

Naturalistic Driving in Theory and Practice

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Introduction

- ND as field of research
- Indicators for future road safety work
- Defining the technical frame

Measures

- Speed
- Acceleration
 - Accelerating
 - Braking
 - Lateral acceleration





Source: <http://www.cardor.de/humor/zeige/33>

Speed

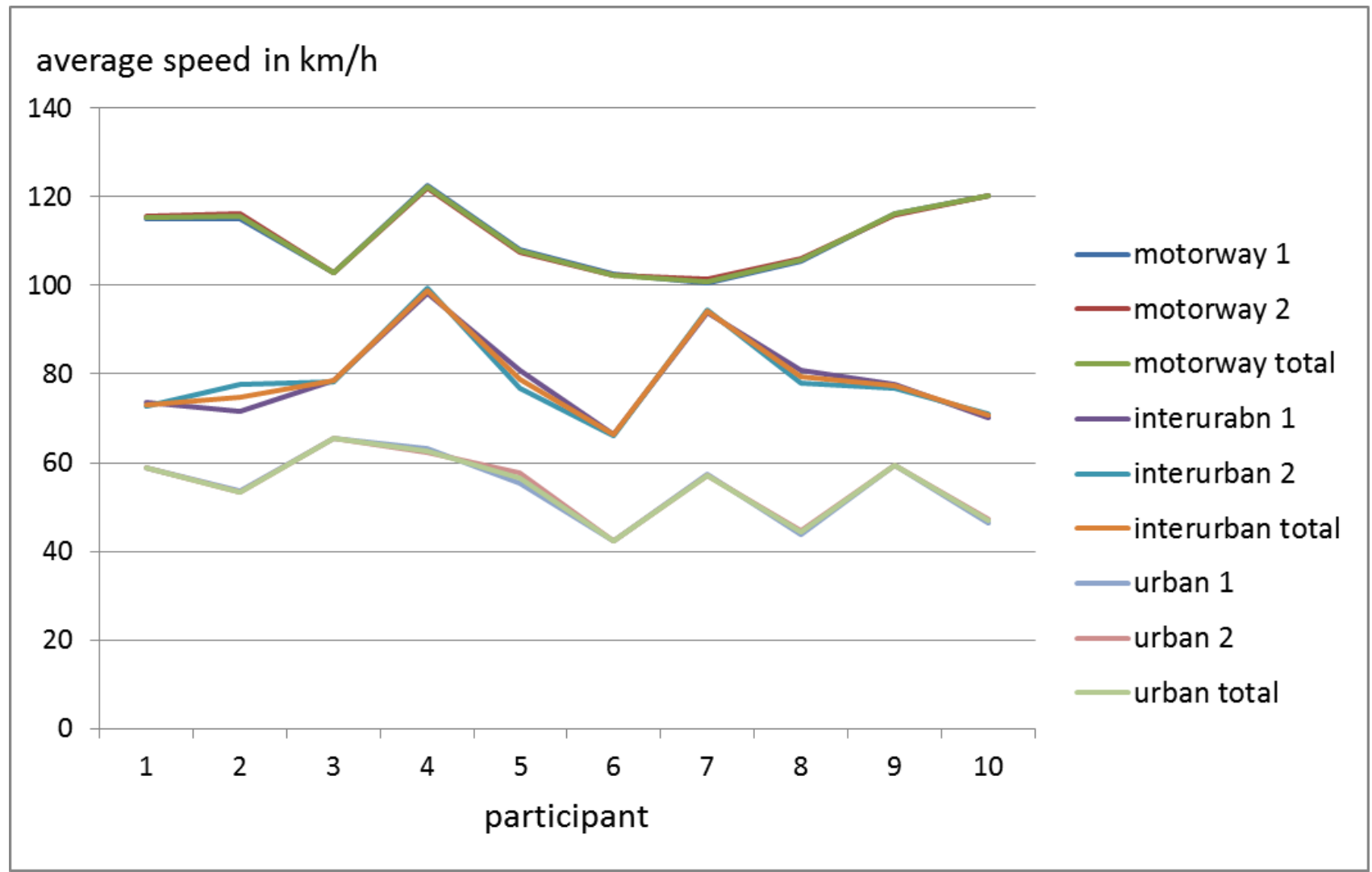
- Theory
 - Higher speeds: more accidents
- Three approaches for practical implementation
 - Distance control
 - Filtering rush hours
 - Constant speed



Concepts of free flowing traffic

SPEED				
		All above 5 km/h	Above 5 km/h 	constant episode 
Motorway	Mean	90,3	90,9	111,1
	SD	26,9	27,3	24,2
Interurban roads	Mean	65,4	66,5	82,5
	SD	18,7	19,2	18,4
Urban roads	Mean	38,9	39,4	58,3
	SD	12,2	12,4	22,3

Consistency of speed

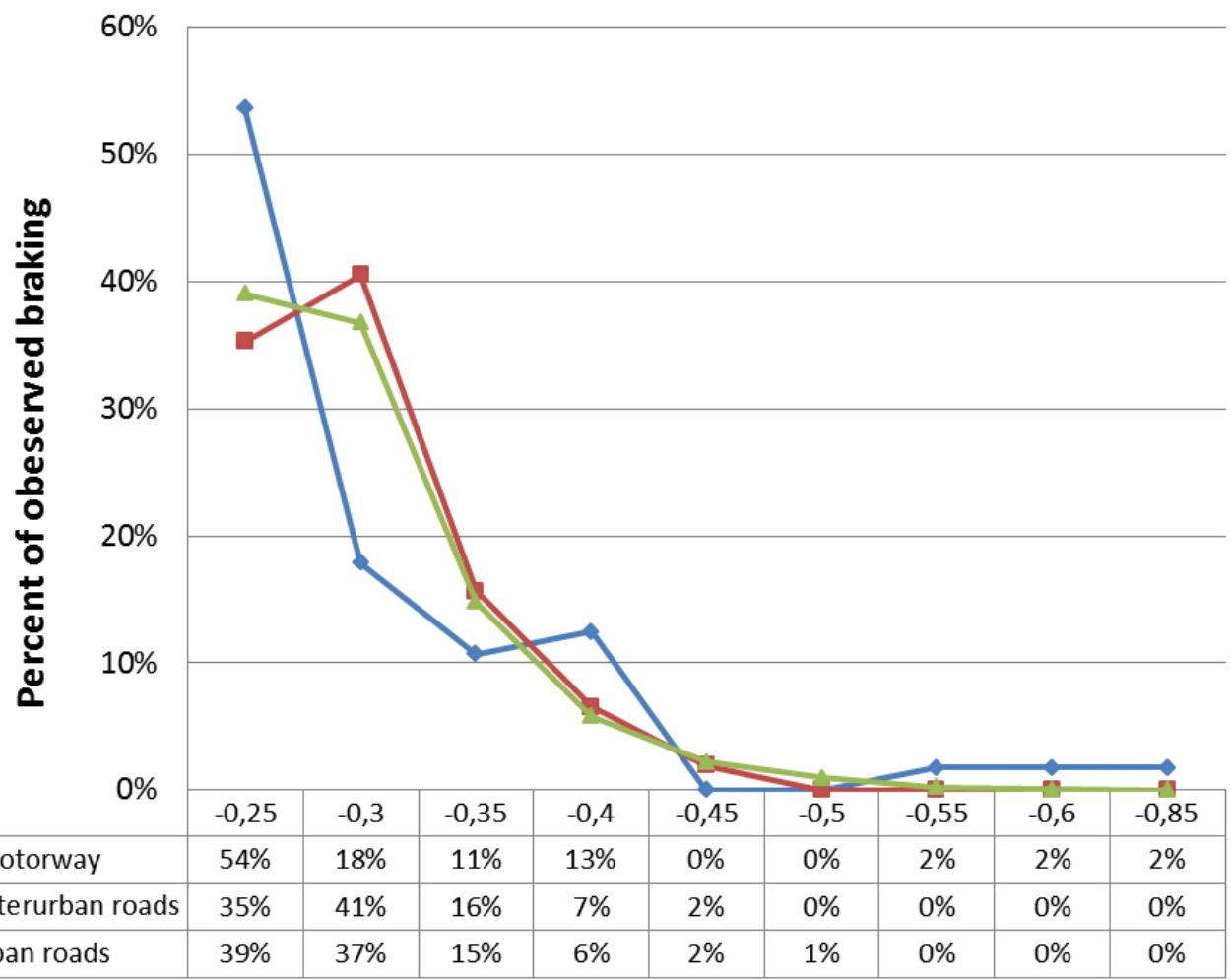


Acceleration

- Drawing conclusions about SPIs (up to near misses) from acceleration, the Theory:
 - Acceleration gives information about concrete behaviour in single situations
 - Manoeuvring in risky situations comes along with remarkable acceleration values



Acceleration - braking



acceleration categories in g



High acceleration – safety relevant?

Braking with 0,55 g

- [Video 1](#)
- [Video 2](#)
- [Video 3](#)
- [Video 4](#)



Outlook

- ND will provide important indicators for road safety work
- Technical frame is defined
- Data are needed for promoting research
- A standardized investigation on the available basis is meaningful.

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