Estimating preferences for pedestrian crossing facilities

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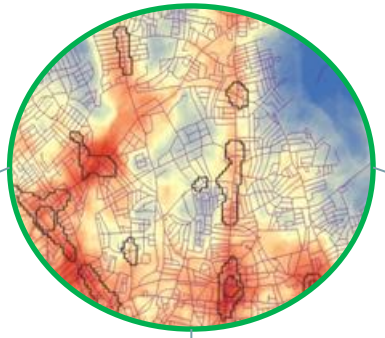
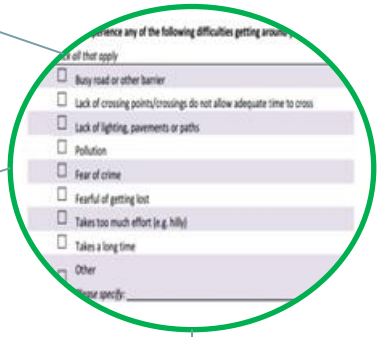


Walkability mapping
(Yesterday's presentation)

Video surveys

Wellbeing survey
(Yesterday's presentation)



Community engagement

Street audits

Stated preference survey
(Today's presentation)

Stated preference survey

Objectives

- Estimate preferences for using different types of pedestrian crossing facilities
- Derive trade-off values between use of each facility and walking time to access it

Methods

- Qualitative stage (focus groups, interviews): to identify relevant attributes
- Main survey (100 respondents): rating facilities, choice among alternatives

Qualitative stage

Slow, dangerous

Inconvenient, insecure, unpleasant

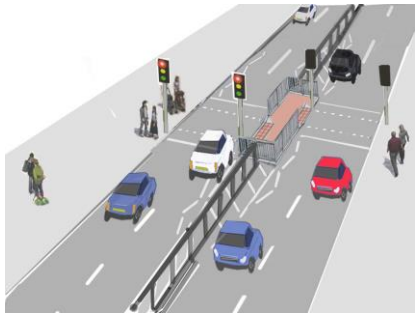
Only one animal

Main survey: Finchley Road

Existing barriers to walking

Options shown to participants

pelican



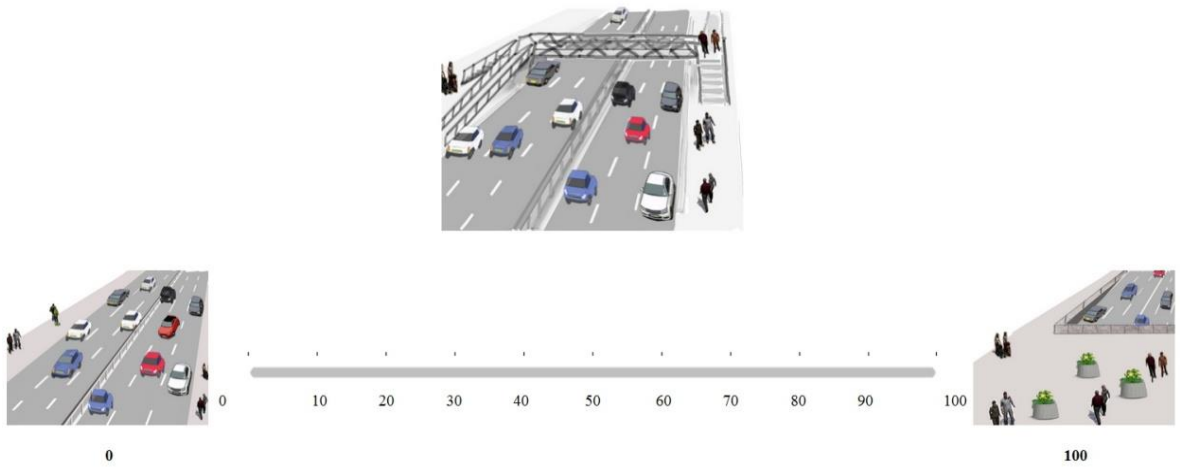
staggered pelican

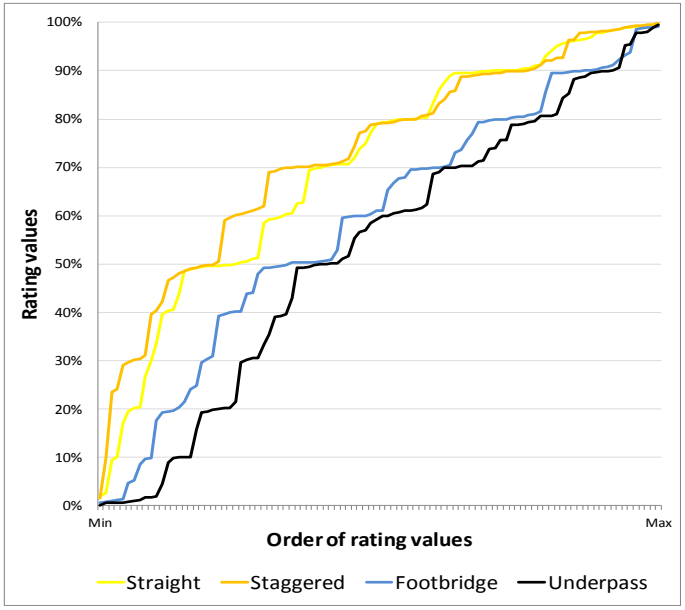
footbridge

underpass

Rating

Looking at this type of crossing, how comfortable would you feel? (using scale below where 0 and 100 are represented by the pictures on either side of the scale)





Average ratings

	Straight	Staggered	Footbridge	Underpass
All	0.70	0.73	0.59	0.53
Female	0.65	0.69	0.52	0.44
Age 51-65:	0.73	0.75	0.48	0.52
Age 65+	0.64	0.62	0.48	0.36
Low income (<20k)	0.72	0.66	0.65	0.34
Restricted mobility	0.60	0.66	0.49	0.39

Stated preference exercise - design

Looking now at this road scenario and the three available options, what would you choose to do?

Option A		Option B		Option C
Use footbridge (with steps and ramp) Adds 20 minutes to your journey	OR	Use underpass (with steps and ramp) Adds 4 minutes to your journey	OR	Avoid crossing road at all
○ Option A		○ Option B		○ Option C

Stated preference exercise - models

Variables	Model 1 conditional logit	Model 2 mixed logit	Model 3 mixed logit
staggered	-0.05	-0.39***	-0.63
footbridge	-0.30	-0.57	-1.44***
underpass	-0.65***	-1.63***	-0.98*
don't cross	-2.81***	-2.23***	-6.81***
time	-0.18***	-7.05***	-0.37***
underpass * age>50			-2.56***
don't cross * work			-7.62*
time * work			-1.06***
n	1800	1800	1800
R^2	0.19	0.36	0.39

Conditional logit: Coefficients are fixed across participants
Mixed logit: Coefficients are random

Stated preference exercise – trade-off values

Walking times above which participants avoid straight pelicans and use other types of crossing facilities or choose not to cross altogether

	Model 1 conditional logit	**Model 2** mixed logit	**Model 3** mixed logit		
			All	Age>50	Destination: work place
staggered pelican	0.3	1.5	1.7		0.4
footbridge	1.6	4.2	3.9		1.0
underpass	3.6	5.7	2.7	9.6	0.7
don't cross	15.6	18	18.5		10.1

Tweet your conclusions

Community Severance @StreetMobility · now

stated preference survey in London confirms that pedestrians balance walking time and aversion to footbridges and underpasses #UTSG2016

Thank you for your attention!

http://www.ucl.ac.uk/street-mobility

https://streetmobility.wordpress.com

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Current team members: Jennifer Mindell, Peter Jones, Muki Haklay, Shepley Orr, Paulo Rui Anciaes, Laura Vaughan, Ashley Dhanani, Lusine Tarkhanyan, Shaun Sholes, Jemima Stockton and Nora Groce