

# **Travel Disruption: Three Case Studies**

## **Report to Disruption Project**

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## Introduction

Travel binds and moulds our society. The travel available helps determine where we go, live, work, study and play. The travel and activity patterns of individuals also shape social institutions and physical infrastructure. Cheaper and faster travel allows suppliers to concentrate their resources for greater economies of scale. Consumers increasingly find their activities more dispersed, both because of suppliers' locations and because cheaper and faster travel permits more choice of activity and destination. Travel disruption interrupts the connections between people and activities. It provides a window for observing what happens when travel is not available as expected and exposes the expectations of travel and how it is integrated into our lifestyles.

The unprecedented rise in the availability and use of motorised transport experienced in the last century radically changed how people organise their lives. Patterns of behaviour which would have seemed impossible in the 1900s became commonplace by the 1990s, such as daily commuting to jobs over 20 miles away from home, routinely holidaying abroad, shopping at out-of-town centres and seeking leisure activities outside the local area. The reliance on motorised travel and the longer distances routinely travelled make modern life more vulnerable to disruption. Yet new forms of information-transfer (mobile phones, e-mail, the web, etc) can provide alternative ways of conducting activities and distributing information which can mitigate the degree of disruption.

Another aspect of travel is that it invariably involves a mix of personal, public and private resources. For example, a car journey requires a car, usually owned by an individual or family, fuel bought from a company and roads built and maintained by public authorities. A flight involves payment from individuals or companies, aircraft provided by a (usually) commercial company, airports which can be commercial or owned by public authorities and flies through airspace managed by air controllers (in the UK, National Air Traffic Services (NATS) run as private-public partnership) under the authority of a public service (in the UK, the Civil Aviation Authority). Additionally all journeys require some degree of time, physical, cognitive and affective investment by the traveller. Because travel links different activities, there are also influences on travel from both the origin and destination activities; for example commuting involves home and work, tourist travel connects home and a holiday destination. This mix of inputs becomes integrated into social practices generating expectations about the rôles of different agencies and actors, for example the assumption that commuting is the responsibility and in the time of the worker. Disruption not only exposes these expectations, but it can have a disproportional impact on different agencies and actors, causing the normal social practices to be challenged.

Disruption can be viewed as a systemic failure, certainly of a travel system. Yet, travel or transport can never be a closed system for the reasons outlined above. Thus, how society re-establishes disrupted flows and incorporates the lessons learnt from a disruption into its systems may also be seen as evidence of the resilience of wider systems.

This report examines the evidence of three travel disruptions investigated by the Institute of Transport and Tourism in 2010. Despite considerable variations in duration, area and modes affected, some shared characteristics emerge and the framework developed may be useful for the investigation of other travel disruptions.

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## Stages of Disruption

Six stages of personal adjustment to travel disruption have been identified: Normality, Disruption, Touching the new context, Revised plan, Consequences and Reflection and Incorporation (see Figure 1). Although they would normally be expected to occur in this sequence, there will be occasions when the order will be changed, for example for predicted disruptions such as the closure of a bridge or the Olympics in London, when 'touching the new context' and 'revised plan' may occur before the actual disruption.

Not only may the sequence vary, some of the stages may happen at the same time, for example, the Revised plan may be altered as new information is received about the Disruption in the Touching the new context stage and the 'Disruption' may change its nature over time as happened with two of the case studies.

**Normality** is when things are operating as expected. These expectations result from previous experience, the observation and experience of others, contracts, timetables, advertisements, depiction in the media, etc. They will include expectations of the roles of the agents involved and the role of the traveller. There may be different expectations depending on previous experiences, for example a regular traveller may know certain delays can happen in specific circumstances, whereas the less regular traveller may not have encountered or know of these. Even people with roughly similar experiences may have different expectations by drawing on different experiences to define their 'normality'.

**Disruption**, when personal or general expectations of normality are not fulfilled and non-normality prevails. This may trigger other expectations of who does what in such circumstances, again based previous experience, the observation and experience of others, contracts, advertisements, depiction in the media, etc. The definition of 'Disruption' may be contested by those affected, which can raise questions about alternative courses of action.

**Touching the new context**, when travellers and others assess the consequences of the disruption to themselves and others. Travellers and potential travellers may only come into contact with the disruption when they attempt to travel as normal or be aware of it through the media, personal contacts or observation (eg seeing queues or the snow fall). They need to find out '*How does this affect me*' by actively seeking information or interpreting the information they have to evaluate their options. To decide on their personal actions they usually desire information about the geographical extent, predicted duration of the disruption, the current provision of their original mode and alternative modes and possibly who will pay any costs (for example, extra accommodation and food, alternative travel and whether there will be compensation for travel not undertaken). They may also need to evaluate the consequences of their prolonged absence from home or the destination.

Touching the new context which may reveal different parameters, they were unaware of, such as the availability and the reliability of information, whether other role-holders fulfil their expectations and how other travellers are faring. It

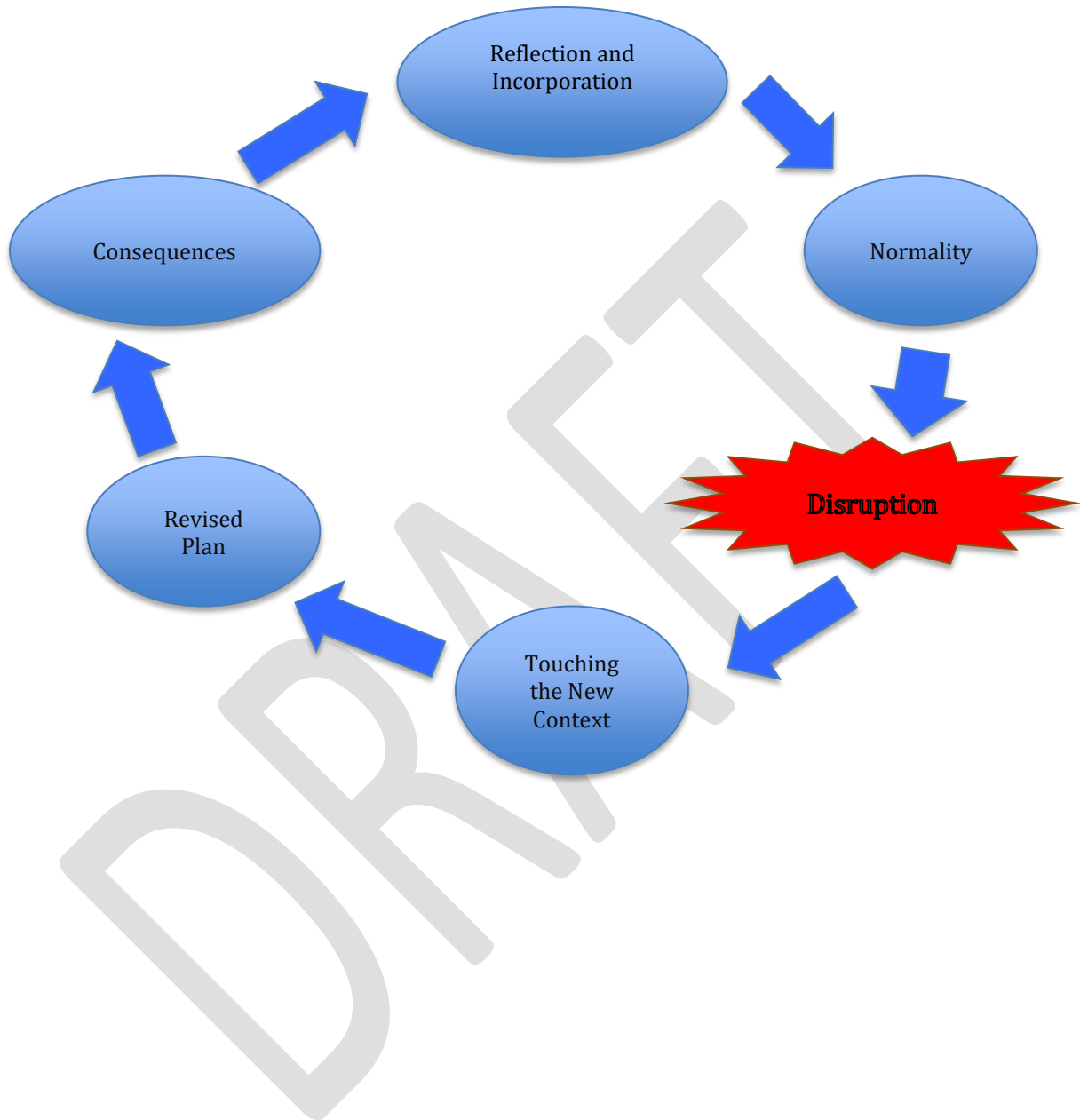
can involve serendipitous events and information. The process may cause them to re-evaluate their emotional responses to being disrupted, their expectations and choice sets. It will involve an assessment of the things they can change and those they cannot.

**The Revised Plan** is the action (or non-action) they decide on after evaluating the options. It may be contingent on revisiting the new context while activating a revised plan. It will involve some degree of resignation about and even 'making the most' the factors they cannot change and exercising their agency over the factors they can to improve their outcomes. This stage involves re-aligning oneself to the new context, may be for one journey or, when the disruption is predicted to last some time, adjusting regular patterns of activities and travel to accommodate extra travel time or the inaccessibility of destinations. Observations of this stage may deliver insights into potential future, more long-term changes, in transport provision, such reduced availability of petrol.

**Consequences** involves counting the costs and any benefits of the disruption. It almost certainly includes the activities which have been displaced by longer journey times or prolonged absences and probably extra monetary costs. There are other 'costs' such physical, cognitive and emotional effort from longer journeys, additional planning and anxieties about making the journey. These may be incurred by the traveller or others such as family, employers or friends. The benefits may involve extra time at a holiday location, comradeship, adventure or a new perspective.

**Reflection and Incorporation** is when travellers evaluate their experiences of non-normality and use these experiences in their current decision-making. This may include an assessment of how abnormal the circumstances were, the reactions of different agents (including themselves) and whether it is relevant to 'carry over' those experiences into travel decisions when normality is restored and anticipated. The experience of using new methods of travel, information seeking, combatting stress, etc may be used in other situations.

**Figure 1: Sequence of Stages**



## The Case Studies

### Introduction

The three case studies all relate to disruptions caused by extreme, but 'natural' events. They are:

- the volcanic ash cloud which disrupted flights in European air space in April and May 2010,
- the closure of road bridges across the River Derwent in Workington, west Cumbria following flood damage in November 2009
- severe winter weather across the UK in December 2010

The research by the Institute of Transport and Tourism (University of Central Lancashire) focussed on users' reactions to the disruptions using surveys and interviews.

### Volcanic Ash Cloud 2010

The ash from the Icelandic volcano, Eyjafjallajökull, disrupted European flights in the spring of 2010 as authorities closed their air space because of fears of the risk to aircraft. The main closure was between 15<sup>th</sup> and 23<sup>rd</sup> April with varying areas affected and there was a later disruption in May affecting some parts of Europe. Even after the lifting of the bans on flights, disruption continued because of the number of passengers who had been stranded and because aircraft and crew needed to reposition to resume their schedules. It is estimated that over 100,000 flights and 10 million passenger trips were cancelled (Eurocontrol, 2010)

The data come from an on-line survey launched on 19<sup>th</sup> April 2010 by the Institute of Transport and Tourism of the University of Central Lancashire and distributed through a number of channels to people whose travel had been affected. In total 507 completed the survey, many of whom were stranded at the time they filled in the survey.

### Workington after the Floods, 2010

In November 2009, the River Derwent broke its banks flooding the centre of Cockermouth and damaging bridges in the coastal town of Workington in West Cumbria in Northern England. One road bridge was completely destroyed and the other, originally expected to collapse from the damage it had sustained, was closed for over a year. The main footbridge was also swept away and another close to the port left too dangerous to use. This severed the road and pedestrian links between the centre and the northern part of the district (a suburb and several villages). The only useable bridge within several miles was the railway bridge. A new temporary station was built on land north of the river in just over a week and an augmented and free train service was organised. A temporary footbridge was erected by the army within a fortnight of the floods. It quickly became clear that replacing the road bridges was likely to take several months, so meanwhile, residents needing to cross the river were faced with the choice of using the free train service, walking across the foot bridge or going by road with an 18 mile detour, subject to congestion and delays. A temporary road bridge was opened in April 2010.

The data about travel changes in this time comes from a postal household and on-line survey commissioned by Cumbria County Council and conducted by the Institute of Transport and Tourism in Workington in June/July 2010. This asked for details of travel patterns before the floods, during the period of limited access and once the road had been re-opened. It was supplemented by interviews with local residents and stakeholders. There were 253 responses to the survey, a response rate of 6.4% and 23 on-line responses. However, as the questionnaire asked for travel details of everyone in the household, this gave information about 435 respondents.

### **Winter Weather 2010**

In December 2010, the United Kingdom suffered unprecedented travel disruptions from extremely low temperatures, ice and snow. This caused the closure of some airports, cancellations and delays of trains, buses and coaches and some road closures as well as making many roads and pavements dangerous and difficult to use. The other weather impacts, such as the school closures and the cancellation of planned events also caused changes to travel plans.

The data for this case study is derived from the responses of 1089 people who filled in an on-line survey started by the Institute of Transport and Tourism on December 6th 2010. People responded from all areas of the country with a mix of different mode users. Telephone interviews (20) were also held with respondents who indicated they were willing to help with the research.



## Methodology

The quantitative data were analysed using SPSS (Statistical Package for the Social Sciences). The relevant tests were performed to establish the statistical significance of the findings.

This report relies heavily on the evidence from the comments made by survey respondents in the many open questions on the on-line surveys and in the comments section of the household survey. These provide clues to the repercussions of the disruption on aspects of their lives, but also insights into their expectations, constraints and, in some cases, underlying priorities. These were analysed using Excel spread sheets to code and filter the comments using discourse analysis techniques.

Quotations are directly from those received in the surveys, some are from non-native speakers, many include misspellings and grammatical errors. Where it may help comprehension corrected words have been inserted in brackets. Three dots indicate where some of the quotation has been omitted.

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## Normality

### Introduction

Paradoxically, disruption often exposes expectations of what is normal. Many taken-for-granted aspects of travel become evident when they are absent. However, the nature of the disruption influences which aspects of normality are noted. For example, there are no doubt numerous expectations about the level of service on a flight (temperature, seating, fittings, attendants, etc), but because during the volcanic ash cloud disruption there were no flights, these are not mentioned. Likewise expectations about parking charges or standards of cleanliness on public transport are not revealed by the comments about the disruptions caused by floods in Workington or the winter weather.

The consequences of disruption on activities give clues about the expectations of the normal functioning of transport provision and how these are integrated into everyday assumptions and social practices. The case studies provide many examples of the tight time schedules that many people operate under and the consequences to the traveller, their families, colleagues and employer when these cannot be met. It appears that vulnerability to disruption is in part due to busy schedules and highly committed time as well as dependence on transport. People's reactions to the disruption can also reveal underlying priorities and ways of evaluating different choices of action.

Travel takes time and moves people from one location to another. With travel under 'normal' circumstances, there are expectations built on experience and derived from observation, contracts, etc. about the time required for the journey and organisation of time for presences at and absences from the destination and origin. When travel is disrupted, time plans are also disrupted and may need re-negotiation with the other people affected by the traveller's absence and presence (family, employers, friends, service providers). When the disruption is predicted to last months and requires extra travel time, as was the case in Workington, the extra time spent travelling must be 'taken' from other activities; often the discretionary activities such as socialising and leisure trips. When the travel is connected to employment, either business travel or commuting, there is often a tension about whose time has been lost in the delay: the employer's or the employee's.

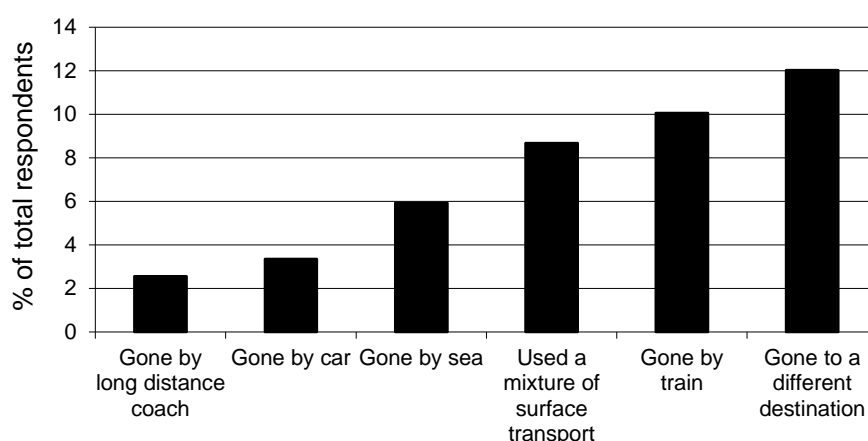
Each survey included questions about travel patterns before the disruption. In the Workington research, respondents were asked about the frequency, mode and destination of journeys for different purposes in a normal week in October 2009, the month before the floods. The volcanic ash cloud and winter weather surveys included questions about the planned journey and the winter weather questionnaire asked about the frequency of that journey. The comments, however, provide rich insights into expectations about normal services and expectations of agencies during abnormal circumstances.

## Volcanic Ash Cloud

### Destination choice

The availability of cheap fast flights has not only speeded up some journeys, but enabled trips to be contemplated which would not be seen as feasible or sensible using surface travel modes. Often the investment in time and/or money in the journey would not have warranted the benefits anticipated from being at the destination. Commonly, with limited time available, a longer journey-time would have shortened the possible duration of stay at the destination. Respondents were asked what they would have done had flying not been possible for some time before their journey. The replies (Figure 2) imply that there is flexibility over chosen destinations and time of travel, with some consideration of surface modes for closer destinations.

**Figure 2: What would you have done if flying had not been possible for some time before your journey?**



These responses suggest the importance of air travel being available in decisions about where to go on holiday, for conferences or other activities. The comments also demonstrate the deliberations about the ratio of journey time and cost to stay time in travel decisions, but also how other considerations, such as visa restrictions, may influence mode choices.

*to(o) far and too expensive, would take to(o) long.*

*Would have preferred to go by train but it was too expensive.*

*If I were to use other options other than flying such as by Transiberian train to get to Hanoi (where I currently work and live), it would probably take me forever as I hold a Philippines passport which presents visa problems on countries where I have to go through (i.e. Russia, China, etc.) to get to my destination. ... my trip was only for one week*

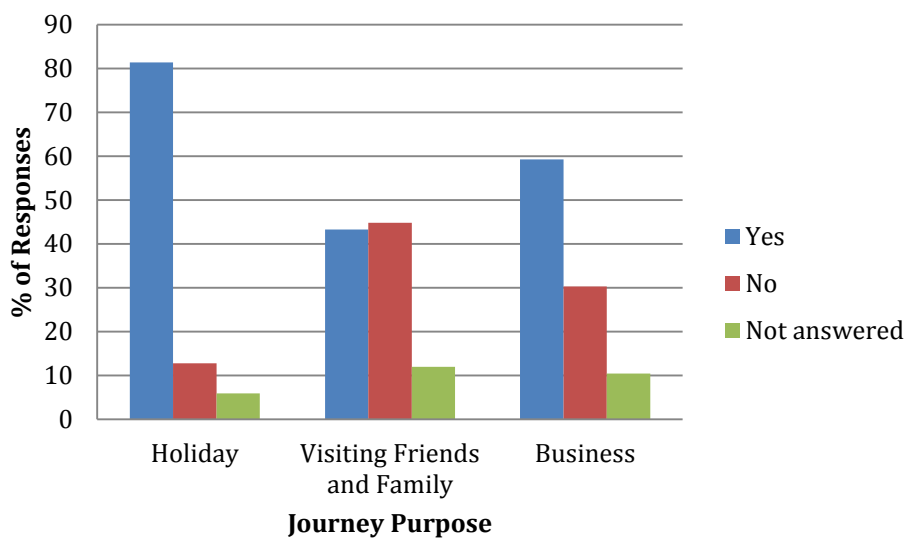
The answers to the closed question about alternatives if no flying were possible indicate flexibility about destination. Yet, many of the comments focus on the (im)possibility of reaching their chosen destination by any other mode. This may imply that the 'journey' is seen as defined by its destination, rather than a holiday or business trip with different potential destinations.

*No alternative! Grenada is a) an island, and b) 4,500 miles away!*

### Planning

The normality of international travel is that it requires investment of time and money before departure. Journeys require planning as well as travelling time. Unlike private transport and to some extent, other forms of public transport, airlines require flights to be booked in advance. People going on holiday had the longest mean advance booking time (13 weeks) with those visiting friends and family or going on business averaged 7 weeks. For many, the preparation included taking out insurance, especially for people going on holiday (see Figure 3) indicating some element of having ‘touched the context’ of arrangements not going according to plan.

**Figure 3: Proportion of Respondents with Insurance: Volcanic Ash**



Along with the booking of the flight, there are a number of other plans and arrangements which need to be made: the journey to and from the airport, and possibly car parking at the airport as evidenced by the passengers’ comments.

*The car park at Heathrow waived the excess parking charge*

*I might not pay for trains and transfers in advance,*

*my son had taken the day off work to take me to the airport*

The expected absences ranged from one day to five months, with an average of nine days. Most involved plans for absences of the predicted duration, often for other people, some paid, to fulfil duties normally undertaken by the traveller such as care of children, pets and houses. The prolonged absence from home unravelled many of these plans and placed additional burdens on the people whom passengers relied on while they were away. The disruption highlighted the degree of interdependence between travellers and others and the discomfort experienced when commitments could not be fulfilled, not just because of the inconvenience, but having to ask more of others than originally agreed. Some travellers were acutely aware of having ‘broken contract’ and of the consequences to others of continuing to substitute for them. In some cases they involved other highly mobile people also affected by the disruption.

*my wife is having to manage the children and her job on her own,  
Petcare - no-one to look after our cat - had to rely on neighbours  
we were expecting housesitters from the UK, but they were stranded at Heathrow, so I  
had to organise housesitters from Cape Town remotely.*

Another strategy for planned absences includes scheduling commitments and tasks for outside of the period of absence or arranging the journey to avoid specific commitments. The benefits of this planning were lost with the unexpected delay, but the types and volume of activity affected indicate the commitments people had made for after their return and the potential consequences

*I was due to lead a workshop one evening, and had to arrange cover for this. ... Husband is magistrate and had to cancel this at short notice.*

*I had to cancel one supervision meeting with a group of students and one meeting in Copenhagen on April in a program committee for a conference*

*Problems with work, missed medical appointments, missed days of school, and one of my sons had to cancel his birthday party.*

*I am in the process of applying for a number of difficult to obtain Central Asian visas for an extended overland trip I am making this summer. I was supposed to send the company dealing with this my passport last Monday. They need at least 3 months to process all the applications, so it looks like I will lose 10 days from this in total. I hope very much that all the visas will be returned to me by the time I leave (July), as they were very expensive (over £500)!*

The volcanic ash cloud affected flights during the Easter school and university holidays: this and the distribution channels for the survey meant there were a high number of teachers, academics, scholars and students among the respondents. Many of the academics, as well as other respondents, appeared to have time-task budgeted for a certain period away from work, so found the prolonged absence reduced the time available for the tasks. Students and scholars had also planned their assignments, revision, etc in the run up to exams. Teachers, however, saw much of their work as delivered at certain time and place and if they were unable to do it, others would need to be brought in. Some self-employed people relied on being available to earn their income while employees relied on the goodwill of employers and their attitudes to absenteeism.

*the delay to return to work has meant working 16 hour days since my return to catch up with the work I had missed.*

*As a party of 12, several of the students had exams coming up which they struggled to revise for without the right books and several missed coursework/ dissertation deadlines.*

*I'm a teacher. My school had 10 teachers stranded but has paid us all. The school will suffer a 30% budget cut next year and can't afford to be spending money this way.*

*Self employed husband lost 3 days work. I had to take 2 days leave, unpaid.*

*I missed commissioned freelance work; £200*

*my employer gave either I take up five days of Annual Leave to cover the absence or I will not be paid five days of work.*

There were also plans for the presence at the destination as well as absence from home. These involved other known people, such as friends and family or colleagues as well as arrangements with accommodation and travel-providers.

*After 3rd re-booking with Finnair I had to cancel as I'd missed all my meetings.*

*We were extremely fortunate in the end and were only delayed by 3 days, however these 3 days were planned to be full of wedding preparation tasks and a little relaxation time before our big day - luckily suppliers, family and friends in Melbourne really stepped to the fore and helped out, and in the end all went smoothly.*

*At the end we had to cancel our holidays.*

People who were prevented from travelling to the destination were unable to honour these arrangements, while those whose return was delayed often had to negotiate extensions to the original arrangement.

*The accommodation we stayed at were excellent and they rebooked us back in straight away after our delay, in addition giving us the first night's stay free because of our situation.*

*I have been here for almost 3 weeks, which is a bit long to impose on family.*

### Lost time

The main concern was about the time spent away from a location (either home and work or the destination). This resulted in lost opportunities, when these required being in a certain place at a fixed time (exams, weddings, birthdays, deadlines, appointments, etc) or time lost in preparing for critical events such as exams, a particular concern of the many lecturers, teachers and parents who responded. These repercussions demonstrate that 'normality' includes confidence in the reliability of air travel to book important appointments soon after returning from international travel.

*I finally missed my wife's birthday, and it revealed less negotiable than professional appointments.*

*I was unable to confirm a hospital appointment so have now been put back a couple of weeks before I can be seen . My son had tickets for a football match which have gone to waste .*

This pre-occupation with time indicates how packed lives, especially professional working lives, are. Some employers bore some of the costs of their employees' absences, for example by hiring locums. However, it seems that where the work could be delayed, it was expected that the employee would catch up and manage their own workload. This may reflect the way that some work is organised for and by individuals rather than for teams, where another member of the team might have been able step in for the absentee. Employees also appear to expect to repair the damage caused by their absence themselves through working harder and longer, partly for their employer, but often also for their 'clients'.

*Although I managed to do a bit of work from my hotel room, much of it was fire-fighting. I will now have to catch up with all my missed work in my own time. For instance I have a pile of 40 assignment to mark that I'll have to do over the weekend.*

*this calculation cannot take into account the other "costs" that are not financial - like the pressure on my courses and students back home, and on me and my familyl.*

## Unexpected costs

Another concern voiced by respondents was the unanticipated costs they or others were incurring often with uncertainty about whether they would be compensated by insurers, airlines or employers. The impact of extra costs might depend on the financial situation of the respondent and a few indicated that, while they were somehow cushioned, other people without their financial resources might be suffering.

*Financial. I was not expecting to have to fork out the best part of a grand to cover this.*

*Younger colleagues may not have been in this position and may not have been able to pay upfront for accommodation whilst stranded*

## Workington

### Social Practices

While the volcanic ash cloud flight ban exposed social practices around international travel, the impact of the destruction of bridges in Workington impacted more on day-to-day local travel. Respondents were asked about the number of journeys they made and to which destinations for a number of journey purposes for typical weeks in October (before the floods), March (when cars had to detour, but there were free trains and a foot bridge) and May (after the opening of a temporary road bridge in the town). There were a number of adjustments to the new situation including change of mode, destination and frequency of trips.

The changes illustrate individuals' ability to adjust their travel patterns to new circumstances, but the comments suggest that it required a number of sacrifices. Workington also saw a number of changes by journey attractors such as employers, shops and doctors' surgeries to help people particularly on the north side of the river. These included establishing new bases and changes in working practices and locations. This is a reminder that journeys have at least two nodes, and while individuals adapt, there is also potential for institutions to change their locations and requirements to help their employees, customers and society.

These changes included:

- buses being provided to bring people to the supermarket and pubs on weekend evenings
- establishing temporary doctors' surgeries in Seaton and Northside, whose locations and times were changed during the disruption
- the construction of a temporary Tesco's supermarket on the north banks of the river
- arrangements for some public servants to work at locations on the same side of the river as their homes
- re-aligning divisional borders of emergency services (Police, Fire and Ambulance) along the river to ensure faster response rates and overriding automatic systems for allocating crews to incidents because the changes to journey times could not be programmed in.
- allowing some employees commuting time to compensate for longer journeys.



With the disruption lasting five months, some respondents reported changes in their own situations or that of their relatives and friends, demonstrating that major travel changes occur against a moving backdrop of personal lives and changing weather.

*I retired in March. I use the bus to go to Workington for shopping but have changed my supermarket as it is too far to go to Tesco and carry shopping to the Railway Station.*

*While the bridge was down we experienced a period of very cold weather and icy roads which meant the cut throughs via the country lanes became impassable...*

The comments illustrate how journey times shape the normal day and have been incorporated into household routines, so that when some of them are lengthened, time must be taken from other activities and household synchronisation can be lost. Many of the comments relate to contact with the extended family, especially to ageing parents or others needing support.

*The family had to make changes so some members could carry out their job and make sure their children arrived at school. And also to be around to collect the children from school when parents were delayed due to traffic conditions.*

*Work journey prior to loss of bridges was 22 miles, after 39 miles. Inconvenience for shopping and leisure resulting in alternative shopping venue and leisure activities restricted and sometimes cancelled. Isolation from family members. Shuttle train was useful but not ideal. Long time from leaving work at the North Station to arriving home in Seaton.*

Travel routines established in the context of a known and acceptable ratio of travel time to time at the destination had to be re-evaluated when journey times increased. For some, the journey was no longer viable while others adjusted the frequency of the trip or duration of the stay or chose a new destination or, in one case, origin.

*My daughter had to resign from her job because of travel problems, living in Seaton and working in town.*

*I also visited an elderly relative each week at Cockermouth but had to reduce the time spent there because of the volume of traffic using Cockermouth to access Maryport, Seaton etc.*

*As I was on placement in Workington, living in Seaton was not practical and it was difficult. Therefore I was forced to move and live with a relative in Workington.*

## Winter Weather

### Social Practices

The most common journey purpose recorded was commuting and some comments demonstrate long distances travelled to work, making them vulnerable to adverse weather conditions. The practice of living a long way from work was questioned by some respondents, who pointed to problems when people could not travel in. However, sometimes it was reliance on certain modes which prevented or impeded travel.

*Surprisingly (?) I made it to the office on 100 mile journey despite delays whereas those living just a few miles down the road couldn't always make it in.*



*People live too far from their place of work and school and are travelling further to get there every year. We should reverse this trend.*

*Buses were being curtailed because drivers had been stuck for long periods in traffic and had therefore worked their hours, there was no information about when a normal service would be restored and therefore I had to walk in home in treacherous conditions.*

The efforts and sacrifices made to come into work reflect a social expectation and the enshrined power of the employer. Nonetheless, some reasoned that the employer should not expect this when travel was dangerous or unduly uncomfortable, alternatives such as working from home were available or it was unnecessary because clients and customers could not get to the location either. Filling in for colleagues unable to get into work was not popular, although other respondents were grateful to colleagues who took their place.

*Feeling under pressure to travel when I wouldn't normally, and when I felt it was unsafe because others were still travelling.*

*Employers should say work from home more during bad weather.*

*I made it in when other who could not spent time at home a generous employer meant I worked harder than them!!*

*It was inconvenient as I missed a face to face meeting but luckily a colleague who lived closer was able to attend.*

There were mixed opinions about the practice of penalising the employee for loss of work hours caused by difficult travel conditions. A number of employees said, some with a sense of injustice, that they would have to 'make up' lost time, would lose pay, flexi-time or holiday entitlement. The loss of flexi-time was particularly resented especially when this had been reserved for other purposes. It appears that, although it is usually to the advantage of the employee, the existence of a flexi-time agreement makes it easy for employers to 'claim back' time lost through disruption of commuting networks. Many were grateful that their employer allowed work from home normally or in such conditions especially when this prevented pay-loss. Several expressed regret that working from home or problems in convening meetings meant that work tasks were not being completed as well or as quickly as they normally might have been.

*Lost 4 hours which I have to pay back due to my boss sending me home at lunchtime on first day of bad weather*

*my only inconvenience is that I now need to make up lost flexitime, but as a single parent, this will prove very difficult.*

*Usually work from home but travel to work once a week to participate in meeting. Set up teleconferences instead.*

*I saw the bad weather was coming so brought work home to do the day before*

*I was able to work from home but ideally I would have been in London to undertake the work with another firm rather than doing so by phone and email.*

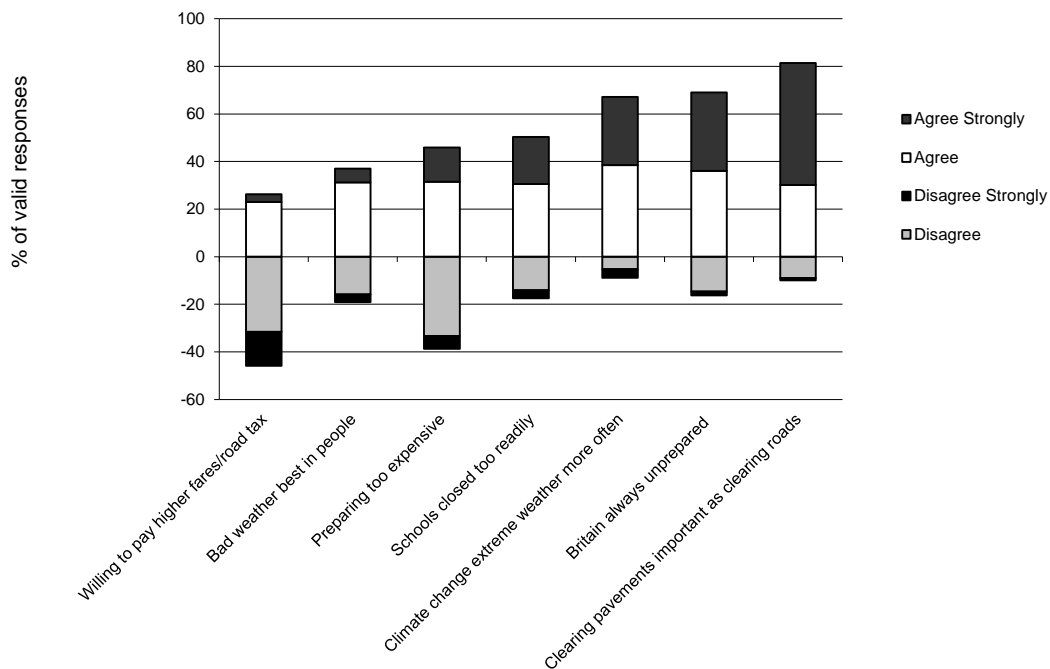
*Had to work from home with limited connectivity to work's computer systems*

### **Expectations during Bad Weather**

The survey asked for opinions about a range of statements including 'Clearing pavements important as clearing roads' which attracted the highest agreement (81%: 30% agreed and 51% strongly agreed) (see Figure 4) and it is clear that

many respondents were disappointed that pavements were not gritted and often became dangerous, causing accidents, fear of accidents, people to walk in the road or just not venture out. They pointed out that most journeys involved walking and so failure to ensure safe walking conditions often proved the weakest link in making a journey.

**Figure 4: Opinions about Winter Weather**



*It is amazing that pavements, shopping centres and bus stations are not gritted routinely. These are just as important as the roads. It is an example of car-centric thinking, which ignores the requirements of businesses when people get into the shopping area...and the fact that many people arrive to shop by bus!*

*I feel for anyone on their own, and vulnerable members of society (disabled, elderly etc) - very frightening when you can't move about as normal. Fear of falling always present in normal conditions, in ice and snow is not worth risking, but some people won't have a choice.*

However, there were also a number of pleas for cycle ways, minor roads, public transport and other routes to be gritted or for different priorities along with acknowledgement that not all routes could be cleared.

*Salting and gritting on minor roads (although I realise that this is cost prohibitive)*

*ensure cycle lanes are cleared/gritted as well as highways*

*Better contingency planning to keep tubes and bus routes open, and to make pavements safe to walk on.*

*Nothing much - maybe clearing of snow from pavements on the main routes into and out of city centre.*

## Summary

The connection between time and distance is evident in all the case studies. Those caught by the volcanic ash cloud flight ban had to deal with an unexpected disruption. Yet, their comments about normal expectations show how choice of destination is often determined by the ratio of time spent travelling to time at the destination and the total time available is constrained by work practices such as annual leave allowances, school and university terms and the money available for expenses. For the winter weather and particularly the Workington disruptions, there were more repeated journeys, allowing people to adjust to the new situation. It is evident that travel patterns have been adopted with an acceptable amount of travel to activity time and when travel takes much longer, either the time must be taken from other activities or other adaptations must be made such as reducing the frequency of journeys.

The degree of disruption relates to the commitments of the traveller. With travel planned to avoid critical time-place commitments, delays cause more disruption. Some commitments are not time-place dependent, so many respondents made efforts to complete work tasks in alternative places such as from home, in hotels, internet cafes, etc although they often found conditions less than ideal. Some respondents were daunted by the volume of work awaiting them on their return, rather than missing appointments. Most saw this as their responsibility to complete although it threatened to displace other, mostly non-work, activities. Others worried about imposing obligations onto family members, neighbours, friends, colleagues and employers and the costs to those people.

There appears to be some contention about whether and how the employee or employer should bear and/or share the cost of lost work-time through unavoidable delays to travel. Being expected to travel to work in dangerous or arduous conditions was also resented, especially when work could be completed at home. However, most respondents appeared to accept that reaching work on time was their responsibility and they should make up lost time, although this would impinge on their personal arrangements.

In the case of Workington, the interviews with employers and others showed that many were quite flexible. Employers and service providers made efforts to accommodate the needs of their workers and clients through redeployment, relocation of facilities, changing times, etc.

## Disruption

### Introduction

Disruption to travel happens when 'normal' travel is prevented or hindered. Typically disruptions result from physical impediments to movement (snow, landslides, etc) along its normal channels, failure to provide the necessary facilities for movement (such as during a public transport strike) or the decisions of governments, local authorities, transport providers, insurers and others to stop, slow or restrict travel for safety or other reasons. The definition of 'disruption' may be challenged by some of those affected or the need for the action taken questioned. Blame for the causes may also be attributed to different agents and, later, the type, scale and speed of remedial action criticised.

There were few challenges to the definition of disruption for any of the case studies although some of the winter weather respondents questioned whether such weather should be seen as abnormal. All three relate to natural events which, at least in the immediate past, could not be attributed to human agency. (Although climate change is obviously a possibly explanation for the extreme weather which caused the Workington floods and the nation-wide travel disruption of December 2010, no-one suggested that humans were directly responsible for the immediate causes.) However, a few respondents hinted that mistakes had aggravated the severity of the disruption.

With the volcanic ash cloud and the Workington floods, the disruption was sudden and arrived with little warning. As the winter weather affected different parts of the country in different ways and at different times, it could be seen a series of local and associated disruptions rather than one discrete event. However, the media linked together the 'winter weather disruptions' to flights, surface public transport and road travel as well as other consequences such as school closures and the cancellation of sporting and other events.

### Volcanic Ash

Although the ash cloud was not visible to travellers, there seems to have been little doubt that it existed and banning flights in affected airspace to avoid danger to aeroplanes and their passengers was action on an appropriate scale. For the most part, respondents do not question the definition or cause of the disruption and many re-enforce the authorities' priority of safety over convenience. A few appear to consider the authorities' action as an over-reaction, knee-jerk and unnecessary. However, as one pointed out that it would take a brave official to sanction flights when there was the slightest doubt about safety.

*Less knee jerk reaction - test planes could have been started sooner but still safety must come first*

*I don't believe that anything COULD or SHOULD have been done differently.....safety MUST be a priority. ... (S)hould technological advances prove to be unforthcoming then i would expect governmants to act responsibly and apply the same restrictions. NO life....not one.....should be lost because someone was afraid of making an unpopular decision.*

### Expectations of Disruption

Although many respondents acknowledged that the disruption was an extraordinary situation, large numbers felt let down by the inability of the airlines to organise their information giving. Table 1 summarises the content of the comments about expectations during the disruption.

**Table 1: Expectations in Abnormal Conditions: Volcanic Ash Cloud**

<b>Agent/Actor</b>	<b>Expected</b>	<b>Contested</b>
Travel Agent	Be contactable, Look after customers	Be flexible, consider alternative airports
Airline	Look after passengers Provide up-to-date information (web sites) Honour tickets Be contactable (number available, phones answered, rates not exorbitant), simple way of phoning, Allow relatives to change bookings, Advance warning of cancellations, Refund cancelled flight tickets	Pay for extra accommodation and subsistence Allocate seats fairly Redeploy staff to deal with passengers Know which visas needed Keep passengers informed Allow transfer to another airline Not lie Inform passengers of length of phone queue Have contingency plans Effective stand-by policy, (no empty seats once airspace open)
Airports	Open longer to help passengers Up-to-date information Liaise with airline staff	Charge delayed passengers full parking fee
Tour Company	Look after customers, keep them informed	Be honest about what know/don't know
Central Government	Foreign & Commonwealth Office to have accurate and up-to-date information	
Embassies/Consulates	Help strandeds, Open at the weekend Give accurate information	Assist non-British residents,
Transport Providers	Update websites, answer phones, Ferries take foot passengers	Honour tickets when people delayed returning Not profiteer from situation
Insurers	Compensate for extra travel, accommodation and subsistence costs	

<b>Agent/Actor</b>	<b>Expected</b>	<b>Contested</b>
Banks		Allow strandeers to access more money
Governments		Relax visa requirements

### Workington

There was little contention about the loss of the road connections between Workington and its northern suburb and villages. The destruction of bridges on 19<sup>th</sup> November 2009 was very visible to the residents of Workington and there was also great sorrow about the death of PC Barker who fell from Workington Bridge as he diverted vehicles from the bridge, when it appeared unsafe. Although the other road bridge, Calva Bridge, was expected to collapse at any moment during the flooding, attracting news photographers in helicopters to record the moment, it did not. The damage was severe, although less apparent from the road than from the river bank.

In the immediate aftermath of the floods, Cumbria County Council closed Papworth Bridge and many others in the county to check their safety, causing considerable inconvenience to motorists. According to one interviewee, it took a little time for people to realise the enormity of the impact to travel and then they were relieved at the measures put in place: the footbridge, station and train service. However, there are reports of people tearing down the barriers and driving over damaged bridges, presumably by those who contested the judgement of Cumbria County Council in deeming them too dangerous to use.

The main aspect of the disruption which was challenged was its duration. Some respondents did not understand why it took so long to erect a temporary road bridge.

*Although we appreciate the services delivered in record time very much (ie temporary railway station, Barker's crossing footbridge and Tesco Temp store, we feel that work on a temp road bridge could have been started a lot sooner than it was. It is however a godsend and made our lives much easier - thank you.*

### Expectations of Disruption

Most of the comments tell of the hardships of life while the road connections were severed (extra travel time and costs) and how that impinged on other aspects of life. However, no-one appeared to expect any help or compensation. Cumbria County Council was praised for their efforts to erect and open the temporary bridge, although some respondents thought it had taken too long. A few respondents implied that negligence was a factor in the loss of the bridges. The provision of the temporary station, rail service, footbridge and temporary supermarket were acclaimed, although there is no suggestion that these were expected, however, this may be because the survey was conducted so long after the event. Table 2 lists the expectations identified in the comments.

**Table 2: Expectations in Abnormal Conditions: Workington**

<b>Agent</b>	<b>Expectation</b>	<b>Contested</b>
Traveller	Sort out own travel arrangements Make arrangements for children to get to school and after-school care Accept extra costs of temporary situation	
Cumbria County Council	Maintenance of roads and bridges Organise rebuilding/repair of bridges	Monitor and maintain bridges Restore and open bridges as soon as possible Minimise delays to drivers (road works, traffic restrictions) Sign alternative routes Reduce cars on road, enhance public transport
Train company	Encourage rail travel	Retain enhanced timetable and extra capacity once road bridge opened Operate safely, not overcrowded

### Winter Weather

Of all the disruptions, this is probably the most disputed especially whether it was abnormal or within the expected parameters of British weather in December. For those who claim it should be seen as 'normal disruption' there appear to be two arguments: one that because it happens relatively often we should be better prepared and the other that we should be prepared to change our behaviour in the face of adverse weather and not attempt or expect to travel as normal.

*Just be more prepared as a nation that once a year it is Winter. What about other Europeans? and other snowy places, THEY don't fall apart each year.*

*I just don;t think it is sensible to think that the economy should function when conditions are not ideal. Who says we should have a 100% attendance record right through life? The weather doesn't so why not hibernate and build a lower carbon footprint over winter. are we stupid?*

Although the weather was seen as the cause of the disruption, several respondents also blamed the reactions of human agents for increasing its severity or duration. These were commonly other travellers, local authorities or transport providers. A few respondents implicated the media in exaggerating the degree of disruption.

*Awareness to drivers of how to drive during snow. - Caused congestion on main route into Manchester through 'panicky' driving and being 'over-careful'*



*The tocs (Train Operating Companies) need to have a better response. Police information to drivers is not geographically specific and thus unhelpful. What does 'don't travel unless it is necessary' mean? Who judges necessity?*

*Media have less scare stories.*

### **Expectations of Disruption**

Various expectations about the role of different agencies during such disruption were expressed. Local authorities were the agency most mentioned with the duty of clearing and gritting roads, pavements and cycleways. Some respondents acknowledged that they could not do everything at once and several suggested that residents could do more to help their own area by gritting and clearing if the resources were provided. However, this gave some respondents a dilemma about where the boundaries of self-help and expectations of public services should lie. Central Government was seen as responsible for the funding it grants local authorities and provides for bus and train travel.

Bus and train companies were expected to keep services running as much as they could and keep their passengers informed about changes to schedules. Some felt they should have contingency plans for reduced schedules, network coverage (when only some roads had been cleared) and for investing to prevent undue delay in extreme conditions.

The power of employers to decide where the employee worked was not questioned, although many queried the wisdom of the choices made, usually when working from home was not sanctioned. There was a sense of unfairness that the employee bore all the costs of extra commuting time and employees who felt obliged to travel when they considered it dangerous or to use their annual leave or flexitime were resentful. This was exacerbated when the employers had not been seen to provide safe parking or pedestrian access.

Society in general appeared to be expected to look after vulnerable members, ensure they had food and were not put at risk. Several respondents challenged the culture of expecting to be able to travel as normal whatever the weather and advocated a more flexible approach. Individuals seemed to expect to be responsible for their own travel decisions, although to be advised of changes in the travel context. Table 3 summarises the expectations apparent in the respondents' comments.



**Table 3: Expectation in Abnormality: Winter Weather**

<b>Agency</b>	<b>Expectation</b>	<b>Contested</b>
Traveller	Be prepared, Attempt to go to work. Expect longer journey times.	Expect to travel in all conditions. Live far from work. Fit snow tyres Learn winter driving skills
Resident	Clear frontages, look after vulnerable neighbours	Be prepared to help grit/clear local roads
Local Authority	Gritting/clearing pavements, cycleways, roads, providing and filling grit bins for residents to use	Priorities, especially about pavement clearing, but also cycleways and minor roads. Invest more to prepare for bad weather. Avoid closing schools Contract farmers to clear rural roads
Central Government	Support public transport. Fund Local Authorities to implement policies	Call in army, unemployed people, low risk prisoners to help clear snow and ice.
Train companies	Try to run a normal service. Have contingency plans for bad weather. Better, up-to-date & consistent information (web, on trains and at stations). Heated carriages and stations Maintain catering on trains and stations, Newer trains, less prone to break-down	Not to curtail services early leaving passengers with long waits for connecting services. Avoid shortening trains and creating over-crowding Allow season ticket-holders to travel by bus, when trains cancelled.
Network Rail	More investment in resilient operations	Better franchising agreements to protect passengers in bad weather
Bus Companies	Run safely. Keep people informed.	Have extra drivers when schedules are disrupted by weather and traffic.
Employers	Make premises safe for parking and pedestrian access. Implement policies for severe weather	Expect workers to lose own time when commuting difficult. Allow home-working when appropriate, Disseminate information about site closures
Police	Warn of any dangers	Specify what they mean by essential travel
Health Authorities	Care for people injured	Pay for more pavement gritting to prevent accidents
Media	Give realistic information, so people have sound base for decisions	

## Summary

It appears that, for the most part, these disruptions were not disputed, although the duration of the disruption could be. The priority of people's safety is not questioned, although in some circumstances some people contested (through their responses or actions) the degree of danger that existed.

Other people or organisations are sometime blamed for extending the disruption or increasing its severity through poor responses or lack of action. In the case of the volcanic ash cloud the decisions about flights were taken by Air Traffic Control. In Workington, Cumbria County Council controlled which roads and bridges were open and closed. In contrast, the weather conditions of December 2010 were very localised and changed dramatically over a few hours. Here decisions taken by numerous individuals and agencies, (individual travellers, employers, transport providers, local authorities, the media) influenced the impact of the disruption. Perhaps in these circumstances, it is easier to find actions/non-actions which one can criticise.

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## Touching the New Context

### Introduction

This stage relates to when travellers become aware of the disruption to their travel and what it means for their travel plans. The three case studies differ greatly both in how this stage occurred and in the information we have about it.

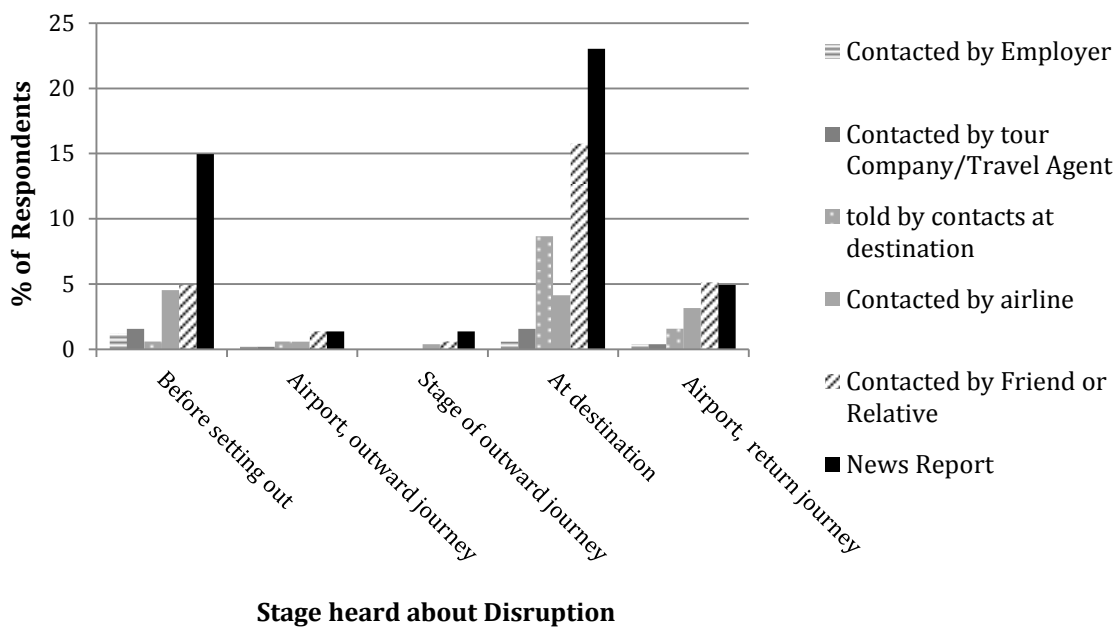
For the volcanic ash flight ban, we have quantitative and qualitative data about the information available and how people accessed it. Probably the majority of the comments refer to the difficulty of acquiring information in a changing scenario and many of the respondents were actively engaged in finding out how they could get home when they completed the survey. There is much less data from Workington and most of it is from the interviews, rather than the survey, partly because the survey took place several months after the disruption. In Workington too, after a situation of flux for two-three weeks after the floods, once the temporary station, shuttle train service and foot bridge were opened, it settled down and people were able to adapt to the new context and soon became aware that it would prevail for several months. In the case of the winter weather, the situation was changing daily, even hourly and it was very varied over the country. Thus 'the new context' was a moving scenario, requiring updating regularly. The quantitative data give us information about specific journeys and how people found and sought information for these.

### Volcanic Ash

#### Finding out it had happened

For many of the respondents, news of the flight ban came while they were out of the country, however, it probably interrupted the travel plans of more people who had not left their home countries. How people heard the news depended to some extent on where they were on the journey (before leaving, at the airport, en route, at the destination, on a stage of the return journey). Figure 5 shows how people heard and which stage they were at.

**Figure 5: How Passengers heard about Disruption**



While some were contacted by their airline, many people heard when they arrived to catch their flight or even after they had boarded the aircraft, others were alerted by tour agents' staff, friends, relations or happened to hear about it.

*I saw the email the morning after  
air hostess  
Swim pool gossip  
Comment made by relative on Facebook*

### Seeking Information

Although, initial knowledge of a flight disruption was inevitably received passively, ie the news was given to the traveller, it often sparked a very active search for further information about how it would affect their planned journey. A very high proportion of the comments relate to the difficulty of acquiring information, being able to depend and act on it.

A major problem was finding out whether or not the flight was operating and the airline's contingency plans. Airlines were often overwhelmed by the volume of telephone calls, causing long queues or the lines to be permanently engaged. Some passengers experienced further difficulties because they did not have the number to call, found the overseas calls expensive while charges and long waiting times drained the money from their mobiles. Being in a hotel overseas or in a different time zone caused other difficulties. A few asked relatives at home to deal with the travel agent or airline on their behalf, but sometimes the rules would not allow this. Websites also could not cope with the traffic and crashed. Many found they could only get information by going to the airport, often at considerable expense or inconvenience. Information was frequently received too late for appropriate action.

*The cost of telephoning from abroad made it very difficult in terms of contacting people.  
I was lucky I had my laptop and friends eventually showed me how to use skype.*

*Expedia in USA wouldn't deal with enquiry, told had to phone UK (premium rate) phone number. Partner called in UK, but kept being cut off after long periods on hold, then Expedia wouldn't deal with him as he hadn't booked the ticket... I spent 2.5 hours on hold in USA to British Airways (fortunately freephone number in USA) and eventually got ticket rebooked one week later.*

*Made at least 6 round trips to airport, costing £23 min each time by shuttle bus. No other way to get information.*

Another problem encountered as people attempted to 'touch the new context' was contradictory information, making it difficult to make decisions about revised plans. Some of this was caused by different agencies giving out different information, some by the changing situation or possibly tentative plans. A few respondents report how they began to make sense of this with accrued contingent knowledge about which sources to trust and which not to.

*An excess of information on the various media led us to make an incorrect decision that our flight would not take off from Heathrow. Dublin airport was reportedly closed and Heathrow partially opened. As we had a 3 hour journey (minimum) to Heathrow we did not think the skies would be clear for our flight. They were so we lost our money.*

*TO BE TOLD TO GET TO THE CHANNEL PORTS (BY THE TRANSPORT MINISTER) FROM WHEREVER WE WERE WAS SILLY ADVICE*

*Getting info is very hard in a foreign country when you don't speak the language (cant understand TV radio),*

*we were given conflicting advice which included being rerouted via USA and told we didn't need visas or to register our travel with USA, which we later discovered by chance was wrong and we would have been turned away.*

*Embassy/Consulate - waste of space!!! Grumpy and rude staff gave us false information ... Gave up with consulate.*

*RTE, the Irish tv/radio station, set up a really useful information website*

Several "stranded" recruited members of their home networks to help them with the task of touching the new context, sometimes because it was easier or cheaper to search for information from the home base, than from accommodation overseas. Some also found information from friends at the destination invaluable.

*Mum spent a lot of time trying to find out more about the situation and researching alternatives.*

*I have already received information from my friend that the flight was cancelled (info via airline website), but the staff at the check-in desk had no clue.*

*Today I'm told by my Finnish friend that even though now the airports are open, more ashes are expected on the weekend when my flight was rescheduled, so I see more cancellations and delays in my journey.*

For passengers stranded in Europe and surrounding countries, there was always the possibility of using surface transport to get back home or to their destination. This required information about alternative transport and sometimes about the consequences of staying where they were. Decisions often had to be made with imperfect information. Some potential air passengers appear to have been very informed about their options, including times and prices, but others had to negotiate new systems, sometimes in a foreign language, while those systems

also adjusted to the massive rise in demand, some by raising their prices. There were also minor disruptions caused by a French Railway strike and riots in Bangkok. Touching this new context reminded some travellers of how cheap airlines had eroded the networks of ferries and trains they remembered.

*Some train websites in Spain and France were difficult to use and there was a train strike in France. Also the Eurolines website needs to be used a week in advance to buy tickets, this made it very difficult if you had no access to a phone.*

*Language barriers were a huge issue, main train/bus stations should have had extra staff on or at least reps from consulates or something to help.*

*I checked cost of train to London at 6.30 am. £130, by time my daughter went to buy her ticket at 11am it was £200. That's exploitation.*

*The disruption due to the political situation on Bangkok then meant that we were hurriedly moved out of Bangkok on a 3 Hour bus journey.*

*... there is no decent ferry service from Scandinavia to the UK. Just three sailings a week to Esbjerg in Denmark and that's over 1000km from where I live in Sweden. There used to be ferries to Gothenberg in Sweden and Stavanger in Norway, but they closed because they couldn't compete against cheap air travel. ... So at the moment air is the only sensible way to travel between Scandinavia and the UK. If this crisis leads to a reopening of the ferry routes I will be extremely happy!*

*The incident shows that too much is going via Airlines. The incident shows that fast train lines have to be established throughout Europe ASAP.*

Another form of 'touching the new context' came about when travellers met others in the same or a worse predicament than themselves, which could make them re-assess the seriousness of their situation.

*On our coach to Calais were 2 very young girls who had been found on a beach in Southern Spain with no money, no credit cards and a dead mobile phone. Had a family not taken them under their wing, they would have been very vulnerable to predation. Inability to contact the consulate made this all much worse.*

*... other stranded people were in a worse state than us*

*However, many other passengers were not as fortunate as us (no money, didn't know where they were sleeping that night, no food, having to pack and repack for accommodation changes due to hotel bookings, awful emergency food, cramped in alternative apartments, awful airlines whose websites had crashed but were taking money upfront for transferred flights they had to reclaim back later etc, etc).*

This disruption differs from the others in that it affected a form of public transport which normally offers a complete package for passengers. Once people arrive at the airport check-in, they are shepherded through waiting rooms, onto the aircraft and generally follow set procedures until they arrive at the destination. For people on package tours, there is an even greater element of being looked after. When these systems failed to provide the expected package or even look after their passengers and customers, many felt extremely let down, even abandoned as they had to make their own arrangements for travel and/or accommodation.

*Air Canada will not help me get from Germany to the UK - once I am in Germany, I am, in their words, 'on my own'.*

*Initially, when all flights stopped, we felt very much on our own and that it was down to us to sort out alternative travel arrangements,*

*I felt completely at a loss especially as I had only limited access to a computer and e-mail in Africa where I was stranded.*

The use of mobile and electronic technology was an important factor in being able to 'touch the new context'. It was extensively used to contact family, friends and employers, to establish what was happening to booked and delayed flights, research alternative travel arrangements and accommodation. However, this put those without it at a disadvantage. Facebook was employed to help people arrange car-shares to get back home and to find accommodation.

*Too much emphasis placed on internet - some people either because of age, access, could not use internet.*

*It has also reminded me of the value of wireless internet access and how wonderful Skype is - as this has saved me a LOT of money.*

*Found a group on facebook dedicated to car pooling. One person had posted he had found a hired car and was going from Paris to Gothenburg and wanted people to share the cost with.*

## **Workington**

Many residents of Workington first heard of the collapse of Northside Bridge when they turned on their radios or televisions on the Friday morning of 20<sup>th</sup> November 2009. The county was already suffering dramatic floods and the centre of Cockerham (nine miles away) had been flooded the previous day. One Workington interviewee recalled seeing images on the television in the morning and when his wife asked where it was: she was incredulous to find out it was their home town. Apparently most people who worked on the opposite side of the river realised they could not get to work and took a day off on the Friday, imagining that the situation would be rectified by the Monday. However, by that time they were alerted and realised they needed to follow the news and other information given by the local radio, Cumbria County Council emergency bulletins and word of mouth.

The first stage of 'touching the new context' occurred in the fortnight after the flooding, when the situation changed rapidly. It started with no road or foot routes across the river and people wanting to travel between Workington and northern Cumbria by road, having to travel inland to the M6 and then back towards the coast, a detour of about 40 miles between north and south Workington. Not only were different routes no longer available, the impact of hundreds of people trying out different modes and routes was unknown. Trains were soon over-loaded once people realised this took less time than using the roads. Some people drove further north in order to get a seat before the train filled up. By the end of the fortnight, a new footbridge had been opened (1<sup>st</sup> December), extra trains had been organised and the new station to the north of the town opened (30<sup>th</sup> November), temporary doctors' surgeries established on the north of the river and a temporary supermarket was due to be opened (14<sup>th</sup> December).

*I cancelled my child care duties on the day of the floods but used the train until the bridge re-opened.*

*Bridges to and from work destroyed. Forced to do 18 mile detour initially by car until Barker Crossing (foot bridge) erected.*

*We had to put holidays in at work while alternative travel arrangements were made.*

The next stage was more stable as people adjusted to the conditions and learnt that they would have to continue without a road bridge for several months. As regular patterns of congestion became apparent, those travelling by train and road adjusted their time of travel where possible. People also became reconciled to what they could and could not do as well as the extra time and costs of travelling. Initial safe-guards for pedestrians near the foot bridge were relaxed, allowing taxis outside of bus operating hours. Some young people realised the potential of free trains between Workington and Maryport and started travelling up and down on them, causing annoyance to some passengers and re-enforced policing on the trains (Times and Star, 25/02/10). Workington Police also took out a dispersal order for the centre of Workington to prevent trouble if members of Maryport and Workington gangs met one another (Times and Star, 26/02/10).

*The temporary Tesco store was a lifeline. Tried the buses and Barker's Crossing, but because I have arthritis. I found standing waiting in the cold and wet extremely difficult.*

*Until Barker Crossing was up I had to travel to work by car via Cockermouth, 30 miles extra per shift. Once the crossing was up I bought a bicycle and used this for work.*

*When the bridge first collapsed I used to go to work on the train there and back. After Xmas I used the bus all the time.*

## Winter Weather

During the period of winter weather, conditions rarely stabilised, so people scarcely had the opportunity to adjust to a new context before it changed. This made it difficult to judge whether a return journey would present different difficulties even for commuters and shoppers. Not only were there variations over short time periods, but also over relatively short distances and locally between major and minor roads, steep and gentle gradients. Many people 'touched the new context' when they left their houses or waited for bus or train, but because there was general awareness that weather was causing problems across the country, many respondents made attempts to find out about the extent and severity of disruption before they left. For people attempting longer journeys, such as visits to friends and relatives around Christmas, there was usually the potential to adjust the timing of the journey to minimise the likelihood of delays.

*Detailed information on the state of the road at points along the journey. The snowfall is very patchy so it's difficult to assess whether to embark on a journey when the state of the road 10 miles away could be very different from close to home.*

*I can accept the weather - it cant be helped, its the lack of reliable information that really causes me an issue.*

*... there could be MUCH better communicaiton by public transpourt services - that really wouldn't be too difficult*

People using public transport had to rely on the information given by the transport provider. This drew criticisms about being too late, inaccurate, uninformative, difficult to access or non-existent, making it difficult to make decisions about travel ranging from whether or not to make the journey, use another mode, postpone or sometimes of a smaller scale (eg which train or platform to use). On occasion, the lack of information caused inconvenience and



discomfort as well as anxiety. Some respondents felt that better communication within companies would lead to customers receiving more recent and accurate information.

*After waiting 8 hours eventually managed to speak to someone from national Express, realised no coaches were running and had to get a taxi to Swansea at a cost of £200. Realise that the weather conditions affected the services but the ;lack of information caused us great difficulty.*

*Trains were running slightly late and information from Scotrail was conflicting (station announcement that the train was cancelled followed by second announcement that train was arriving (which it did))*

***What could have been done to improve your travel?***

*More information, and most importantly, accurate information relayed to radio, local tv, websites. All these sources of information were hugely optimistic about realistic travel options, causing hundreds of people to swarm in the station expecting some sort of service, only to find the place completely closed!*

*When I called, all they did was read out the website to me!*

*The info screens got it completely wrong sending people on wrong trains. An employee at Twickenham jubction took charge correctly countermanding the incorrect info on tannoy and screens.*

*When the roads have virtually stopped operating and there are no trains in or out of the station, it is unhelpful to suggest that passengers seek alternative means of getting to their destinations - this announcement was actually made!!!!*

*more updates via train station staff. As long as I know how long I'll be waiting - it's the not knowing thats distressing.*

The general advice not to travel unless your journey was necessary was criticised for being too vague.

*The message 'do not travel unless necessary' is poor advice and means different things to different people.*

## Summary

The differences between the case studies are very evident for this stage although some of these differences may reflect the point at which respondents completed the surveys. (Most volcanic ash cloud responses were during the actual disruption, those for the winter weather were during the or shortly after the disruption and Workington respondents completed the survey about two months after the opening of the temporary road bridge, seven months after the bridges were closed.)

Most of the respondents of the volcanic ash cloud disruption had an immediate problem of being stranded in a foreign country for an indefinite period with little knowledge of the relative advantages and costs of staying put or attempting to return by other means. Information would have helped their decisions but was largely unavailable for a number of reasons. Not knowing the conditions and so being unable to decide on the best course of action caused a high degree of anxiety Some of the people affected by the winter weather wanted more information, particularly for immediate journeys, including getting back home.

Information seemed much less of an issue for respondents from Workington, although it may have been more important at the beginning of the disruption.

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## Revised Plan

### Introduction

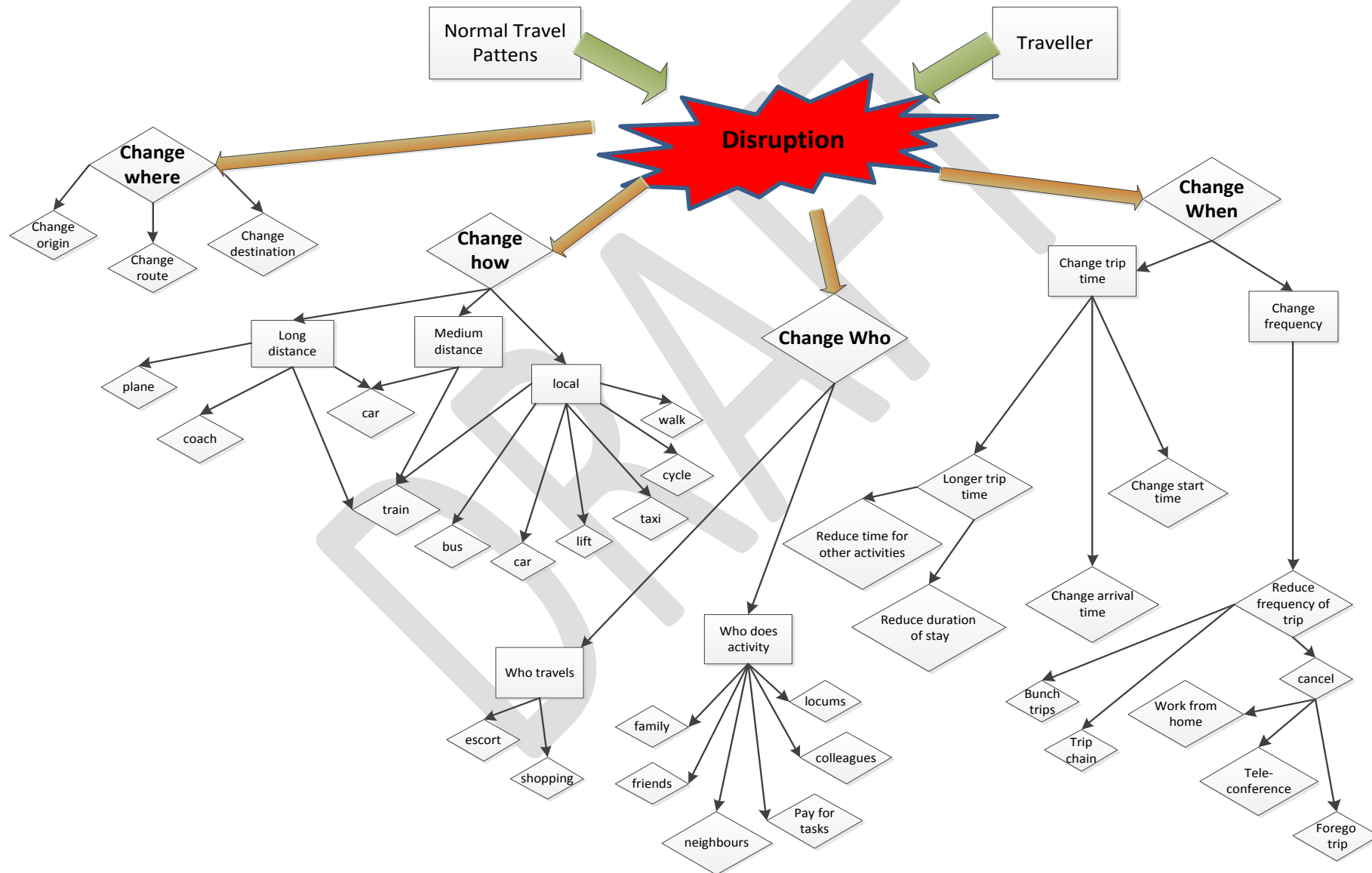
Once travellers have 'touched the new context', they need to decide how to proceed. These decisions involve trade-offs of effort, cost, time and reflect the travellers' values. Their choices involve changing when, where and how they travel and occasionally who travels, they also include changes to the cost of travel. Again, there are critical differences between a 'one-off' journey, such as getting home from being stranded by the flight ban, to regular journeys to work in bad weather or day-to-day travel for five months around Workington.

The temporal (or when) aspects of travel include postponing or cancelling a journey, changing the frequency of a regular journey or altering the time of day or week when a journey is made. Another temporal issue of disruption can be the extra journey time needed to make journeys, usually displacing other activities.

The spatial (or where) aspects of travel involve changing the destination and, occasionally, origin of a journey as well as route changes. The 'how' aspect concerns changes of mode. The 'who' aspect relates to travel or activities which are undertaken by another person because of the disruption such as a friend taking a child to school or a colleague doing the work of someone who is not able to reach work. No doubt, when disruption increases the cost of making a journey that restricts the money available for other activities. The surveys yield some information about the monetary cost of the disruptions, but little about how that impacts on other activities.

Of course, for disruptions such as the volcanic ash cloud and the winter weather, the stages of touching the new context and the revised plan are rarely discreet. Deciding a course of action may be contingent on receiving more information or new information may change the course of action. The use of mobile information technology helps planning on the move.

Figure 6: Strategies for Travel Disruption



## Volcanic Ash Cloud

The alternatives available to people depended at which stage of the journey the disruption happened. People unable to leave were faced with the options of delaying, cancelling, using alternative modes for closer destinations or switching destination. For those stranded away from home there were different options depending on how far away they were, how their journey had been arranged (by tour company, travel agent, employer, self, etc) and the resources they had (access to cash, driving licence, mobile technology, social networks, information about alternative modes, etc).

## When

People who were expecting to travel very far from their homes mostly had no alternative but to cancel or postpone their journey. Which they did could depend on why they were travelling. If it involved a specific event such as a wedding or conference, there was no point in travelling once the event had taken place or in some cases postponed because of the ash cloud. In some cases companions could not be available at a later time. If it involved more flexible arrangements, such as a holiday or visiting relatives, it might be postponed if it was possible to arrange for the planned absence (from work and other commitments) at a different time.

*Problem relates to the TTRA Europe conference which has been postponed*

*I could not shift my dates as my friends would not have been around for me to stay with as they were going on holiday themselves so I had to cancel outright*

*I only work 1 day a week (delivering papers), but couldn't cancel my leave (they had arranged cover), so I have used one week's allowance that I would really like to use for the replacement holiday in the autumn.*

For people stranded away from home, cancellation was not an option and the delay had to be accepted and its impacts minimised. Commitments requiring their presence at home or elsewhere had to be postponed, delegated to other people or missed. Several respondents tried to reduce the impact on their work by working remotely, while others acknowledged that 'catching up' would require effort and time once they were back.

*As a university lecturer I had to cancel one lecture, ask the university to find a replacement to supervise one workshop, and postpone an assessment by 7 days.*

*I had a meeting planned with a new customer whom I didn't have their contact details with me so I wasn't able to let them know I was stranded abroad. I missed an Emergency Call-Out for a customer whose system had broken down and had to telephone a colleague in another business to attend to my customer's property and carry out repair and earn the income as a result.*

*I missed giving my best man speech at my friend's wedding!*

*We missed the funeral of our Grandad as if travel arrangements had not been disrupted, then we would have been at the funeral.*

*Although I managed to do a bit of work from my hotel room, much of it was fire-fighting. I will now have to catch up with all my missed work in my own time.*

## Where

Some respondents unable to reach their destination arranged alternatives, but as the majority of respondents were stranded away from home, their only spatial

flexibility was over the routes they used. This often involved flying to close to the edge of the ash cloud and then continuing by surface modes or vice versa. Others diverted to stay with friends and family rather than in more costly temporary accommodation.

*A holiday to a completely new destination - Paris - was booked. We travelled there by train.*

*I travelled back by a circuitous route, via 3 separate stopoffs with 3 separate airlines (Bangkok - Chennai with Thai Airways, Chennai to Bahrain with Gulf Air, Bahrain to Athens with Gulf Air, Athens to Heathrow with Olympic Air.*

*After the crisis began and did not look like ending for a while I made alternative travel plans to go by train to Madrid and then to fly Air Egypt to Bangkok and home by Air Asia.*

*I went to stay with my father who lived closer to another airport,*

## How

For people attempting journeys within Europe even as part of an intercontinental journey, there were a number of alternative modes available: train, ferry, coach, hire car, car share and lifts from friends, family and acquaintances. Journeys often involved combinations, sometimes setting off without knowing how to complete the trip. Sometimes serendipitous encounters or other agencies such as the British Consulate, Girona Tourism Information Centre helped them on their way.

*I managed to fly a part, was offered a ride for another part of the journey, mostly travelled by train and coach, eventually my own car, then a ferry.*

*A friend of a colleague has driven us from Madrid to Biarritz From Biarritz we took the train to Brussels with a stop in Bordeaux and Paris. In Paris we had to change the stations, this way we made by taxi. In Brussels my dad collected us and we drove back to Cologne.*

*I love to hitch, and it was WAY fast. Four cars from Geneva to Paris!*

*Came home under our own steam! 9 trains, 3 boats, 2 coaches, 2 taxis and 1 car journey later, we got there.*

*One person had posted he had found a hired car and was going from Paris to Gothenburg and wanted people to share the cost with. I contacted him and that's how I got home. From Gothenburg it was not a problem to get a train to Stockholm.*

*coach provided by british consulate in Madrid*

*Formed a group that recruited passengers for bus hired by Girona airport tourist office when we had a bus full - got 90 passengers*

*Thankfully I met a man in the bus queue to Rotterdam port who said I could share his 2 berth cabin. And I was on the ferry Tuesday night.*

In the atmosphere of uncertainty several people hedged their bets and arranged different methods of returning or accommodation. Frequently social networks were used either for practical help or in giving information.

*Having also booked BA flights home for the following sunday as an 'insurance policy' we eventually rebooked with Ryanair on Thursday and flew home successfully*

20 April: train from Madrid Chamartin station to Hendaye. 21 April: trains from Hendaye to Poitiers, Poitiers to St-Pierre-des-Corps, near Tours. My husband collected me from the station; he had travelled from Aberystwyth by car and ferry. 21-23 April: staying with family near Le Mans. 23-24 April: overnight scheduled ferry from Caen to Portsmouth. 24 April: drove home to Aberystwyth.

*it has also highlighted how lucky I am to have friends from all around the world*

### How Much?

Some respondents were worried about the cost implications of their prolonged stay and/or return journeys, especially when it was unclear who would be paying. Some tour operators immediately assumed the responsibility, others were less helpful. There was also considerable ambiguity about whether airlines were required to provide accommodation and subsistence for stranded passengers and, as with tour operators, there were varied experiences and passengers often commented on how treatment differed. When airlines refused help and it was not clear whether insurers would pay out, 'stranded' could become anxious about their ability to meet the costs. Again friends, relatives and other social networks often provided accommodation and help.

*the tour operator could not have been more helpful in sparing us delays/angst/expense*

*The airlines behaved appallingly leaving people stranded with no help or information while the tour operators particularly Thomas Cook and Thompson were brilliant*

*It was at this stage that Thomas Cook told me it was not their concern.*

*I didn't bring that much money with me as my trip was only for one week - I don't have any bank account here in Germany, no credit card. I am just really fortunate that my cousin lives here in Frankfurt and she's so nice to "adopt" me while I'm stranded.*

*The Association of American Geographers, who hosted the conference I attended, set up a facebook page for people who were stranded, and geographers in the US offered free accommodation*

### Action or Resignation

In deciding on the revised plan, travellers had to take stock of the actions that were available to them and which were not. People stranded close enough for surface modes to be feasible had more scope for action, but this often demanded a whole string of decisions. Those in other continents often resolved to make the most of the situation, which they could not change. Sometimes the costs of being away (paying for accommodation, running out of medication, missing family, losing pay, feeling guilty about work or family commitments) added impetus to the effort to return. A few travellers enjoyed the adventure of the new experience.

*travelled south as family and rented an apartment in calahonda to cut hotel costs booked ferry for santander then found flight to belfast aer lingus 27th april. tried to find earlier flights most full also had cancellations in between times. couldnt get thro france because of train strike car hire was extortion.*

*The only option for me right now is to wait for my airlines to resume their flights*

*I was stuck in my destination (Washington, D.C.), unable to return home to Scotland, so I hired a car and decided to spend the time between my scheduled (but cancelled) flight and my newly arranged flight in Ohio with my mother.*

*assuming that we get our money back we shall treat this as an adventure. if not we shall be penalised financially for some time to come.*

*Some made the best of the extended trip by exploring Beijing in more depth and/or went to visit Shagnhai, Tianjin.*

*It was an adventure and a character building learning experience*

*Had a blast, I'm thoroughly grateful for every moment of the way.*

## **Workington**

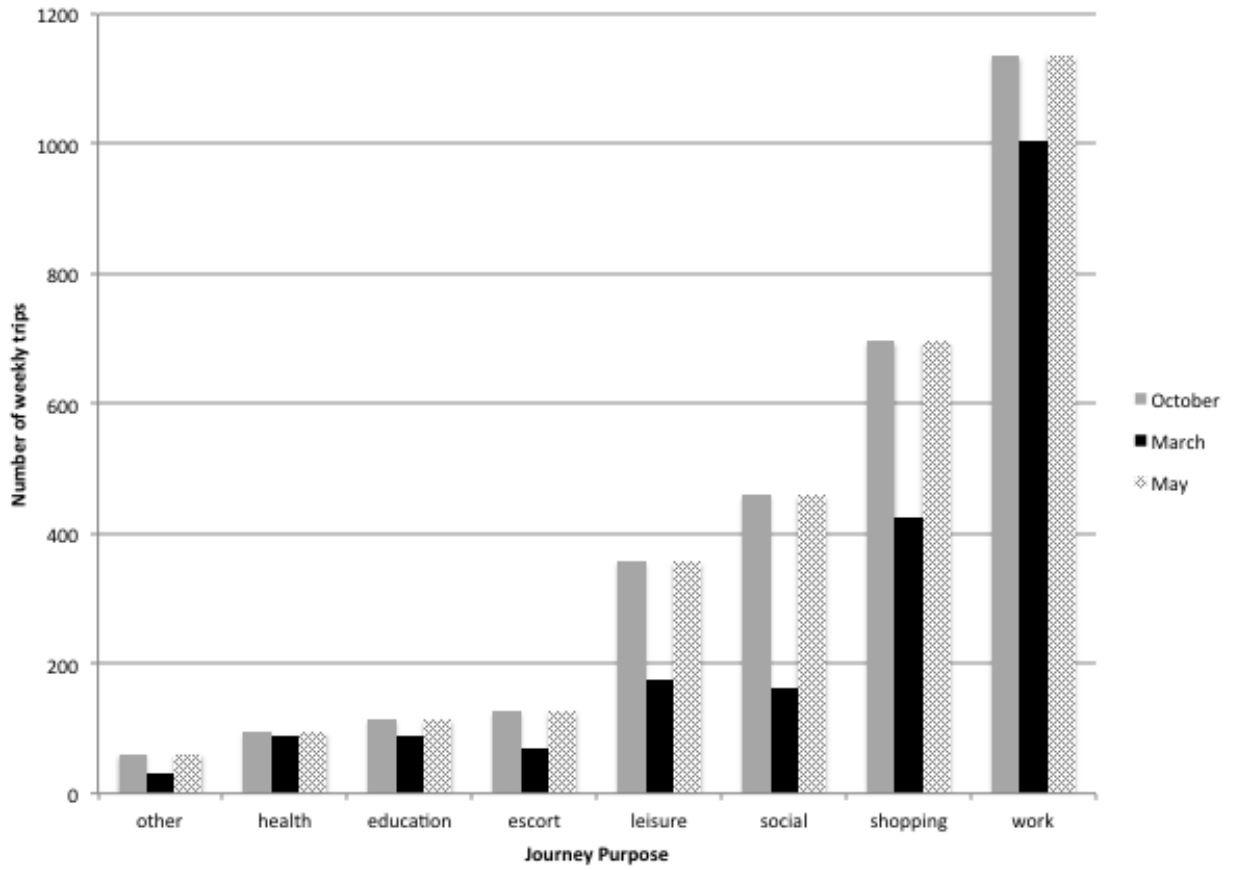
The situation was very different in Workington, where people had to find ways of continuing their lives without direct road access across the river. Many normal flows were severed as destinations which had been close, were now effectively several miles away. There were examples of all kinds of adaptation, which tended to vary according to the journey purpose. Table 4 explores how destinations changed and Figure 7 shows how the frequency of journeys for different journey purposes changed. Figure 8 gives the mode changes by journey purpose.

**Table 4: Changes in Destination by Journey Purpose: Workington**

	<b>% of respondents</b>	
	October to March	March to May
Changed destination for some trips	23.3	21.1
Work	6.0	5.8
Education	1.8	1.4
Escort	3.2	0.7
Shopping	17.7	14.7
Social	13.4	10.8
Leisure	14.7	12.0
Health	2.1	1.8
Other	1.2	0.9

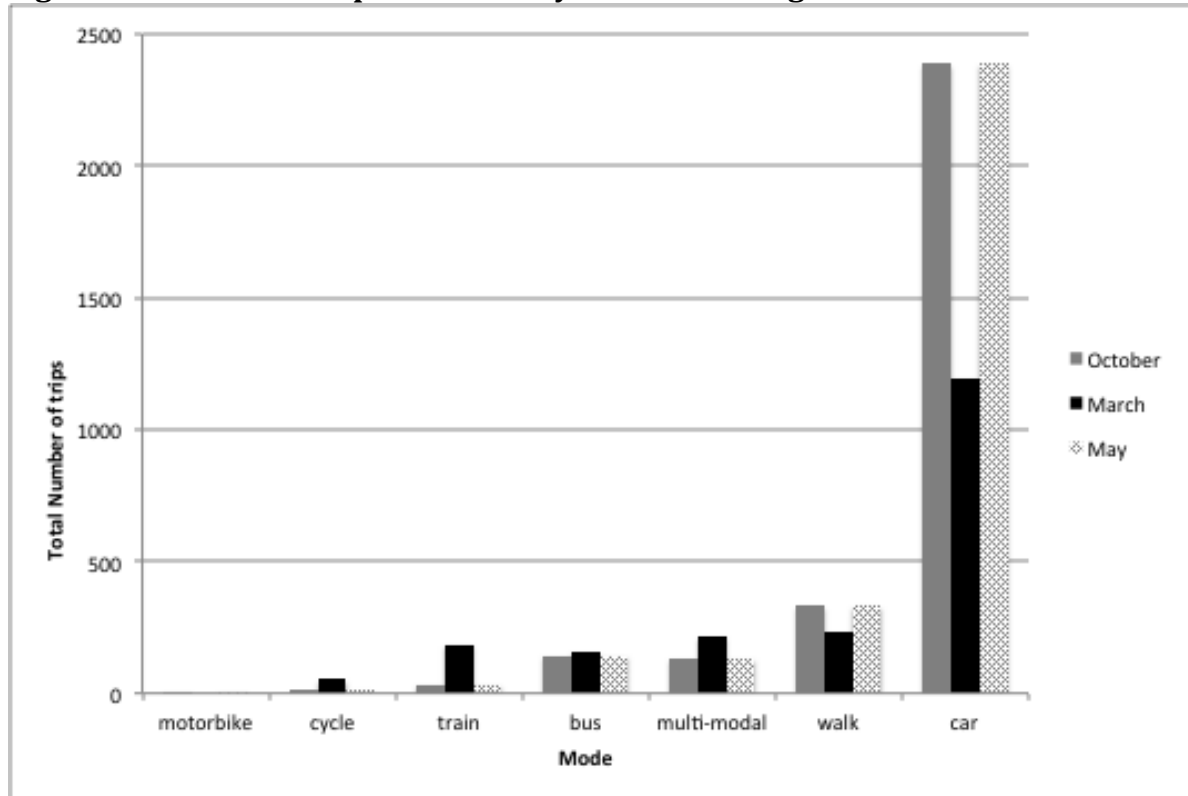


**Figure 7: Number of trips reported for October, March and May by Journey Purpose: Workington**



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**Figure 8: Number of Trips recorded by Mode: Workington**



### When

There were a number of temporal changes. These included ceasing to make certain journeys or making fewer trips, usually discretionary journeys. At least one household temporally reduced their number of journeys by taking annual leave. Less discretionary journeys such as to work, for health care or important social commitments often took much longer, so reduced the amount of time available for other activities. Some people reduced the time they stayed at the destination to compensate for the extra travel time. Travel times also became less predictable, obliging people to allow longer travel times when punctuality was required. 'Rush hour' congestion lasted longer, causing those who could to change when they travelled to avoid the long delays.

*I couldn't see my mother as it was a four hour round trip for ten miles.*

*I got out of routine of going to Church (must try to re-establish).*

*Loss of bridge had a profound effect on life- reduced chances of popping over to friends and shopping*

*The main effect was to break the habits of twenty years. Visits to grandchildren entailed 40 mile round trips. Visiting my late wife's memorial tree at Isel was difficult.*

*Number of journeys unaffected but duration increased dramatically. 5 minute car journey was 30 minutes following the flooding.*

*Shopping was affected, volume of traffic meant extra miles and time to destinations.*

Travel to work across the river took much longer because of the extra distance and congestion. People adjusted by setting off earlier and returning later. Those who could, adjusted the timing of their journeys to avoid the worst delays.

*so much time spent in traffic jams had to get up alot sooner...arriving home later,*

*Main inconvenience for me was arriving for work about an hour late after traffic jams and returning home about half an hour late.*

*Until Barker Bridge opened we went on Tesco bus trip of 21 miles so only went twice a week for shopping and doctors. We had to make sure appointments were at lunchtime to get there and then get home.*

*Travelled to various places to work - had the ability to time my journey and therefore didn't venture at peak times.*

Precise timing for set appointments became difficult, especially for less frequent journeys.

*Making appointments for the Doctor and Hospital was awful as you couldn't gauge the time to get there.*

Some travel commitments were considered essential and so the extra travel time was reluctantly accepted as unavoidable. Occasionally the duration of stay was reduced to accommodate some of the extra time.

*32 mile round trip had to be done every day as my 97 year old mother lives in Seaton. First night of the bridge closure I travelled 94 miles home up to Carlisle via Penrith.*

## Where

For activities that could be performed at different locations, such as shopping a change of destination could reduce the travel time or cost of making the journey. A temporary supermarket was also opened on the north side of the river changing the destination of some shopping trips. Some public sector jobs were relocated so employees could work on the same side of the river as they lived, but some people lost work because of the travel difficulties. One person also reported moving temporally (in effect changing their journey origin) to be able to attend a work placement.

*Banking had to be done in Maryport most of the time instead of Workington until the footbridge was up.*

*Had to allow extra hour either journey to and from shopping at Morrisons. Was not worth the time waiting in traffic, it was quicker to get to Carlisle, via Maryport Road than it was to Workington.*

*Personally I was able to change office/place of work so as not to travel Northwards*

*My wife lost her job due to health issues and stress of trying to use Public Transport. She had to walk or face a 36 mile round trip by car. Her employers were south of the river and not very understanding of the difficulties. We both feel the no bridge situation/poor public transport links were a causal factor.*

*As I was on placement in Workington, living in Seaton was not practical and it was difficult. Therefore I was forced to move and live with a relative in Workington.*

## How Much?

As well as costing extra time the extra journey length involved increased costs. Several respondents mentioned higher fuel bills as well more money being required for maintenance and repair due to longer distances, stop-start traffic and the poor state of many of the roads after the floods. In some cases, the extra costs meant the journey was not undertaken.

*Our travel expenses rose by £80 per week and travel to and from work rose by at least 10 hours each per week. Social events were none existent due to extra travel time and expense.*

*Everything (apart from spending extra petrol money and car-repair bills for resulting bad roads through extra use) nearly ground to a halt. Felt isolated.*

*couldn't visit friends in Seaton as too far and too costly in petrol.*

## How

Once the temporary footbridge and station had been opened, walking and train travel were cheaper (both were free) and faster than car travel. Many respondents did change from car to train or walking (sometimes using buses to get to or from the foot bridge) and mostly these respondents have positive comments about their adopted mode, although some lamented its reduction once the temporary road bridge was opened

*I used the free train between Workington and Workington North and Maryport. This was such a real help on petrol & time.*

*I used the train or chose off-peak times to travel by car.*

*Travel to work from Seaton to Police Station was much easier for me before the temporary road bridge opened! I had the regular bus to Footbridge as an option- that's gone. The closest I can get to work through Public Transport now is the 'scenic route' to the Bus Station or Train Station. I still use Footbridge. Thank God I'm not disabled!*

*Walked from house to Bridge and caught bus then got picked up by family to Seaton. When I came back I got dropped off at Bridge and walked through town or or was taken to the temporary railway station*

*I must add that the footbridge was a Godsend. Up until the temporary road bridge the buses met up at either end of the footbridge. if this service had carried on I am sure a lot of cars would still be off the road.*

*We run our business from home in Seaton. Our storage depot is at Moorclose. We had to cycle there to to take deliveries.*

## Who?

There were a few incidences when family members stepped in to help, usually to get children to and from school because their parents needed extra time to commute.

*My daughter and granddaughter live in Staiburn and I live in Seaton. Before the footbridge was built we had to drive round by Cockermouth via Broughton Moor Dovenby over Papcastle Bridge. When the footbridge was opened we drove to the nearest point- myself to Toll Bar House and my daughter to Workington Police Station then walked to meet each other so that I could take my granddaughter to Seaton Junior School. We still do this now even since the new temporary road bridge was opened. If we did drive it took longer and had to drive through Workington Town.*

## Winter Weather

Most of the respondents of the winter weather survey wrote about day-to-day travel, predominantly commuting. While they might have expected the disruption to continue for a few days, they did not have to plan how they were going to organise their lives around it for several months, unlike the respondents from Workington. Also, it was a changing picture as new snow fell and lying snow turned to ice or was cleared. Another difference between this disruption and those at Workington and from the volcanic ash cloud was that most

travellers had experience of the impact of winter weather, particularly from the preceding year, but also previous winters or from visiting other countries. As with the other disruptions there were temporal, spatial, modal adaptations.

### When

The extra time needed to travel caused some people to set out earlier and many to arrive late, sometimes provision had to be made to make up the lost work time. Some decided to retime their trips to avoid rush hours, darkness, etc, while those changing mode often found there was a time penalty. Events which relied on bringing people together or being in a place at a certain time could be missed although many were proactively postponed or replaced by other means such as tele-conferencing when participants might have difficulty travelling to the venue. Sometimes they failed to take place. Less routine or discretionary journeys were postponed or cancelled.

*Now having to get up at 5.30am to get the train in time to be in work for 9am teaching and not 7am for the past two weeks.*

*I'm taking more flexi leave than usual so that I can travel later in the morning (when roads are more likely to have been cleared) and return earlier than usual (before it gets very dark/icy, etc.)*

*Catching the bus means being caught up in traffic so extending my travel time. Also in order to get home reliably, I have to catch the bus much earlier than I would leave if cycling.*

*Had to make up time at work being late and had to leave early to ensure got home - so again having to make up time.*

*Decision made day before to postpone in light of 5 day forecast. Meeting to be rearranged for January. Most people relieved at not having to drive to an evening meeting. While I could have made it from Derby using bus service might not have been able to make it back.*

*Cancelled another research interview due to the weather conditions had to conduct it via Skype*

*Personal meetings cancelled because of dangerous driving conditions*

Generally the frequency of trips was likely to be reduced, however it could be increased for shopping trips undertaken by walking, because the respondent could not carry as much.

*I chose not to make the journey as often as I otherwise might because I did not feel safe on the pavements alone, particularly after it became dark and colder.*

*Annoying, as I haven't been able to get to a shop and have a good stock up with my shopping trolley because of the pavements being so snowy/icy. They have been bad for ten days now.*

*Carrying shopping was a nightmare, had to work shorter days, caught a heavy cold, had to make more journeys than had I been able to drive.*

### Where

Most of the changes in location involved not making journeys, often avoiding the commute by working from home. Where this was what not possible or acceptable many respondents opted to take day's leave or use their flexi-time rather than lose pay. Occasionally people could not get home, or made provision to stay away from home to avoid disruption or overly long journeys, effectively

changing the origin of their journey. Other adaptations involved staying at friends or in hotels when travel was difficult or threatened to be and shopping at locally and for one respondent it meant an unexpected shopping trip, where they were delayed.

*I was able to work from home but ideally I would have been in London to undertake the work with another firm rather than doing so by phone and email.*

*I had to take one day's leave because I could not be sure of getting in and getting home safely.*

*I stayed with family one night to avoid having to travel as it had taken me 4.5 hours to get to work that morning.*

*had to stay in london for three nights, cost company 3 hotel nights and friend 2 stays*

*Had to stay with a friend in London was last onward train connections missed.*

*We've done more shopping locally as a result.*

*Looking on the bright side, I unexpectedly had a chance to do half my christmas shopping in a city I wouldn't usually visit (Perth)*

Another spatial adaptation was changing routes. With just some of the roads usually the major routes cleared and gritted, the useable network was reduced although many did venture more slowly and with more caution onto untreated roads. Bus routes were often shortened to avoid dangerous parts or to save time lost in the disruption. Railways suffered similar changes, with some trains being stopped short of their destination to keep a more punctual service on the rest of the line and some points frozen, only allowing one direction of travel at junctions. Some railway travellers with the choice of different stations near home had to judge a number of factors: distance, accessibility and potential service.

*My father had to drive me to hospital on Saturday 27th November, just after the snow first settled, and he had to alter his usual route because so few roads had been gritted, even close to the hospital.*

*on the day of the blizzards - leaving at 3.30 after everyone only added on 10mins to my usual journey - and that was going the long way round to avoid the usual route of country lanes.*

*One day a 20 minute journey took 120 minutes because we made a detour to get someone home when the buses stopped running then got caught in a traffic jam.*

*the bus company who didn't tell us that the bus we were waiting for wasn't coming thru the village despite us referring to their live feed website*

*some services are suspended completely to allow priority routes, main lines, to continue running - in other words the weather is not bad enough to stop trains but makes junctions difficult and slow to operate, therefore they just keep the junction fixed in the direction of the most important traffic, cutting others off completely.*

*Ended up getting the first train out and getting my partner to collect me from a station 6 miles from our house and left my car at usual station overnight. Total, utter chaos.*

## How

There were numerous changes of mode reported. Some people finding the pavements too dangerous, used their cars or public transport, others swapped their cars for public transport, mostly involving a walk. Cyclists also changed to

walking or public transport because the roads were too dangerous or cycle paths uncleared. At least one respondent changed from train to plane, but found it harder to work on their journey. For a few respondents the change came en route, as it became difficult to use their car, buses or trains were cancelled or found they could not return by the mode they had arrived. However, most of the modal swaps were the result of more measured decisions having experienced or seen the conditions of knowing the forecasts. Some people contemplating changing their mode, but then found their alternative was not viable and either resorted to their original mode or cancelled the journey.

*due to lack of clearance of ice on footpaths and some local roads, it appeared less hazardous to use the car, when compared with other methods. This wasn't my preference and did not seem right, but it felt like the only alternative.*

*I became aware of how dangerous driving is in icy conditions and chose not to take risks. better to walk - i walked on the road edge as pavements even more icy.*

*i took the bus and suffered the consequences, my usual mode of travel - ie walking - being too dangerous due to icy pavements.*

*Had to leave car in work and start using the train instead. The trains were then cancelled and I was stranded. A family member then spent 2 hours stuck in traffic whilst trying to rescue me.*

*I chose not to cycle to work as usual due to dangerous road/cycle path conditions - I could have done it, but chose the bus instead which turned out to be quicker - fewer cars on road, more direct route, no need to change clothes etc.*

*Visually impaired relatives stranded at work, and unable to collect their children from nursery/school early (they both shut) as on the worst day (heavy snow fall all day) taxis became stuck in traffic/were all in use, and buses stopped running. Walking also not possible as can't follow kerb with white cane when it is buried by several inches of snow. Both only got home through accepting lifts from strangers who saw them standing at bus stops.*

*all buses had stopped running, we were in a severe blizzard and I faced a four mile walk alone from the train station. Fortunately a neighbour borrowed a landrover and met me there.*

*My car was stuck in the snow therefore due to lack of public transport I had to walk as our customers rely on the support they receive as they live independently in the community*

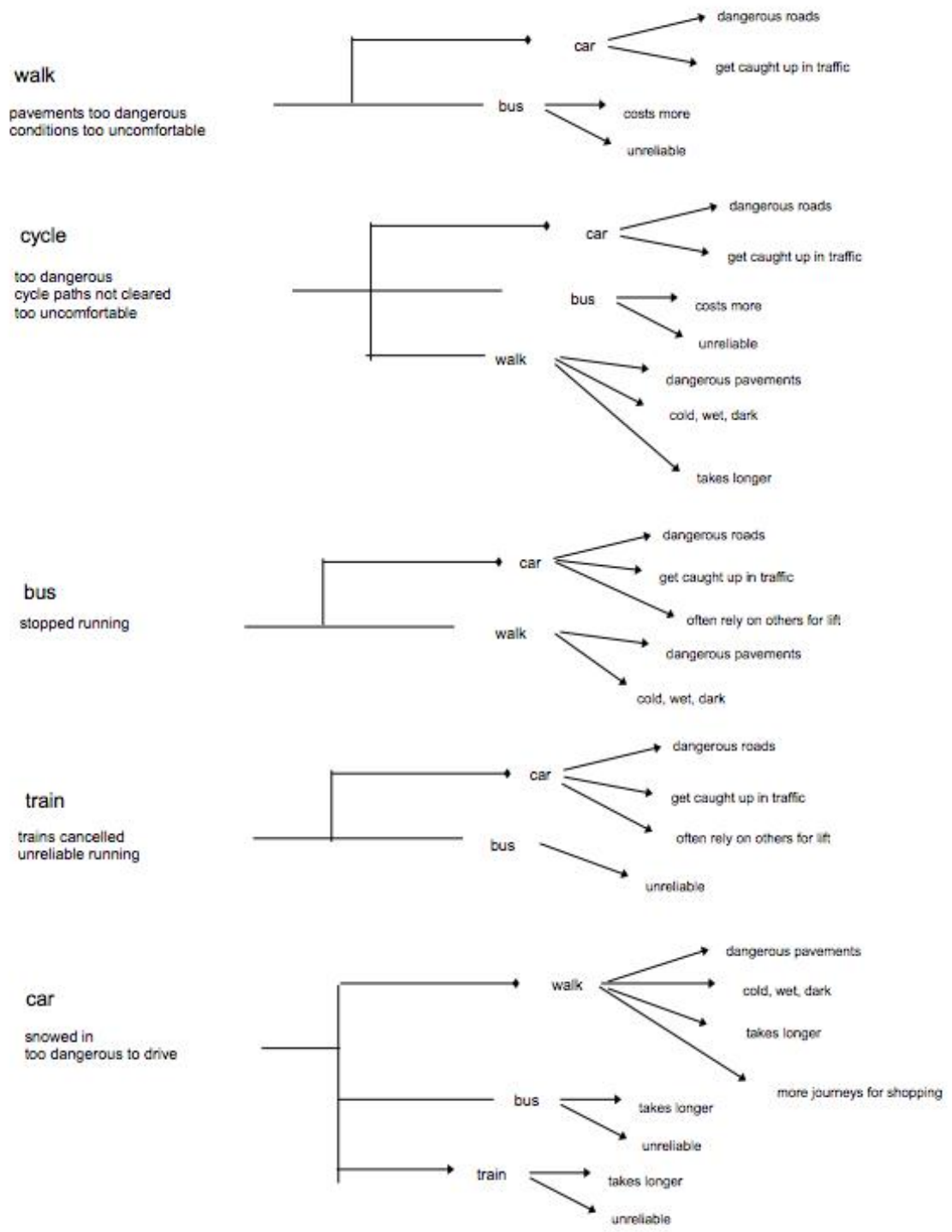
*Wife could not get into work on the first day and I had to take her in on subsequent days*

*I had to take the plane instead of the train. On the train I had planned to get lots of work done but did not get any done whilst taking the plane. In other words, it was quicker but less productive.*

*Having decided against travel by car, we tried walk+train and then walk+bus. Neither of these public transport services was working. In the end we reverted to travel by car as the only remaining possibility, and had a tough journey.*

Figure 9 models the mode choices represented by the comments.

**Figure 9: Reasons for modal changes and alternative modes: Winter Weather**





## Who?

There were a few incidences of journeys or activities being undertaken by other people, although mostly they involved people driving others to their destination.

*Wife could not get into work on the first day and I had to take her in on subsequent days*

*I had to get a friend to pick up the dog's medication from the vets instead.*

*My son had to miss out on activities as I was unable to get him to his planned events.*

*With closure of school, I also needed to get him to grandparents whilst I went to work.*

## How much?

Some of the extra expenses incurred represented deliberate choices, for example to use the bus instead of cycling to be safer. Other expenses resulted from the conditions or were the result of unforeseen costs. A few people reported loss of income, but when given the choice, employees appeared to prefer loss of time to loss of pay.

*My normal transport (cycling) is free! I've had to pay out £32 already over the last 2 weeks and it may cost me more yet.*

*We both had to pay out for bus fares for 1 week as we were unable to get the car out of the street even safely*

*However unless I manage to find time for the trips I will have lost the fares I paid for the tickets (25 pounds for each return journey).*

*realised no coaches were running and had to get a taxi to Swansea at a cost of £200.*

*I had a car accident and have lost my no claims bonus.*

*lost client in our business.*

*lost pay as didnt have annual leave for the year remaining.*

*Fortunately I am still paid, however I had to take annual leave to make up for the four days I missed due to bad weather.*

## Summary

People facing travel disruption often have decision to make which reveal their preferences. The normal result is longer journey times, which means either this time must be taken from other activities or the amount of travel reduced. The volcanic ash cloud involved one-off journeys and those who had been stranded not only often faced longer journeys, but extra time away for their normal lives: families, work, home, leisure pursuits, etc. For the people affected by the travel disruption at Workington and in December 2010, decisions had to be made about repeated journeys and the distribution of time in the day. The demands of work had to be prioritised over other activities, although many people preferred to lose annual leave or flexi-time rather than pay.

Arrangements involving specific times and places were harder to re-arrange than tasks which could be completed in other places or at different times. Engagements with other people required synchronisation, which often proved difficult when there were a number of people involved or they had busy schedules.

There were numerous costs involved, many of which people accepted as necessary to preserve their priorities, eg to get home, to keep their employment or to travel safely. Yet there seems to be a preference to 'trade in' time for money when faced with the choice of loss of flexi-time/annual leave or pay-loss.

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## Consequences

### Introduction

Any travel disruption has consequences, without them, it would not be classed as a disruption. Most of them are for the traveller, but as they connect into other networks at the end of the journey, they impact on other people: family, friends, colleagues, neighbours, employers, transport providers, accommodation providers, etc. They also affect people not travelling but normally or abnormally affected by the travel of others, such as those living under flight paths, besides normally busy roads or those used for diversions or expecting to use transport facilities which get diverted and no doubt the ripples of a disruption reach many people not recorded in these surveys of transport users.

For travellers, the main concern appears to be loss of time which displaces other activities. This included extra time spent travelling or planning travel as well prolonged absence from certain places such as home or work. Appointments requiring face-to-face or face-to-face synchronisation may be re-arranged, usually postponed, depending on the relative power of the traveller. For example, a one-to-one meeting can usually be re-arranged, although is less likely to be so when the traveller holds less power, such as the interviewee in a job interview. When the traveller is one of many attending an event, such as a conference, an exam, a concert, this is unlikely to be re-organised to another time unless a significant number of participants are affected by the same disruption. Other commitments requiring co-presence at particular times are less 'moveable' such as birthdays, anniversaries and funerals.

For many respondents, especially those involved in the knowledge economy, the concern seems to have been the volume of time commitment rather than specific time-place commitments. Several found it possible to work in another place (for example at home or from an overseas destination) although some confessed that this affected the quality of their work. Where the location made work difficult or impossible, many foresaw having to fulfil work commitments in time usually reserved for lower priority activities, but valued or enjoyed aspects of life such as leisure time, socialising, family life, even sleep. Teachers caught in the volcanic ash disruption were very aware that their schools had to pay supply teachers to fill their places in the classroom, whereas lecturers (admittedly at a quiet time in the academic year) mostly seemed to re-arrange their work and commitments with students.

There was often resentment that the time costs for travel disruption were borne by the worker and seldom by the employer. Flexibility or helpfulness from employers often prompted praise.

Like time, most of us have short-term finite monetary budgets, although unlike time (which is uniformly limited by hours in the day and the length of a lifetime) financial budgets vary greatly between people. Money spent on one activity is not then available for another. However, whereas people often indicated the activities that extra travel time displaced, only one reported what they would not be able to buy because of the extra costs incurred. Many, though, did

communicate the actual monetary cost or loss. It is significant that these costs were raised as meaningful, particularly in open responses. There were monetary costs involved for most respondents: more expensive travel, the unexpected need for accommodation, loss of earnings, etc.

As well as the more measurable aspects of disruption, there were physical, mental and emotional costs. There were specific questions about inconvenience and distress in the surveys about the winter weather and the volcanic ash cloud, but many of the comments illustrate how such disruptions cause physical hardships, worry, isolation and stress.

These fall on the traveller, but also on their networks such as families, colleagues, employers and friends. These networks were often important for supporting the disrupted travellers in practical ways, such as giving lifts, looking after children, pets, houses, researching the situation, providing temporary accommodation, etc.

The scale of these disruptions meant that people often observed or heard about the impact on other people and often comment on this. Typically they explain how certain groups or individuals fared worse than themselves. As well as 'known' others, travel affects 'unknown' others such as transport and accommodation providers and people who are affected by other people's travel. Several respondents referred to the impact of the disruption on them as non-travellers, often temporally removing annoyances caused by transport, such as noise and danger. This provides a reminder that the effects of travel reach beyond the traveller and the transport providers.

Not all the consequences were negative. Many of the 'stranded' in the volcanic ash cloud reported enjoying aspects of their journey back, often seen as an adventure in retrospect, or extended stay abroad. Respondents from Workington enjoyed the walking, using the trains and a greater sense of community and people trying to travel in December 2010 found fun and enjoyment in the testing circumstances.

This section focuses on the comments about physical, cognitive and emotional costs to the traveller and their circles, the costs to other people they met or heard about and unknown others. The details about time losses, spatial displacement and material costs have been covered in the previous sections. However, because the physical, cognitive and emotional costs are intimately interwoven with the other losses, it is impossible not to mention them as well.

### **Volcanic Ash Cloud**

As a consequence of the flight ban many people were stranded abroad and more were unable to undertake planned journeys. Most of the respondents fell into the first category and their prolonged absence from home had a number of repercussions for them and their networks. As well as missing planned events, the unexpected time away interfered with plans such as working towards deadlines.

The disruption generated extra expenses for the travellers where they were stranded (contacting airlines and family, accommodation and subsistence costs, alternative travel plans, some of which then had to be cancelled) There was often confusion about who would pay the costs abroad and disappointment if airlines refused to accept the responsibility. Respondents praised tour operators and airlines who looked after them, but others were condemning about those who appeared to abandon or neglect their customers. Most business travellers seemed to have been supported by their employers, although they may have had to pay costs themselves initially. There was considerable scepticism about whether insurance companies would compensate their customers.

There were also expenses in the travellers' home country. Arrangements for their absence such as pets being housed in kennels, car parked at the airport had to be extended. Payments for events they had hoped to attend were often lost and being away caused some people to miss regular payments such as for store cards were missed incurring penalties. However, for many people, the greatest cost was the income they forfeited by not being able to work as planned. For self-employed people or those on contracts, this not only lost trade but could threaten their reputation. A few people reported being in pocket from the experience.

#### Other costs

While the time and money lost might be easy to measure, there were other costs in energy, discomfort and anxiety. Several of the journeys by alternative modes took considerable time and often involved travelling overnight, even worse for people with medical conditions. Others required several changes and complex planning. There was also an emotional toll from the uncertainty, poor treatment from officials, having to fend for oneself and dependants, worry about how to get home, how to pay for the extra expenses and about people and commitments at home.

*More physical strain than material damage.*

*Sleep deprivation*

*got first available seat on regular coach line straight from Lancaster to Warsaw. I finally have got back home 4 days after it was originally planned after 36 hours of ride in seated position.*

*Took last available car in Paris on 19th April and booked cabin for 4 people at Ferry Saint Malo/Porthmouth ..... travel on 20th April at 3am from Paris to Saint Malo with Europ Car rented car with 2 year old, 4 year old, my father 76 year ... Arrived at 7.30 am in Saint Malo .... Waited at the Ferry Terminal ... Father looking after the children while giving back car, checking ferry .... Nap in the Ferry and recover from physical and emotional stress.*

*I suffer from a chronic disease and am on a drug regime. My supplies would have run out if I'd been delayed any longer. I had a few extra and in future will travel with more supplies. Scary.*

*children very distraught, not knowing worse than the delay.*

*tiredness due to 4 days of uncertainty and stress.*

*Humiliation. Because of the way I was treated during the time spent at various consulate locations, and mostly because of my nationality ... Lack of confidence and the feel of anxiety because of my financial insecurity.*

*Extreme emotional distress in terms of finding alternative accommodation - ... I was also travelling alone, and security and personal safety has been a problem, as I had to stay in areas off the beaten tourist/business track, alone. Also distress due to being separated from family and friends with no indication for a long time of when I could get back. Distress due to days lost at work*

*Main cost was emotional, rather than monetary*

In many cases, the costs: losing time, money, changed plans, effort and anxiety were not just sustained by the traveller. Contacts abroad often helped 'stranded', which sometimes worried the recipients, some of whom tried to show their gratitude with gifts, etc. Family, friends, colleagues and employers at home stepped in for the traveller, paid for their replacement, transported them and worried about them.

*Inconvenience to the family that kindly took me in whilst in Uganda - can't claim the costs they incurred feeding me and driving me around etc.*

*My cousin and her husband have been so kind to welcome me at their house while I'm stranded. I am blessed and grateful for that. Or else I would be staying at the airport this whole time.*

*courtesy thankyou dinners for friends who offered hospitality partner's missed her shifts, and must make them up.*

*I recently married and my wife was moving in while I was away and I was due to help with this process which I could not*

*As a teacher, my absence lost my school 4 days in supply cover.*

*Owe favours to people who rang us, helped us, gave us a lift etc.*

*My mother got really concerned with me!*

Encounters with other travellers and news information made some respondents aware that they had fared better in the crisis.

*we saw families who had no means of funding their extended stay and some means of assistance for these people should be made priority.*

*I'm very concerned about the treatment of visa-restricted travellers - e.g. some non EU nationals were unable to return to/exit the UK because they did not have and could not arrange transit visas for all the countries on their land route back. Likewise travellers in Russia (which does not issue visas longer than the return date on your air ticket) are reportedly being held in custody as overstayers.*

*On our coach to Calais were 2 very young girls who had been found on a beach in Southern Spain with no money, no credit cards and a dead mobile phone. Had a family not taken them under their wing, they would have been very vulnerable to predation.*

*Realise some people had much worse time, especially if they are not experienced travellers.*

One respondent completed the survey because her journey, although not by plane, had been disrupted by the ash cloud. Her comments are a reminder, that

any redeployment of resources will have impacts on those who intended to use them, usually unknown others.

*My travel plans did not include flights but because of the sudden withdrawal of the "lifeline" Northlink ferry to Orkney (it was commandeered to take stranded air passengers back from Norway) my travel plans were affected. I had an interview in Cornwall on Thursday 22nd & the withdrawal of the Hamnavoe ferry meant that I could not connect to my scheduled public transport (train) connections on 21st April other than by using Andrew Banks' unsubsidised ferry service. The Pentalina does not, however, connect with public transport services, other than that the 8 am sailing connects with the 7.15 am bus from Kirkwall to St Margarets Hope. I do not have a car. I was fortunate in that friends of mine happened to be on the ferry that Wednesday am (they were travelling to Aberdeen for a hospital appointment) & they were able to give me a lift to Inverness and I was able to catch a train from there. Otherwise all the preparation I had done for that interview would have been wasted.*

### **Beneficial Consequences**

Several respondents reported pleasant encounters, experiences and feelings. Some of these were to do with enjoying the alternative mode, being treated kindly and relief at returning and having overcome the obstacles.

*But the stopover in Istanbul was nice, lovely city, we were too lucky to enjoy a half day there*

*It was actually a blessing in disguise. My friend's anxiety was taken away by the knowledge that we could get onboard the cargo ship so we enjoyed Bilbao and absolutely loved the 6 day journey at sea. We got back home refreshed and relaxed.*

*great local people, supportive of trapped tourists, great signs of comradeship, fantastic above and beyond support from bangkok airport for those stuck at airport - free internet, pcs, food, water etc (cant imagine that happening at heathrow!), amazingly reduced prices from hotel, supportive staff, brilliant*

*As the Finnish airspace was going to be shut for some days, I decided to cross Europe from one corner to the other overland. To avoid the French train strike I first flew to Rome, next day took a train to Venice (didn't want to waste my time in Rome in the queue for international tickets), got a lift from Venice to Ljubljana from friendly fellow stranded Europeans, enjoyed a night in Slovenia, Ljubljana, then continued to Budapest, spent a few days there, then a train to Warsaw, a bus to Latvia, Riga and bought a car there and drove to Tallinn, where I had to spend a few days before any ferries had room for me. Had a blast, I'm thoroughly grateful for every moment of the way. The only real annoyances were the French train strike, the Italian bank strike and the grumpy people who could not see the value of this opportunity.*

*Excitement to get back home, feeling of overcoming the volcano (volcano 0 - me 1). Joy of getting back home and gratitude to the airliner that brought me over the Atlantic with an absolutely perfect landing in Oslo.*

*I could read a good book in the train. That would have been impossible in the airplane. The Train (ICE first class) was much more comfortable than to fly*

*great Team spirit from the British!*

A few respondents wrote about the benefits of not having flights overhead and the environmental advantages of reduced flying.

*I was very grateful for the brief respite from constant aviation noise people around the country were granted by the volcano. The big reduction in carbon and NOx emissions that was caused was also appreciated as were the contrail free skies. It was also nice to have a practical demonstration of the fact that life does go on pretty much as normal*



*when planes can't fly. This will no doubt come in handy when the dwindling oil supplies finally make people realise that aviation is an extravagant luxury that is no longer viable.*

*It shows that planes are not essential to our lives, business has carried on as normal in the lives of most people in the UK, and the argument that airport expansion is necessary is not substantiated.*

*Actually enjoyed the silence and clear skies.*

### **In Summary**

The consequences of the disruption to the travellers included extra expense, lost income, being separated from loved ones, missed events and opportunities at home, having to work harder once they returned, often uncomfortable return journeys and anxiety. These costs were not universal and a few respondents found the incident had given them a longer holiday with little extra expenditure, some excitement or fun. However, the consequences of the disruption 'rippled' through other networks both at the destination and where the traveller lived and worked, creating costs, loss of time and opportunity and anxieties for hosts, family, friends, employers, colleagues and clients. When extra resources were deployed to bring back travellers, there were undoubtedly other people whose plans were affected. The absence of flights re-awakened concerns about the environmental damage created by increasing aviation, but demonstrated that its absence did not bring life to a standstill.

### **Workington**

The biggest impact of the loss of road connections across the river was felt by people living north of the river and those regularly travelling across the river for work, education, health or shopping. The impact was most acutely felt in the two weeks immediately after the floods before the more frequent free train service, station and footbridge were opened. After that, people began to sort out routines to accommodate the new situation, while being aware that it was only temporary. This possibly meant that arrangements which were not sustainable in the long run, because they were too expensive, took too long, etc were maintained in the knowledge that the temporary bridge would be opened in the spring.

Like the volcanic ash cloud disruption, the loss of bridges led to longer travel times, more expense, disrupted plans and routines, required extra effort and was often accompanied by negative emotions. However, in Workington the disruption lasted five months and affected daily life and routine journeys, rather than a one-off flight and return. The effects were not evenly felt: many respondents living on the south of the river registered few impacts, some who started using the trains or footbridge found them convenient and even enjoyable, while those who continued to drive or who were not as able to walk or use public transport often found their journeys more arduous or reduced the number of trips. Again, there were 'ripples' through family, work and social networks although with a sense of community developing through the common hardships.

Longer journey times for essential trips resulted in less time available for discretionary activities which could also involve longer journey times. The largest decreases in weekly trips were for social and leisure purposes. For those



who continued to drive, the extra distance and stop-start traffic conditions increased their fuel consumption and led to more repairs. In some instances there was loss of income, through losing a job or work hours or being cut off from clients. A couple of respondents mentioned non-travel personal impacts of the floods.

*Social visiting was severely affected, as I have family living in Seaton.*

*The amount of petrol, time and social problems had a huge impact.*

*Mrs xxx worked as a home carer in Seaton CA141. Because of bridge, lost work in Seaton and now has a round in Workington. Has lost money and 1 days holiday because of less hours worked on this round.*

*Business was severely affected. No passing trade. My husband had to drive miles out of his way on most weekdays to reach customers.*

*I had to evacuate my house.*

*Place of work closed in Jan 2010 as a result of floods so no more journeys to work after that.*

Driving took longer because of the detour and congestion tiring and frustrating drivers. The extra time, effort or exposure required to make journeys impacted disproportionately on people with health or other issues that made travel more difficult. Many respondents expressed sadness about the loss of regular activities seen as important in life or social gatherings, to maintain friendships, family and other networks. Meeting up with people needed more planning and forethought.

*Travel time varied but some days it was 2 plus hours. This put extra time on my day and I was very tired as a result.*

*Tried the buses and Barker's Crossing, but because I have arthritis. I found standing waiting in the cold and wet extremely difficult. Very pleased to use the temporary bridge and delighted to meet up with friends and family once more.*

*In order to keep at least some social and leisure activities up, we went but less often, as it meant a 37 mile round trip instead of 4, so much more expense, but less social life, causing places we would have visited - and people concerned - to lose out also, in revenue, friendship, organisation etc. Everything (apart from spending extra petrol money and car-repair bills for resulting bad roads through extra use) nearly ground to a halt. Felt isolated.*

*Unable to attend social events. ... Before Barkers Crossing erected I felt totally isolated.*

*The main effect was to break the habits of twenty years. Visits to grandchildren entailed 40 mile round trips. Visiting my late wife's memorial tree at IseI was difficult. My mileage increased. Friends could not get to social events I attend.*

*Family celebrations had to be cancelled which was upsetting and caused difficulties for family members from other places.*

*Loss of bridge had a profound effect on life- reduced chances of popping over to friends and shopping.*

For some people the extra provision of trains and the foot bridge proved advantageous and some regretted the resumption of normal service with the temporary road bridge.

*Loved using the free train - excellent frequency and parking - shame it ended:*

*Travel to work from Seaton to Police Station was much easier for me before the temporary road bridge opened! I had the regular bus to Footbridge as an option- that's gone. The closest I can get to work through Public Transport now is the 'scenic route' to the Bus Station or Train Station. In the car, a previous 1.5 mile, 5 minute trip is now 4 miles and 20 minutes! I still use Footbridge. Thank God I'm not disabled!*

Like the other disruptions, there were impacts on other people connected to the disrupted travellers. A few respondents mention how they or members of the family helped out, especially with childcare.

*When the footbridge was opened we drove to the nearest point- myself to Toll Bar House and my daughter to Workington Police Station then walked to meet each other so that I could take my granddaughter to Seaton Junior School.*

*I live in Workington and my grandson lives in Flimby and attends school on South of Workington so I was involved in picking him up at the train station and driving him to Southfield School Mon to Friday each week. My grand-daughter needed quite a few lifts also though not every schoolday.*

*The family had to make changes so some members could carry out their job and make sure their children arrived at school. And also to be around to collect the children from school when parents were delayed due to traffic conditions.*

The impact of traffic on every day life was not explicitly mentioned, although a few people mentioned the benefits to them and the area of having more people walking and cycling. Some of the interviewees talked about the sociability of meeting people on the footbridge and families walking together.

*On the plus side- more people walking and more social feel to the town.*

*I had a cycling and walking winter. The exercise was beneficial. I met many other walkers and cyclists and it was good to talk with them.*

*For everyone in this area it was a difficult time, but people worked together- talked more and smiled more. Just making an effort made one think of others who were far, far worse off.*

### **Summary**

Living five months without road bridges across the river cost some travellers time and money as well as eroding social and family lives. The impact was greatest on people living to the north of the river and regularly crossing to the other side for work, education, shopping, business and family commitments and appears to have been hardest for those who continued to drive rather than take the improved train service or use the footbridge. People with existing travel difficulties could suffer more. Because of the extra travel time, both for essential and discretionary activities, socialising and family gatherings and commitments were reduced, which caused some respondents to feel isolated. However, sometimes family members were able to help out with revised household routines by accompanying children to or from school.

The train service and footbridge were greatly appreciated and some respondents detected a more friendly feel to the town with more people walking and interacting.

## Winter Weather

### Introduction

The travel disruptions caused by snow and extreme cold in December 2010 shared some of the characteristics of the volcanic ash cloud: they were over a large area and of unknown duration and those of Workington: affecting every day activities for repeated days and more than one mode. Although in some places at some times some modes, mostly public transport, ceased to operate mostly some travel was possible. However, a unique aspect was the potential danger to travellers and this disruption saw the highest number of casualties, with motorists dying in their cars after being stranded and pedestrians suffering broken bones from slipping on the ice. This meant that potential travellers not only weighed up the consequences of longer or unpredictable journey times, they often considered the probability of coming to harm through an accident or exposure to the harsh conditions. Whereas the decision about safety for the flight ban was taken by governments and air controllers, individuals were responsible for own risk assessment of their proposed journey, often with little information about conditions beyond their immediate vicinity.

### Time and Monetary costs

Like the other disruptions, increased journey times reduced the time available for other activities. Lost work time mostly had to be made up or sometimes caused loss of income. Again discretionary activities and travel were most likely to be curtailed or postponed, while work might be completed at home and business travel re-arranged. Planned events were sometimes cancelled or could not be reached.

The main monetary costs were due to loss of income or having to use a more expensive mode, higher fuel costs, lost fares and missing events already paid for. One woman explained what the extra expense would stop her doing. Others described the significance and consequences of the lost time, events or money to them and others.

*I was paying my removal van driver by the hour - meaning that it cost me £175 to move rather than £70-£90. This means no christmas presents for a few people and no trip to see my boyfriend for new year who is living abroad.*

*I have been late for work meaning that i have had to use my leisure time to catch up on missed working hours, I had to get up much earlier than usual to try to guarantee that I am in work on time. The combination of increased working hours and also the extra physical demands of my commute have made me ill, increasing the days lost from work and the stress to catch up on lost workinghours.*

*Missed going to the gym for the last couple of weeks due to lack of time.*

*missed a rare and long planned opportunity to meet a good friend*

*Financially the bad weather can have a huge impact on me personally as I do not get paid if I cannot get to work but having a child in full time contracted childcare mean I still have to find the money for that!!*

*Pay lost for myself, Unable to tutor student close to exams causing stress for student.*

There were also the physical costs of travelling in such conditions, especially when there were delays, overcrowding or other discomforts and inconveniences.

Although a few respondents did suffer injuries, many more were worried about the risks, there were also anxieties about not being able to get home, to work to their destination, to their children's school and the consequences. People with disabilities or living in rural or hilly areas felt disproportionately affected and there were many worries about the plight of people less able to get out in the conditions.

*Only in that it was particularly cold the worst morning - minus 10 degrees and standing outside for 2hrs 20mins wondering if a train or bus was ever going to arrive was horrendous and I felt chilled and fluey all day.*

*Arrived at work wet with no way to dry off adequately.*

*It was v frustrating waiting for delayed trains which were then VERY overcrowded. Quite a few trains were so far I couldn't get on and it was dangerous people pushing & shoving on the platform.*

*I did a lot of waiting around at bus stops and train platforms in the cold (sometimes as cold as -7 degrees) and as I am 6 months pregnant, this is not good for my health.*

*Someone crashed in to the back of my car. A twenty minute journey took me two and a half hours on the worse day of snow. I was late collecting my children from school and nursery. I fell over and injured myself. I spent a lot more in petrol costs due to having to prepare my car for use and due to longer travel times.*

*head injury after falling on black ice*

*Councils never provide grit for pavements, one of my friends has broken her ankle slipping at her station.*

*Stress of not knowing whether it would be possible to return on the planned date, what was happening to the house standing empty in very exceptionally cold weather.*

*As long as I know how long I'll be waiting - it's the not knowing that's distressing.*

*Found disruption very draining and distressing...just performed less well at work and home.*

*the old people who lived near me could not even walk on foot due to the pavements not being cleared this should have been a priority as there are a large number of elderly people living in my area*

*am very nervous of slipping and falling. I have Rheumatoid arthritis which doesn't help, so use cramp-ons on boots, sometimes use a stick and don't relax until I reach my destination*

*Whilst it is understood that main roads take priority, some consideration of rural areas would be appreciated, especially where there is a lack of shops and other facilities.*

*v v steep hill/ cul de sac. Council discontinued gritting in winter several years ago .... . Driving/ walking conditions are v v treacherous.----ice under snow. Main road is short distance away but down hill, with steep uphill climb on return journey. The residents are doubly penalised as the city Bus Company does now operate a service on Sundays.*

As with the volcanic ash cloud and Workington, several respondents used their family and social networks for help and support. However, neighbours were sometimes criticised for not doing their share.

*we were in a severe blizzard and I faced a four mile walk alone from the train station. Fortunately a neighbour borrowed a landrover and met me there.*

*Even now, it is still extremely treacherous and due to some selfish neighbours not bothering to clear their bits of road / parking dangerously, the street is only just passable.*

*Years ago we all used to help neighbours by clearing paths etc. that does not seem to happen as much these days.*

### **Beneficial Consequences**

Some respondents mentioned advantages of having less traffic and a few questioned the wisdom of trying to ensure 'carrying on as normal' when the weather and ground conditions were so bad. Some enjoyed the challenge of travel or experienced mutual help.

*lost time to study for exams but quite liked the snow - so many cars were left unused, streets actually seemed safer, cleaner air, less noise pollution, people staying/working at home - probably spending more time with their kids, shopping/consuming less - putting less strain on the environment and hopefully learning that resources are not unlimited and we are very dependent on imports and fossil fuels... I hope*

*Allow the children to enjoy the snow and their time off school. Allow adults the time off to spend time with their children rather than employers demanding that they try to get into work.*

*If the weather is bad, it's sensible to stay put, why do we worry about not going places?*

*It was great fun on the trains in the snow. Fun working out the best route. A really enjoyable day and I got to my meeting!*

*The one good thing is that snow sometimes brings out the best in people, eg one night when everyone pitched in with each other removing the several inches of snow from our cars which had been parked all day in the station car park. And all made sure that each other's car started ok before departing. These are people who wouldn't normally even acknowledge each other's existence on a day to day basis!*

### **Summary**

This disruption differed from the others in that it often presented real dangers to travellers, which some preferred to avoid even though this might inconvenience them or cost them money. It changed from day to day and area to area and affected all modes making the consequences unpredictable. It also meant that travelling was more arduous and uncomfortable than normal and this and the danger caused stress for some respondents.

It brought similar losses of time and money to respondents, with particular tensions around lost work-time when employees were expected to bear all the consequences. As with the other disruptions, work time tended to be prioritised over other time commitments, but discretionary trips were also cancelled because of the travel difficulties.

It disproportionately impacted on people away from main roads, bus and train routes, but also on less-physically able people. While family and social networks sometimes helped, there was occasionally a feeling that neighbours should share more responsibility for clearing roads and pavements.

A few respondents queried whether it might be better be prepared for some days when travel was not possible and a small number enjoyed the lack of traffic and its noise.

## Reflection and Incorporation

### Introduction

Every experience moulds our expectations. There is no doubt that the experience of these disruptions will feed into the corporate memories of transport providers such as air lines, tour operators, Cumbria County Council and local organisations around Workington, highways authorities and local authorities, to be activated when similar events threaten or happen. They will also inform future expectations and actions of the travellers affected.

The surveys only offer a snapshot of what respondents were thinking and at different stages of the disruption. Many of the respondents of the volcanic ash cloud were still finding their way home or stranded in airports or hotels abroad. The Workington respondents were asked to recall an episode which had ended and been resolved and it is evident that some of them were keener to talk about current transport problems than past ones. The winter weather survey was mostly filled in during the disruption, when the issues were pertinent and current. Many of the interviewees contacted during a hot period in May 2011 had difficulty recalling the problems that they had written about in December.

Many of the comments refer to how other people/agencies should react in the future, particularly for the winter weather disruption which was seen as an event which could easily be repeated. The volcanic ash disruption and the Workington floods were viewed as unlikely to re-occur. Some respondents reflected on how they had reacted to the disruption and how that might be transferred to other aspects of life and travel.

There also a number of recommendations for other people and agencies, which are briefly summarised.

### Volcanic Ash Cloud

#### Personal reflections and incorporation

Understandably, people who felt they had been badly treated by travel agents, tour operators, airlines, insurers and others vowed never to use them again. Likewise when people had suffered because of a certain type of ticket, arrangement, etc, they resolved not to use that again. Conversely, those who had been well-treated considered returning to the same company /arrangement, even more so when they had witnessed others being badly treated by different companies.

*I will not use Monarch Airways again.*

*I would never again book with an american airlines, they are less helpfull than any other company*

*Will stop using Expedia and book directly with airline, as Expedia were pretty useless and practically uncontactable if overseas and unable to afford international calls to premium rate numbers!*

*BA was uncontactable by phone (5 days of trying) and their website was unhelpful - will NEVER fly them again*

*British Airways remains on my list of good airlines to use, especially for the routes they cover.*

*I will choose Thomas Cook in the future if possible*

*we flew with easyjet who collected us from the airport, booked us into a 5 star hotel and paid for all our accommodation and meals. On the basis of this experience I would definitely fly easyjet again.*

*will consider direct flights instead of transfer on intercontinental travel*

*I will certainly be paying more attention to whether tickets are refundable, and if so under what conditions.*

*I will now ALWAYS book accommodation AND flight with one tour operator - if you book separate flights the airlines are not obliged to do anything to help.*

*There's a lot to be said for not being at the mercy of a package operator (owner allowed us to stay in our apartment indefinitely while others in hotels were being turfed out and moved every 24-48 hours).*

Insurers were generally not highly rated and a few respondents rued not having read the small print, a mistake they would not repeat. Others felt less inclined to believe that any insurer would compensate them for any problem. Many respondents had been highly disappointed by the reactions of embassy and consulate staff, whom they had assumed would help them in an hour of need. This revelation had shaken a belief in the existence of a safety net, when they travelled.

*We will also look into our insurance cover, however, the cover we purchased was a premium cover and did not cover us for volcanic eruption.*

*it makes you realise that it's important to have adequate insurance cover, a reserve of money available and contact numbers for airlines etc.*

*I will ensure that my insurance covers 'acts of God'*

*I would like to see insurance programs that offer "plan B" arrangement (by land or sea) if such a case happens again.*

*The insurance companies need a kick up the \*\*\*\* because their only interest is generating cash - genuine insurance cover for customers who need it seems to be low on their priorities (read terms and condition before purchasing), they will do anything to slip out of their obligations or promise comprehensive cover when in reality they have a list of small print exclusions.*

*Insurance is a scam*

*I wouldn't trust the british embassy, i wouldn't bother registering with Locate as it is a waste of time*

*So everyone was helpful bar the embassy who did nothing aside from help 200 stranded passengers forgetting the extra 16000*

*From the Sunday 18th April, the Embassy became involved and were then extremely helpful.*

*More information and action by British Government in repatriating its citizens.*

*Once the embassy became involved, they were very helpful, calm and provided practical help.*

*The British consul in Reykjavik was utterly charming and loveable but couldn't offer any practical help or advice really. But he was such a genuinely nice chap, a real good egg. ...  
. Made me proud to be British. Marvellous!*

Having seen the importance of being able to communicate by phone, e-mail, and have access to the internet, many strandedees were committed to always travel electronically well equipped. There were also other resolutions about always having telephone numbers, access to cash and important documents and making contingency plans. Medicines, underwear and other essentials of life also featured in the resolutions to travel more prepared for delay and disruption.

*I would be even more inclined to take technology with me - phone and laptop were invaluable.*

*I'll make sure I am more prepared, eg, take phone charger, have some awareness of contingency.*

*Never travel without my mobile phone I WILL NEVER EVER FLY WITH JET AIRLINE AGAIN  
Always carry small denominations in £ or \$ as this was invaluable.*

*Would have bought a local SIM card -- phone bill was frightening!*

*Having travel insurance documentation handy as well as access to a local phone is crucial.*

*Will pack more underwear just in case!*

*Will make sure I take more spare contact lenses with me in future!*

*Don't discard all your half empty bottles of shampoo, shower gel, travel wash before you travel home. Don't 'gift' your half bottles of red wine to others who are staying as you may need it!*

*Next time I'll make sure and do my laundry BEFORE I pack to leave in case i don't GET to leave.....*

*I will be much more prepared with the financing. I didnt bother bringing pin numbers for my credit cards, and my main ATM card broke down! That made things 10 times worse.*

*Only in that we will be more prepared e.g. taking prescription copies, travel insurance booklets, multiple credit cards.*

*I suffer from a chronic disease and am on a drug regime. My supplies would have run out if I'd been delayed any longer. I had a few extra and in future will travel with more supplies. Scary.*

The experience caused many of those affected to reflect on their personal priorities. Others suggested that the experience would make them more mindful of what could go wrong. A few had thought about possible contingency plans for future travel, including allowing more time in case travel is delayed.

*I will think twice about travelling with work without my husband.*

*If I fly overseas, I try to take my children with me.*

*I will try to avoid scheduling important commitments in the days immediately after my scheduled return from future trips, and make sure that my insurance arrangements are clear and bulletproof (as far as is possible) before leaving.*

*may build in a few extra days before flying to any important events.*

*Never put myself in position that I cannot manage ... 2 very young childrens and sigle adult is difficult in normal time (plane) during natural disaster ... challenging situation.*



*I have taken it for granted that I can hop across the Atlantic but this is not the case. I will consider travelling by alternate means - i.e by train when travelling in Europe.*

*am supposed to take two business trips to the US in the next 12 months but I will either not do so or will make emergency arrangements with people in the destination cities so that I can stay with them if this happens again.*

*I think it will be a temporarily period of distress which will disappear soon.*

*I think I will press for my video conference-based interactions over face-to-face interactions.*

*I will never book a fly many months before the date of flight*

*I will travel like I did this time- lighter, less planned!*

*Make a back up plan*

*I'll make sure that I have local networks I can draw on, and that we always have at least 100 000 air miles in stock if alternative plans have to be made.*

Many stated they would still fly. For some respondents, the event was so rare that it was unlikely to re-occur so it should not change their decision to fly. A few suspected that the crisis would colour their travel decisions for a short time. Others explained why flying was important to their lives. Another group had resolved to fly less, although there might be reasons why it was not always possible to change mode. This could be because the destination was considered 'non-negotiable' and was only reachable by air or because of work policy, expense or travel time.

*In reality, I don't think it will. In many ways I'd prefer to travel in Europe by train, but the expense is prohibitive and I don't think that is going to change in the near future. I would certainly be prepared to investigate trains as an alternative to planes.*

*Exceptional event, think nothing will change dramatically.*

*I shall continue to travel frequently by air trusting that this is a freak*

*I don't think how I travel will change much in the long term.*

*no change - you cannot live your life by what might happen - you wouldn't go out!*

*Strengthened my commitment to fly rather than take surface modes*

*To get to the destination I required it is most appropriate to travel by air.*

*Well, with my situation the only way to go is by flying (unless I have a lot of money to take Transiberian train or fly from other airports and I hold a good passport) but I would still fly anyway.*

*No... from Australia we have little choice*

*I will probably make holidays/vacations closer to home, but this trip was for business so there was no 'alternative'.*

*No other forms of transport are available to get us to our chosen holiday destinations so flying is essential.*

However, for others the experience had rekindled a desire to reduce flying by using surface modes and choosing closer destinations accessible by these modes. The experience of finding out about or using cars, ferries, trains and coaches may have made it seem more possible and enjoyable to use them.

*When I am considered to stay only for a few days at the destination, I will never fly such a huge distance again*

*I usually do 6-8 overseas trips per year. Increasingly I have used the train, and definitely for trips where I can go via Paris or Brussels. I have to go to Frankfurt, Cologne and Bilbao this year, and will go overland because I checked and it is feasible - I can get to Frankfurt in a day. I certainly won't travel in the evenings anymore, and have already cut back on my plans to travel overseas. I think the volcano was a wake-up call.*

*I will take the train into account when I travel from the UK to France, I will make sure I book it well in advance to get a good price,*

*Plan less, enjoy more. I'll probably travel Europe more on land, use more trains and make use of how close by everything is in Central Europe.*

*might go by ferry to France for a while, because I am sick of airports! and running through and queueing in airports*

*The one change is, that now I'm not scare anymore of driving in Europe with a British car (with the steering wheel on the wrong side), because I was simply forced to do it and it was not that bad.*

*We have not booked a holiday for the school summer holidays that involves flying We have instead booked a holiday to Paris using Eurostar*

*I may consider the ferry and train more often for short trips as the return journey was quite pleasant on the feery/train. It was a good advertisement for stenaline who did not increase charges and the service was excellent. Also the Hi-speed trains were very good value and very comfortable. Down side was of course the extra expense and time wasted.*

*Not at all. It was just bad luck. Did enjoy the ferry & found it was very civilised - has made me want to use ferry for family on next holiday*

*I'm a concience torn "greenite". The last flight I took was five years ago, I sort of ration myself. I paid some organisation to plant some trees last time I flew, didn't do that this time as I've vaguely heard Monbiot etc complaining that it's a scam. There isn't much of an alternative way to get to Iceland except in the summer months.*

A handful of the respondents saw the event as a prompt to re-consider dependencies and lifestyle and a reminder that humans did not always control their own movements.

*I really learned a lot with this trip, and the main things are that the world is supported by very fragile things, and when we think we are on vacations we can't forget that the planet earth never goes on vacations.*

*There is a God, we are not in control*

*I was already considering not flying again, but this has emphasised to me the absurd nature of the way we travel. I much prefer slower travel, such as train, car, or boat - however these are often far too expensive to be viable unfortunately. I will continue to use my vote and voice to support political groups that have greener and cheaper travel at their heart, and I will seriously consider taking the boat to the United States in the future!*

### **Over-caution?**

With a few dissenters, the majority of respondents who commented, thought the authorities' prioritisation of safety over passengers' convenience was correct and endorsed the flight ban. Some wondered about the rapid volte-face after

British Airways sent up a test flight, but overwhelmingly the comments supported a cautious approach.

*The natural reaction of the authorities seems to be to err too far on the side of caution (Nanny State!!) with the result that everything is disrupted. Health and Safety seems to rule everything and knee jerk reactions are given priority over rational thought. No real thought seems to be given to the reality of the situation.*

*in unprecedented situations such as these it is automatic to want to blame someone. Although I feel there was probably an element of over-caution, I'd rather be safe than sorry.*

*Finavia, the Finnish airspace administration was overly cautious.... Nevertheless we are lucky that no planes dropped.*

### In Summary

It seemed that passengers were happy to learn from their experience of companies, reject ones who had performed badly in the crisis and choose ones who had appeared to look after their customers. Many had had their faith in insurers and British Embassies shaken, although they could not do much about it. They had learnt from their personal and others' experiences what had worked and what they had wished they had packed and seemed to be willing to transfer that knowledge to future travel. They were less inclined to change travel habits because of the incident, although some were considering having more 'buffer' time between long journeys and home commitments. Characterising the incident as a fluke, rare and unpredictable, provided a reason not to change behaviour in response. Good experiences with alternative modes or an awakening awareness of the unsustainability of aviation could trigger intentions to reduce air travel, stay closer to home and use less damaging transport. The cautious approach of the air traffic controllers in the face of an unknown risk was largely supported by those inconvenienced by their decision.

### Workington

#### Introduction

There were few reflections about how the experience of five months with limited road access to the other side of the river would influence travel behaviour in the future. One interviewee suggested that it was a very 'dark' time for people living to the north of the river and people were just relieved it was over with the opening of the temporary road bridge.

*For everyone in this area it was a difficult time,*

*This (survey) is a waste of time and money. It is past now so one has just to make the best of things and look to the future. Stop this kind of rubbish. What difference will it make? None*

A few respondents reported that they had continued to use the same modes as they had adopted during the disruption, although there was regret and some condemnation that the train service had reverted to its pre-crisis scheduling and limited rolling stock. Several thought this and withdrawal of the buses to the foot bridge was a wasted opportunity to reduce car traffic.

*it has changed my son's mode of transport- he now takes the train more often.*

*Loved using the free train - excellent frequency and parking - shame it ended: I would have continued to use it for work. Existing timetable is not fit for purpose.*

*Cycled 5 days a week from December to April for work. Now do 3 days in the car and 2 days by bike ( weather permitting ).*

*Wasted opportunity to improve public transport- people with cars would have stayed on buses and trains if times were better for workers.*

*I must add that the footbridge was a Godsend. Up until the temporary road bridge the buses met up at either end of the footbridge. if this service had carried on I am sure a lot of cars would still be off the road.*

Bus users were disappointed that bus stops near the supermarket had not been replaced, making returning home with heavy shopping difficult and car users were annoyed about road works and retention of the one-way system around the bridge. There were several suggestions about road provision in the future. Only one respondent pondered about the connection between transport and climate.

*In spite of the availability of the temporary bridge there has been no improvement in our travel situation since the floods. There is still no provision of replacement bus stops outside Tesco on New Bridge Road, therefore twice a week we have to wrestle with bags of heavy shopping walking up from Tesco to Workington Bus Station. As two of us are senior citizens this is a far from satisfactory state of affairs.*

*My only issue is that I think they could make Seaton easier to access from the new bridge. We are still doing a roundabout journey every day.*

*Can't get on bus at Stainburn or off. Prams and disabled have to get taxi to bus depot to get on buses as there are ramps in bus station.*

*I now travel by train whenever possible. It jolted me into thinking about transport and how it is affected by climate change.*

## Winter Weather

Most of the calls for change were for agencies such as the Highways Agency, local authorities, transport providers, education authorities and employers or other people such as idiot, cautious, or untrained drivers or neighbours to behave differently in future periods of severe winter weather. There appeared to be little scope for individual action, to improve one's own welfare, because most of the parameters were controlled by those in charge of wider decisions.

One respondent had resolved on a definite act which contravened their own values, for a more 'sustainable' if less environmental lifestyle.

*The poor reliability of public transport has made me decide to buy a car for commuting next winter, thus increasing my carbon footprint, decreasing my environmental sustainability and meaning that I and will have to actively seek opportunity to exercise. However the benefits will be less stress, more predictable working hours and a more predictable commute.*

The issue raised by more people was the clearing and gritting of pavements and while many acknowledged it would be difficult, they believed this was a high priority because icy pavements caused accidents, from people slipping and from people walking in the roads to avoid the ice. It meant people transferred to cars, creating more congestion or could not be able to leave their houses to buy food or for social activity, becoming isolated. The icy pavements were seen as

particularly problematic to old, frail or disabled people, but also used by most at some point on their journey. A few people suggested it made economic sense to reduce the number of accidents.

*The greatest hazard to myself has been pavements which have been left to melt and then freeze, turning them in to sheets of ice. I have seen a number of people fall. By leaving pavements, we are being encouraged to walk in the road (which are often far clearer) thereby putting us in further danger.*

*However, due to lack of clearance of ice on footpaths and some local roads, it appeared less hazardous to use the car, when compared with other methods.*

*Loss of bus services in bad weather and icy pavements leads to isolation of older and vulnerable people, causing danger and distress (eg lack of essential supplies) and increasing pressure on emergency/social services.*

*It is amazing that pavements, shopping centres and bus stations are not gritted routinely. These are just as important as the roads. It is an example of car-centric thinking, which ignores the requirements of businesses when people get into the shopping area...and the fact that many people arrive to shop by bus!*

*maybe hospitals could spend the money it costs them to fix broken limbs on paying councils to salt/grit more footways, to reduce A&E admissions - I understand Durham PCT have done this.*

*It makes me feel like a poor relation as I choose not to have a car and can usually get around on foot/public transport really easily. I feel discriminated against as a pedestrian!*

*I live close to my workplace because I am an environmentalist, and because it reduces stress related to travel and gives us more time as a family. I resent the fact that the local council prioritise the needs of those travelling from out of town in their polluting cars, even in bad weather, and do nothing to clear pavements which are SO dangerous - elderly people and other vulnerable folk - with disabilities or pregnant, are severely affected unless they drive everywhere!!*

There appears to be an assumption that local authorities would be responsible for pavement clearing, but some respondents acknowledged that they were fully stretched at times of severe weather. There were several suggestions that neighbours, with grit provided could or should be responsible along with local businesses and others recommended the use of people whose time could be commandeered: the unemployed, low-risk prisoners, the Army.

*However, we do have a grit box this year so we have done some gritting of our local street ourselves. But this all takes time and clearing snow from the local pavements/roads is a slow, laborious process by hand!*

*Shop owners - pavements outside their businesses.*

*Could we not get people who are being paid benefits to clear the roads??*

*one of the pavements (could be done as a punishment by community vandals such as Sir Fred Goodwin and the guy from Top Shop who has been picketed recently)*

*the unemployed and convicts.*

*The Council, Army, Unemployed and local residents*

*I think that low risk prisoners could be used to do this work in the UK.*

Unfavourable comparisons were made with previous times when people seemed more ready to help each other, which one respondent put time to lack of time.

*Years ago we all used to help neighbours by clearing paths etc. that does not seem to happen as much these days. Pavements are left untreated.*

*People would be more willing to help their neighbours if they had the time to do it!*

Most of the reflections considered how other people might react differently but there few ideas about personal action. The scope for action appeared to be more for changes in policy that individual agency.

### **In Summary**

While the volcanic ash cloud appeared to offer opportunities for individual learning and adopting new strategies, the situation in Workington was 'endured' and the winter weather problems mostly offered lessons for authorities or other people.

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## Discussion

### Space, time and cost

All journeys have spatial, temporal and cost characteristics. Disruptions displace these, so that a journey between A and B, between time J and K and costing Y, once disrupted changes some of these characteristics. Presuming that the traveller had previously chosen the best time-space-cost ratio for them, the alternative will involve an inferior match to their wishes, for example requiring more effort, less comfort or costing more. It may just take longer, so that the person sets up earlier (J-) arrives later (K+), changes the destination from B to D, possibly changes the origin from A to C or changes the route. The cost, will almost certainly change, with rises more (Y+) likely than falls (Y-).

Figure 6 outlined the possible personal adaptations to disruption. Because these characteristics co-exist, adaptations frequently involve more than one or changes which can be classified as either spatial, temporal or requiring more resources. Thus a longer journey, means the traveller is not in the place they expected to be at their normal arrival time and it costs more of their time resources. Working from home instead of commuting can represent reducing the frequency of a journey or displacing their work spatially.

For repeated travel patterns, it is easier to identify how journeys have been adapted, through their frequency, journey time, stay duration, route, destination, origin and additional costs. For less frequent trips, it can sometimes be difficult to identify what has replaced a journey. For example a planned foreign holiday which was not possible because of the volcanic ash cloud, may have been replaced by a weekend trip to a British resort and a longer or more distant summer holiday or some of the money not used on the holiday might be invested in a party or a new carpet and the time on watching TV or DIY.

### Structure and Agency

The surveys were of transport users and (with a few exceptions in Workington) did not include the experiences of transport providers or destination agents (such as hoteliers and other accommodation providers in foreign holiday resorts, employers, retailers, education providers, etc in Workington and across the UK for the December survey). It is easy to assume that all adjustments to disruption come from individuals rather than public authorities, commercial, charitable, social and other organisations. However, in Workington, it was evident that many organisations worked hard to provide the extra transport facilities (the foot bridge and its approach roads, traffic management schemes, the train service and temporary station, redesigned bus routes, school buses, roads and to replace the road bridges). Many also temporarily re-aligned their organisations to the new geography with provision of a temporary supermarket, doctors' surgeries, mobile banks, special arrangements for schools, new section boundaries for emergency services and redeployment of public sector employees to reduce their commuting.

During the flight ban, surface modes were used for people to get home. This caused a sharp peak in demand for train seats, coaches, hire cars, ferry and



tunnel capacity. The example of the ferry diverted from Orkney also illustrates how other people relying on transport provision for their routine travel were also inconvenienced by this displacement of resources. However, many respondents noted that the surface network's density, coverage and capacity have been reduced by competition from cheap airfares and it never matched the speed and convenience of air travel.

The comments of the travellers in the winter weather survey foreground their own struggles with the weather and beleaguered transport systems. In the background there are transport providers; individuals (bus and train drivers, people driving snow ploughs, gritting roads and pavements, unfreezing points, etc) and organisations such as central and local government, the Highways Agency, train, coach, taxi operators with their own limited resources, policies, practices and expertises. It is striking that, with the exception of clearing very local streets and pavements, respondents saw little room for their own agency and that mostly the situation was in the control of 'structures'. From their comments, the failure to clear pavements was the most evident disjuncture between their values and those enacted by the authorities.

### Time and Resources Budgets

Our time is finite, time spent on one activity is not available for another; even with multi-tasking it is doubtful we can expand the time available to us. It is also likely that there are optimal proportions of our time that we can spend on different activities. It has been suggested that on average people spend just over an hour a day travelling, although individuals have widely varying daily travel-time budgets. The evidence for this has been the relatively small variation in the total average time spent travelling over different periods and countries with very dissimilar levels of provision for travel.

In the UK, the average distance travelled has risen with greater speeds, but there has been little change in the time spent travelling. This suggests people and societies adjust to better transport technology and infrastructure by changing land use and travel patterns rather than 'saving' travel time for other purposes. When disruption, particularly to regular journeys, temporally increases journey times, this time must be taken from other activities such as leisure and family. The disruption around Workington gives clear evidence that discretionary activities such as socialising and leisure were badly hit by the extra time-demands of travel. This was deeply missed by many respondents who felt isolated and unable to fulfil the social obligations that nurture families and friendship groups. There may well have been more adjustment, by changing jobs, homes, work patterns, etc if it had not been known that the bridges would be repaired and replaced within months.

In all of the disruptions, valued but discretionary activities were sacrificed when extra time was needed to deal with the abnormal situation. Work, education, shopping, health trips and visits to vulnerable relations were prioritised while other socialising and leisure trips were abandoned or deferred. In effect, these activities provided the 'time elastic' to deal with unplanned demands on time.



Although incomes vary much more than time budgets, money and resources spent on one good or service are not normally available for another. There was only one example from a respondent of what she would not now be able to afford, because of extra expenses sustained during a travel disruption. However, many respondents gave details of the extra costs they had incurred and, sometimes, the income they had lost. The extra money spent on travel, although lost to the individual and household, is not lost to society. It is still paid to other people for goods and services, but may have been redistributed, for example the extra money spent on fuel in Workington may have reduced the takings of local retailers and service providers.

It has been suggested that, like time (but with less conclusive evidence), there is an average proportion of budget spent on travel. Thus, when travel starts costing a higher proportion of one's income, the balance becomes sub-optimum and people will seek to reduce their travel costs. It is evident that many respondents were prepared to spend more money and time in short-term, abnormal, circumstances to maintain important aspects of their lives (work, education, caring for relatives). The surveys give us no information about whether there would be long-term readjustments should travel continue to cost greater proportions of personal time and money budgets.

### **Learning from Disruption**

Disruptions, by definition, are abnormal situations, which prevent or slow down normal flows. The normality defines the abnormality, so for systems with a wide variation of performance (such as journey times or costs) abnormality would be something outside of the expected range. For systems which 99.99% of the time deliver at the advertised cost and arrive to the minute, disruption might mean a five-minute delay or two such delays. There may even be a time-space dimension to what is classed as a disruption as with increasing frequency and/or proximity disruptions will be absorbed into the 'normal'.

Whether recurrent or predictable disturbances to flows are classed as disruptions depends upon the range of performances one accepts as 'normal'. There may be well room for an intermediate category of 'normal abnormalities /disruptions', such as road accidents, highway and railway maintenance, strikes and predicted events such as festivals, the Olympics and Paralympics which can be accommodated through contingency planning.

Experience of disruption informs personal and organisational planning, both as a specific possibility or as a generic example of how plans can be disrupted. Presumably every generation will experience situations they had not expected, and perhaps this is necessary for growth and life not to become over-programmed, predictable and tedious. No doubt the events of September 2001 were used to inform actions in 2010, which in turn informed the New Zealand authorities when an ash cloud disrupted domestic flights in 2012. These collected memories will in turn be incorporated into future contingency plans and mental preparation for future disruptions. In this way, disruptions might be viewed as a way of adding to the collective memory bank and strengthening

personal and organisational resilience. Several respondents reported their experiences had made them more accepting of events beyond their control.

Disruptions, through their infrequency, are also opportunities for new experiences and perspectives, possibly for a re-assessment of values and priorities. Some of those caught up in the flight ban wrote about an increased confidence, new and good experiences such as using different modes, meeting helpful people and a re-awakened appreciation of home. A very few suggested it had triggered new ways of travelling or living.

In Workington, although a handful of people enjoyed walking or train use and some sensed a better community spirit, most testified that it was a time of hardship and sacrifice. There was also a theme of missed opportunity, by not building on the more sustainable travel practised during the disruption, especially not improving the train service or making the bus service more helpful for passengers.

In all the disruptions, respondents received help from their personal networks. Their use may even have strengthened the networks, although some travellers were aware that it would be difficult to reciprocate. However, the loss of time often impinged on planned activities which sustain family and local networks.

### **System Failure?**

All of these disruptions could be classed as system failures. The relevant transport system failed. However, transport is normally conceptualised as a means to an end, rather than an end in itself. Thus the transport is utilised to help achieve wider individual and societal goals such as human health, well-being, reproduction, economic development, equity and community. As such the transport system will always overlap/interlink with other systems and networks such as those concerned with employment, homes, family, health, education etc.

These systems shape and are shaped by the transport systems depending on and supporting them. So while travel was temporally halted or severely delayed by these three natural events, it can be argued that the wider systems worked to restore travel and meanwhile prioritised higher goals such as safety.

To deal with extraordinary events, a system needs more resources than are used to maintain it during normal functioning. Resilience requires some degree of redundancy: resources in reserve. Organisations such as airlines, tour companies, employers, governments and local authorities provided some of the resources needed restore the system (eg information, flights, extra accommodation, replacement staff, the Royal Navy ship to Spain, the train service in Workington, gritters and diggers). However, many of the extra demands of the situation were absorbed by the individual traveller and their personal networks. These included monetary costs (to get home or stay where they were for 'stranded', extra fuel for routine journeys in Workington and in December 2010 as well as the use of more expensive modes), but also reserves of physical and emotional energy.

The resource most mentioned was personal time. For people stranded by the volcanic ash cloud or unable to travel during the bad weather, there was the time they had not been where they expected to be and in all of the three incidents there were longer journey times. The greatest tensions appear to be between work and home time and the way that extra travel time and 'displaced time' is expected to be taken from personal time budgets and not work time.

People with jobs which could be performed in different places and/or at different times, often had to 'make up' their work time. However, several of these seemed to have little time resilience and invariably personal/family time was used to catch up. Public servants whose jobs depended on being in a certain place at a certain time (such as teachers or care workers) felt guilty about being away, requiring replacement. Those not in public service often faced loss of income as a consequence of their lost work time. Yet, when given the choice, working respondents usually chose to lose flexi-time or annual leave rather than income, suggesting that monetary budgets were less flexible or expendable than time-budgets or that there was more time-resilience than income resilience. There may be a difference between loss of income and extra expenditure as it is apparent that many 'stranded' were willing to pay and endure long journeys in order to not be away from home any longer.

In the winter weather survey, several respondents suggested that people should be more prepared to help their neighbours and neighbourhood by clearing snow and gritting local roads. Some recognised that was unlikely to happen because people did not have the time, but there were suggestions for this to be undertaken by groups with apparently fewer time commitments such as the unemployed or low-security prisoners.

### **Examples for more sustainable travel?**

This research was undertaken partly to investigate what happens when travel become more expensive in terms of time or resources for clues as to what might happen as fuel becomes inevitably scarcer and more expensive following peak oil. That scenario differs from the disruptions in that they were only temporary, while the post-peak oil situation will probably be accompanied by a future vision of diminishing supplies and rising prices. The disruptions were also geographically limited and, in the case of the volcanic ash cloud, restricted to one mode, whereas peak oil is likely to affect the whole world and all modes using fossil fuel.

Workington probably provides the best example of how individuals and agencies adjusted. It illustrates that services providing an all-over service such as the emergency services, libraries and health care can be re-organised quickly to reduce journeys to work. The response of the supermarket indicates considerable flexibility to reach its stranded customers on the other side of the river. The government resources focussed on the crisis area to provide troops to erect the footbridge, a temporary station and free trains would not be available in a slower developing, 'unlocalised' context.

The research shows the potential for change and re-alignment to new transport situations, through the use of collective and personal resources. However, as

snapshots, they cannot give information about long-term changes to a different transport context. If long-term personal transport time budgets and proportion of income do remain relatively stable, increased travel time and costs would result in land use or time use adjustments. Land use is relatively slow to change, in fact it could be argued that it is still adjusting to the current motorised transport context, so changes to the time-scape (such as reducing the number of days worked or that schools are open) may be easier to implement. This would inevitably require structural as well as personal actions.

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## Conclusions

This report compares the responses to three surveys of people affected by travel disruption in 2010; the volcanic ash cloud which resulted in several days of flight bans in Europe, the destruction and damage to road bridges sustained in floods in Workington, west Cumbria, which left the community without direct road access across the river for five months, but with access to a footbridge and free train services and the severe winter weather of December 2010, which blocked roads, pavements and cycleways across the country and caused delays and cancellations to public transport services. The main data source are the open comments by respondents.

Six stages in the cycle of disruption for travellers were identified and described:

1. Normality, when the transport system is operating normally, as perceived by travellers informed by previous experience, observations, timetables, tickets and other representations such as through the media.
2. Disruption, when normal flows are ceased or slow down,
3. Touching the new context, when travellers become aware of the disruption and seek information about its scale, duration and how it impacts on their journeys as well as the alternatives available to them
4. Revised plan: when traveller adjust to the disruption and decide their best course of action
5. Consequences: an assessment of the costs and benefits of the disruption
6. Reflection and Incorporation: where the experience is appraised and the useful lessons incorporated into future travel plans.

Travel disruption involves displacement in time and in space and usually cause extra costs to the traveller, which displaces resources from other potential expenditure. However, the research provides little evidence about how the extra monetary costs impacted on travellers' budgets. There were also other costs such as more physical effort, inconvenience, planning or anxiety. Lack of trustworthy information was a major source of anxiety.

The adjustments to disruption include:

- Spatial changes:
  - changing destination (including working from home) for activities which are not place specific eg shopping,
  - changing origin (by staying closer to destinations)
  - changing routes.
- Time Changes:
  - reducing the frequency of journeys
  - reducing duration of stay at destination
  - changing the time of travel to avoid congestion or hazards
- Modal switches
- Changing who does what:
  - journeys being undertaken by other people, when they are not person-specific, eg shopping or escorting children to school
  - activities, such as work and family duties.
  - paying for services normally undertaken by the traveller.

In all cases, there were increased journey times and in some cases people were stranded away from home. The biggest impact appears to be on personal time. There were tensions between personal and work-time losses, but in most cases respondents expected to make up lost work time although this could depend on the nature of the employment (self-employed, private or public employment) and work (whether it was possible to transfer spatially and/or temporally). Discretionary activities and trips were most likely to be cancelled or postponed.

Each of these disruptions was limited in its area and time, allowing extra, focussed resources to be brought in for repair and recovery from outside the area or stored from the past or borrowed from future requirements. When resources are relocated from other areas, there are repercussions for the people in those areas. The report provides understanding of personal short-term adjustments which can offer insights into how we might adjust to more long-term increases in travel costs. Yet it only supplies the travellers' snapshot perspectives and the evidence of relatively stable proportions of time and income devoted to travel suggest that there may be longer term adjustment to more permanent changes in the travel context, such relocation of residence or workplace. Neither does the research incorporate the views of providers and others reliant on the transport system, such as employers, service providers and retailers. Many changes to enable travel to adjust to peak oil and mitigate climate will require changes to society's 'structure' land use, timescapes, employment practices, etc as well as personal re-alignment to new contexts.

The report discusses whether disruption represents system failure, but concludes that transport is never a closed system but part of a wider set of systems and societal values. The partial failure of physical travel provision in unusual conditions partly reflects the degree of redundancy planned for in the system, and also the relative priority of travel. Other systems compensate and provide resilience for travel problems as resources are pulled from personal, private and public networks and systems.

### **Reference**

Eurocontrol (2010) **Ash-cloud of April and May 2010: Impact on Air Traffic**, <http://www.eurocontrol.int/sites/default/files/attachments/201004-ash-impact-on-traffic.pdf> accessed 16/08/12