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Climate change, discretionary air travel and the 'flyers' dilemma'

Abstract: The *'flyers' dilemma'* describes the tension that now exists between the personal benefits of tourism and the climate concerns associated with high levels of personal aeromobility. This article presents the first international comparative analysis of attitudes towards climate change and discretionary air travel, providing insights into areas of convergence and divergence across three European societies - Norway, the United Kingdom and Germany. Employing a critical interpretive approach and drawing upon 48 indepth semi-structured interviews, we document evidence of widespread neglect of the *'flyers' dilemma'*. Our comparative analysis confirms that although current discretionary air travel practices are deeply embedded and resistant to change, attitudes towards the climate crisis and barriers to behaviour change offer points of important contrast between different societies. Efforts to reformulate excessive discretionary air travel in response to accelerating global climate change must accommodate the unique issues and contrasting perspectives that exist in sections of these societies.

Keywords: Climate change, discretionary air travel, *'flyers' dilemma'*, attitudes, behavior change.

Introduction

Writing in *The Guardian* on 12 March 2009, George Monbiot calls for an end to use of the term *'climate change'*, arguing that *'climate breakdown'* better reflects the order of consequences facing life on earth. He contends that policymakers have fallen far behind the scientific community, which not only recognizes global climate change as an

accepted reality, but that global warming is already catastrophic (IPCC, 2007). Demands for carbon constraints and mitigation measures to address anthropogenic climate change are now embracing all forms of contemporary consumption (Monbiot, 2007). One significant such cause which is yet to be subject to effective mitigation is tourism transportation, most notably aviation (Smith and Rodger, 2009; Scott, Hall and Gössling, 2012). An expanding body of literature addresses the significant contribution of aviation to climate change (Becken, 2010; Peeters and Dubois, 2010), as well as the socially embedded (Randles and Mander, 2009a) and institutionalized (Gössling and Nilsson, 2010) nature of contemporary aeromobility. The academic literature highlights the urgency of mitigating aviation emissions (Gössling and Hall, 2006; Gössling and Upham, 2009; Weaver, 2011; Buckley, 2012). It is increasingly accepted that while the experiences accessed through air travel may offer psychological benefits to the individual leisure traveler (Clark and Calleja, 2008; Elliott, 1994), the related transport contributes significantly to the negative consequences of global climate change.

Frequent tourist air travel, or '*binge flying*' (Hill, 2007; Burns and Bibbing, 2009), on the part of those who enjoy high personal aeromobility is increasingly being cast in a critical light, and indeed is now being questioned in consumer discourses (Urry, 2010; Cohen, Higham and Cavaliere, 2011). The critique of frequent tourist air travel is echoed in the popular press. Rosenthal (2010) also writing in *The Guardian* observes the tension that exists between the perceived personal benefits of deeply embedded air travel practices and the collective climate change consequences of such practices. This is an escalating tension that she labels the '*flyers' dilemma*'. The '*flyers' dilemma*' has significant tourism planning and management implications. Within the European Union (EU) a legally binding target for emission reductions (20% of 1990 base year emissions levels by 2020) now exists although there have been recent calls (e.g., France, Germany and the United Kingdom) for the EU to adopt a 30% reduction target. Indeed Germany and Sweden have independently adopted 40% reduction goals by 2020 (Scott *et al.*, 2012). Evidently, as long as the European Union targets 20% reductions (or upwards) in CO₂ by 2020 (Gössling 2009), the insatiable appetite for air travel that exists within some sections of the traveling public in Europe will be drawn into question.

This article critically explores consumer reactions and responses to the *'flyers' dilemma'*, informing in doing so tourism policy, planning and management approaches that may be available to address the climate change mitigation conundrum. While studies in this field have hitherto been national in focus (Ryley and Davison, 2008; Randles and Mander, 2009a; Hares, Dickinson, and Wilkes 2010; Higham and Cohen, 2011; Dickinson, Robbins, Filimonau, Hares and Mika 2013), here we document a critical analysis of consumer attitudes towards anthropogenic climate change and frequent tourist air travel in sections of three different European societies; Norway, the United Kingdom and Germany. We present empirical material that explores consumer awareness of and attitudes towards climate change, and personal behavioral responses to the *'flyers' dilemma'*. While highlighting elements of convergence and divergence in terms of attitudes and responses to anthropogenic climate change, we also set out to identify the extent to which manifest changes in individual air travel practices and reduced levels of aeromobility may be occurring in response to the *'flyers' dilemma'*. Our work here aims to progress understanding of individual reactions to responsibility in addressing climate change as they differ across socio-cultural contexts, an area that Buckley (2012) has identified as a future research priority in sustainable tourism, and one of practical interest to any regional and/or global efforts to reformulate public flying behaviour in light of climate change.

Climate change and the *'flyers' dilemma'*

Not only is tourism an oil intensive industry (Becken 2010), it is now quite justifiably seen to have an increasingly rapacious appetite for consuming energy and producing CO₂ (Gössling and Peeters 2007; Gössling, Scott, Hall, Ceron and Dubois 2012). Tourism currently contributes 3.5% of total global CO₂ emissions (Smith and Rodger 2009). If viewed in terms of national greenhouse gas (GHG) emissions, tourism would be the fifth largest behind China, USA, India and Russia (Pang, McKercher and Prideaux 2012). Aviation consumes 243 million tonnes of fuel per annum; 6.3% of world refinery production (Becken 2010), and is estimated to contribute 40% of tourism transport

emissions (Gössling 2009). It accounted for approximately “700 Mt of CO₂ in 2004, 2.6 per cent of total anthropogenic CO₂ emission in that year, or 1.3-14.0% of radiative forcing (90 per cent likelihood range)” (Scott *et al.* 2012:124). Most significantly the growth in civil aviation over the last half century is forecast to continue at the rate of 5.3% per annum over the next decade (Gössling and Peeters 2007). Given the longstanding impasse in accounting for international aviation emissions (Becken 2010; Smith and Rodger 2009), combined with existing carbon constraints and mitigation targets aimed at scaling back emissions in other industries, aviation is projected to emit in the range of 15–40% of total global CO₂ by 2050 (Dubois and Ceron 2006; Gössling and Peeters 2007).

Calls for the tourism industry to be managed onto a sustainable emissions path (Becken 2007; Gössling 2009; Hares *et al.* 2010) are increasing and initial responses to those calls are evident. The European Union had moved to charge airlines for their emissions with the inclusion of aviation in the EU’s emissions trading system (ETS) from the start of 2012 (Scott *et al.* 2012), a move that met bitter resistance from many major airlines. In a significant step towards a low carbon European economy (OECD 2010), the ETS was set against 2011 emissions data, with major polluters provided with allowances to emit GHG to the 2011 benchmark in a trading scheme that is then scaled back over time. Such a scheme is expected to impact levels of personal aeromobility (Blanc and Winchester 2012) and wider tourism industry sectors (Dwyer, Forsyth, Spurr and Hoque 2012). Due to resistance from the US and China, however, the scheme is currently frozen and uncertainty surrounds whether it will be finally implemented in 2014 (EC 2013; Harvey 2012). In the meantime, the aviation industry continues to grow without restraint. The United Nations World Tourism Organization forecasts growth of 43 million international arrivals per annum (2010-2030) and 1.8 billion international tourist arrivals in 2030 (UNWTO 2012), a scale of international travel that we consider incompatible with carbon mitigation. Clearly, how moving to a sustainable emissions path will be achieved is a question that is as perplexing as it is urgent (Pang *et al.* 2012). This is particularly so in light of continuing national and regional boosterism strategies (Hall 2005), social networks that are evermore spatially ‘stretched out’ (Larsen, Urry, and Axhausen 2007;

Riley and Davison 2008) and the reproduction of mobility (Gössling and Nilsson, 2010). Equally challenging is the fact that future high growth in demand for air travel will come from ‘emerging economies’ both in Europe (Dickinson *et al.* 2013) and elsewhere (Voigt 2011).

Given current and projected aviation emissions growth rates it is evident that “...*technology and management will not be sufficient to achieve even modest absolute emission reductions*” (Gössling, Hall, Peeters and Scott 2010:119). This, according to Gössling *et al.* (2010), confirms that social and behavioral change is necessary to achieve climatically sustainable tourism. It is also accepted that mobility is not evenly distributed (Hall 2005), both between and within societies (McCabe 2005; Casey 2010). Most obvious is the distinction between people who live in industrialized and non-industrialized societies (Gössling and Nilsson 2010); the former enjoying high mobility at the expense of the latter who are less mobile and notably less well resourced to live with the consequences of global climate change (Monbiot 2007). However, wide disparities in mobility also exist *within* industrialized (and non-industrialized) societies (Gössling, Ceron, Dubois, and Hall 2010). Scott, Hall and Gössling (2012:107) observe that “(h)ighly mobile travelers (for both business and leisure) are likely to exceed annual emissions of 50t of CO₂ from air travel alone”, with highly aeromobile members of society undertaking up to 600 flights in a calendar year (Gössling *et al.* 2009; Gössling and Nilsson 2010). These points clearly highlight the need to examine the air travel practices of those who engage in high and unrestrained aeromobility.

A number of studies in particular nation states (e.g., in the UK, Sweden, Poland Australia and New Zealand) have focused on tourists’ perceptions of and attitudes towards air travel and climate change (*see* Becken 2004; Dickinson *et al.* 2013; Hares *et al.* 2010; Cohen and Higham 2011; Shaw and Thomas 2006). This body of work demonstrates that the ideal of complete freedom to travel is deeply entrenched in the minds of some sections of the traveling public (Becken 2007). Hares *et al.* (2010), in a study of air travel behavior in the United Kingdom, report a profound reluctance to compromise individual appetites for leisure travel. This reluctance was such that study participants “...*were not*

prepared to accept personal responsibility for the impacts their holidays have on climate change, (but rather) put forward a number of denial mechanisms for why responsibility lies with governments, businesses and other countries, rather than with the individual” (Hares *et al.* 2010:472). While some empirical evidence exists to suggest an increasing awareness of and attitudinal concerns for the *‘flyers’ dilemma’* (Hares *et al.* 2010; Higham and Cohen 2011), the next step – from attitudes to meaningful behavioral change to reduce levels of personal aeromobility- remains intractable (Randles and Mander 2009a). Entrenchment of the perceived freedom to travel through, for example, the growth of low cost airlines in the European Union (Casey 2010; see also Graham and Shaw 2008 for a review of the emergence of low-cost carriers in Europe) and the compulsive consumption of cheap air travel (Urry 2010) represents an imposing obstacle to necessary behavior changes.

The *‘flyers’ dilemma’* (Rosenthal 2010) raises important and timely questions (Pang *et al.*, 2012). While increasingly apparent in academic discourses and in the popular press, responses to the *‘flyers’s dilemma’* in the traveling public remain poorly theorized or understood. While Randles and Mander (2009a: 270) report “*a ‘tipping’ of popular discourse against flying for environmental and climate change concerns...*”, empirical support for this proposition remains limited and inconclusive. Miller, Rathouse, Scarles, Holmes and Tribe (2010) observe a continued reluctance in the UK traveling public to engage with sustainable tourism practices (*see also* Hares *et al.* 2010; Cohen and Higham 2011). Furthermore, those who give priority to environmental practices in their domestic lives are largely unable to translate those values to holiday decision making and sustainable travel practices (Barr, Shaw, Coles and Prillwitz 2010).

Such is the public appetite for the unconstrained consumption of tourism experiences that air travel is now being appraised by some in terms of *‘binge mobility’* (Urry 2010) and behavioral addiction (Rosenthal 2010; Cohen *et al.* 2011). The urgency of climate change mitigation (Smith and Rodger 2009), and high aeromobility as a socially embedded form of unconstrained contemporary consumption (Verbeek and Mommaas 2008), promote the need for empiricism to address public perceptions of climate change and responses to the

'flyers' dilemma'. In order to address this context, we set out to provide a deeper, widened, and empirical comparative understanding of the attitudes and behaviours of the traveling public with regards to climate change and discretionary air travel in three European national contexts.

Empirical study methods

This article reports on a program of empirical research that addresses climate change, discretionary air travel practices and responses to the *'flyers' dilemma'* in sections of three European societies, responding in doing so to calls for comparative analyses to inform our understanding of sustainable tourism (Buckley 2012). Our philosophical position as researchers was influenced by Tribe's (2009) call for research that challenges the neoliberal values of performativity, consumerism and profitability. This philosophical stance was influenced by the shared position of the researchers: we consider aviation CO₂ emissions to be a significant contributor to anthropogenic climate change that need to be mitigated through various social, political and technical avenues. We also see climate change and aeromobility as a site of social and environmental injustice that is and will increasingly impact the lives of people in different societies in ways that are unequal and unethical. Our shared view is that significant reductions in levels of discretionary air travel among consumers represents a critical part of the societal response to climate change. This shared position highlights the need for more critical and nuanced understandings of contemporary (unsustainable) tourist aeromobility to induce and inform the pathway to behavior change.

We adopted a critical interpretive research paradigm located within a relativist ontology (Denzin and Lincoln 2005). Our epistemological position was subjectivist. We considered our study participants to be "...*individuals whose opinions are valued, and valid*" (Sedgley *et al.* 2012:954). We followed the advice of Fontana and Frey (2005) and did not superimpose our world views on the study participants (Sedgley *et al.* 2012). While we were non-activist in our approach, our research was transformative (Pernecky

and Jamal 2010) insofar that asking the questions we did was an act of raising self-awareness on the part of the study participants, stimulating reflection upon the potential consequences of their discretionary air travel behaviors. These decisions were aligned with the aim to elicit deeply subjective personal perspectives on air travel behavior and climate change in a manner that allowed contemplation of issues and careful consideration of responses.

Our focus fell upon travelers in sections of three European societies; Norway, the United Kingdom and Germany, where tensions exist between global climate change and the conspicuous consumption of aeromobility (Burns and Bibbings 2009; Randles and Mander 2009a). The governments of all three have been actively engaged in discourses addressing the urgency of climate change mitigation (Gössling 2009; Hares *et al.* 2010; Høyer 2000). Specifically we set out to explore awareness of, attitudes towards, and personal behavioral responses to global climate change. While situated within general consideration of anthropogenic climate change in daily domestic life, we also set out to pay specific attention to the *'flyers' dilemma'*, given the strong negative discourse on frequent flying that now exists in sections of the public domain (Rosenthal 2010; Siegle 2005).

Extensive qualitative materials were generated through one-to-one open-ended personal interviews (Fontana and Frey 2005), an approach selected for the flexibility it offers in identifying and exploring issues in detail (Jennings 2001). This approach also overcomes the potential influence of group norms which inevitably arise in collective discussions (Patton 2002). The qualitative materials are derived from 48 semi-structured open-ended interviews conducted in Stavanger, Norway (June-July 2009), Bournemouth, United Kingdom (July 2009), and Berlin, Germany (September 2010). While the study societies were chosen because of their high levels of conspicuous aero-consumption and ambitious climate change mitigation goals, the locations where interviews were conducted were based on convenience. Participants were recruited using convenience and snowball sampling techniques whereby potential study participants were identified via recommendation in accordance with stratified selection criteria.

Our sample of interview participants was stratified insofar as we aimed to access a relatively equal gender distribution across a broad age range and varied vocations. Selection criteria required that participants were of minimum age 18 years, self-identified as Norwegian, British or German nationals, respectively, and willing to be interviewed face-to-face in English. Interviews were conducted at neutral sites, utilizing an interview schedule that was organized into three parts: 1) Awareness of and attitudes towards anthropogenic climate change, 2) Personal/domestic responses to climate change and 3) Changes in travel behavior, including personal responses to the '*flyers' dilemma*'. The nature of our investigation was to seek unique individual insights (Fontana and Frey 2005). As such the interview schedule served only as a guide; we sought to accommodate and explore avenues of discussion as they emerged in each interview, some of which were not initially recognized as significant to the investigation. Interviews ranged in duration from 30 to 60 minutes and were digitally recorded. The interview programs in each country were concluded when evidence of saturation emerged.

The 48 interview participants included 24 females and 24 males (Norway 8 females: 7 males; UK 8:7; Germany 8:10) with ages that ranged from 18 to 67 (Table 1). The occupational status of interviewees included 26 industry professionals, ten students, seven university academics, four personal assistants (PA)/administrators and one retiree. The participants represented a range of education levels, but the majority were well educated and moderately affluent. All 48 study participants were highly aeromobile. International air travel at least once annually was commonplace, with several flights per year (and in some cases per month), both short- and long-haul flights for leisure, VFR and/or business (or a combination thereof), not uncommon. The travel practices of our study participants reflected the propensity of Europe's hypermobile to take multiple short-break holidays each year (Hares *et al.*, 2010; Randles and Mander 2009a).

Table 1: Summary profile of Norwegian, British and German interview program participants

Pseudonym	Gender	Age	Nation	Occupation	Highest qualification
Frode	M	37	Norway	Industry professional	Masters
Rita	F	34	Norway	Industry professional	Masters
Bjørn	M	41	Norway	Industry professional	PhD
Silje	F	45	Norway	Industry professional	Masters
Svein	M	35	Norway	Industry professional	High school
Tone	F	58	Norway	Postgraduate student	Masters
Ida	F	52	Norway	PA/administrator	Masters
Grete	F	27	Norway	Postgraduate student	Undergraduate
Lars	M	53	Norway	Academic	PhD
Pål	M	34	Norway	Industry professional	Masters
Hilda	F	67	Norway	Retiree	Masters
Håkon	M	48	Norway	Industry professional	Undergraduate
Johannes	M	57	Norway	Academic	PhD
Anette	F	35	Norway	Industry professional	Masters
Grethe	F	27	Norway	Postgraduate student	Masters
Cindy	F	42	United Kingdom	PA/administrator	High school
Jack	M	35	United Kingdom	Industry professional	Undergraduate
Grace	F	36	United Kingdom	PA/administrator	Masters
Jessica	F	48	United Kingdom	PA/administrator	High school
Ruby	F	41	United Kingdom	Industry professional	High school
Amy	F	30	United Kingdom	Academic	PhD
Hannah	F	48	United Kingdom	Postgraduate student	Masters
Oliver	M	30	United Kingdom	Academic	Masters
Thomas	M	38	United Kingdom	Academic	Masters
Harry	M	40	United Kingdom	Industry professional	Undergraduate
Daniel	M	18	United Kingdom	Undergraduate student	High school
Mia	F	21	United Kingdom	Undergraduate student	High school
James	M	63	United Kingdom	Academic	PhD
William	M	42	United Kingdom	Industry professional	Undergraduate
Lewis	M	39	United Kingdom	Industry professional	Undergraduate
Dagmar	F	31	Germany	Postgraduate student	Masters
Max	M	29	Germany	Industry professional	Undergraduate
Elias	M	27	Germany	Postgraduate Student	Masters
Jacob	M	46	Germany	Industry professional	High School
Linus	M	53	Germany	Academic	PhD
Alex	M	27	Germany	Industry professional	Undergraduate
Alina	F	28	Germany	Industry professional	Undergraduate
Amelie	F	32	Germany	Industry professional	Undergraduate
Zoe	F	28	Germany	Postgraduate Student	Masters
Lenni	M	30	Germany	Industry professional	Masters
Jasmin	F	29	Germany	Industry professional	Undergraduate
Mika	M	30	Germany	Industry professional	Undergraduate
Melina	F	31	Germany	Postgraduate Student	Masters
Nele	F	33	Germany	Industry professional	Undergraduate
Fabian	M	52	Germany	Industry professional	Masters
Henri	M	31	Germany	Industry professional	Masters
Justin	M	30	Germany	Industry professional	High School
Finja	F	51	Germany	Industry professional	Undergraduate

All interviews were transcribed and subject to repeated independent reading and annotation. We applied a triple blind thematic analysis approach in manually interpreting the empirical material (Patton 2002). This involved reducing the empirical material into categories guided by the participants' narratives without losing sight of the research aims, a process which allowed for the identification of emergent themes (Miles and Huberman 1994; O'Reilly 2005). During the immersive blinded process we acted as three independent critical analysts. We then engaged in collective 'analyst triangulation' (Patton, 2002) in an attempt to ensure trustworthiness by checking for congruity of interpretations, blind spots and multiple ways of interpreting the empirical material (Lincoln and Guba 1985). Through triangulation we set out to promote dependability (via interpreter triangulation), credibility (via theoretical triangulation) and transferability (via rich description of the context to facilitate analytical transfer) (Decrop 2004). In describing the data extensively, we set out to use verbatim quotations from participant interviews, and to achieve 'referential adequacy' to further promote transferability and credibility (respectively) (Decrop 2004).

Individual reactions and responses to anthropogenic climate change.

Our study set out to first address participant perceptions of and responses to anthropogenic climate change (Table 2). Here we found evidence of widely held climate change concerns, coupled with contrasting personal responses to climate change. Acceptance of the significance of human contributions to climate change was clearly evident, particularly in the Norwegian and German cases. Johannes (Norway, 57) expressed a view that was common to many in all three study contexts: *'The evidence is so obvious now from different sources so that I'm really convinced. And I think it's quite obvious that there is a direct link between human activities and climate change. I see it as a problem'*. Similarly Nele (Germany, 29) explained that *"...we really feel it here. The weather has really changed... it is just really strange, it just doesn't have a rule anymore"*. In Norway, it was noteworthy that these views were commonly based on personal experiences of changing weather patterns within the life course of participants.

'I'm running an alpine resort in the mountains here. So we have some first-hand observations. Human activity, no doubt about it, has increased the development [of climate change]. In the 1930s when my father grew up in Stavanger, there was a lot of snow, there was downhill skiing at the slope here. There has not been snow on that one for the last twenty years' (Lars, 53).

The clarity of thinking that was particularly evident in the Norway and German interviews stood in contrast to the United Kingdom where uncertainties were declared by some. While not denying climate change, Cindy (United Kingdom, 42) stated that “...we must be making some sort or contribution towards this, not in a good way ... [but] how much overall, I'm not really sure”. Some confusion and concern regarding the climate change discourse was also expressed in the interviews we conducted with German nationals. Henri (Germany, 31) explained that “*I don't like the discussion about climate change in general because I think climate change is a normal thing... Climate is not static, it's dynamic...the problem is the human impact on climate change [which is unclear].*” While accepting climate change as a real and dynamic phenomenon, the lack of clarity that differentiates natural and anthropogenic climate change in the minds of some has significant implications in terms of individual responses to climate change.

The urgency of climate concern coexists for most with a widespread sense of individual powerlessness. However, here the Norwegian and UK participants stood in clear contrast; the great sense of personal responsibility (however problematic) of the former contrasting the general lack of individual responsibility felt in the latter (Table 2). The prevailing view of UK participants, one of individual responses being an exercise in futility, was typified in the words of Lewis (United Kingdom, 39) who expressed “...concern [about climate change], absolutely, however, you have to look at it in context of living... Even though I'm concerned about it, unless there are viable alternatives for me to take ... there's no way I can change”. The sense of being locked-in led Lewis to argue the case that global agreements on climate change measures, with commitment from large and fast growing emitters, must be a forerunner to individual responses. By way of further contrast, a common response among German participants was to reduce climate change to its smaller and more manageable component parts:

First of all we have to protect the environment... not only for climate reasons but for the forest, the rivers, for the clean environment but for saving the nature. Everyone wants to save the climate but you can't save the climate without saving the environment at home....and that's why I don't like climate change... we have to do something for clean industry, cleaner cars, not only [but also] for climate reasons (Henri, Germany, 31).

Thus, individuals may be able to meaningfully respond to pressing local/regional environmental issues that act as a surrogate for responses to climate change at the global level.

While these results depart from the finding of Hares *et al.* (2010) who report climate change skepticism in the United Kingdom, they do provide supporting evidence of continuing “*uncertainty about the human contribution to climate change through the production of greenhouse gases*” (ibid: 468). Although we are able to document further evidence of the mainstreaming of climate concern in Norway (Gössling 2009; Higham and Cohen 2011), the sense of personal responsibility varies in the United Kingdom and Germany from abrogation of individual responsibility in the former, to reconciliation of more manageable (local) environmental issues that are seen to be directly linked to global climate change in the latter.

Table 2. Comparative analysis of perceptions of global climate change, and human contributions to climate change, held by Norwegian, British and German study participants.

Norway	United Kingdom	Germany
General agreement on anthropogenic contributions to global climate change	Divided views on the existence of climate change	Climate change is real, and humans are contributing to climate change
High awareness of climate change derived from personal observation and experience	Widespread concerns coupled with uncertainty as to the extent of human contributions to climate change	High awareness of and concern about climate change
Climate change discourse is mainstream in Norwegian society	Climate change debate is available if you are inclined to care	Climate change debate is widely available in German society
Sense of responsibility to respond with urgency to the climate crisis	Unconvinced that responsibility to respond lies with the individual	Climate change is one of manifold socio-environmental issues facing Germans
Great sense of personal responsibility	Little sense of personal responsibility Global agreements to reign in big carbon emitters (e.g., China, USA and India) are the immediate priority	Climate change is one manifestation of the environmental crisis facing society

Note: Shading indicates areas of convergence between discrete (Norwegian, UK and German) interview participants.

We then explored manifest behavioral responses to climate change in the day-to-day domestic lives of study participants, where we found some evidence of routine daily efforts to mitigate individual contributions to anthropogenic climate change (Table 3). Reduced car use, interest in the next generation of electric cars, and the preferred purchase of local foods are actions that were motivated in part by climate change. *‘We have two cars but we use perhaps one third now as we did a year ago. We’re waiting for the next generation of electric cars with five seats and decent driving range, that’s the next step.... It’s motivated by climate change’* (Svein, Norway, 35). However, sentiments of confusion, guilt and a sense of insignificance of domestic responses to global climate change were also most evident, to the point in some cases of deliberate neglect of climate

change as a matter of concern. The comments of Cindy (United Kingdom, 42) were typical: *“So I guess I’m conscious of it [climate change] but I’m not really prepared to do anything about it. I’ve changed my habits slightly but I wouldn’t say I’ve changed them drastically [and only] ...to keep fuel costs down and reduce the household expenditure”*. Cindy’s comments perhaps reflect the prolonged austerity measures in the United Kingdom (and elsewhere in Europe) and the consequence that financial concerns have tended to override climate issues in consumer and media discourses in recent years. Hilda (Norway, 67) was even more forthright: *‘To be honest, I’m not so concerned about the climate. I read papers and look at television and see that the North and South pole [polar ice sheets] are decreasing, but for me, personally, I don’t care. I’m honest’*.

In other cases, climate change was seen as part of the justification for chosen behaviors, but in terms that were secondary to such things as saving money (e.g., reduced energy consumption) and being physically active (e.g., riding a bicycle rather than driving to work). A voice that was common to all three study contexts expressed the need for daily climate action to be convenient and cost effective. *‘... [I am] being very honest with myself... in my practical life, there are very few things that are actually affected by the climate change issue. If it’s convenient, yes, I would care for it’* (Johannes, Norway, 57). In many cases the link between domestic behaviors and climate change was tenuous at best. *‘Climate is not the reason why I walk, I walk because I want to get some exercise and fresh air... I think it’s both economic and climate. A combination, ... maybe (it’s) economic’* (Anette, Norway, 35). Indeed Dagmar (Germany, 31) was sufficiently honest to observe that some claim climate mitigation as a justification for otherwise ‘normal’ behavior. *“Germans just really like using their bikes – this is not recent and it is not because of climate change... [it is] because they are generally health conscious”*. By the same token, efficient and convenient urban public transport in Germany was widely noted to have positively impacted behavior. Indeed Melina (Germany, 31) simply stated that *“I don’t need a car. In Berlin, the public transport system is so good you don’t need a car”*. Effective low-pollution alternatives were recognized particularly by Norwegian and German study participants as critical to behavior changes.

Food miles is an issue that clearly illustrates a prevailing sense of widespread confusion. The link between food production and transportation, and climate change was particularly evident in interviews with Norwegian participants. *'I admit that I am more observant of it (food miles) today than I was even three years ago. So there has definitely been a change in my attitude towards it'* (Pål, Norway, 34). However, beyond the obvious matter of transportation of food and distance to market, the less apparent issues of fertilization, heating/lighting, mode of transportation, storage and refrigeration, all of which add complexity to the climate change equation, were causes of considerable confusion and doubt. *'If you take (Norwegian) tomato production in a greenhouse, which takes a lot of electricity, that has an influence on climate more than maybe the transportation has'* (Silje, Norway, 45). While food miles was a concern raised by a number of study participants, others made specific reference to the high GHG emissions and climate consequences associated with meat production. *'I won't eat, for instance, so much meat because I know it produces more GHG emissions compared to vegetarian food or fish'* (Bjørn, Norway, 41 years). Being empowered to accommodate environmental concerns in food purchase decisions was, albeit alongside other factors such as cost and quality, most apparent in the interviews we conducted in Germany. While Linus (Germany, 53) claimed in reference of food purchases *"to make decisions for environmental reasons more than (any other reason)"*, Alina (Germany, 28) noted that *"students my age and younger.... go for cheaper"*.

The prevailing confusion identified in this study is not unique. Hares *et al.* (2010:467) comment that *"whilst general awareness of climate change was quite high, ... 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"*. These comments proved to be emblematic of wider issues of relevance to climate change. Confusion, it appears, is a significant barrier acting against personal climate change action. Rather modest changes that are economic and of little personal inconvenience more accurately describe the current domestic response to climate concern in all three study contexts. The availability of alternatives that are efficient, convenient and cost-effective, was seen as central to any aspects of routine behavior change.

Table 3. Comparative analysis of domestic behavioral responses to climate change by Norwegian, British and German study participants.

Norway	United Kingdom	Germany
Key factors are financial (e.g., cut fuel costs, reduce monthly household expenditures, and health-related (e.g., walking or cycling to work)	Engagement in behaviors that are obligatory, economical or otherwise made easy	Environmental behavior is financially driven. Cost is the key driver
Preference given to purchasing local products, reducing food miles, and making ethical purchases, but quality and price continue to drive purchase decisions.		
Some climate mitigation efforts in domestic living (but secondary to other factors)	Little climate mitigation effort in domestic living (e.g., political opposition to airport expansion)	Convenience and efficiency are the key factors in domestic decision making (e.g., local transport)
Overwhelming sense of insignificance. Climate change (and its consequences) seems largely unrelated to domestic living (so ambivalence prevails)		
Climate change is not a significant factor in domestic living decisions. If chosen behaviors happen to also benefit the climate, that is a bonus		
Pro-climate behaviors need to be made easy and cost effective		
Reduced car use, interest in the next generation of electrical cars, and the preferred purchase of local foods	Saving the climate must work in combination with saving money	
Secondary to healthy lifestyle and financial priorities	Electoral decisions are influenced by environmental policies	

Note: Shading indicates areas of convergence between discrete (Norwegian, UK and German) interview participants.

The ‘Flyer’s dilemma’: Flickerings of consumer concern?

Randles and Mander (2009a: 270) describe the “... ‘tipping’ of popular discourse against flying for environmental and climate change concerns...” and observe “... ‘flickerings’ of evidence of consumer environmental concern over air travel”. Our study found evidence in

the cases of Norway and Germany of acute awareness of the link between personal air travel and global climate change (the *'flyers' dilemma'*) and deeply-held consumer concerns (Table 4). The comment of Elias (Germany, 27) was typical of both Norwegian and German interview participants: *"I'm pretty sure that most... Germans are very aware of the problem flying is causing on climate change"*. He went on to explain that over the last *"10-15 years people are taking it very seriously...the environmental problem. This is why governments are introducing taxes and incentives"*. In sharp contrast, the *'flickerings'* observed by Randles and Mander (2009a) were barely evident in a number of our United Kingdom interviews. Grace (United Kingdom, 36) indicated quite simply that *"I don't think it's something that I think about, to be honest"*. This position was most apparent among younger study participants for reasons of apathy, as expressed by Daniel (United Kingdom, 18). *"Most of them [my friends] just can't be bothered. It's true though, most people don't care about it. Most of my friends don't really care about it"*.

Any flickerings of consumer concern must be set against the deeply-entrenched aeromobilities that exist in (parts of) the societies under analysis (Becken 2007; Randles and Mander 2009b; Gössling and Nilsson 2010; Cohen *et al.* 2011). We found abundant evidence in all three study contexts, particularly Norway and the United Kingdom, of profound reluctance to compromise established aeromobilities. Expressions of the entrenched nature of contemporary air travel practices, and deep personal resistance to change, were common. Silje (Norway, 45) explained that: *"...Of course it frightens me to hear it, because if I do it everyone else can too! I know it matters.... But maybe I am not responsible enough. I think that in many ways I am a typical Norwegian in this way of thinking. So it's cultural – it's a way of behavior"*. Tone (Norway, 58) warned that *"I don't think you can just stop it, even if it becomes very expensive"*. Similarly Hannah (United Kingdom, 48) expressed the view that *"...we've broken down so many barriers to travel in the last few years that I don't see how you would ever be able to turn it around"*. The same view was expressed, only in more forceful terms, by younger study participants. Mia (United Kingdom, 21) stated that *"I think flying is so accepted now. I don't think anyone will stop flying... I think growing up in England... it's a way of life now, isn't it?"*.

Table 4. Comparative analysis of attitudinal and behavioral responses to the 'flyers' dilemma' by Norwegian, British and German study participants.

Norway	United Kingdom	Germany
Acutely aware of the 'flyers' dilemma'	Happy to ignore the 'flyers' dilemma'	Acutely aware of the 'flyers' dilemma'
Profound reluctance to compromise personal aeromobilities		Desire to take advantage of cheap travel, coupled with deepening climate concerns
Deep love of mobile lifestyles based primarily on air travel	Access to holiday destinations the right of all British citizens	Deep love of mobile lifestyles based primarily on air travel
Prepared to make changes to air travel practices (in due course)	Do not feel strongly enough about it to act upon concerns	Cost is the key factor in making travel decisions
Temptation of outrageous deals is too strong		Environmental concerns are relegated below cost considerations
Will happily sacrifice other luxuries to continue unrestrained air travel practices	Holiday decisions are not influenced at all by climate concerns	International destinations are irresistibly attractive due to the low costs of air travel
Norwegians need regular holidays in warmer climates	Freedom to take holidays is the prevailing interest	Convenience is important. Even those who are scared of flying fly!
Guilt suppression is required to allow continuation of unmodified air travel practices	General absence of guilt. Sense of denial remains	Guilt is suppressed to allow continuation of air travel practices
Not well informed of carbon emissions of air travel (relative to other modes of transportation)		
Accustomed to mobile lifestyles. It is addictive!	Selfishly interested in getting to nice destinations. So we fly	Travel is a way of life. It says much about the individual. It is too important to compromise
Guilt suppression will continue until a government-led collective response occurs	It's business as usual. Simply not ready to change	Leadership is wanted and needed to make better decisions (e.g., modal shifts) easier
Short haul aviation seen as completely unsustainable. Need to target reduction in short haul air travel		
Some consumption of air travel with a carbon conscience	Hardening of views on responses to climate change in some quarters, and calls for urgent collective action	

Note: Shading indicates areas of convergence between discrete (Norwegian, UK and German) interview participants.

The case made by Verbeek and Mommaas (2008), that air travel behaviors are social practices that are ‘historically-shaped’, usefully informs this discussion. So too do the works of Burns and Bibbings (2009) and Urry (2010), who explore the evolution of contemporary air travel practices through a sociological lens. Linus (Germany, 53), for example, commented that *“my travel habits...(are) typical for my layer of society... First of all we travel often ...the longer holiday is usually somewhere out of Germany. Climate change has hardly influenced that at all... Spending holidays in Germany is considered old fashioned”*. In a comment that was echoed in our Norwegian interview program, he went on to explain that *“People are much more willing to change their everyday life behavior rather than travel because traveling is so important to Germans and to myself that I would not change my plans because of climate change”* (see also Barr *et al.* 2010; Pang *et al.* 2012). This contrasted the United Kingdom, where resistance to change also arises from the view that access to regular holidays is a right of all British citizens regardless of social standing (McCabe 2005). The present study gives further compelling evidence (see also Becken 2007; Randles and Mander 2009a; Cohen *et al.* 2011) of the fact that current air travel practices are both established and deeply embedded in social practices (Dickinson 2010), and are newly available (and highly attractive) to younger and recently independent members of society.

Cost competitiveness clearly emerged as a common factor that in part explains the embedded nature of air travel practices. Jack, (United Kingdom, 35), typically an ardent environmentalist at home, admitted in reference to a return flight to Barcelona that cost him £40 that *“it’s ludicrous... but I took advantage of it!”*. The costs of air travel are sometimes so cheap in relative terms that climate change concerns are happily disregarded. *“People might have an awareness that it’s damaging the environment but they want to take advantage of... cheap air travel”* (Dagmar, Germany, 31). She went on to explain that: *“A few years ago they were not able to do this because flights were too expensive. (Now) you can fly for €20 from Berlin to Barcelona – that’s cheaper than getting from Berlin to Munich!”*. Convenience, particularly in reference to the best use of limited leisure/holiday time and the desire to spend time in appealing destinations, also emerges as a key factor that allows consumers to relegate or disregard entirely concerns associated with the *‘flyers’ dilemma’*. The realities of relative cost, convenience and

efficiency were discussed to a laughable extent by Max (German, 29) who explained that even those who are terrified of flying choose to fly over the alternatives:

*“I mean we just had this trip to Spain... Mallorca. It’s an island so we were all flying and this one friend, she’s afraid of flying, so she like calculated everything through trains and it would take her like two days to stop in France and then take the ferry for seven hours and she was, like, ‘**** no!’... So yeah, no”.*

We found widespread neglect of the *‘flyer’s dilemma’* to be accompanied by denial and guilt in all three of our interview programs (Table 4). Ida (Norway, 52) linked denial to guilt-induced carbon offsetting. *“To be honest, I don’t dare to think about it. Because I think, then I have to say to myself ‘why are you traveling so much?’ But I like it – that’s why it was very easy to buy this [voluntary carbon offset]. I said “ok, I have done that, so now I can travel”.* Similar sentiments were expressed by UK and German interview participants. *“It’s awful, isn’t it? You feel guilty but you justify it to yourself in some respect”* (Grace, United Kingdom, 36). Melina (German, 31) recounted that she *“flew RyanAir (to London)... the flight cost €60 return. Its super cheap I know...it’s awful!”*.

Feelings of denial were particularly evident in the UK interviews where general ignorance remains a convenient excuse for ignoring the *‘flyers’ dilemma’*. Cindy (United Kingdom, 42) explained that *“I don’t really know what will happen, so that’s maybe why I’m not giving a great deal of thought... If I really wanted to go (somewhere) I’d still do it and I wouldn’t worry too much about the consequences”*. Thomas (United Kingdom, 38) indicated denial in stating that he *“make(s) the connection, but it’s not enough at the moment to affect my travel patterns”*, while Lewis (United Kingdom, 39) expressed the general consensus in stating his personal view that *“it’s business as usual as far as flying is concerned”*. General ignorance also poses a barrier to modal shifts in travel practices. Even Jack (United Kingdom, 35), who seemed more engaged with the *‘flyers’ dilemma’* than most, accepted that claims of naivety make denial of the climate consequences of personal air travel very straightforward.

“I couldn’t tell you what is more efficient - going by plane or going by ferry from here to the continent. I couldn’t tell you what has a worse impact – driving to Europe, flying to Europe or going on the boat to Europe. I feel a bit embarrassed ... because I normally like to know those things”.

Denial and ignorance aside, few were able to ignore the unsustainable practices of low cost/short haul air travel. Concerns surrounding short haul air travel were clearly expressed by Norwegian interview participants. *‘I think the mass use of airplanes as it is today is a huge polluter. I don’t think we can afford to have that short-distance, short-time travel to other places’* (Lars, Norway, 53). These views were reflected in the comments of Hannah (United Kingdom, 48): *“A lot of people think, I’ve got nothing to do this weekend, oh I’ll just see what flights are available and just jump on a plane to go somewhere... It would not upset me if that all fell apart, that part of travel”*. Resentment of these forms of conspicuous consumption were also expressed by German interviewees. *“As long as flights cost €50 people are gonna fly...for instance what many British people do because drinking is a lot more expensive in London – they have bachelor parties or a girls’ night...in Berlin because the drinking is so cheap....and that doesn’t make any sense. I’m kinda liberal but I think still the government has to regulate that”* (Mika, Germany, 30).

We found evidence of hardening views towards low cost/short haul air travel, which in some quarters extended to calls for government action to trigger changes in air travel practices. This we interpret as an indication that some are in fact prepared (or preparing) to more seriously address the *‘flyers’ dilemma’*. While denial remains clearly evident in the United Kingdom, this contrasts Norway and Germany. Norwegian interview participants expressed the need for a shift from individual sacrifice to government-led collective action. *“It’s an issue [climate change] that is there in the conscious mind - it is there. So I know that sooner or later this will probably have an effect on me anyway, but it’s like I’m waiting for somebody to come up with a rule, to come up with some hard measures that make me change my practice”* (Johannes, Norway, 57). Our German interviews offered further contrast. In Germany, where the appetite for high personal mobility is undeniable, we heard calls for alternatives to air travel to be much more

competitive in terms of cost and convenience. In expressing her preference for train travel Alina (German, 28) explained that “*it takes seven hours to Berlin from Cologne (by train) but then in comparison the plane is €80 return whereas the train is €150... and then you think I could be there in 3 hours with a lot less hassle. I’m not willing to spend twice the amount of money AND time (to travel by train)... it’s crazy*”. Indeed the fact that air travel is so much cheaper than rail was described by Nele (German, 33) as quite simply “*insane*”.

Limitations and future research

While the city locations where interviews were conducted were convenient, other cities would have been equally suitable. We recognize that regional differences within and across nations can affect the findings, which is a limitation of an in depth but narrow cross sectional study. We also acknowledge the limitations of representation; it was beyond the scope of the research to achieve critical insights that were representative of wider Norwegian, UK and German societies. This limitation does present the opportunity to extend this line of research to specific sections of societies such as less privileged or marginalized groups (e.g., Sedgley, Pritchard, and Morgan 2012).

More broadly our research was limited insofar as being conducted in three European countries. Indeed, while this article addresses highly mobile individuals in highly mobile (developed) societies, a growing appetite for increased personal aeromobility is rapidly emerging in the developing world. An important aside to the inability of many European nationals to curb their drive for excessive discretionary air travel (Cohen *et al.* 2011) is rapidly growing demand for air travel in the expanding middle classes of countries such as Brazil, China, India and Indonesia. Indeed Voigt (2011) recently reported on *CNN International* the largest single purchase of aircraft in the 94-year history of Boeing Aircraft Corporation by Lion Air (Indonesia) on 16 November 2011; 408 Boeing aircraft (\$US 37.7 billion) over fifteen years with delivery starting in 2017. Extending this line of research into non-western contexts (e.g., Brazil, China), including the Asian subcontinent

(e.g., India) and south-east Asia (e.g., Malaysia, Indonesia, the Philippines) offers timely avenues of further investigation.

Our research is also limited in the extent to which it addresses sustained behavior change. Important questions remain as to how best address the dissonance that exists between awareness and attitudes on one hand, and behavioral change on the other (Barr *et al.* 2010; Cohen, Higham, and Reis 2013). The continuing absence of willingness (Becken 2004; Hares *et al.* 2010; Higham and Cohen 2011; Cohen and Higham 2011) or ability (Urry, 2010; Cohen *et al.*, 2011) at the individual level to actually reduce personal levels of air travel raises further questions as to how such behavior change should be achieved (Buckley 2012; Pang *et al.* 2012). Timely questions include: what forms or levels of global or national policy initiatives, government interventions, infrastructure changes, business strategies or social movements are likely to be acceptable and/or effective in addressing the problem at hand? This paper would indicate that any such initiatives must accommodate the nuances that differentiate different communities and societies.

Conclusions

This article explores attitudes and behavioral responses to global climate change, providing the first comparative analysis of responses to the '*flyers' dilemma*' in sections of three European societies; Norway, the United Kingdom and Germany. In this article we present empirical evidence of both convergence and divergence within sections of these three travel markets. In all three cases we found empirical evidence of climate concerns coupled with widespread feelings of insignificance in terms of individual efforts to mitigate anthropogenic climate change. Routine daily domestic efforts to minimize individual climate emissions were common in all three study societies. However, we found the extent of human contributions to global climate change to be causes of consumer uncertainty and doubt, and in cases where climate change did influence domestic behaviors, it tended to be secondary to other factors most notably relating to convenience, cost and lifestyle. While the need for climate action was universally

accepted, responsibility for action provided sharply contrasting views, between individual responsibility (Norway), government/industry investment in low emission technologies (Germany) and global agreements to curb high emitters (United Kingdom).

Within this general context, we then explored the ways in which consumers in these three European societies consider their personal air travel practices as expressed in relation to the *'flyers' dilemma'* (Rosenthal 2010). Here, again, we found evidence of convergence and divergence within and between the study societies. Our empirical material provides evidence of widespread awareness of the link between air travel and anthropogenic climate change, and deeply held consumer concerns particularly in Norway and Germany. A profound reluctance to compromise established and entrenched air travel behaviors was widespread. Convenience, efficiency (time) and cost competitiveness were commonly identified as the key determinants of behavior, allowing climate concerns to be suppressed or disregarded entirely in consumer decision making. Personal accounts of the *'flyers' dilemma'* varied. Denial and ignorance were expressed in the United Kingdom sample, while sentiments of guilt and calls for government intervention (collective action) were commonly expressed in the Norwegian interview programme. German study participants, by further contrast, widely disregarded the *'flyers' dilemma'* on the ground of logical consumer decision making (particularly cost and convenience), calling again for infrastructure and technology investment to provide sustainable alternatives to air travel. While our empirical material provides continuing evidence that international leisure travel based on convenient and cheap aviation is deeply entrenched (Shaw and Thomas 2006), it also highlights some evidence of hardening views towards low cost air travel and resentment of the conspicuous consumption of low cost air travel in all three study societies.

In exploring these avenues of investigation we found our interview programme to be transformative (Pernecky and Jamal 2010) insofar that we required study participants to openly question the climate consequences of global travel, and to actively consider the consequences of their individual discretionary air travel behaviors. We confronted a reluctance on the part of some to accurately understand their own aviation emissions that

extended to ‘willing naivety’ in many cases. We also observed a growing realization of the urgency of the climate crisis, and acceptance that behavioral change is inevitable, among those who participated in our interview programme in all three study societies.

The implications of this research are broad and far reaching. Growing concerns for global climate change are clearly set against a reluctance or inability to take individual responsibility for reducing levels of personal aeromobility (Cohen *et al.* 2011). Our research confirms that contemporary air travel practices remain deeply entrenched and resistant to change (Randles and Mander 2009a). Evidently the necessary levels of public behavior change will not occur spontaneously or voluntarily, and interventions will need to take place through policy, changes in infrastructure (industry) provision and, no doubt, other mechanisms. That said, the findings addressed here also highlight areas of convergence in attitudes towards certain aspects of frequent air travel, with widespread doubts surrounding the sustainability of frequent low cost/short haul air travel within Europe. While we found little evidence of manifest behavioral responses to the ‘*flyers’ dilemma*’, the widespread negativity amongst consumers towards short haul air travel does indicate that policy makers may now be able to seek stronger mitigation goals in this context, wherein there may be reduced consumer resistance, at least from the more affluent and mobile sections of these societies.

In this respect we did find that the social environments in all three study contexts are increasingly restless for change. Many expressed the view that they are waiting for a trigger. Precisely what might be needed to trigger and sustain such change – whether it be direct and immediate government action, tourism management interventions, evolutionary social change and/or catastrophic climate-related events – is available for further empirical investigation. Our analysis highlights the conclusion that any efforts to reformulate excessive tourist air travel, be it through government action or other mechanisms, must accommodate the important contrasts in perspectives and circumstances in different societies if they are to be effective. It also further emphasizes the fact that in times of accelerating global climate change and expressed concerns for ‘*climate breakdown*’ (Monbiot 2009), repositioning the social practices that underpin the

consumption of personal air travel as they vary within and between different societies, remains as challenging as it is urgent.

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