

„Friedrich List“ Faculty of Transport and Traffic Sciences
Chair of Integrated Transport Planning and Traffic Engineering
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Designing for Safe Streets and Roads: Basic Principles



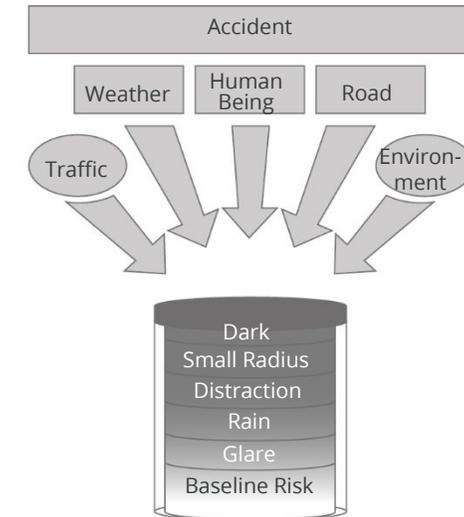
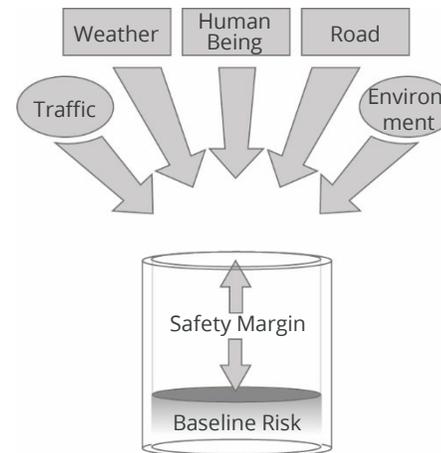
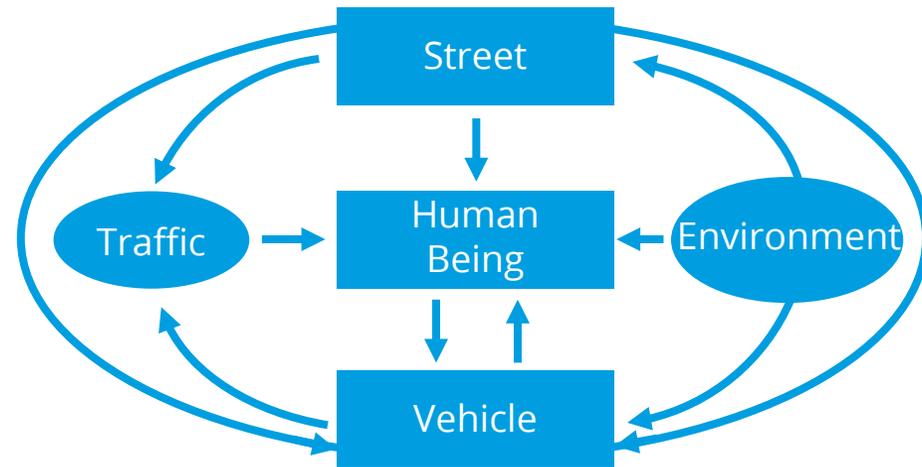
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Traffic Safety: Determinants and Responsibilities

German road traffic regulations (StVO) § 1 basic rules

- (1) *The participation in road traffic requires permanent caution and mutual courtesy.*
- (2) *Anyone participating in traffic must behave in such a way that no other person is harmed, endangered, obstructed or inconvenienced more than is unavoidable under the specific circumstances.*

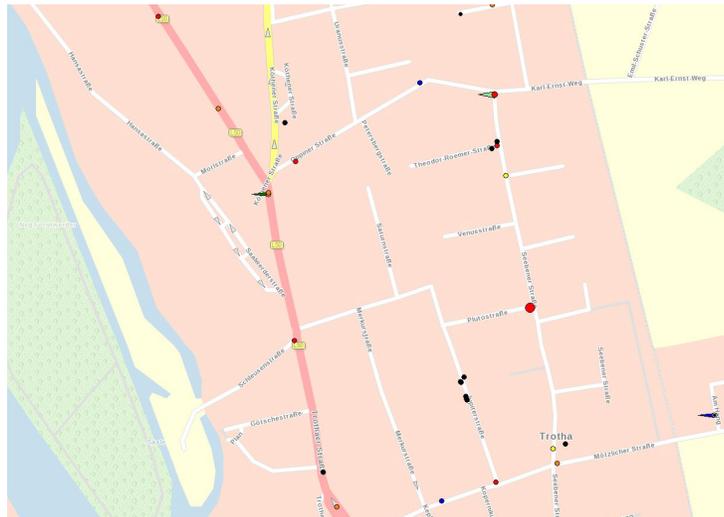


Sources: German road traffic regulations from 6th march 2013 (BGBl. I S. 367), last amended by article 1 of the directive from 20th april 2020 (BGBl. I p. 814)
FGSV (2012): fact sheet for the local accident investigation in accident commissions (M Uko), Cologne, p. 6

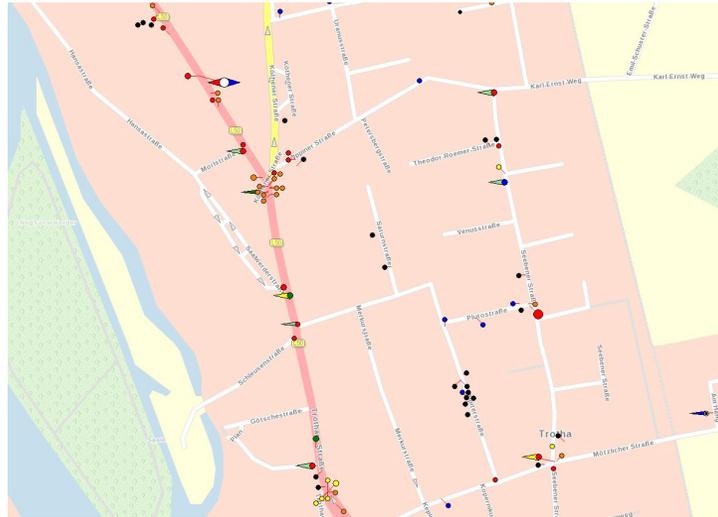
Random vs. Systematic Factors

Accidents are not just a Coincidence – Influence of Road Design and Operation

accidents within 4 months



accidents within 8 months

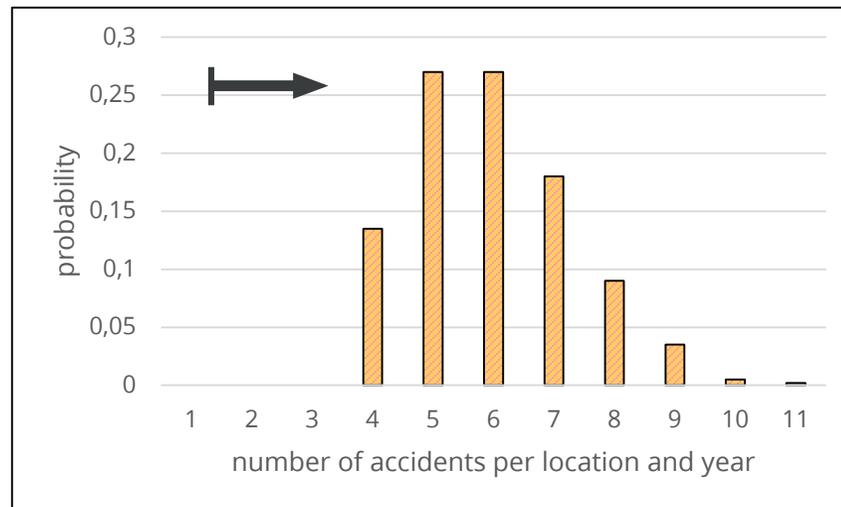
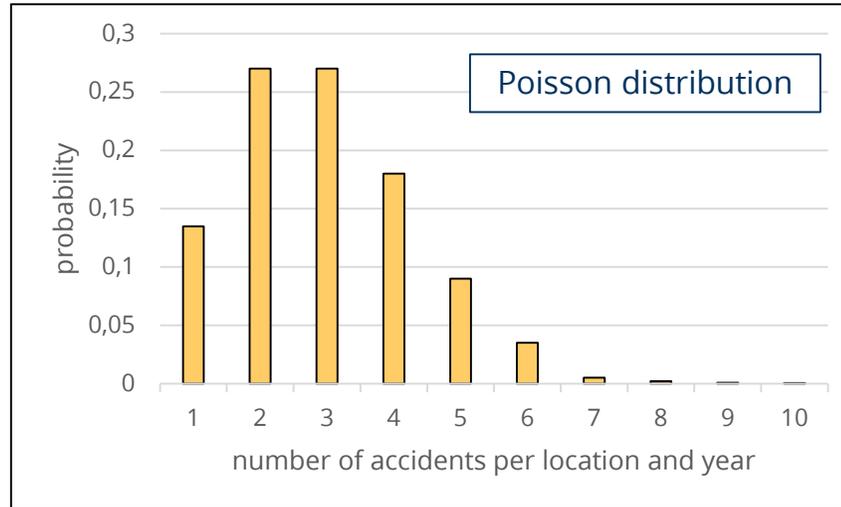
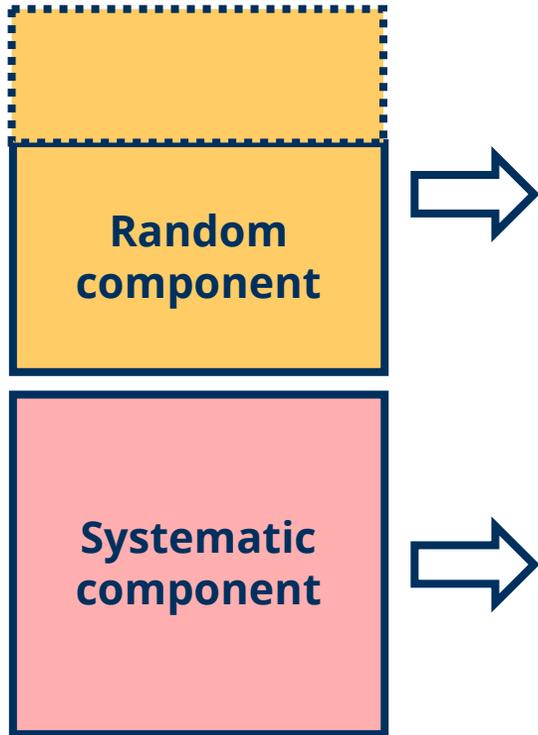


accidents within 12 months



[Source: EUSka: Electronic accident type map]

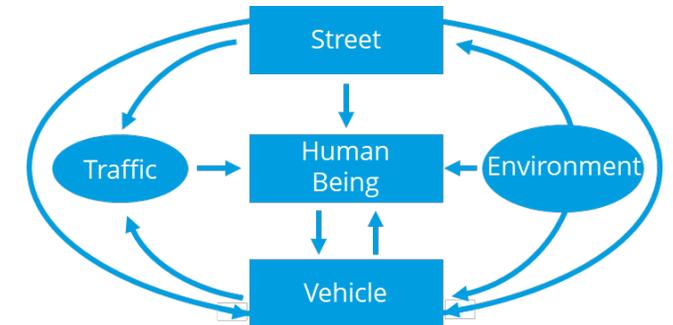
Probability of Accidents at Specific Locations



Reducing the impact of systematic components as a task for road design and operation

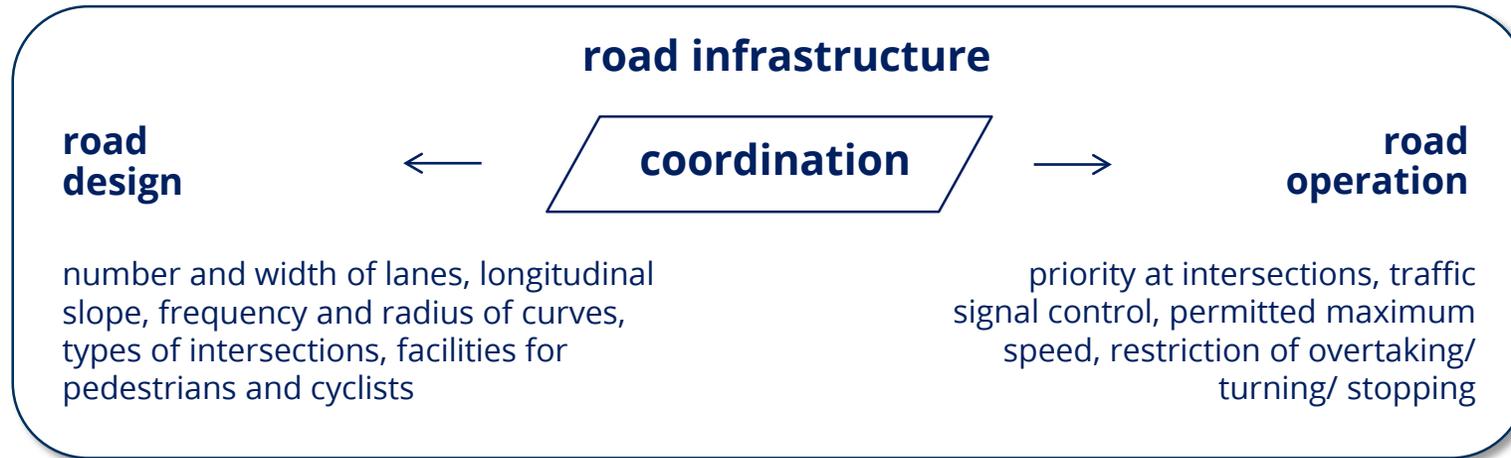
Random vs. Systematic Factors of Road Accidents

Is it a coincidence that a road accident ...	Example determinants
... happens to a certain person in a certain situation ?	driving experience physical fitness risk taking time pressure
... happens to a certain vehicle ?	tyre condition brake system condition driver assistance systems
... happens in a certain place ?	range of vision signalling scheme grip radius
... happens in certain environmental conditions ?	wetness/slickness lighting conditions traffic



Reducing the impact of systematic components as a task for road design and operation

Coordination of Road Design and Operation as the Basic Principle of Planning Safe Road Transport Systems



"The Safe System approach to road engineering involves matching road function, design, layout and speed limits to accommodate human error in a way that crashes do not lead to death and serious injury."

(COM(2018) 293 final, EUROPE ON THE MOVE: Sustainable Mobility for Europe: safe, connected and clean)

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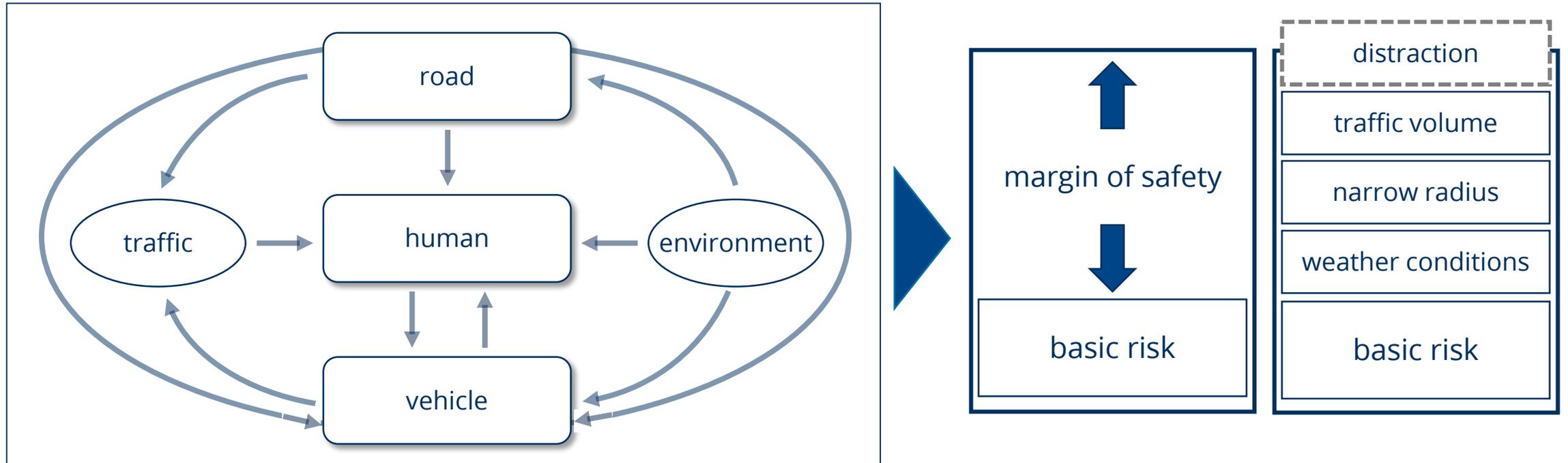
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Factors of Traffic Safety and their Interaction



Road safety management can only succeed in integrated approaches which take all factors into account.