

How fast would you (or should you) drive here?

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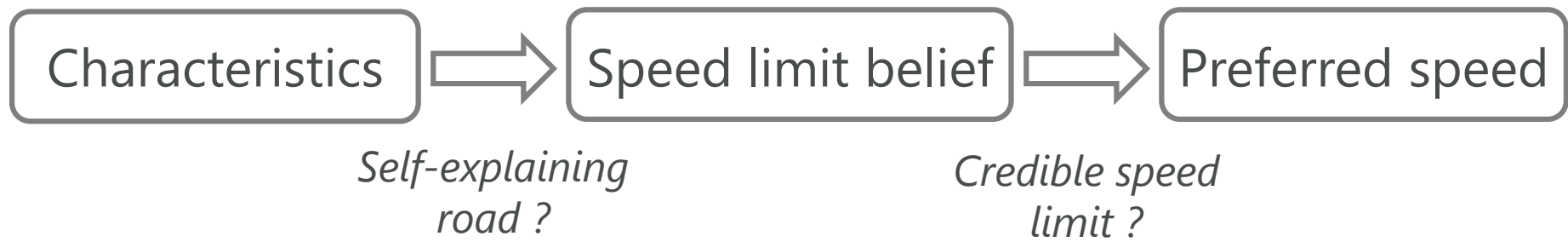
Introduction (1/2)

- **Speed** = the most influential driving risk factor
- Managing speed is at the core of Vision Zero approach
- Characteristics of drivers, roads, etc. → speed choice
- **Self-explaining roads** → speed limit belief (credibility)



Introduction (2/2)

The study investigates the hypothesized relationship:



Research questions:

- Which characteristics influence speed(ing)?
- Are the analyzed roads self-explaining?
- Are their speed limits credible?
- Do drivers comply with the speed limit?



Data (1/2)

- Response variable: speed (km/h)



How fast should you drive there?

Speed limit belief



Posted speed limit

Preferred speed



Observed speed

How fast would you drive there?



Data (2/2)

- Explanatory variables from 4 questionnaires
($n = 70$; 40 males + 30 females; age 20–78; driving license)

General questionnaire (gender, age, driving experience, etc.)
Personality questionnaire TVP (129 items)
Driver Behaviour Questionnaire (50 items)
Arnett Inventory of Sensation Seeking (20 items)
- Road characteristics
(width, vegetation, crossings, overtaking...)



Method

- Two linear mixed-effect models:
 1. to see what affects preferred driving speed
 2. to compare posted speed limit / speed limit belief / preferred speed



Results

What influenced preferred speed?

Examples of factors associated with...

... speed increase	... speed decrease
Higher road class	Pedestrian crossing/pavement
Wider road	Vegetation
Extrovert drivers	Female drivers
Openness to experience	Drivers identifying as cyclists

(model
 $R^2 = 81\%$)

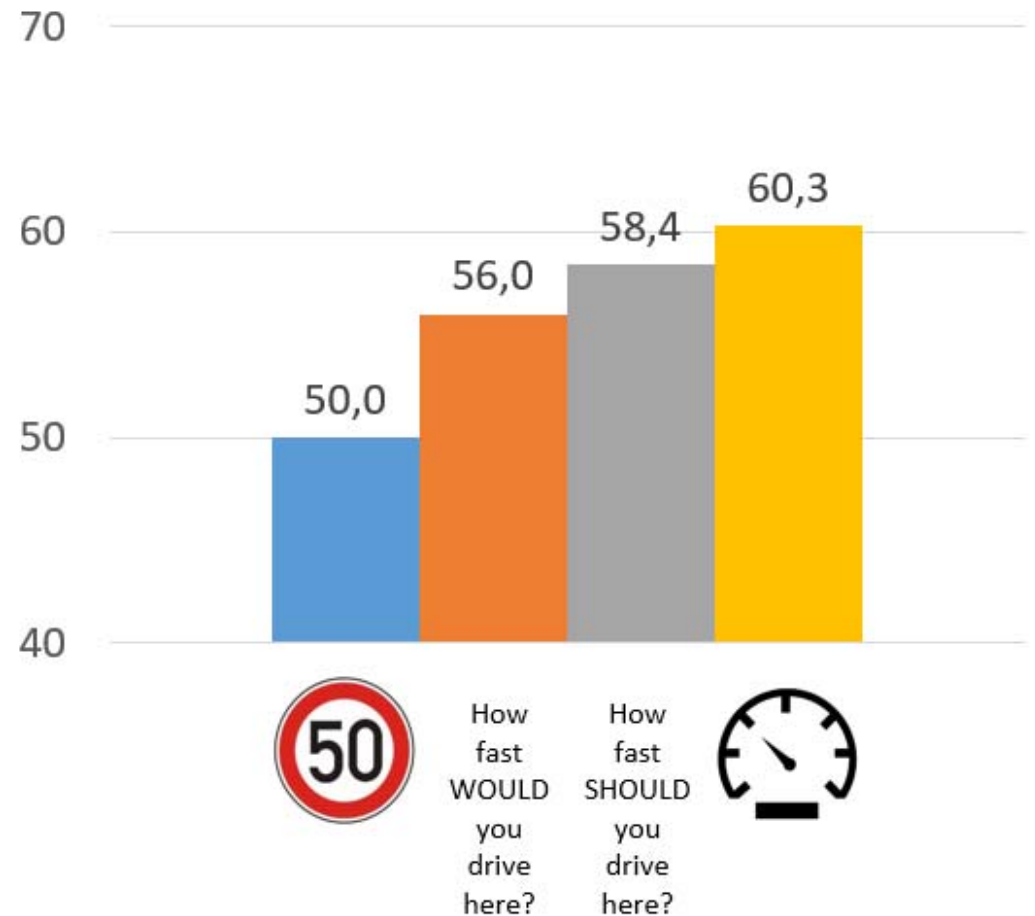
Interestingly: speed limit belief + **1 km/h** → preferred speed + **0.5 km/h**
age and experience ... no association with preferred speed



Results

Relationships between types of speed?

- Statistically significant differences (model $R^2 = 70\%$)
- All speed types exceed the posted speed limit



Results

Are the analyzed roads self-explaining?

- Posted speed limit × speed limit belief
- **Speed limit belief ~ 8 km/h higher !**
- The biggest difference on roads without pedestrian facilities



Results

Are the speed limits credible?

- Speed limit belief × preferred speed
- Preferred speed ~ **2 km/h lower** (not significantly)
- Potential observer effect?

(a type of reactivity in which individuals modify an aspect of their behavior in response to their awareness of being observed)



Results

Do drivers comply with the speed limits?

- Posted speed limit × preferred speed
- Preferred speed ~ **6 km/h higher !**
- Again, the biggest difference on roads without pedestrian facilities



Conclusions (1/2)

Limitations: Speeds based on photographs – external validity ?
 Potential observer effect ?
 Small sample

Are the analyzed roads self-explaining?

Are the speed limits credible?

Do drivers comply with the speed limits?

} **NO** 😞

All speed types exceeded the speed limits !

But road modifications may reduce the speeds

→ roads with pedestrian facilities more self-explaining ?



Conclusions (2/2)

Which characteristics influence speed?

↑ Extrovert drivers, Openness to experience...

↓ Female drivers, Drivers identifying as pedestrians...

These should be considered:

- in psychological driving assessment
- in training of drivers

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Edinburgh News 

OUR REGION EDINBURGH LEITH NEW TOWN STOCKBRIDGE PORTOBELLO

Lothian Bus drivers sent on training course to better understand cyclists

Thank you for your attention

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