the care of animals and the trees... to be honest it doesn't enter my thoughts at all"*  
Female 2, Family Group

*"I don't find that important for a holiday... I think with the flights they've made them so cheap now that would just override any climate change things"*  
Male 1, Family Group

*"I have never ever considered climate change with regard to a holiday"*  
Male 6, Retired Group

Two participants, both females in their 20s, said that climate change considerations were in the back of their mind when planning their holidays. Both participants had used carbon offsetting schemes, but neither on a regular basis. They also stated that climate change considerations did not alter their holiday decisions in any additional way.

*"I feel a bit guilty about all that and sometimes I do those extra payments but I would still go"*  
Female 2, Student Group

Another acknowledges considering climate change when planning day trips in the UK but not overseas holidays.

*"It is in the back of my mind, not particularly so much when I take the odd holiday abroad, but it certainly is on day trips. I feel by using my car I am actually contributing to global warming"*  
Male 1, Professionals Group

A number of spontaneous justifications for not thinking about climate change when planning holidays were mentioned in the focus groups and several participants were keen to defend their decisions to fly on a regular basis. Of even more concern, perhaps, was the fact that a number of younger participants in both the Student and Professionals Groups expressed a view that climate change

was actually making them travel more. There was a belief that they should travel as much as possible now, while flights are relatively cheap, and before travel is possibly restricted or made more difficult in the future due to climate change concerns.

*"There is more in the media and it does make me think. But it probably makes me think I should travel more now because I might not have the opportunity... in twenty years you just won't be able to get to some of the places that are really accessible now"*  
Female 6, Professionals Group

It is therefore evident that some links are made between tourism and climate change but there is much confusion and little impact on behaviour. The data suggest an information deficit. From this, traditional communication models would indicate scope for awareness raising to bring about behavioural changes. However, such an approach is questioned by Randles and Mander (2009) who argue that information campaigns alone are unlikely to bring about change due to the social embeddedness of practice. This is evident in the participants' habitual choice of flying for overseas holidays. The following section develops this aspect through an exploration of the barriers to behavioural change.

## 5. Barriers to behavioural change

The final part of the focus group revolved around a number of questions aimed at generating discussion on potential ways that holiday and travel behaviour might change in favour of less carbon-intensive tourism practices. Outlined below are some, but not all, of the barriers identified from this research.

### 5.1. Dismissal of alternative transport modes

Strong preferences for air travel over alternative travel modes were expressed in all four groups. Flying was considered the only viable option for most holiday destinations and illustrates the extent to which participants were 'locked-in' to flying (Randles and Mander, 2009). Trains were dismissed as being too slow and too expensive. France was identified as one of the few overseas holiday destinations that could be reached by train or ferry. In discussions about other holiday destinations, participants said they would only consider flying. Even for holidays within the UK, a number of participants said that they prefer to fly, rather than drive or take the train, confirming a view that trains cannot compete with planes in terms of price or travel time. This criticism of alternative modes reflects the representation that public transport is poor and needs improving in the UK (Dickinson et al., 2009), as the quotes below illustrate.

*"I did manage to take a train on my previous holiday because that was Paris. So I presume that I saved a little bit compared to flying but in general, like everybody says, it's difficult to avoid flying when you want to go on holiday"*  
Male 3, Student Group

*"It's a problem being on an island here, the quickest way to get somewhere is to fly basically"*  
Male 1, Student Group

*"It's cheaper to fly than it is to drive or take the train... and so much quicker"*  
Female 1, Family Group

*"If there was some investment in the infrastructure of the travel routes, for example in Japan you get on these bullet trains that run on time and obviously they're carrying a lot more people for the fuel that they use but in England especially there is no investment in that kind of thing, so I don't think we look far enough to the future in this*



*country, it's all very shortterm... if the public transport system had a better infrastructure then we might all jump on a speed train to Edinburgh as opposed to sitting on a plane or driving"*

Male 3, Professionals Group

The dismissal of alternative transport modes can be conceived as either a structural barrier, in the sense that flying is perhaps the only realistic option to reach long-haul holiday destinations, or a perceived behavioural control barrier (Ajzen, 1991) in that an individual perceives flying as the only option open to them and therefore precludes all other transport options. The extent to which this is a structural or perceived barrier will depend to a great extent on the distance to the destination. This can also be interpreted in a social practices perspective as an interaction with the resources available where much international tourism is institutionally structured around flying. To increase the availability of different transport modes, tourists could choose holiday destinations closer to home. However, the participants were resistant to changing their holiday plans for climate change reasons.

Many participants also seemed to have an affinity with low-cost airlines. There was a widespread view that they have opened up travel to the masses, making overseas holidays accessible and affordable for many. This perception is supported by Nilsson (2009, p. 126), who states that *"To passengers, low-cost carriers have reduced fares and improved opportunities to travel"*. Almost all the participants in the Student, Family and Professionals Groups claimed that the advent of low-cost airlines had enabled them to take more overseas holidays.

*"They give accessibility to people to travel at an affordable cost. I think back years ago when I was a kid, we never thought of going abroad because our family could never afford that, and suddenly everyone can get on a plane and go somewhere"*

Female 5, Family Group

*"I didn't get on a plane until I was sixteen, and I think in the last twelve years I probably do at least ten journeys on a plane a year now"*

Female 6, Professionals Group

The repeated use of air travel as the preferred transport mode for holiday taking could be considered as habitual behaviour for these participants. Studies show that frequent past behaviour can have a significant effect on future behaviour (Ouellette and Wood, 1998). The frequency with which the participants of these three groups are using low-cost air travel may well act as a barrier to the adoption, or even consideration, of alternative transport modes in the future. In the Retired Group, low-cost airlines were not used that frequently, although the participants still flew regularly. The participants in this group preferred what they considered to be the more sociable flight times and comfort levels of scheduled airlines. As this group was also the most affluent, the cost of holidays was much less of an issue for them. Despite preferring scheduled airlines, participants in this group still had a very favourable view of low-cost airlines, as they believed low-cost airlines had introduced necessary competition to the marketplace and were largely responsible for bringing down the cost of flying in general.

Similar positive views of low-cost air travel were also exhibited by the participants in a study by Shaw and Thomas (2006). Despite the negative climate change and environmental consequences associated with flying, it appears that airlines are held in a positive light by many of the focus group participants who took part in this research.

## 5.2. Importance of holidays

The second barrier comes in the form of the value or importance that many of the participants placed on holidays. There

was a strong reluctance across all groups to consider changing their tourism behaviour. When the possibility of future quotas limiting the number of flights individuals could take in a year was discussed, there was universal disapproval. Not one participant thought that an enforced restriction on flights for climate change reasons was acceptable. The loss of freedom of choice was identified as a reason why governments should not restrict their ability to fly.

*"I'd feel pretty restricted about personal freedom and things like that, and I'm quite sure there are plenty of other ways for a government to do more about climate change"*

Female 2, Student Group

*"Whatever happened to freedom of the individual, and freedom of choice, and all the things that we're supposed to hold dear"*

Male 8, Retired Group

Becken (2007) also found that the value of freedom to travel is firmly established in the minds of many tourists and that restricting this travel is considered unacceptable. The possibility of higher taxes on flights to reflect environmental costs were also met with disapproval although viewed slightly more favourably than quotas, especially by those participants who thought they would be able to afford them and hence could continue their travel behaviour. One participant in the Professionals Group mentioned that an increase in taxes might result in people taking fewer holidays of a longer duration. This idea was scorned upon by the rest of the group who still considered this to be an infringement on their personal freedom. As Adey et al. (2007, p. 785) suggest *"it is impossible to imagine life without flight"*.

Participants gave a number of spontaneous justifications for their travel behaviour. The cultural and social benefits of travel, to individuals and society, were put forward as a reason to continue with travel. As were the economic benefits tourism brings to poorer countries.

*"I think that travel's important for people to understand each other's culture... so many social reasons why we need to travel and experience different parts of the world"*

Female 3, Student Group

*"We're planning on going to Thailand, to places that were affected by the tsunami on Boxing Day, and you know the tourism industry is something that will help re-build... in some places where there was poverty tourism brings wealth"*

Male 3, Professionals Group

In the Student Group and the Family Group the discussion moved onto conversations about 'dream' holidays and how it was their financial situations rather than climate change concerns which was preventing them from travelling even more.

*"If I could fly to Kenya I would and it would be great. I probably wouldn't really take a moment to think about climate change, I'd be like yeah I'm going to Kenya!"*

Female 3, Student Group

*"I'm sure that I wouldn't think of climate change if I got the chance to go to Australia. I would not think on no better not... I would love to go"*

Female 3, Family Group

*"I think there's no such thing as a holiday of a lifetime anymore. I think everyone's so well travelled that people are looking for that new place and I think it's making places that are fairly remote very attractive, but they haven't got the infrastructure to suit that, so it's being impacted purely for our own pleasure. Finding that new place that is untouched by tourism"*

Female 2, Professionals Group

This discussion reflects the discourse of aspirational lifestyles associated with flying (Thurlow and Jaworski, 2006).

### 5.3. Responsibility lies with others

The third barrier relates to the belief amongst participants that responsibility for climate change lies with others, and is consistent with the findings of Stoll-Kleemann et al. (2001) and Lorenzoni et al. (2007). In all four groups the major contributors to climate change were considered to be governments, businesses and other countries. Very little responsibility was seen to lie with individuals in terms of personal contributions to climate change. In addition, when it came to tackling climate change, responsibility was again seen to belong to collective bodies rather than individuals. Personal responsibility (often referred to as personal norms or moral norms in the socio-psychological behaviour literature) is considered a key variable in implementing pro-environmental behaviour (Stern et al., 1999). The lack of personal responsibility displayed by the focus group participants is clearly a barrier to adjusting their holiday travel behaviour in favour of lower carbon options.

The Government featured prominently throughout all four focus groups. There was a common view that the UK Government should practice what they preach. Politicians should lead by example, and they can not expect the general public to take climate change seriously when they have big cars, take lots of flights and own second homes.

*"When you look at the Government and they say they're putting taxes on this for greener that and the other, and they're still using cars and still flying places so they're not concerned"*

Female 1, Family Group

*"If you look at a government collectively and what they could do to help a country as a whole be more carbon neutral then I think there's an awful lot more governments could do, in the way they trade, the way they act in terms of MPs and second homes"*

Male 2, Professionals Group

There was also considerable scepticism about how serious the UK Government were about tackling the causes of climate change, and annoyance that so called green taxes were not being used directly to combat the problem. There were doubts expressed as to whether the Government really wants people to fly less because airport capacity is being expanded.

*"It's a means of raising taxation. I fully appreciate the impact to the environment and everything else but I think there's an element of how much money can we make out of this on the back of climate change"*

Male 2, Professionals Group

Participants also believed that many companies were falsely marketing green credentials. Big business was widely considered to be more responsible for climate change than consumers. Businesses were not doing their fair share in addressing climate change and were passing on responsibility to consumers. Carbon offsetting schemes were viewed unfavourably because they were deemed to place the emphasis on the general public rather than on the airlines 'who are actually adding to the problem'.

*"Big companies, they've created this society, we've had to fit around what they've put out. They've given us cars, they've given us cheap flights, they've given us the heating etcetera"*

Male 1, Family Group

In the Family and Retired Groups in particular, there was a feeling that the actions of one person cannot make a difference.

*"If we don't fly somebody else will"*

Male 7, Retired Group

*"As an individual we can do nothing, it doesn't come on the Richter Scale, never... I mean there's a thousand million in India and more than one and a half thousand million in China, we don't make a mark"*

Male 9, Retired Group

*"I think the human brain, to be quite honest, cannot possibly envisage what is really happening in outer space and time. We're insects in this enormous universe and I think as individuals we'll have very little effect on what is going to happen in the next thousand years"*

Male 7, Retired Group

These participants were exhibiting a strong external locus of control (Cleveland et al., 2005), whereby they considered that any efforts they made as individuals to reduce their carbon emissions would be insignificant in the global context. This sense of 'powerlessness' is viewed by Stoll-Kleemann et al. (2001) as a denial mechanism for accepting personal responsibility. Social dilemmas, the conflict between self-interest and the common good, were evident across all four groups. Participants questioned changing their holiday behaviour when other people were not prepared to change theirs, using the lack of action by others to justify inactivity (Anable et al., 2006; Randles and Mander, 2009; Shaw and Thomas, 2006). These comments referred to the behaviour of other people and the behaviour of other countries. Tackling climate change was seen as a very 'Western' or 'European' thing with America, China, India, Eastern Europe and developing countries all being criticised for not doing enough with regards climate change.

*"That's the difficulty if it's just one country seen to do X and Y to make a difference... there are still a lot of countries who are far behind us and I think it would seem a bit unfair if we have things imposed on us where others won't"*

Female 6, Professionals Group

*"You've only got to drive past a power station in Eastern Europe, or dare I say Spain and Italy, to realise if they're not going to play why should we"*

Male 3, Retired Group

*"That was aptly put by my wife. She said when they turn the lights off in Las Vegas then she'll believe it. And as they haven't done, she doesn't believe it"*

Male 9, Retired Group

## 6. Conclusions and implications for policy

Whilst the participants in these focus groups had a basic understanding of climate change, they generally lacked a more in-depth knowledge. Nonetheless, flying was widely identified as a major cause of climate change. When it comes to planning holidays, climate change does not feature in the thoughts or decisions of many of the participants even though many of them acknowledged air travel as a cause of climate change. The association between holidays and climate change, in the minds of the participants, is either not made when planning holidays or is somehow suppressed.

The research identified three major barriers to behavioural change when it comes to taking holidays, all of which present significant obstacles in terms of reducing the impact of international travel on climate change. The first barrier – dismissal of alternative transport modes to air travel – can be seen as a structural or psychological barrier. For many holiday destinations, access by air travel is the only realistic option. Therefore, tourists may consider that they have no choice but to continue flying when they go on

holiday. However, the impacts of holidays on climate change can still be reduced, even when air travel is involved, if tourists take fewer holidays of longer duration (hence fewer flights), and travel shorter distances to the destination. If UK tourists were to take more holidays in the UK and less overseas, or even take their holidays in Western Europe, this would open up a number of transport options, such as train and coach, which have less impact on climate change.

However, as the second barrier illustrates, the participants in these focus groups were very much against making changes to their travel behaviour. The participants attached a very high importance and value to their holidays and were reluctant to consider adapting them for climate change reasons. The third barrier – responsibility lies with others – may help explain this unwillingness to change travel behaviour. The participants were not prepared to accept personal responsibility for the impacts their holidays have on climate change. Instead, they put forward a number of denial mechanisms for why responsibility lies with governments, businesses and other countries, rather than with the individual. The impacts of an individual on climate change were argued as being insignificant in the context of a global problem, and that changing individual travel behaviour would make no difference.

Whilst previous studies suggest an attitude-behaviour gap in relation to environmental issues this research would suggest that, in the case of holidays and international travel, there is an awareness-attitude gap rather than an attitude-behaviour gap. The participants, whilst not necessarily having an in-depth knowledge, were aware that air travel has a significant detrimental impact on climate change. However, this awareness did not appear to translate into pro-environmental attitudes with regards holidays and climate change. In this respect, attitudes and behaviour were consistent in that neither were pro-environmental. It may be the case that awareness is not leading to correlating attitudes, or it may be that behaviour is having a strong influence over attitudes in this holiday situation. Cognitive Dissonance Theory (Festinger, 1957) suggests that where there are inconsistencies between an individual's attitudes and behaviour resulting in internal feelings of discomfort, the individual will adjust either their attitudes or behaviour to reduce this discrepancy. As the participants were reluctant to change their travel behaviour, it is possible they may have aligned their attitudes towards holidays and climate change to be consistent with their behaviour. A similar explanation is offered by Self-Perception Theory (Bem, 1967), which suggests that in certain situations attitudes are inferred on the basis of observations about one's own behaviour. This links to the suggestion that air travel has become embedded in contemporary lifestyles and, while people are aware of the climate change issues, they are unwilling to give up their lifestyle. Therefore, people employ a variety of denial mechanisms (Stoll-Kleemann et al., 2001) to justify continued flights.

While it is not possible to make generalisations from this type of research, a number of policy relevant suggestions can be made. Further research needs to be conducted to investigate why environmental awareness does not translate to pro-environmental attitudes and pro-environmental behaviour when it comes to holidays and climate change. Whilst it may come as no surprise that tourists are reluctant to make significant changes to their lifestyles, especially when such strong social benefits are associated with holidays, finding ways to induce behavioural change is essential for the sustained long-term future of the tourism industry. Information regarding the scale of climate change impacts associated with travel and holidays needs to be presented in a way that is accessible and relevant to the general public. Fiscal measures to increase the costs of flights are unpopular and argued to be inequitable. However, given the bulk of the problem can be attributed to the more affluent taking more frequent flights (Adey et al., 2007), this deserves further exploration. There are significant trust concerns

regarding government and industry action. This is a considerable barrier and it is paramount that government sends out clear messages about its own activities. In addition, the current UK Government policy regarding air travel could be considered somewhat contradictory. The Air Transport White Paper Progress Report (Department for Transport, 2006b) states that the Government is committed to ensuring that aviation reflects the full costs of its climate change emissions and reiterates support for the inclusion of aviation in the EU Emissions Trading Scheme. At the same time, the report also stresses that international aviation is critical for a successful economy and justifies decisions to expand future airport capacity in the UK. Government forecasts for air passenger demand at UK airports, which include adjustments for passengers paying increased air fares in the future to reflect climate change costs, predict that annual passenger numbers will increase from 228 million in 2005 to 490 million in 2030 (Department for Transport, 2006b). It is possible that the absence of a clear policy direction with regards discouraging the increasing use of air travel could be a factor impacting on reluctance to change tourism behaviour and is thus an area justifying further research. Finally, alternatives to flying are not in the reference frame for international holidays, nor are they associated with aspirational lifestyles. More work is needed to explore slow/low carbon tourism transport practices to establish how these might be more strongly embraced.

## References

- Adey, P., Budd, L., Hubbard, P., 2007. Flying lessons: exploring the social and cultural geographies of global air travel. *Progress in Human Geography* 31 (6), 773–791.
- Ajzen, I., 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 50, 179–211.
- Anable, J., Lane, B., Kelay, T., 2006. An evidence base review of public attitudes to climate change and transport behaviour. Department for Transport.
- Barr, S., 2004. Are we all environmentalists now? Rhetoric and reality in environmental action. *Geoforum* 35, 231–249.
- Barr, S., Coles, T., Shaw, G., Prillwitz, J., 2008. A holiday is a holiday: practicing sustainability, home and away. In: Royal Geographical Society Annual Conference, August 2008, London.
- Becken, S., 2007. Tourists' perception of international air travel's impact on the global climate and potential climate change policies. *Journal of Sustainable Tourism* 15 (4), 351–368.
- Bem, D.J., 1967. Self-perception: an alternative interpretation of cognitive dissonance phenomena. *Psychological Review* 74 (3), 183–200.
- Bickerstaff, K., Simmons, P., Pidgeon, N., 2008. Constructing responsibilities for risk: negotiating citizen-state relationships. *Environment and Planning A* 40, 1312–1330.
- Blake, J., 1999. Overcoming the value-action gap in environmental policy: tensions between national policy and local experience. *Local Environment* 4 (3), 257–278.
- Bloor, M., Frankland, J., Thomas, M., Robson, K., 2001. *Focus Groups in Social Research*. Sage, London.
- Boyatzis, R.E., 1998. *Transforming qualitative information: thematic analysis and code development*. Sage, Thousand Oaks, CA.
- Bryman, A., 2008. *Social Research Methods*, third ed. Oxford University Press, Oxford.
- Cleveland, M., Kalamas, M., Laroche, M., 2005. Shades of green: linking environmental locus of control and pro-environmental behaviours. *Journal of Consumer Marketing* 22 (4), 198–212.
- Davidov, D., Yang-Hansen, K., Gustafsson, J.E., Schmidt, P., Bamberg, S., 2006. Does money matter? A theory-driven growth mixture model to explain travel-mode choice with experimental data. *Methodology* 2 (3), 124–134.
- Department for Transport, 2002. Attitudes to air travel. <<http://www.dft.gov.uk/pgr/statistics/datatablespublications/trsnstattsatt/earlierreports/attitudesair>> (accessed 28.01.2008).
- Department for Transport, 2006a. Public experiences of and attitudes to air travel. <<http://www.dft.gov.uk/pgr/statistics/datatablespublications/trsnstattsatt/publicexperiencesofandattitu1824>> (accessed 28.01.2008).
- Department for Transport, 2006b. Air transport white paper progress report. <<http://www.dft.gov.uk/about/strategy/whitepapers/air/aviationprogressreportsection/aviationprogressreport>> (accessed 25.01.2008).
- Department for Transport, 2008. Public experiences of and attitudes to air travel. <<http://www.dft.gov.uk/pgr/statistics/datatablespublications/trsnstattsatt/airtravels>> (accessed 12.02.2009).
- Dickinson, J.E., Robbins, D., Fletcher, J., 2009. Representation of transport: a rural destination analysis. *Annals of Tourism Research* 36, 103–123.
- Diekmann, A., Preisendörfer, P., 2003. Green and greenback: the behavioural effects of environmental attitudes in low-cost and high-cost situations. *Rationality and Society* 15 (4), 441–472.

- Dubois, G., Ceron, J.-P., 2006. Tourism/leisure greenhouse gas emissions forecasts for 2050: factors for change in France. *Journal of Sustainable Tourism* 14 (2), 172–191.
- Festinger, L., 1957. *A Theory of Cognitive Dissonance*. Stanford University Press, Stanford, CA.
- Gössling, S., 2002. Global environmental consequences of tourism. *Global Environmental Change* 12 (4), 283–302.
- Gössling, S., Peeters, P., 2007. 'It does not harm the environment!' an analysis of industry discourses on tourism, air travel and the environment. *Journal of Sustainable Tourism* 15 (4), 402–417.
- Gössling, S., Bredberg, M., Randow, A., Sandstrom, E., Svensson, P., 2006. Tourist perceptions of climate change: a study of international tourists in Zanzibar. *Current Issues in Tourism* 9 (4/5), 419–435.
- Gössling, S., Broderick, J., Upham, P., Ceron, J.-P., Dubois, G., Peeters, P., Strasdas, W., 2007. Voluntary carbon offsetting schemes for aviation: efficiency, credibility and sustainable tourism. *Journal of Sustainable Tourism* 15 (3), 223–248.
- Halpern, D., Bates, C., Mulgan, G., Aldridge, S., Beales, G., Heathfield, A., 2004. Personal responsibility and changing behaviour: the state of knowledge and its implications for public policy. Cabinet Office, Prime Minister's Strategy Unit.
- Høyer, K., 2000. Sustainable tourism or sustainable mobility? The Norwegian case. *Journal of Sustainable Tourism* 8 (2), 147–160.
- Hunter, C., Shaw, J., 2007. The ecological footprint as a key indicator of sustainable tourism. *Tourism Management* 28 (1), 46–57.
- Jackson, T., 2005. Motivating sustainable consumption: a review of evidence on consumer behaviour and behavioural change. A Report to the Sustainable Development Research Network.
- Kollmuss, A., Agyeman, J., 2002. Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behaviour? *Environmental Education Research* 8 (3), 239–260.
- Krueger, R.A., Casey, M.A., 2000. *Focus Groups: A Practical Guide for Applied Research*. Sage, Thousand Oaks, CA.
- Lorenzoni, I., Pidgeon, N.F., 2006. Public views on climate change: European and USA perspectives. *Climatic Change* 77, 73–95.
- Lorenzoni, I., Nicholson-Cole, S., Whitmarsh, L., 2007. Barriers perceived to engaging with climate change among the UK public and their policy implications. *Global Environmental Change* 17, 445–459.
- Nickerson, R.S., 2003. *Psychology and Environmental Change*. Lawrence Erlbaum Associates Inc., Mahwah, NJ.
- Nilsson, J.H., 2009. Low-cost aviation. In: Gössling, S., Upham, P. (Eds.), *Climate Change and Aviation: Issues, Challenges and Solutions*. Earthscan, London, pp. 113–129.
- Olsthoorn, X., 2001. Carbon dioxide emissions from international aviation: 1950–2050. *Journal of Air Transport Management* 7, 87–93.
- Ouellette, J.A., Wood, W., 1998. Habit and intention in everyday life: the multiple processes by which past behaviour predicts future behaviour. *Psychological Bulletin* 124 (1), 54–74.
- Peeters, P., Gössling, S., Becken, S., 2006. Innovation towards tourism sustainability: climate change and aviation. *International Journal of Innovation and Sustainable Development* 1 (3), 184–200.
- Penner, J.E., Lister, D.H., Griggs, D.J., Dokken, D.J., McFarland, M., (Eds.), 1999. Summary for policymakers: aviation and the global atmosphere. A special report of IPCC working groups I and III. <<http://www.ipcc.ch/pdf/special-reports/spm/av-en.pdf>> (accessed 5.12.2007).
- Randles, S., Mander, S., 2009. Aviation, consumption and the climate change debate: 'are you going to tell me off for flying?'. *Technology Analysis and Strategic Management* 21 (1), 93–113.
- Ryan, G.W., Bernard, H.R., 2003. Techniques to identify themes. *Field Methods* 15 (1), 85–109.
- Shaw, S., Thomas, C., 2006. Discussion note: social and cultural dimensions of air travel demand: hyper-mobility in the UK? *Journal of Sustainable Tourism* 14 (2), 209–215.
- Spaargaren, G., van Vliet, B.J.M., 2000. Lifestyles, consumption and the environment: the ecological modernisation of domestic consumption. *Environmental Politics* 9 (1), 50–77.
- Stern, P.C., Dietz, T., Abel, T., Guagnano, G.A., Kalof, L., 1999. A value-belief-norm theory of support for social movements: the case of environmentalism. *Human Ecology Review* 6 (2), 81–97.
- Stoll-Kleemann, S., O'Riordan, T., Jaeger, C.C., 2001. The psychology of denial concerning climate mitigation measures: evidence from Swiss focus groups. *Global Environmental Change* 11 (2), 107–117.
- Thurlow, C., Jaworski, A., 2006. The alchemy of the upwardly mobile: symbolic capital and the stylization of elites in frequent-flyer programmes. *Discourse and Society* 17 (1), 99–135.
- Tol, R.S.J., 2007. The impact of a carbon tax on international tourism. *Transportation Research Part D* 12, 129–142.
- United Nations World Tourism Organization, 2007. Davos declaration: climate change and tourism responding to global challenges. <<http://www.unwto.org/pdf/pr071046.pdf>> (accessed 14.11.2007).
- United Nations World Tourism Organization, 2008. Tourism highlights 2008 edition. <[http://www.unwto.org/facts/eng/pdf/highlights/UNWTO\\_Highlights\\_08\\_en\\_LR.pdf](http://www.unwto.org/facts/eng/pdf/highlights/UNWTO_Highlights_08_en_LR.pdf)> (accessed 12.02.2009).