Life Events as Opportunities for Behavioural Change

Kiron Chatterjee
(University of the West of England, Bristol)
Motivation

- Traditional approach is to improve transport options (maybe publicise improvements) and hope that people use them - often disappointing results

- An alternative approach is to better understand people’s life contexts and when might be a good time to promote alternatives to them
Outline of presentation

1. Life events – definitions and theory
   - What are they?
   - Why are we interested in them?
2. Evidence of the importance of life events
   - English population
   - Residential relocation
3. Behavioural change interventions
   - Experience to date
   - Innovative approaches
4. Summary and suggestions
1. Definitions and theory
Definition

- Life event - “a major event in a personal life that will trigger a process of reconsidering current behaviour” (van der Waerden et al, 2003).

- Micro and macro life events
  - Individual
  - Family and social network
  - Broader society

- Characteristics of life events
  - Planned or unplanned
  - Desirable or undesirable
  - Permanent or temporary
Life Moments

Starting a family? Or ready to enjoy your retirement? We’re here to support you through all life’s important journeys. Here you’ll find articles, money-saving tips and more to help you manage your finances day-to-day.

- Going on holiday
- Improving your home
- Buying your first home
- Managing your money
- Getting ready for retirement
- Caring for vulnerable relatives
- Dealing with bereavement
- Changes at work
- Moving home
Taxonomy of life events

- **Micro**
  - Family and relationships
  - Education and employment
  - Residential
  - Health
  - Lifestyle
  - Vehicle ownership and competencies
  - Critical incidents

- **Macro**
  - Transport system changes/disruptions
  - Spatial activity system changes/disruptions
  - Socio-political events
  - Natural events
Why are we interested in life events?

- Travel is a derived demand that usually takes place to fulfil activity needs
- Travel choices determined based on needs, preferences and constraints (relating to life context)
- Changes in life context likely to modify these and cause discrepancy between aspirations and current circumstances
Travel choices determined by ‘lifestyle choice’

**Lifestyle choice**
- Family formation
- Participation in the labour force
- Orientation towards leisure

**Mobility choices**
- Employment location
- Residential location
- Housing type
- Car ownership
  - Mode to work

**Activity and travel choices**
- Activity type
- Activity duration
- Destination
- Route
- Mode

*Source: Salomon and Ben-Akiva (1983)*
Life events break habits

- Behaviour becomes automatic or scripted in stable context
- Reconsidered when contextual discontinuities occur (Habit-discontinuity hypothesis - Verplanken et al, 2008)
- Decision makers become aware of situational cues and seek information about options
- Thus become sensitive to transport system (and changes that have happened to it)
- Can more fundamentally alter:
  - Roles, resources, values, preferences
  - Context for travel (activity space)
Conceptual model for explaining turning points in travel behaviour - role of life events (Clark et al, 2015)

- **Life event**
  - (change in roles, values, resources, context)

- **Mediating factors**
  - Personal history
  - Intrinsic motivations
  - Facilitating conditions in the external environment

- **Deliberation**

- **Travel behaviour change**
  - (potential or actual)

- **Life course**

- **‘Transport stressors’**
## Schedule of Recent Events

(Holmes and Rahe, 1967)

<table>
<thead>
<tr>
<th>Life Event</th>
<th>Stress Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death of a spouse</td>
<td>100</td>
</tr>
<tr>
<td>Divorce</td>
<td>73</td>
</tr>
<tr>
<td>Marital separation from mate</td>
<td>65</td>
</tr>
<tr>
<td>Detention in jail or other institutions</td>
<td>63</td>
</tr>
<tr>
<td>Death of a close family member</td>
<td>63</td>
</tr>
<tr>
<td>Major personal injury or illness</td>
<td>53</td>
</tr>
<tr>
<td>Marriage</td>
<td>50</td>
</tr>
<tr>
<td>Trouble with the boss</td>
<td>17</td>
</tr>
<tr>
<td>Major change in working hours or conditions</td>
<td>16</td>
</tr>
<tr>
<td>Change in residence</td>
<td>15</td>
</tr>
<tr>
<td>Major change in usual type and/or amount of recreation</td>
<td>13</td>
</tr>
<tr>
<td>Major change in church activities (e.g., a lot more or a lot less than usual)</td>
<td>12</td>
</tr>
<tr>
<td>Major change in social activities (e.g., clubs, dancing, movies, visiting)</td>
<td>11</td>
</tr>
<tr>
<td>Change to a new school</td>
<td>5</td>
</tr>
</tbody>
</table>
2. Evidence of the importance of life events
Evidence for English population

- Life Transitions and Travel Behaviour project (2012-14) undertaken by University of the West of England, University of Essex and DfT (led by Kiron Chatterjee)
- “People and organisations are likely to be most open to changing habitual behaviours at key ‘transition points’ or ‘moments of change’” (DfT)
- Had not been demonstrated that behaviour more likely to change at time of life events
- We used Understanding Society panel data to investigate this
## Life event prevalence

<table>
<thead>
<tr>
<th>Life event</th>
<th>% English adults (weighted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential relocation</td>
<td>6.9%</td>
</tr>
<tr>
<td>Switched employer</td>
<td>6.2%</td>
</tr>
<tr>
<td>Entered employment from non-employment</td>
<td>5.1%</td>
</tr>
<tr>
<td>Lost employment (excl retirement)</td>
<td>3.3%</td>
</tr>
<tr>
<td>Had child</td>
<td>3.1%</td>
</tr>
<tr>
<td>Gained a driving licence</td>
<td>2.5%</td>
</tr>
<tr>
<td>Gained a partner</td>
<td>1.6%</td>
</tr>
<tr>
<td>Lost a partner</td>
<td>1.3%</td>
</tr>
<tr>
<td>Retired</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

Source: Understanding Society, Waves 1 and 2 (2009/10 - 2010/11), English residents only, n=32,151
Young adults experience more change
### Year to year car ownership changes

<table>
<thead>
<tr>
<th>Cars year t</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>20.8</td>
<td>2.2</td>
<td>0.2</td>
<td>0.0</td>
<td>23.2</td>
</tr>
<tr>
<td>1</td>
<td>2.4</td>
<td>37.5</td>
<td>3.5</td>
<td>0.3</td>
<td>43.7</td>
</tr>
<tr>
<td>2</td>
<td>0.3</td>
<td>3.7</td>
<td>20.3</td>
<td>2.0</td>
<td>26.3</td>
</tr>
<tr>
<td>3+</td>
<td>0.1</td>
<td>0.5</td>
<td>1.6</td>
<td>4.7</td>
<td>6.9</td>
</tr>
<tr>
<td>Total</td>
<td>23.6</td>
<td>43.8</td>
<td>25.6</td>
<td>7.0</td>
<td>100</td>
</tr>
</tbody>
</table>
## Year to year car ownership changes

<table>
<thead>
<tr>
<th>Cars year t</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>20.8</td>
<td></td>
<td></td>
<td></td>
<td>23.2</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>37.5</td>
<td></td>
<td>9%</td>
<td>43.7</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>20.3</td>
<td></td>
<td>26.3</td>
</tr>
<tr>
<td>3+</td>
<td></td>
<td></td>
<td></td>
<td>4.7</td>
<td>6.9</td>
</tr>
<tr>
<td>Total</td>
<td>23.6</td>
<td>43.8</td>
<td>25.6</td>
<td>7.0</td>
<td>100</td>
</tr>
</tbody>
</table>

N=19,545 households
We find a wide range of life events are associated with increased likelihood of car ownership change.

For example...
43% of households lost a car when a household member lost a partner, while only 8% of households lost a car in the absence of this life event.

<table>
<thead>
<tr>
<th>Life event experienced by any household member</th>
<th>n</th>
<th>with life event</th>
<th>without life event</th>
<th>with life event</th>
<th>without life event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lost a partner</td>
<td>372</td>
<td>7.0</td>
<td>9.0</td>
<td>42.7</td>
<td>8.4</td>
</tr>
<tr>
<td>Gained a partner</td>
<td>447</td>
<td>38.7</td>
<td>8.2</td>
<td>14.8</td>
<td>8.9</td>
</tr>
<tr>
<td>Gained a driving licence</td>
<td>794</td>
<td>34.0</td>
<td>7.9</td>
<td>5.7</td>
<td>9.2</td>
</tr>
<tr>
<td>Residential relocation</td>
<td>1426</td>
<td>14.4</td>
<td>8.5</td>
<td>23.4</td>
<td>7.9</td>
</tr>
<tr>
<td>Entered employment from non-empl.</td>
<td>1525</td>
<td>15.0</td>
<td>8.4</td>
<td>9.8</td>
<td>9.0</td>
</tr>
<tr>
<td>Lost employment (excl retirement)</td>
<td>1023</td>
<td>9.4</td>
<td>8.9</td>
<td>14.8</td>
<td>8.7</td>
</tr>
<tr>
<td>Changed employer</td>
<td>1647</td>
<td>15.6</td>
<td>8.3</td>
<td>11.4</td>
<td>8.8</td>
</tr>
<tr>
<td>Had child</td>
<td>622</td>
<td>11.4</td>
<td>8.9</td>
<td>11.9</td>
<td>9.0</td>
</tr>
<tr>
<td>Retired</td>
<td>355</td>
<td>6.8</td>
<td>9.0</td>
<td>12.7</td>
<td>9.0</td>
</tr>
</tbody>
</table>

Source: Understanding Society Wave1 and Wave 2 (2009/10 to 2010/11); n=19,344

Bold figures highlight greater prevalence of car ownership changes amongst the group of households experiencing the life event. The table illustrates simple bivariate associations. Households may experience more than one life event at a time.
Changes to *household structure* have the *strongest effects* on household car ownership

- **Partnership formation and dissolution** produces households with higher (0-1 and 1-2 cars) and lower numbers of cars (2-1 and 1-0 cars) respectively.

- **Child birth** increases likelihood of moving from zero to one car but also increases likelihood of moving from two to one car.

- **Gaining a driving licence** *strongly* increases likelihood of a household gaining a car (0-1 and 1-2 cars) *regardless of the number of cars already available*.

- **Moves into employment** *moderately* increase the likelihood of acquiring cars (0-1 and 1-2 cars).

- **Changing employer** *moderately* increases the likelihood of moving from one to two cars.

- **Moves out of employment (excl. retirement)** *moderately* increase the likelihood of relinquishing cars (2-1 and 1-0 cars).

- **Retirement** not significant.

- **Residential relocations** are predictors of *reductions* in car ownership level (2 to 1 and 1 to 0 car), but *not increases* in car ownership level.
### Year to year changes in commute mode

<table>
<thead>
<tr>
<th>Commute mode in year t</th>
<th>Car</th>
<th>Walk</th>
<th>WFH</th>
<th>Bus/coach</th>
<th>Train</th>
<th>Cycle</th>
<th>Metro</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>91.4%</td>
<td>2.5%</td>
<td>2.1%</td>
<td>1.1%</td>
<td>1.0%</td>
<td>0.6%</td>
<td>0.3%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Walk</td>
<td>13.3%</td>
<td>76.1%</td>
<td>1.5%</td>
<td>4.6%</td>
<td>1.3%</td>
<td>1.6%</td>
<td>0.5%</td>
<td>1.0%</td>
</tr>
<tr>
<td>WFH</td>
<td>26.5%</td>
<td>3.5%</td>
<td>62.4%</td>
<td>0.8%</td>
<td>3.0%</td>
<td>0.6%</td>
<td>1.0%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Bus/coach</td>
<td>16.6%</td>
<td>8.4%</td>
<td>1.1%</td>
<td>65.8%</td>
<td>2.7%</td>
<td>1.7%</td>
<td>2.5%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Train</td>
<td>9.3%</td>
<td>2.9%</td>
<td>2.7%</td>
<td>5.7%</td>
<td>70.7%</td>
<td>1.0%</td>
<td>6.6%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Cycle</td>
<td>16.3%</td>
<td>9.0%</td>
<td>0.8%</td>
<td>1.7%</td>
<td>1.9%</td>
<td>67.4%</td>
<td>1.0%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Metro</td>
<td>6.8%</td>
<td>2.0%</td>
<td>2.4%</td>
<td>8.3%</td>
<td>13.1%</td>
<td>1.5%</td>
<td>64.3%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Other</td>
<td>29.4%</td>
<td>10.6%</td>
<td>4.1%</td>
<td>2.4%</td>
<td>4.5%</td>
<td>3.3%</td>
<td>2.9%</td>
<td>42.9%</td>
</tr>
</tbody>
</table>

N=15,200 workers in England
Changes to and from car commuting are much more common for those experiencing life events.

E.g. 15% of non-car commuters changed to car commuting with no change in employment.

This doubles to 30% of non-car commuters changing to car commuting with a change in employment.

<table>
<thead>
<tr>
<th>Life event</th>
<th>Life event prevalence</th>
<th>with life event</th>
<th>with no life event</th>
<th>with life event</th>
<th>with no life event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gained a driving licence</td>
<td>1.9%</td>
<td>18.48</td>
<td>8.49</td>
<td>34.68</td>
<td>16.10</td>
</tr>
<tr>
<td>Switched employer</td>
<td>10.5%</td>
<td>18.21</td>
<td>7.38</td>
<td>29.39</td>
<td>15.08</td>
</tr>
<tr>
<td>Gained a partner</td>
<td>1.9%</td>
<td>16.32</td>
<td>8.40</td>
<td>23.86</td>
<td>16.65</td>
</tr>
<tr>
<td>Residential relocation</td>
<td>6.8%</td>
<td>15.01</td>
<td>8.04</td>
<td>23.24</td>
<td>16.15</td>
</tr>
<tr>
<td>Had child</td>
<td>3.9%</td>
<td>8.54</td>
<td>8.58</td>
<td>22.85</td>
<td>16.56</td>
</tr>
<tr>
<td>Lost a partner</td>
<td>1.2%</td>
<td>16.45</td>
<td>8.48</td>
<td>15.78</td>
<td>16.81</td>
</tr>
</tbody>
</table>

Source: Understanding Society Wave 1 and 2 (2009/10 to 2010/11); n=15,200 workers

Bold figures highlight greater prevalence of commute mode change amongst the group experiencing each life event.

The table illustrates simple bivariate associations. Individuals may experience more than one life event at a time.
Change in distance to work is the main driver of changes to commuting mode

- Clearly this occurs when people move home or change employer.
- Change to car commuting is more likely if the distance increases above two miles (30 times more likely!)
- Change to non-car commuting is more likely if the distance reduces below three miles (9 times more likely)
- Change to residential context is also influential (pop density, PT availability)
- Car commuters are more likely to switch to non-car commuting if they are ‘willing to act to protect the environment’
Mapping findings to policy actions

- We identified how the findings are relevant to policy goals and suggested policy actions that could be taken forward.
- See [http://travelbehaviour.com/project-outputs/](http://travelbehaviour.com/project-outputs/)

<table>
<thead>
<tr>
<th>Finding</th>
<th>Potential policy goal(s)</th>
<th>Example Action(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LE1</td>
<td>People bring and take cars with them at the time of partnership formation and dissolution and cars are not immediately shared by partners. Stopping cohabitation is associated with switching to non-car commuting.</td>
<td>Reduce need for each adult member of household to have access to own car.</td>
</tr>
<tr>
<td>LE2</td>
<td>Birth of a child encourages non-car households to acquire a car and also enables parents looking after young children to manage without car for daily activities.</td>
<td>Enable parents looking after young children to manage without car for daily activities.</td>
</tr>
</tbody>
</table>
Research on residential relocation

- Most studied life event
- Different possible effects
  - Activity spaces and trip distances
  - Mode choice
  - Vehicle ownership
- Effect on travel behaviour depends upon...
  - What other life events occur around same time
  - Nature of move (distance, type)
- Bi-directional influence (dissatisfaction with travel can prompt move)
- May involve high degree of pre-move deliberation (self-selection to location which suits travel preferences)
3. Behavioural change interventions
Free public transport card for car owners in Copenhagen

- Target group was car owners
- Treatment group received free public transport card and control group did not
- Only those that had moved home or changed job in last 3 months increased public transport use
- Implies targeting those experiencing life events would be more effective

Thøgersen (2012)
Public transport incentive for movers in Stuttgart

- Target group was home movers to Stuttgart
- Treatment group were given a public transport information pack (including a free day ticket) six weeks after they had moved and control group were not given the pack
- Both groups were found to re-evaluate behaviour after move
- Treatment group increased public transport mode share more substantially

<table>
<thead>
<tr>
<th></th>
<th>Before intervention</th>
<th>After intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>No PT ticket (control group)</td>
<td>18.9%</td>
<td>24.4%</td>
</tr>
<tr>
<td>Free PT ticket (treatment group)</td>
<td>19%</td>
<td>46.8%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEGMENT project 2010-13</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New employees</strong></td>
</tr>
<tr>
<td>Hounslow UK</td>
</tr>
<tr>
<td>Almada PT</td>
</tr>
<tr>
<td>Sofia BG</td>
</tr>
<tr>
<td>Utrecht NL</td>
</tr>
<tr>
<td>Gdynia PL</td>
</tr>
<tr>
<td>Munich DE</td>
</tr>
</tbody>
</table>

Utrecht new residents - welcome pack and cycle map sent a few weeks after move. Modal shift of 4% from car to cycling and public transport.
West of England
Local Sustainable Transport Fund – Transitions Theme

Move to secondary school
University
Moving Home
New Job

…to your new source of travel options

Bath & North East Somerset, Bristol, North Somerset and South Gloucestershire Councils, working with the Department for Transport
New Developments

• Identified developments through S106

• Worked with Residents Groups, developers and Housing Associations

• Travel Pack produced for each development

• Travel Advisors knock on doors and give residents Travel Pack and make other offers

• Offers including free bus tickets, Dr Bike, loan bikes, route planning, cycle training.
Approach

Wake up to a new way to get around
...to your new source of travel options

Bath & North East Somerset, Bristol, North Somerset and South Gloucestershire Councils, working with the Department for Transport
Outcomes – anecdotal evidence

• *Did your travel behaviour change as a result of receiving that travel information pack?*

• Yes, I think so we definitely use the bus after, I mean after getting the pack when you kindly sent us those bus tickets that you could use, you know, free ones. We used them, we used them well.

• *Great*

• And we have used it since as well, you know having you know to pay.

• *Right*

• So it’s been, it was good.
Next Steps

– ‘Moving Home’ – a focus on not just new developments but ‘people moving in general’.
– Market research undertaken and new approach being piloted in 2015/16
– Working with estate/letting agents and advertising portals (via button/link on their website for each property to provide travel/access information)
– Tailored approach for five different groups of movers based on life stage and overall motivations
– For more information see http://travelwest.info/new-developments
4. Summary and suggestions
Summary

- Life events can be stressful even when desired/planned – it does not automatically follow that people will wish to change travel behaviour
- However, clear evidence that many life events increase likelihood of changing travel behaviour
- Promising results from marketing initiatives targeting people experiencing life events
- Although do we measure success of interventions?
  - Assess if treatment group change behaviour?
  - Compare treatment group to control group?
  - Compare treatment group to established population?
Suggestions

- Seek to understand population in terms of their life phases and the likely life events they will experience.
- Aim to engage people very soon after life event or before life event.
- Broaden scope of life events considered
  - Health changes
  - Lifestyle changes
  - Temporary disruptions
- Appreciate that people’s lives are constantly evolving and they experience/seek out change (major and minor).
- Do not assume that transport users are stable and familiar (there are new users appearing all the time).
Further information on *Life Transitions and Travel Behaviour* project can be found at: [www.travelbehaviour.com](http://www.travelbehaviour.com)