Everyday driving: The influence of driver and environment characteristics on everyday driving behaviour

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Objectives

- Descriptive analysis of normal, everyday driving
- Will investigate the occurrence of risky behaviours in everyday driving
  - Individual risky behaviours
  - Combination of risky behaviour

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Defining risky behaviour

- Speeding (speed choice)
- Close following
- Harsh acceleration and deceleration
- Harsh steering
- Seat belt use
- ADAS use

- 'Risk-taking' – combined measure

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Risky behaviour variable	Performance indicator under development
Speeding	Proportion of time over-speeding (> limit, > limit +10%), mean difference from posted speed limit, maximum trip speed,
Close following	Mean and minimum time headway, proportion of time at low time to collision
Harsh acceleration and deceleration	Number of harsh accelerations/deceleration per unit time, maximum acceleration/deceleration value per trip
Harsh steering	Steering quality to assess aggressive behaviour on curves
Seat belt use	Seat belt use, proportion of time seat belt use
ADAS use	Number of ADAS interactions per unit time, mean duration of ADAS interaction, maximum duration of ADAS interaction
Risky behaviour	Explores co-occurrence of above behaviours

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Environment characteristics

- Road type
- Time of day
- Country
- Traffic density
- Trip-based metrics: trip length, passenger presence

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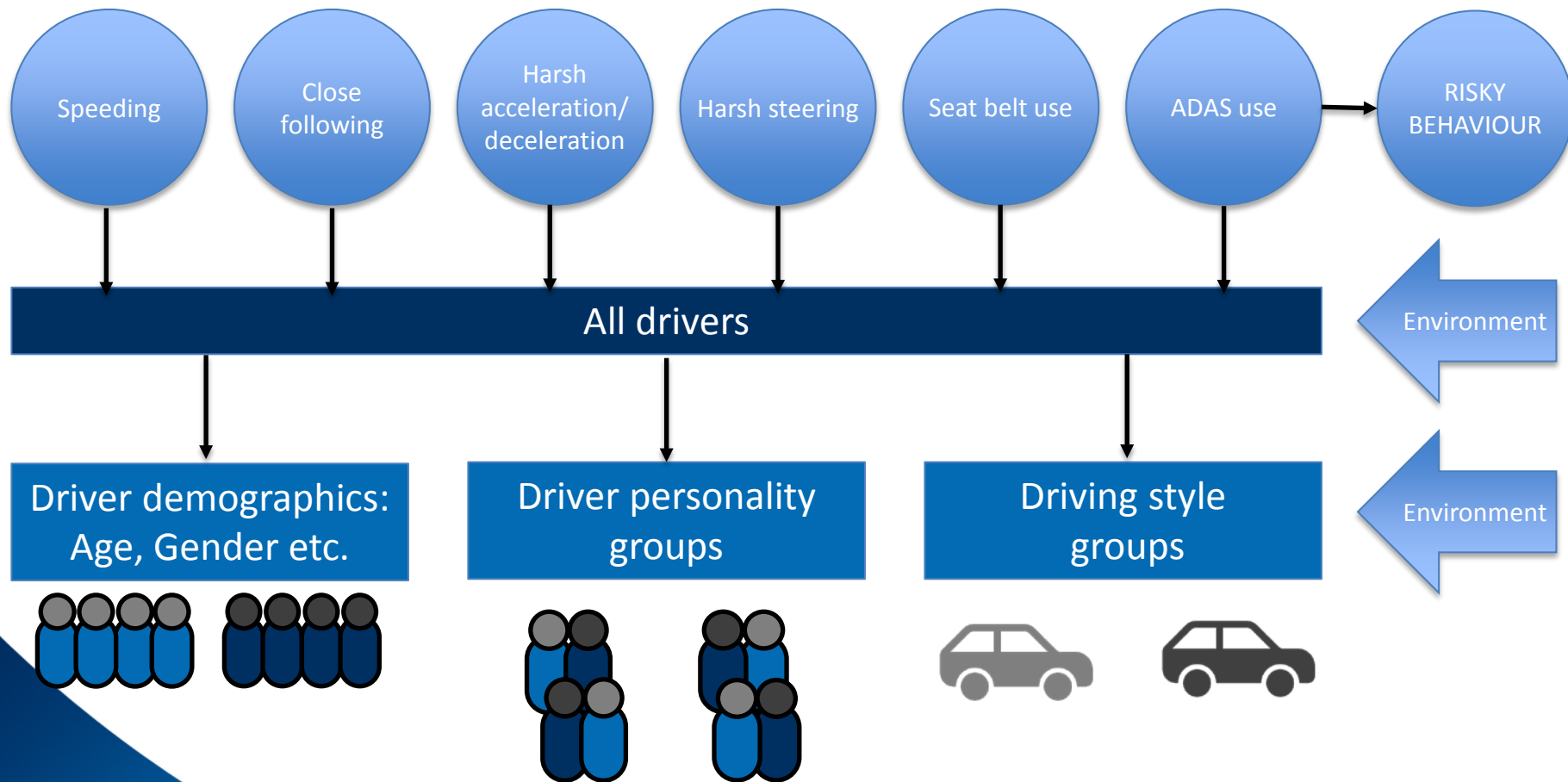European Naturalistic
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Driver characteristics

- Age
- Gender
- Annual mileage
- Personality measures: attitudes, behaviour, driving style, sensation-seeking
  - K-means cluster analysis to identity driver groups for segregated further analysis
- Driving style indicator
  - Calculated from SD of longitudinal acceleration and lateral acceleration per driver across all trips

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Data to be used

- Randomly selected baseline trips
- Use vehicle-based data, with video used to validate measures

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Analysis approach

Speeding

Close following

Harsh acceleration/ deceleration

Harsh steering

Seat belt use

ADAS use

RISKY BEHAVIOUR

All drivers

Environment

Driver demographics: Age, Gender etc.

Driver personality groups

Driving style groups

Environment

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Thank you for your attention!