

# 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

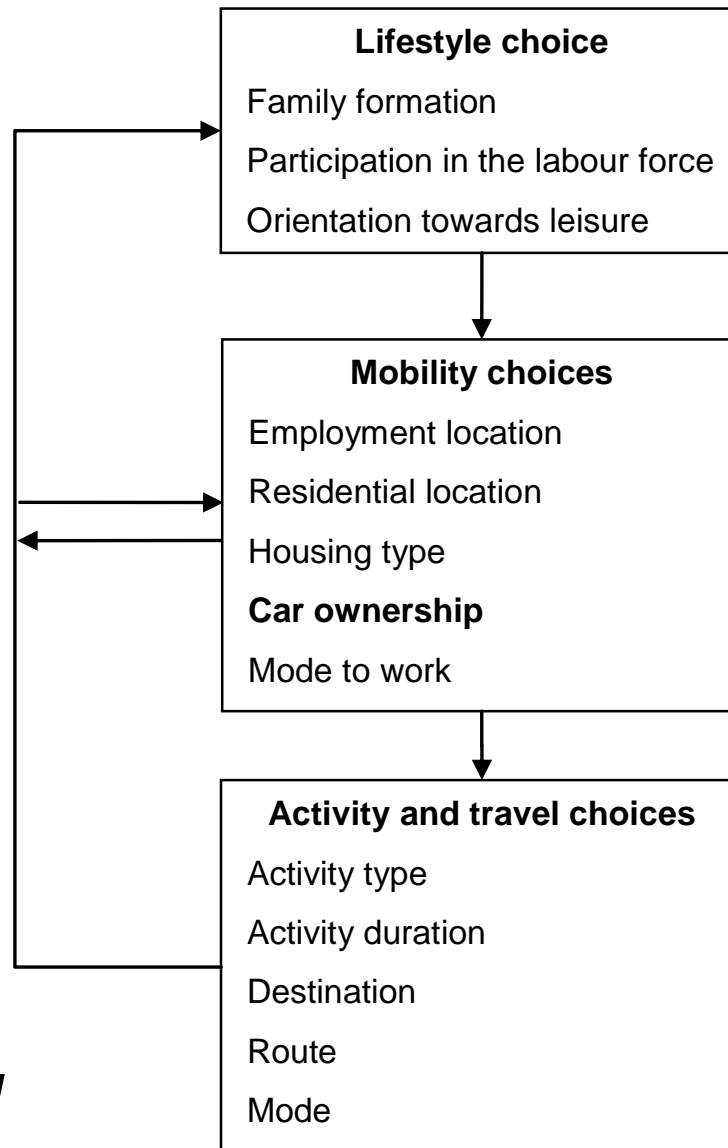
- Transport system changes/disruptions
- Spatial activity system changes/disruptions
- Socio-political events
- Natural events

# 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'

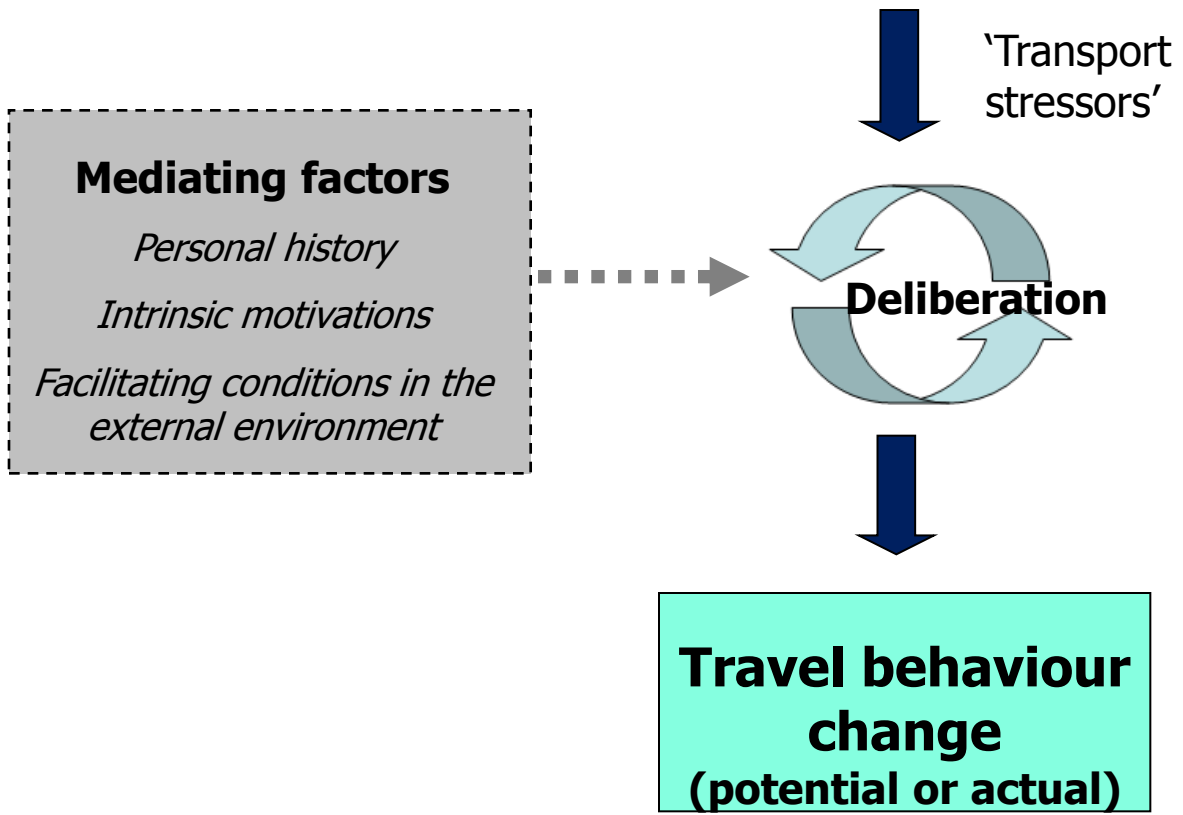
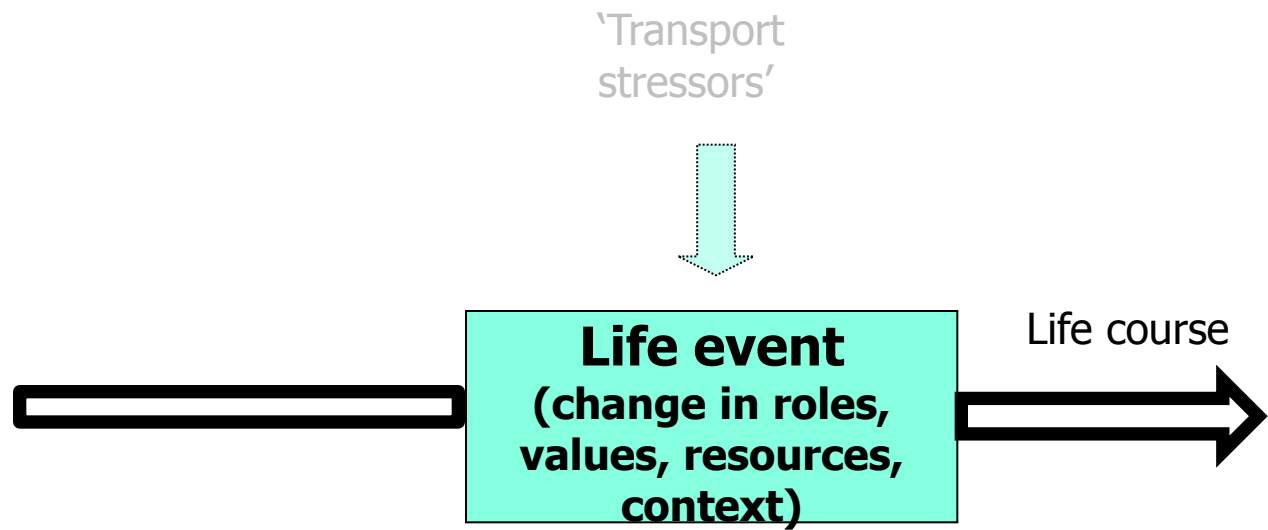


*Source: Salomon and Ben-Akiva (1983)*

# 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)





**Mediating factors**

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

**Conceptual model for explaining turning points in travel behaviour - role of life events (Clark et al, 2015)**

# Schedule of Recent Events (Holmes and Rahe, 1967)

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

## 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



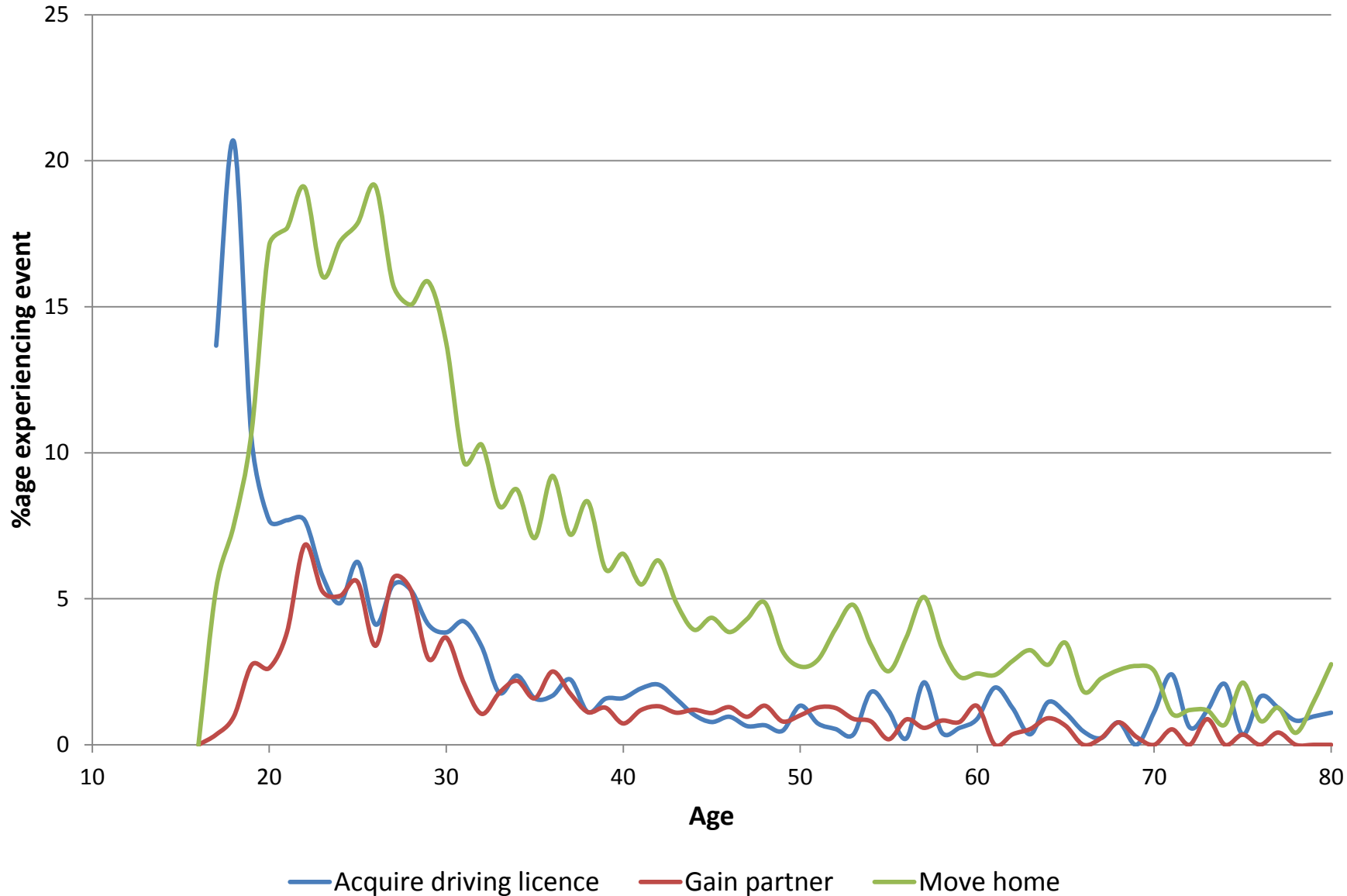
[www.understandingsociety.ac.uk](http://www.understandingsociety.ac.uk)



# Life event prevalence

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

		Cars year t+1				
Cars year t	0	1	2	3+	Total	
0	<i>20.8</i>	<i>2.2</i>	<i>0.2</i>	<i>0.0</i>	23.2	
1	<i>2.4</i>	<i>37.5</i>	<i>3.5</i>	<i>0.3</i>	43.7	
2	<i>0.3</i>	<i>3.7</i>	<i>20.3</i>	<i>2.0</i>	26.3	
3+	<i>0.1</i>	<i>0.5</i>	<i>1.6</i>	<i>4.7</i>	6.9	
Total	23.6	43.8	25.6	7.0	100	

# Year to year car ownership changes

		Cars year t+1				
Cars year t	0	1	2	3+	Total	
0	<i>20.8</i>	<b>9%</b>			23.2	
1	<i>37.5</i>				43.7	
2	<b>9%</b>		<i>20.3</i>	26.3		
3+			<i>4.7</i>	6.9		
Total	23.6	43.8	25.6	7.0	100	

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

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

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.

while only 8% of households lost a car in the absence of this life event

# 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

%age of people switching to commute mode by year t+1								
Commute mode in year t	Car	Walk	WFH	Bus/coach	Train	Cycle	Metro	Other
Car	91.4%	2.5%	2.1%	1.1%	1.0%	0.6%	0.3%	1.0%
Walk	13.3%	76.1%	1.5%	4.6%	1.3%	1.6%	0.5%	1.0%
WFH	26.5%	3.5%	62.4%	0.8%	3.0%	0.6%	1.0%	2.3%
Bus/coach	16.6%	8.4%	1.1%	65.8%	2.7%	1.7%	2.5%	1.4%
Train	9.3%	2.9%	2.7%	5.7%	70.7%	1.0%	6.6%	1.0%
Cycle	16.3%	9.0%	0.8%	1.7%	1.9%	67.4%	1.0%	1.9%
Metro	6.8%	2.0%	2.4%	8.3%	13.1%	1.5%	64.3%	1.5%
Other	29.4%	10.6%	4.1%	2.4%	4.5%	3.3%	2.9%	42.9%

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

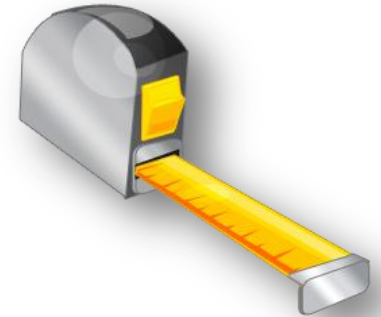
Life event	Life event prevalence	%age of workers switching from:			
		car to non-car		non-car to car	
		with life event	with no life event	with life event	with no life event
Gained a driving licence	1.9%	<b>18.48</b>	8.49	<b>34.68</b>	16.10
Switched employer	10.5%	<b>18.21</b>	7.38	<b>29.39</b>	<b>15.08</b>
Gained a partner	1.9%	<b>16.32</b>	8.40	23.86	16.65
Residential relocation	6.8%	<b>15.01</b>	8.04	<b>23.24</b>	16.15
Had child	3.9%	8.54	8.58	<b>22.85</b>	16.56
Lost a partner	1.2%	<b>16.45</b>	8.48	15.78	16.81

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

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

# 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/>

	Finding	Potential policy goal(s)	Example Action(s)
	<b>Life events – Family changes</b>		
LE1	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.	Reduce need for each adult member of household to have access to own car.	Effective provision and marketing of car clubs \ public transport \ cycling as alternatives to under-utilised second cars.
LE2	Birth of a child encourages non-car households to acquire a car and also	Enable parents looking after young children to manage without car for daily activities	Ensure that alternatives to the car (public transport, car clubs, walking and cycling



# 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<sup>27</sup> of 38 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

	<b>Before intervention</b>	<b>After intervention</b>
<b>No PT ticket (control group)</b>	18.9%	24.4%
<b>Free PT ticket (treatment group)</b>	19%	46.8%

Bamberg,  
Rolle and  
Weber  
(2003)

# SEGMENT project 2010-13

	New employees	Start /change school	New residents	University students	Other
Hounslow UK	✓	✓			Health centres
Almada PT		✓	✓	✓	
Sofia BG	✓	✓	✓		
Utrecht NL	✓	✓	✓	✓ (*)	
Gdynia PL	✓	✓			First baby day care
Munich DE		✓	✓		New foreign residents

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.



**Wake up**

# 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

travelwest+

## 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.

...to your new  
source of travel options



Wake up

# Approach



to a new h  
new ways to get ar



...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.

...to your new  
source of travel options

## 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>

...to your new  
source of travel options

## 4. Summary and suggestions

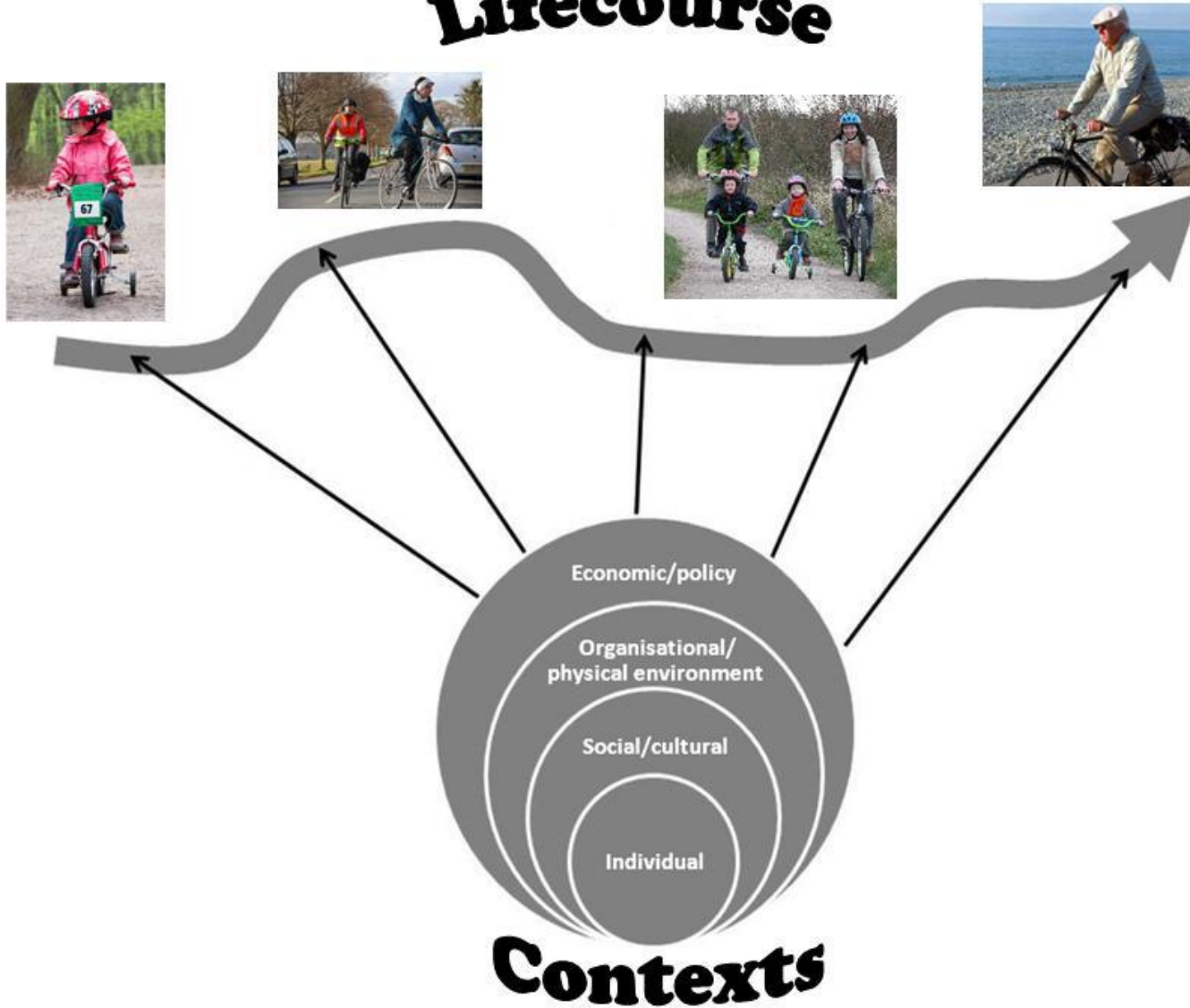
# Summary

- 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)

# Lifecycle



Further information on *Life Transitions and Travel Behaviour* project can be found at: [www.travelbehaviour.com](http://www.travelbehaviour.com)