

Observing the observation of (vulnerable) road user behavior: a scoping review into current practices

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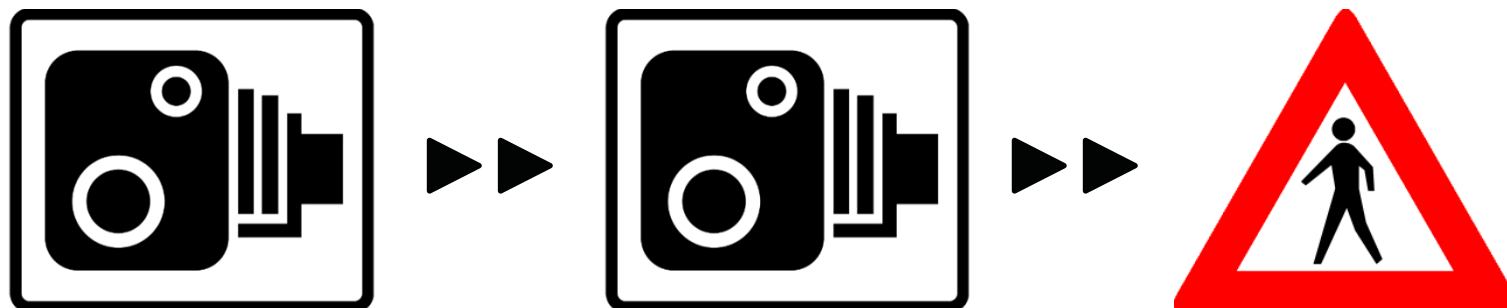
(Transportation Research Institute – IMOB, Hasselt University)

RSS2017, 19-10-2017, Scheveningen



In-depth understanding of Accident Causation for vulnerable road users





Objectives

1. Summarizing scientific peer-reviewed publications
2. Investigating purposes and use
3. Identifying topics and behavioral indicators
4. Examining study characteristics
5. Preventing duplicate research efforts

Our focus

- Traffic safety
- Peer-reviewed journal articles
- English language
- Up to and including 2015

Safety evaluation techniques

| Observational | | Experimental | |
|-----------------|---|---|--|
| <i>Revealed</i> | | <i>Simulated</i> | <i>Stated</i> |
| Crash data | Behavioral Observation Traffic conflict observation Naturalistic Driving | Driving Simulator Microsimulation Virtual reality | Questionnaires Interviews Focus groups |

Studies observing the behavior of road users, in which the road users are not informed (beforehand) of their participation into the research project

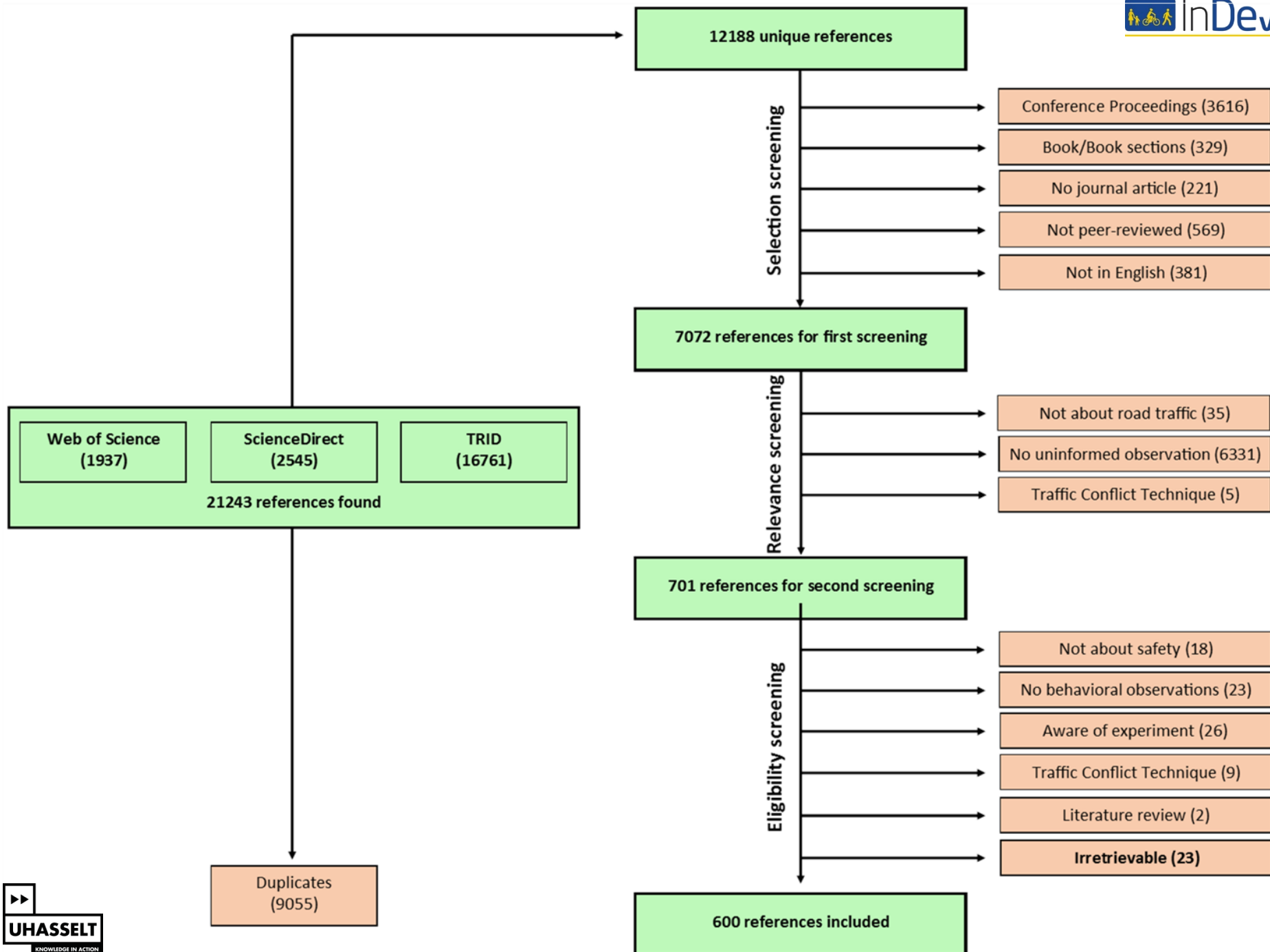
Our method

Scoping review

- To “map rapidly the key concepts underpinning a research area and the main sources and types of evidence available” (Mays et al, 2001)
- A systematic literature retrieval process, but not a meta-analysis or quality assessment

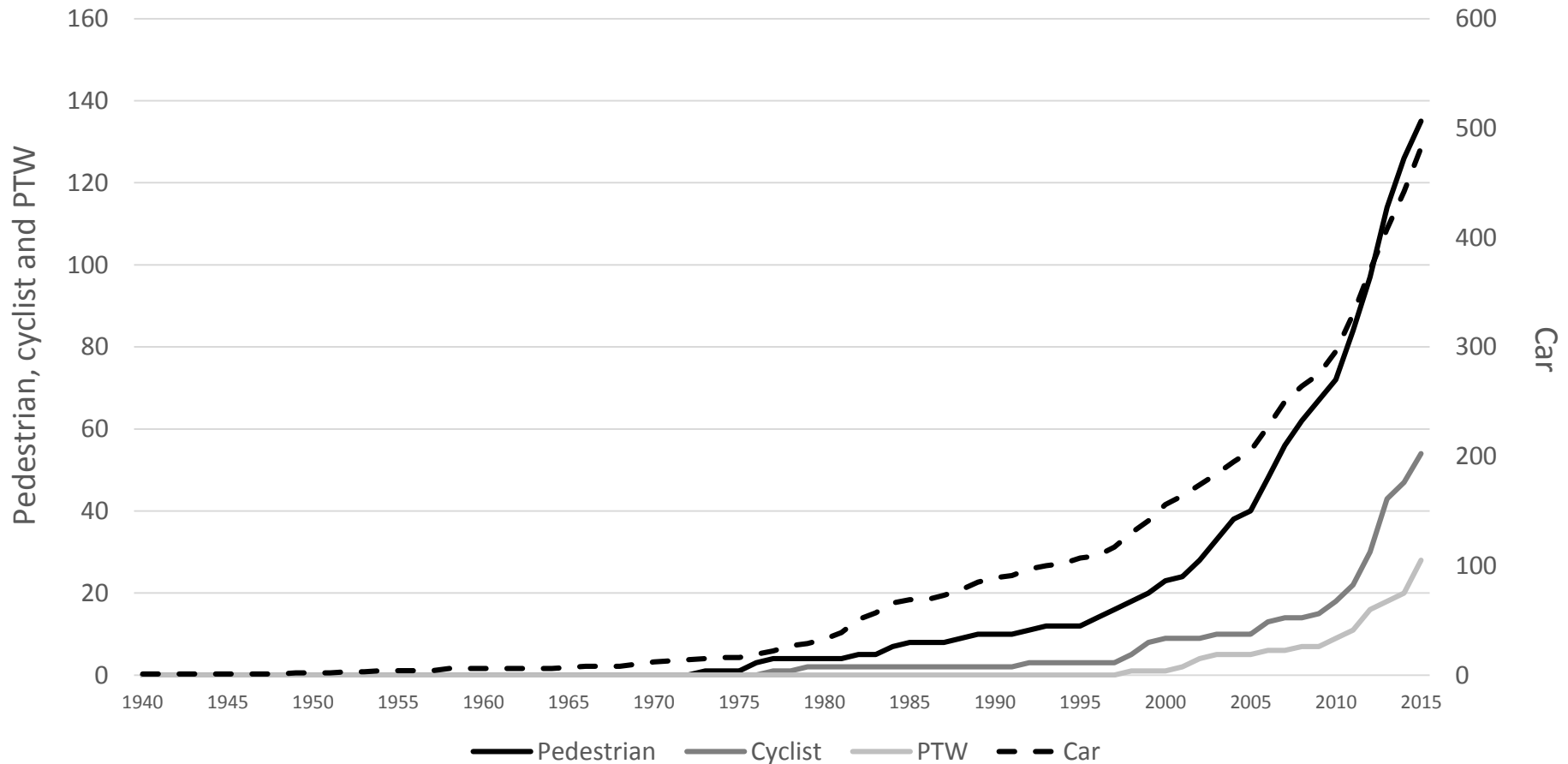
Databases used

- Web of Science
- ScienceDirect
- TRID



Road user focus

Cumulative Number of publications per year [#]

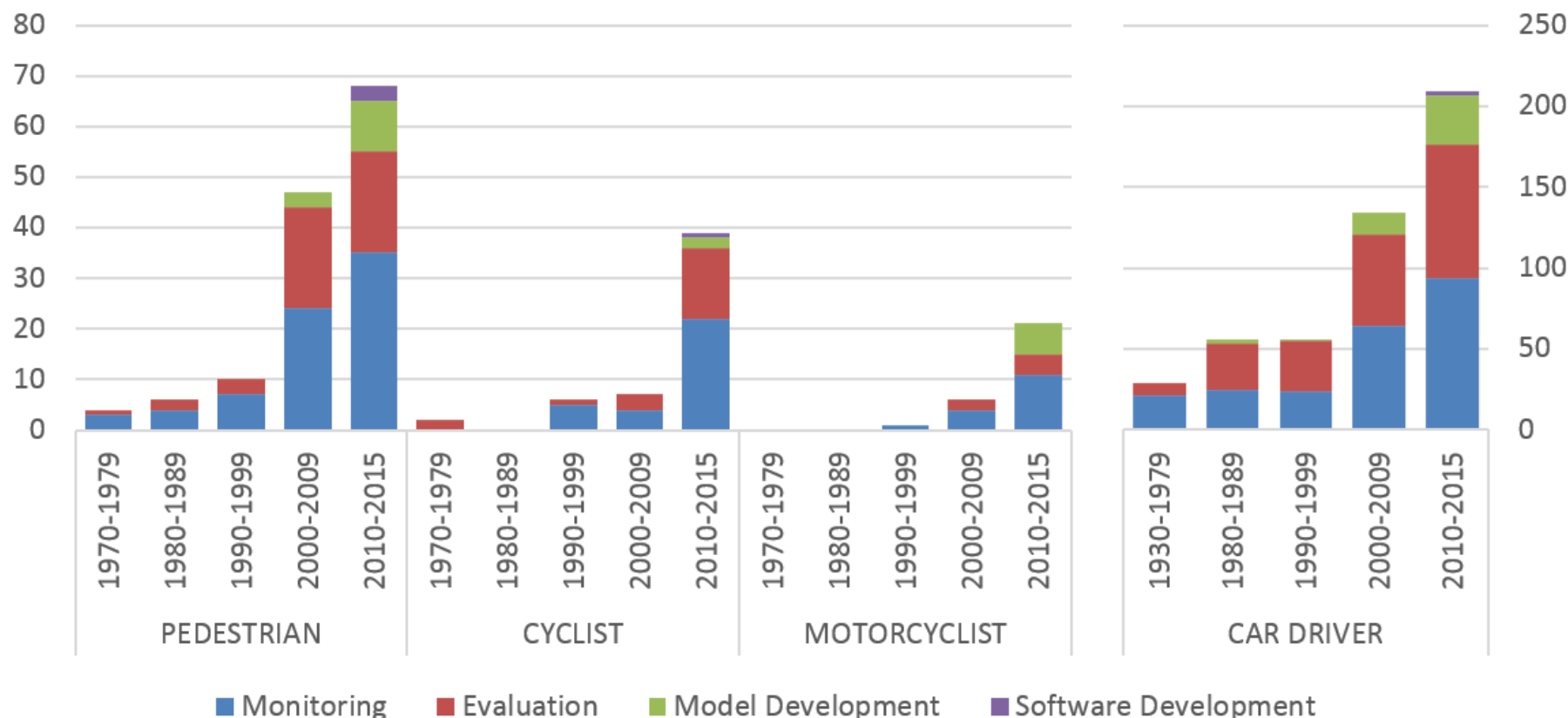


Purpose

- Monitoring
- Evaluation
- Model development
- Software development

Purpose

Number of published studies [#]



Monitoring

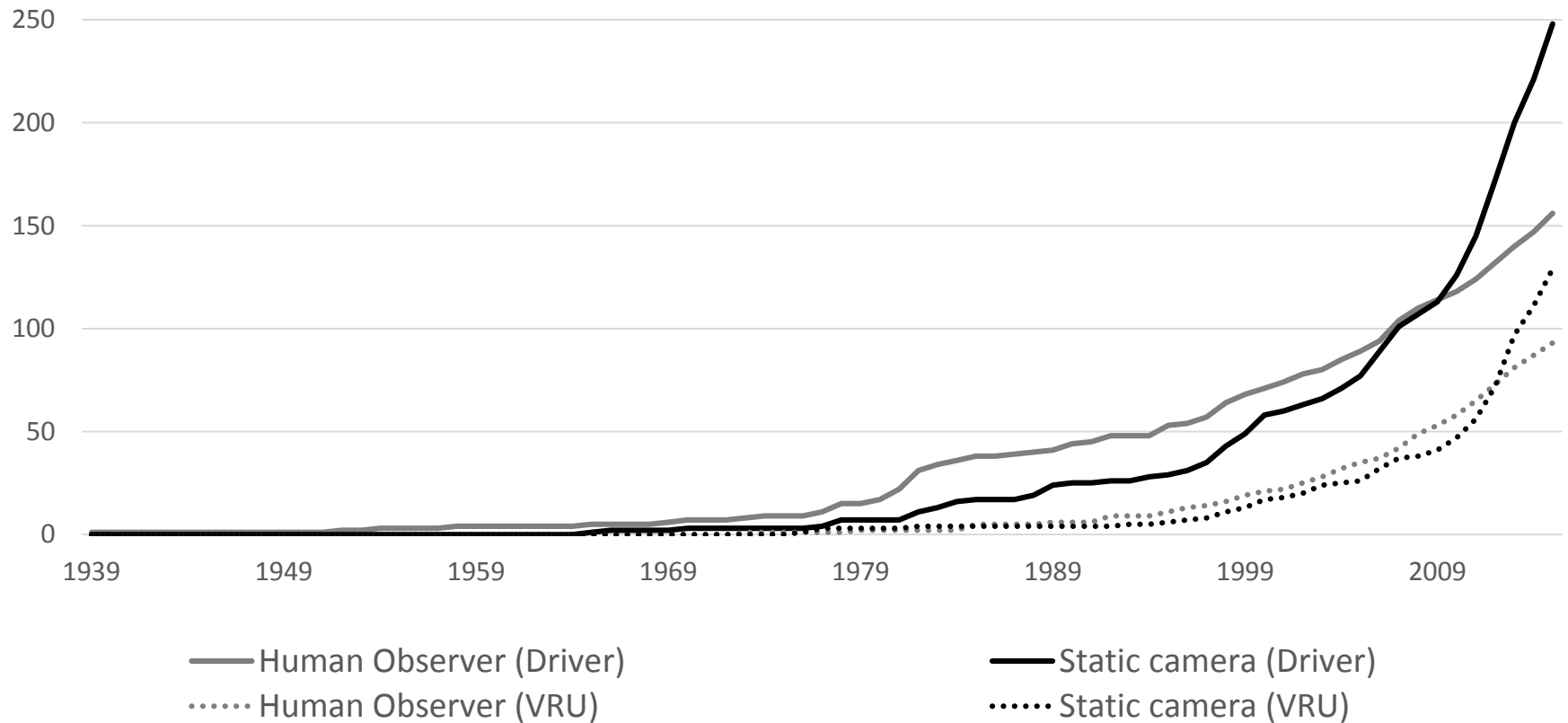
Evaluation

Model Development

Software Development

Common data collection tools

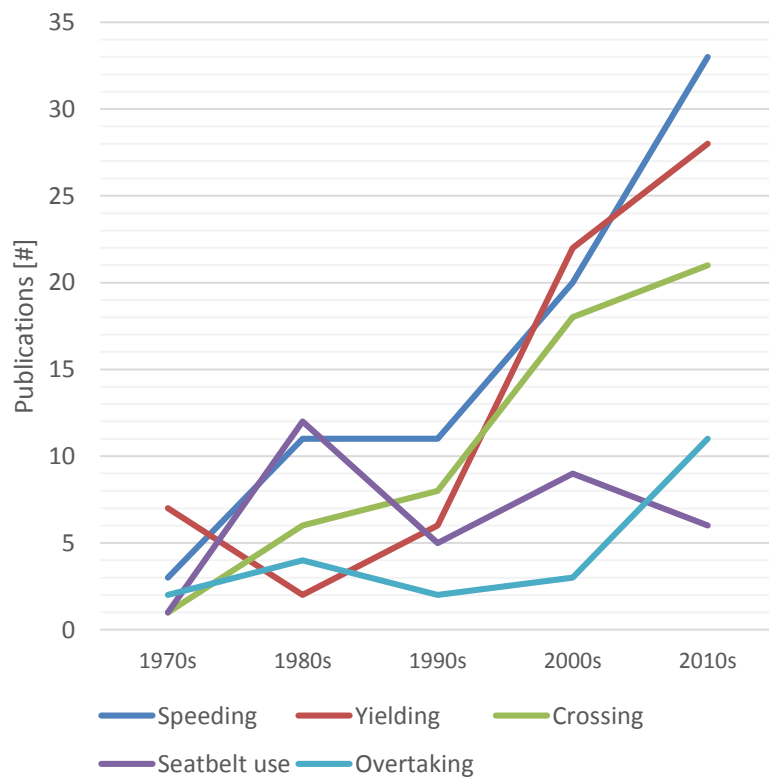
Main data collection tools [#]



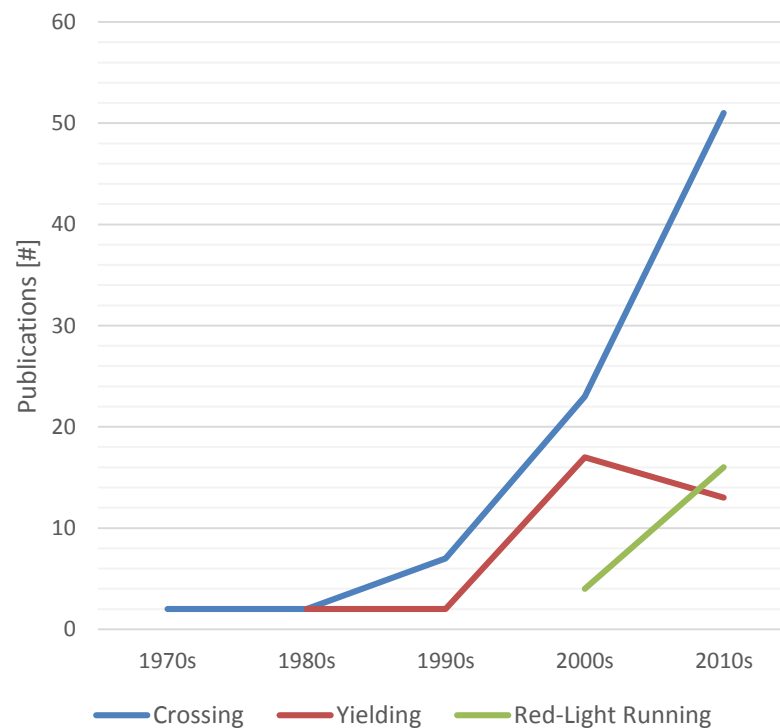
Topics

Categorization into 27 topics

Main Topics Driver-Studies



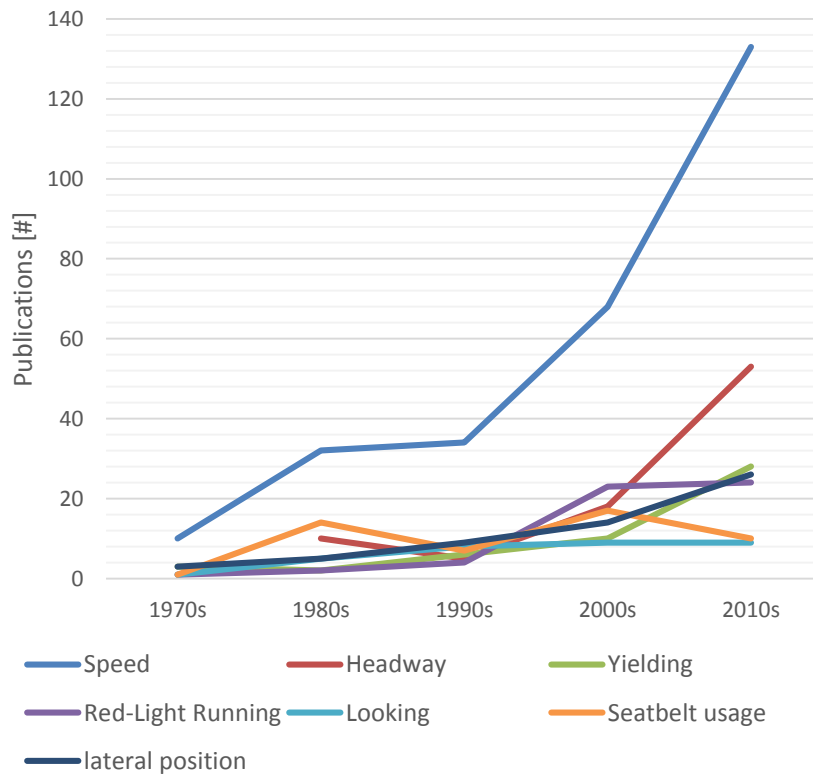
Main Topics VRU-studies



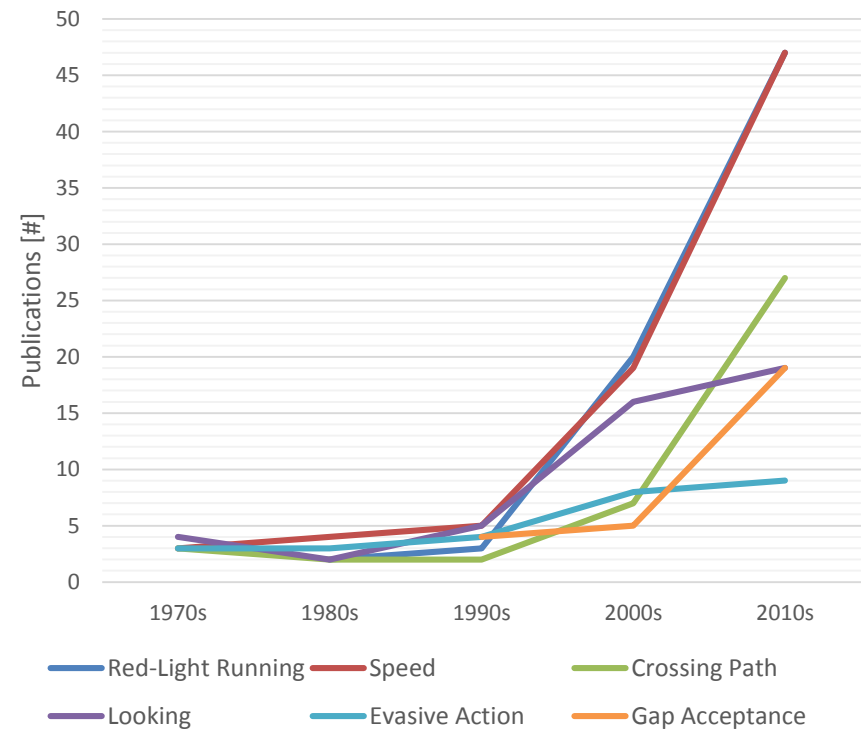
Indicators

Categorization into 41 behavioral indicators

Main Indicators Driver-Studies

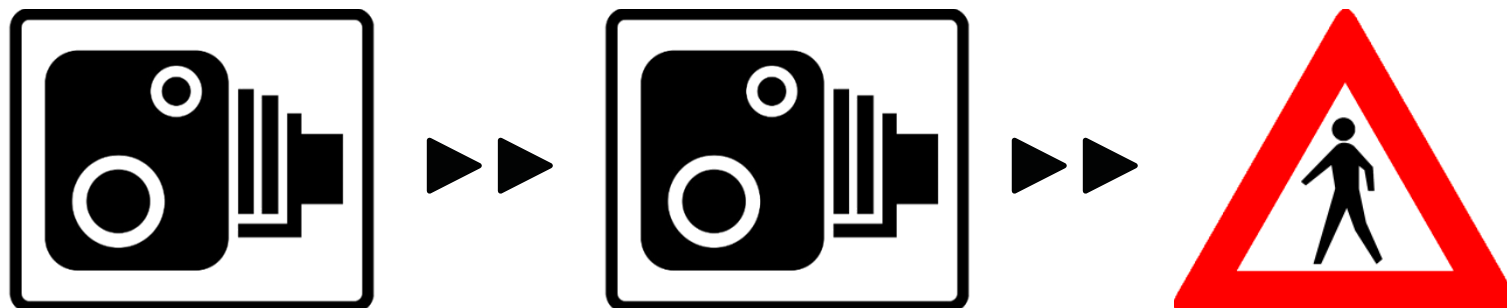


Main Indicators VRU-studies



Our reflection

- Meta-analysis of efforts on road user behavioral observation
- Focus on peer-reviewed journal articles
 - Grey literature?
- Reporting issues
 - Transferability and transparency of results
- Possible research gaps
 - E.g. railroad crossings, mobile phone while driving and motorcyclists
 - Other means of safety evaluation?
- Automated video analysis software tools
 - Publications in other journals?





InDev

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