



Estimating the Effect of Speed Limits on Antisocial Behaviour

CCJS Work in Progress Seminar

Toby Davies & Jose Pina-Sánchez

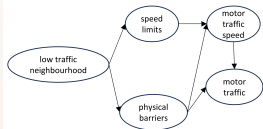
Theorised Causal Mechanisms

Causal Mechanisms



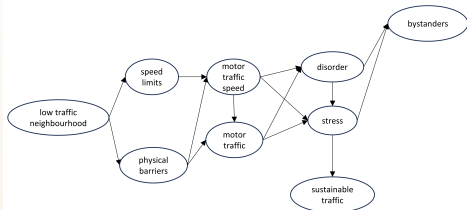
- LTN can be grouped into two main interventions:
 - *Speed limits*
 - *Physical barriers*

Theorised Causal Mechanisms

Causal
Mechanisms

- Both interventions reduce *motor traffic* and *speed*

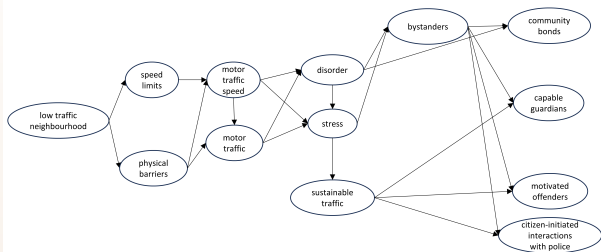
Theorised Causal Mechanisms

Causal
Mechanisms

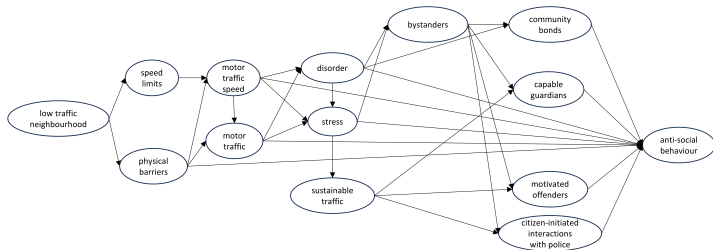
- Lower speed and motor traffic reduce perceptions of *disorder* and experience of *stress*
- Each of these mechanisms in turn increase *sustainable traffic* and presence of *bystanders* in the area

Theorised Causal Mechanisms

Causal Mechanisms



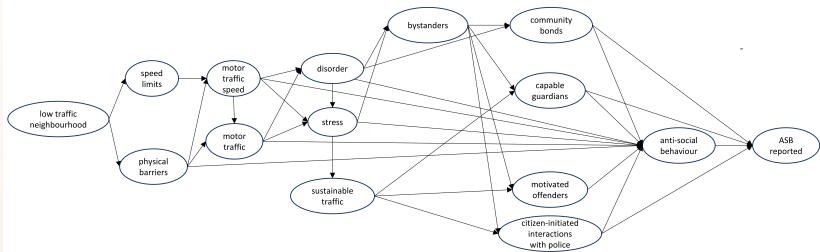
- As the public space appears more orderly and more people are present *community bonds* are enhanced
- More people present (either as bystanders or passing by) means more *capable guardians*, *motivated offenders* and frequency of *citizen-initiated interactions with the police*



- Direct effect on antisocial behaviour
 - Less/slower traffic limits reckless driving, intimidation and noise
- Indirect effects
 - *Crime prevention through environmental design*: physical barriers lower chances of escaping swiftly
 - *Collective efficacy*: stronger community ties deter crime
 - *Routine activity theory*: the presence of more capable guardians deters crime, but more motivated offenders increases it
 - *Strain theory*: lower stress levels reduce crime
 - *Procedural justice*: positive interactions with the police increases compliance with the law
- Total effect
 - We hypothesise the effect from higher presence of motivated offenders is offset by the combination of all other mechanisms

Differential Crime Recording

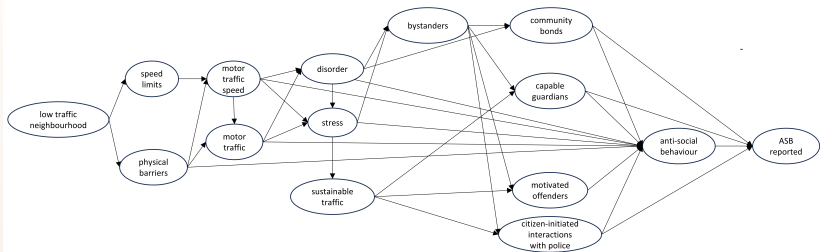
Causal Mechanisms



- Only 25% of antisocial behaviour incidents are reported
 - Collective efficacy, procedural justice, and capable guardians, each increase report rates
 - We will underestimate the effect of low traffic neighbourhoods
 - Still, if we find a significant negative effect between speed limits and ASB reported we can corroborate our hypothesis
 - Otherwise, using sensitivity analysis we can estimate how strong should differential errors be to corroborate our hypothesis

Unobserved Counfounders?

Causal Mechanisms



- Variables simultaneously causing speed limits and ASBO
 - Political party at the local/regional level: probably not a huge problem in England given the independence of Police Forces?