

## **Impacts of Terrorist Events on Travel Behavior**

### **Barbara Fasolo, London School of Economics**

The objective of this work is to investigate Londoners' behavioral response to the 7/7 bombings across a range of transportation modes and analyze the underlying psychological mechanisms. This is an extension of CREATE studies of the impacts of terrorism on travel behavior.

**Principal Investigator:** Dr. Barbara Fasolo

**Institution:** London School of Economics

**Other Investigators:** Zhifang Ni (LSE), Larry Phillips (LSE)

#### **Brief Description:**

The purpose of this research is to investigate Londoners' behavioral response to the 7/7 bombings across a range of transportation modes and analyze the underlying psychological mechanisms. In particular, we examine cross-culturally Gigerenzer's dread hypothesis and its three components, namely avoidance, substitution and risk-taking. Previous investigation found support for an increased fatality in the US as a result of excessive car usage after 9/11; no such evidence was found in Spain. Hypothesized reasons include cultural differences, past exposure to risks and better developed public transportation. If these hold, UK data should exhibit a similar pattern as the Spain data.

#### **Objectives:**

This research will (a) collect London fatality and casualty data by transportation mode by month before and after 7/7 (b) analyze avoidance, substitution and risk-taking behaviours in the context of the London transportation policies (including Governmental measures to increase safety and cost of private transportation) (c) analyze the level of fatality of each transportation mode. This will allow, in the future, to compare the effects with US and Spain.

#### **Interfaces to other Center Projects:**

This work is part of a larger project, managed by Prof. von Winterfeldt at CREATE, considering impact of terrorist attacks on US, Madrid, London and Tokyo citizens.

#### **Interfaces to non-Center Projects:**

n/a

#### **Major Products and Customers:**

Project deliverables will consist of a report, in which we summarize our results, meeting the objectives described above. This report lays the ground for the next stage of the research, where we aim to employ a better, more focused method of examining Gigerenzer's dread hypothesis by analyzing more finely-grained data. One policy implication of our results is that a way for Governments to help people deal with the aftermath of the attacks and avoid falling prey to the 'dread risk trap' (i.e. die out of avoiding a dread risk) is to enhance the attractiveness of safer transportation substitutes, such as by increasing the relative cost of riskier modes (e.g., car travel) and providing a better public transportation system.

#### **Technical Approach:**

We will collect data from the UK and London transportation authorities, i.e. Department of Transport in UK and Transport for London. These data are available by London borough, by transportation mode, and by month. We will collect them for five years, between 2002 and 2006. We will analyze data by measuring *interannual variations*, or the percentage difference between a measure in a given period and the same period a year earlier. We measure the level of risks of transportation mode by fatality rate, which is the number of fatalities divided by traffic volume, or person killed per million vehicle kilometers. This way, we account for the increased usage as an element contributing to its increased fatality. We analyze the effect of 7/7 by comparing the fatality in the second-half of 2005 (from July to Dec) to the first half (from Jan to June), and again compare this ratio in 2005 to the ones observed in the previous three years (from 2002 to 2004).

**Major Milestones and Dates:**

- Casualty data collected -- March 2008.
- Fatality data collected – April 2008.
- Fatality data by London borough by transportation mode collected – May 2008.
- Initial analysis done and report written – September 2008.
- Additional analysis of CREATE data on Madrid, Tokyo, and New York attacks – December 2008
- Additional studies on risk perception and behavior changes – June 2009.