What is community severance and why is it important?

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We thank our funders:
WHAT IS COMMUNITY SEVERANCE?
“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…..”
Effects of Habitat Fragmentation and Road Density on the Distribution Pattern of the Moor Frog Rana arvalis

C. C. Vos and J. P. Chardon

Journal of Applied Ecology
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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.
Figure 4: Word cloud of definitions of “barrier effect”
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

Figure 3: Word cloud of definitions of "community severance"
Community severance and health

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

- 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