

Urban Highways Reduce Social Connections

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FOR IMMEDIATE RELEASE

Urban highways reduce the number of social connections between people living on either side of the road by an average of up to 16%, finds a new study.

Researchers from Corvinus University of Budapest (<https://www.uni-corvinus.hu/?lang=en>), the IT University of Copenhagen, the Complexity Science Hub in Vienna, and the University of Amsterdam investigated the link between highway infrastructure and declining social ties.

On top of a network of urban highways within the 50 largest cities in the US, the researchers overlaid a geolocated social network of individuals who follow each other on Twitter (now X). Using a random network generation procedure not affected by the position of highways, they computed a Barrier Score to quantify the reduction in the number of social ties crossing highways.

The results show that urban highways decreased the number of social ties in every US city studied, with the average ranging from 1 to 16%. This effect was particularly strong within a 5km distance and aligns with historical efforts in the US to use highways to segregate communities, especially Black neighbourhoods. The biggest decline in social connections was observed in Cleveland and Orlando, while highways disrupt social life the least in Portland and New York City.

“This is the first study that aims to measure the influence of urban highways on social ties at scale,” says Sándor Juhász, research fellow at the Corvinus Institute for Advanced Studies, Corvinus University of Budapest, and co-author. “We can all name big cemented barriers in the cities where we live, and we expect that the isolation effect will be observed not only in the United States but also in other countries. We hope to motivate further research in the context of other cities.”

This research provides quantitative evidence that transportation infrastructure can segregate neighbourhoods and communities by disrupting the social ties that connect them. Policymakers should consider the potential impact of infrastructure on society and help to reconnect communities.

These findings were first published in the Proceedings of the National Academy of Sciences (PNAS) in March 2025.

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