Community Severance from Major Roads: Can We Measure its Effects on Determinants of Health? Lessons from Finchley Road, London, UK

Dr Jennifer Mindell
Reader in Public Health, UCL
j.mindell@ucl.ac.uk

@j_mindell
Street mobility and network accessibility: towards tools for overcoming barriers to walking amongst older people


www.ucl.ac.uk/street-mobility
Street mobility and network accessibility

• Prof Peter Jones
• Prof Laura Vaughan
• Prof Muki Haklay
• Prof Nora Groce
• Dr Shaun Scholes

• Dr Paulo Anciaes
• Dr Ashley Dhanani
• Dr Jemima Stockton
• Dr Sadie Boniface
• Ms Louise Francis
• Ms Rebecca Payne
• Ms Barbara Brayshay
• Dr Lusine Tarkhanyan
Community severance

- Appleyard and Lintell,
- San Francisco

Appleyard. *Livable Streets, 1981*

Community severance
Participatory mapping

Questionnaire survey

Objective measurement
- Space syntax
- Pedestrian environment
- Traffic & pedestrian flows

Stated Preference analysis

Modelling interventions
- Reduction in severance
- Economic benefit

Outcomes
- Suite of tools
- Values for WebTAG
My neighbourhood, my streets questionnaire

Please make sure you have read the information sheet before you complete this questionnaire.

STREET MOBILITY & NETWORK ACCESSIBILITY PROJECT

UNIQUE ID# _____
Developing a survey tool

- Pre-existing questions:
  - Demographics
  - Socio-economic factors
  - Self-rated health
  - Longstanding illness
  - Disability
  - Wellbeing (SWEMWBS)

- Developed questions about perceptions of own road, busiest road, and walking around in their area

- Cognitive testing
- Pilot
- Survey of random sample of residents
Study results
Finchley Road
1. Qualitative interviews of 101 people August 2014
2. Survey of 209 people July/August 2015
3. Stated preference survey 100 participants August 2015
4. Video observation of vehicle movement and pedestrian flows 6th November 2014 (20 locations)
5. PERS survey of 114 street segments
6. Local and global spatial analysis of the area
7. Model of walkability for London area
Context

Spatial analysis: Finchley road is structurally important to both local center and wider urban area
Local residents asked on the street reported the road is a strategic destination

- popular local amenities: Swiss Cottage Farmers’ Market, Leisure Centre, O2 Shopping Centre
London’s walkability

Finchley Road: one of the peak walkability locations in London.

Walkability defined as a potential of the built environment to promote walking. A high walkability score does not necessarily mean a high level of walking.

“Proximity to green spaces and pleasant back routes are a positive factors of the road.” (Street survey)
Based on DfT data considerable amount of traffic passes through the area.

Survey participants reported that the ability to walk to local places often or always affected by the speed of traffic (14%) or its volume (15%) (almost half sometimes affected).

Levels of traffic within peak walkability boundaries
Perception of road as socioeconomic border between two different groups, reinforced by findings from the IMD (from Oliver O'Brien's blog of IMD deciles)
The video survey shows that road traffic levels along the road are very high, compared with similar roads in London. The values are similar to some motorways.
Street survey: A number of local residents reported that they do not cross the road near Swiss Cottage due to risks involved from car traffic.

Questionnaire survey:  
- 25% of participants were concerned about the crossing facilities at Swiss Cottage.
- Difficulty walking around their area:  
  - 18% mentioned a lack of crossing points  
  - 25% the lack of adequate time to cross

“I don’t like crossing at Swiss Cottage – I nearly got killed there one night.” (Street survey)
• >50% of survey participants, who were located close to the busy road (≤3 minutes walk) were at least occasionally affected by speed of traffic
• >60% by the traffic volume
The PERS survey results show there are barriers to walking other than road traffic, such as railways and dark alleyways (in the NW part) and slopes (in some streets leading to the Finchley road in the E part).
Other difficulties in walking around the local area was related to poor lighting, pavements and paths (13%) and the fear of crime (11%) (Questionnaire survey)

11% of local residents (street survey) raised the issue of fear of crime when walking around locally or using underpasses
Pedestrian flows
Environmental qualities

• October 2014 – October 2015:
  – Mean NO$_2$ **61** µg/m$^3$
  – EU limit 40 µg/m$^3$
  – Maximum **345** µg/m$^3$ 18 February 2015

• 20% (street survey) raised pollution as a negative perception of the road

• 36% (questionnaire) reported air or noise pollution as a difficulty for them in walking around the local area

“I avoid the pollution on Finchley Road by using the bus – it’s foul crossing by the cinema (Swiss Cottage), really disgusting.”
(Street survey)

“Exhaust fumes from huge airport buses are dreadful. Killing us.”
(S1 survey participant)
“I have arthritis and use a walking stick. Many of the pavements are cracked and I have fallen on several occasions.”
(S1 survey participant)
First two inner London case-study areas (WD & FR)

310 participants \(\Rightarrow\) 35% aged \(\geq 55\) years

\[\Rightarrow\]

42% of aged \(\geq 55\) years reported longterm, activity-limiting, health condition

Significantly more likely than those without such a condition to report:

- Walking is often/ always affected by
  - traffic speed
  - traffic volume

- Problems on their own road:
  - Lack of crossing points
  - Insufficient time to cross

- Traffic speed is fairly/very fast, and Wait >30 seconds to cross
  - Own road
  - Busiest road
New definition

Transport-related community severance is the variable and cumulative negative impact of the presence of transport infrastructure or motorised traffic on the perceptions, behaviour, and well-being of people who use the surrounding areas or need to make trips along or crossing that infrastructure or traffic.