

What is community severance and why is it important?

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On behalf of the Street Mobility and Network Accessibility project team

www.ucl.ac.uk/street-mobility

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We thank our funders:





WHAT IS COMMUNITY SEVERANCE?

What is community severance?

Vos & Chardon, 1998

“For *[older people]*, isolation can be regarded as a combination of distance to other *[places]* and the resistance of the landscape between *[them]*. The road network will probably contribute considerably to the resistance between *[them]* ... higher traffic density ... increased mortality as well as increasing isolation. The negative effects of roads are often underestimated.”

Community severance



“For **ground dwelling species**, isolation can be regarded as a combination of distance to other **habitat patches** and the resistance of the landscape between **patches**. The road network will probably contribute considerably to the resistance between **habitat patches**. **Mortality on roads can have a considerable impact on amphibian populations and eventually can lead to extinction....**”

WWF

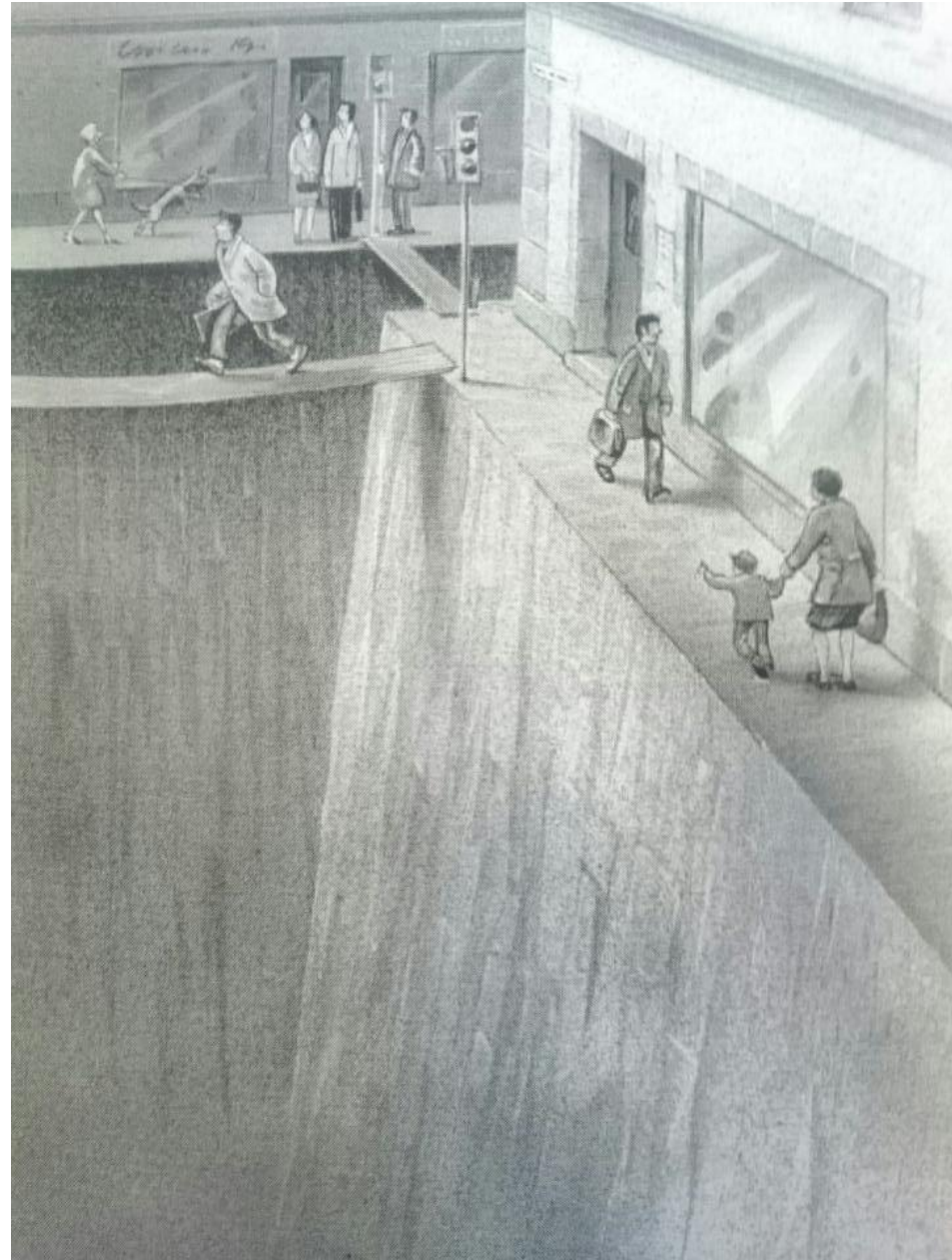


- According to the WWF, the Giant panda population in China is growing. However, it is divided into 33 groups, many of which are very small: 24 groups are at high risk of becoming extinct. Climate change is likely to reduce the area of suitable bamboo habitat.
- At the same time, new roads and other infrastructure could fragment the bears' habitat, restricting pandas' ability to move around to breed and feed.
- National Highway 108 in the Qinling mountains created an impassable boundary between two large populations. In 2007, the road was rerouted through a tunnel and the habitat replanted with bamboo.

Our definition of community severance

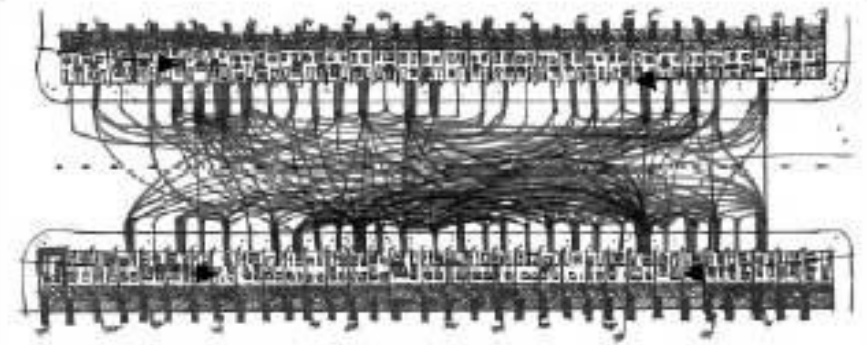
Transport-related community severance is the variable and cumulative negative impact of the presence of transport infrastructure or motorised traffic on the perceptions, behaviour, and wellbeing of people who use the surrounding areas or need to make trips along or across that infrastructure or traffic.

WHAT ARE THE POTENTIAL IMPACTS OF BUSY ROADS ON HEALTH & WELLBEING?

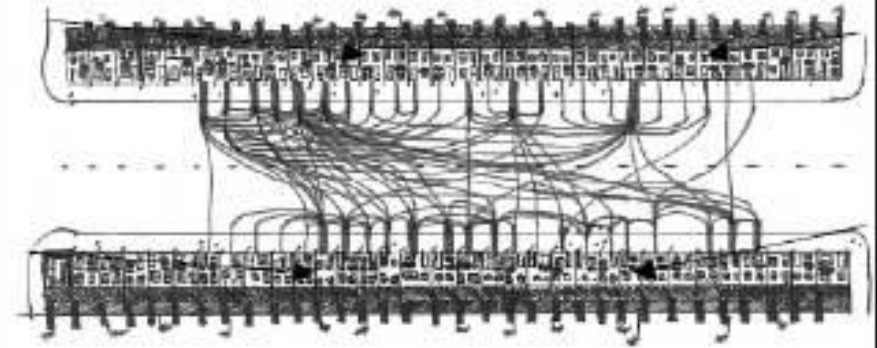


Community severance

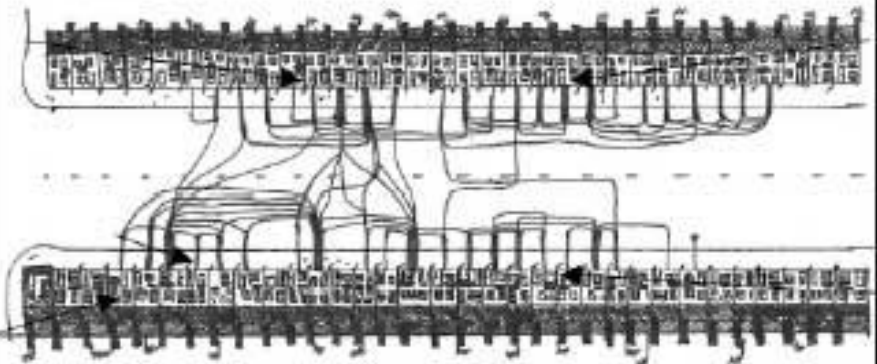
Appleyard D & Lintell M (1972).
The environmental quality of city streets: the residents' viewpoint. *Journal of the American Institute of Planners*, 38(2), 84-101.



LIGHT TRAFFIC: 140 VEHICLES PER DAY
5.35 friends per person/ 6.1 acquaintances

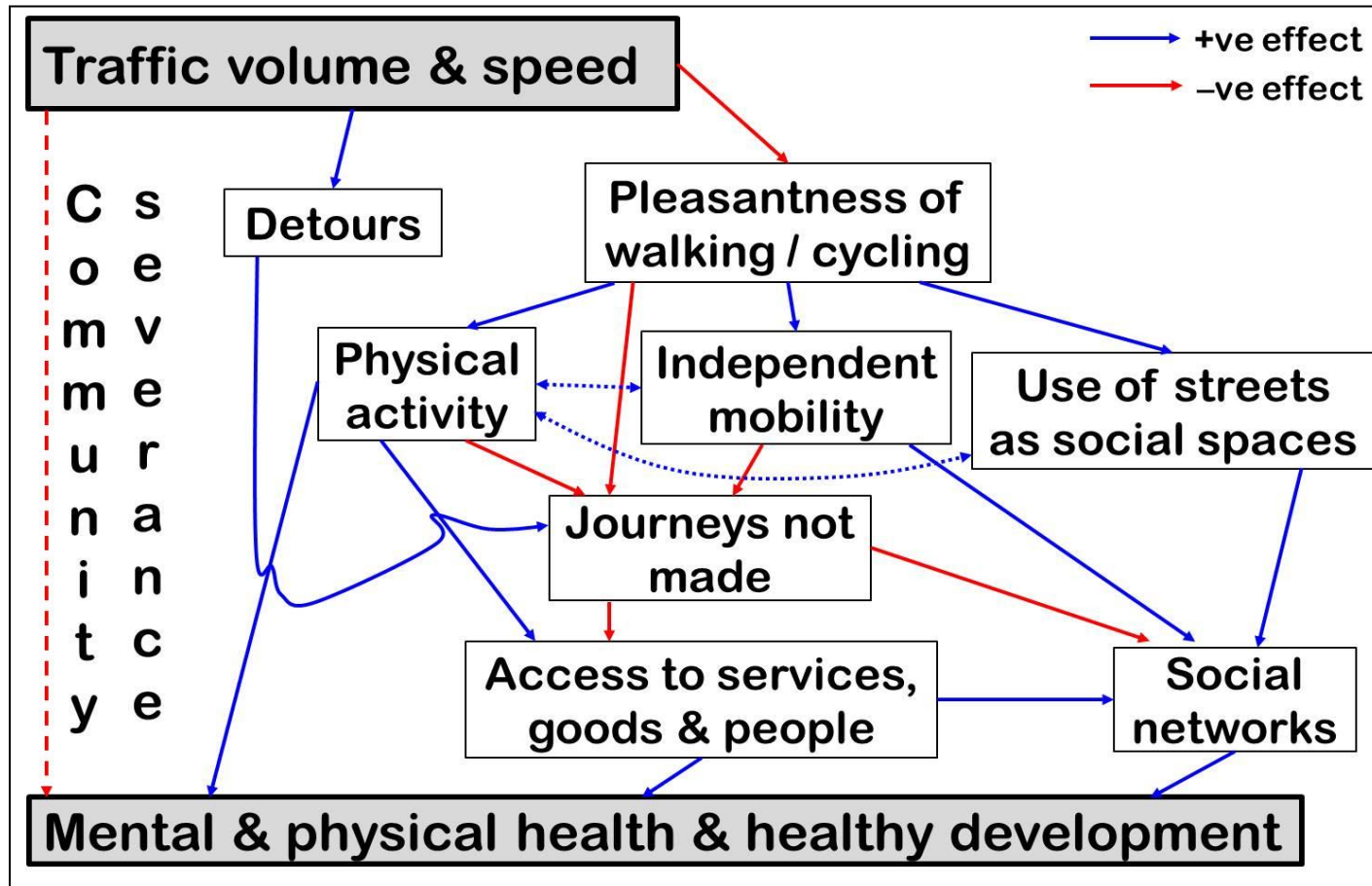


MEDIUM TRAFFIC: 8,420 VEHICLES PER DAY
2.45 friends per person/ 3.65 acquaintances



HEAVY TRAFFIC: 21,130 VEHICLES PER DAY
1.15 friends per person/ 2.8 acquaintances

Community severance and health



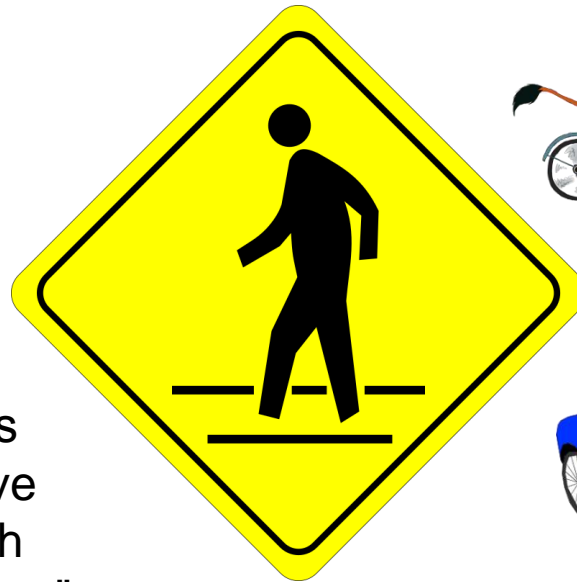
Mindell JS, Karlsen S. Community severance and health: What do we actually know? *J Urban Health*. 2012;**89**:323-46.



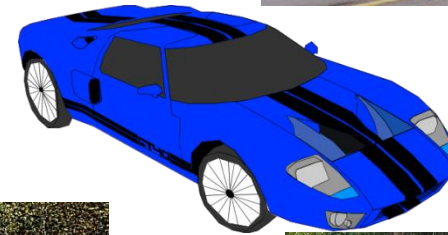
**WHAT ARE THE POTENTIAL
IMPACTS OF BUSY ROADS ON
HEALTH INEQUALITIES?**

Health inequalities from busy roads

Benefits of transport – mobility and access



“A developed country is not where the poor drive cars, it is where the rich use public transportation.”
 Enrique Peñalosa, Mayor, Bogotá



Health inequalities from busy roads

Air pollution

- Poorer people:
 - More exposed to air pollution from motor traffic
 - More susceptible to health impacts of pollution

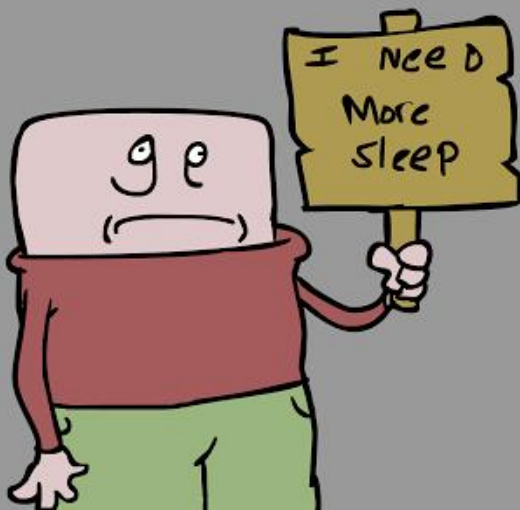


Health inequalities from busy roads

Noise pollution



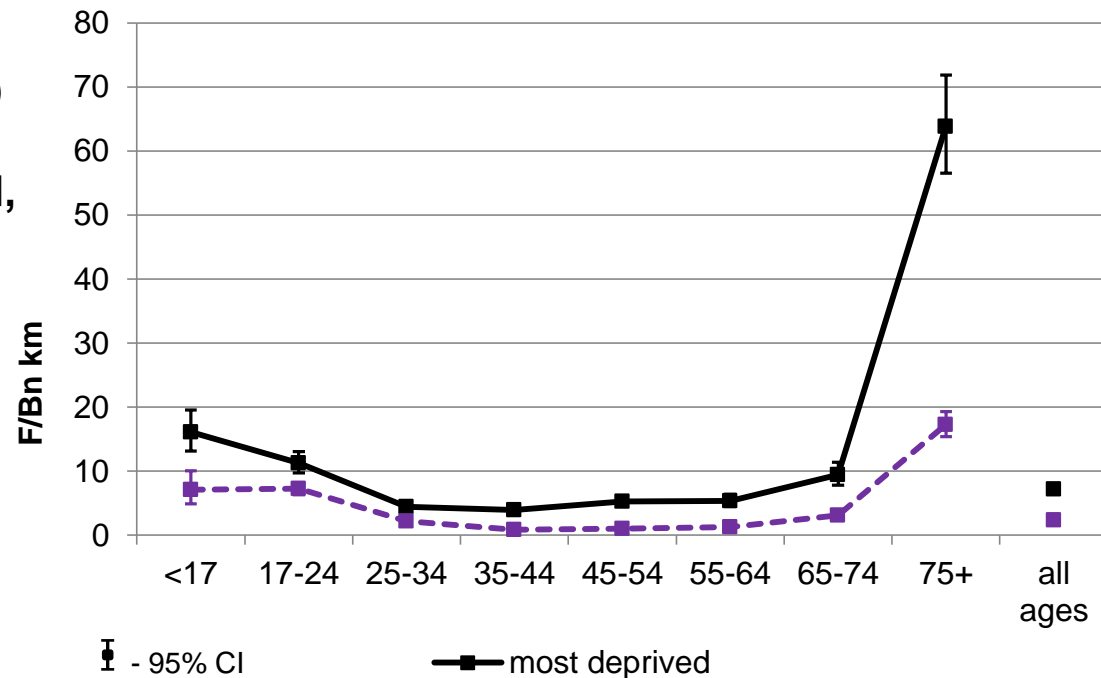
- Raised blood pressure
- Interference with concentration and with sleep
- Disruption of education



Health inequalities from busy roads

Injuries

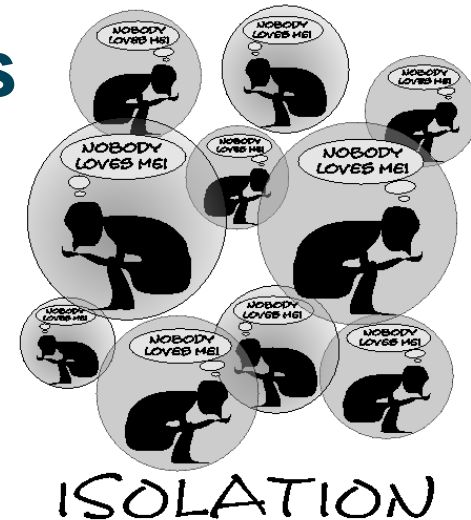
Rate of fatality (all modes)
per billion km by IMD
quintile, persons, England,
2007-12



- Injury rates higher in more deprived areas
- More deprived people more likely to be killed in road traffic crash

Health inequalities from busy roads

Social isolation



- Poor - worse health –less able to walk or cycle
- Frail, elderly, disabled: less able to cross the road (bus stops)
- Fewer other options for safe spaces to meet and socialise (old, young)

A vision of the future?

“Old men and women shall again dwell in the streets ... ; every person with their staff in their hand because of great age. And the streets of the city shall be full of boys and girls playing in its streets.”

Zechariah 8:4-5

