Street Mobility project

A stated preference model to value reductions in community severance

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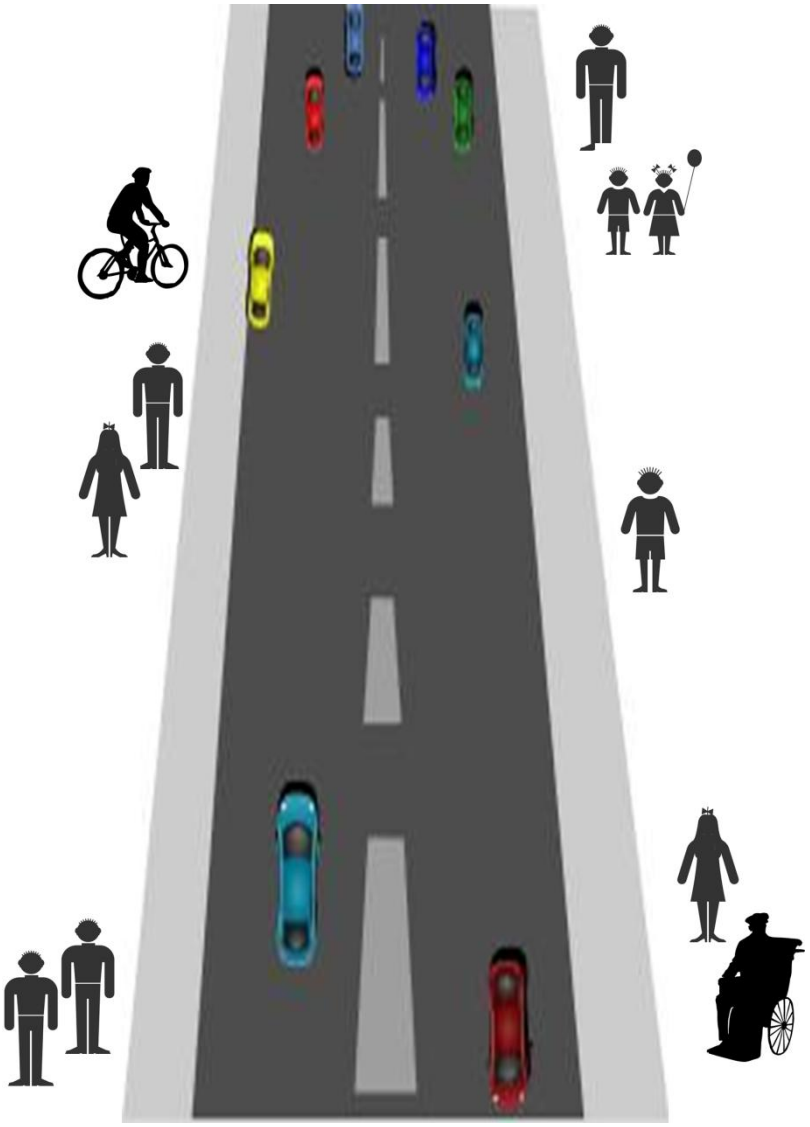
World Conference on Transport Research, Shanghai, 13/07/2016

What is community severance ?



London, UK

Skopje, FYR Macedonia

Prague, Czech Republic

Açores, Portugal

How to monetize severance?

- Sweden, Denmark (old documents for transport appraisal):

  formulas combining traffic variables (density, composition, speed), crossing need, and unit monetary values per age group

- Pedestrian delay * value of walking time

- Stated preference:

  estimate willingness to contribute to projects that reduce severance

Stated preference survey

SP1
willingness to walk

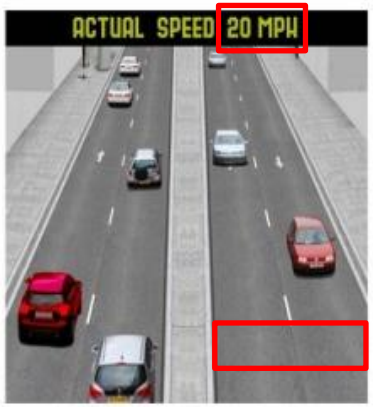
SP2
willingness to pay

to avoid crossing a road in a place without crossing facilities

200 respondents, 100 in London, 100 in Southend (a smaller city)

SP1: design

Looking at the road conditions on the left, which of the three options would you choose?

Traffic density: **Low**		
Central reservation with no guard railing		
		Avoid crossing road at all
Cross at closest point (not at pedestrian crossing)	Use covered over road Adds 8 minutes to your journey	
Option A	Option B	Option C

OR OR

Attributes

SP1: model results

Variables	MIXED LOGIT	
	coeff.	**willingness to walk** (minutes)
time	-0.31***	
Option A (cross)	-2.45***	7.9
lanes=as now	-1.86***	6.0
no central reservation	-2.67***	8.7
density=medium	-	-
density=high	-1.63***	5.3
speed=30	-	
Option C (don't cross)	-7.95***	25.8

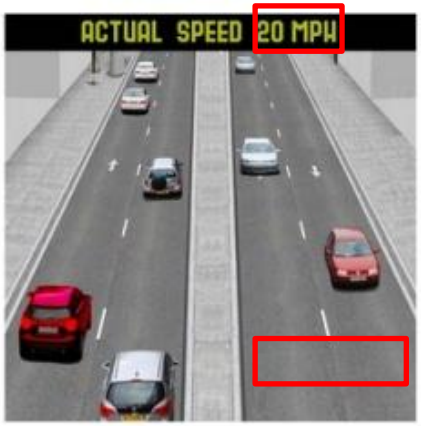
Higher for females and people who don't cross every day (vs. males and people who cross every day)

Higher for people aged>50 (vs. age<50)

SP2: design

Traffic density: **Low**

Central reservation with no guard railing



In this scenario, which of the two options would you choose?

Option A	Option B
Cross at this point Saving 80p off your one-way ticket cost	Do not cross the road and pay the higher ticket cost

Option A Option B

Attributes

or shopping bill

SP2: model results

	RANDOM-EFFECTS LOGIT	
	coeff.	**willingness to pay (£)**
constant	1.24***	
saving	0.92***	
lanes=as now	-1.40***	1.5
no central reservation	-1.24***	1.4
density=medium	-1.15***	1.3
density=high	-2.56***	2.8
speed>=30	-0.72***	0.8

Higher for people aged>50 (vs. age<50)

Higher for people with mobility restrictions (vs. full mobility)

Application: Tool for local authorities/general public

User inputs

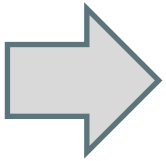
Road conditions

(# lanes, central reservation, traffic levels and speeds)

Population

Major destinations

(stations, supermarkets, schools..)



Outputs

Severance index

'Disutility' of the road for pedestrians

Impact on behaviour

Probability that someone will not cross the road (by age group)

Monetary value of the impact

Thank you for your attention!

UCL
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project

www.ucl.ac.uk/street-mobility

streetmobility.wordpress.com

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