



TALLINNA TEHNIKAÜLIKOOL
TALLINN UNIVERSITY OF TECHNOLOGY

General Traffic Safety Culture Model: Case Study of Estonia

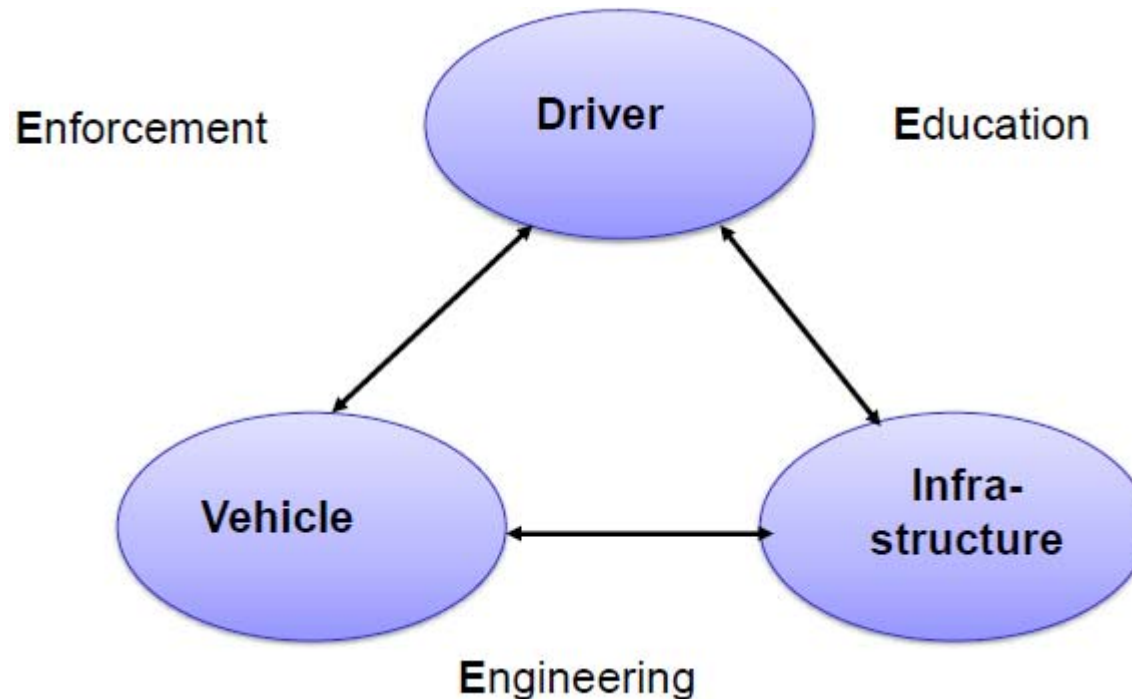
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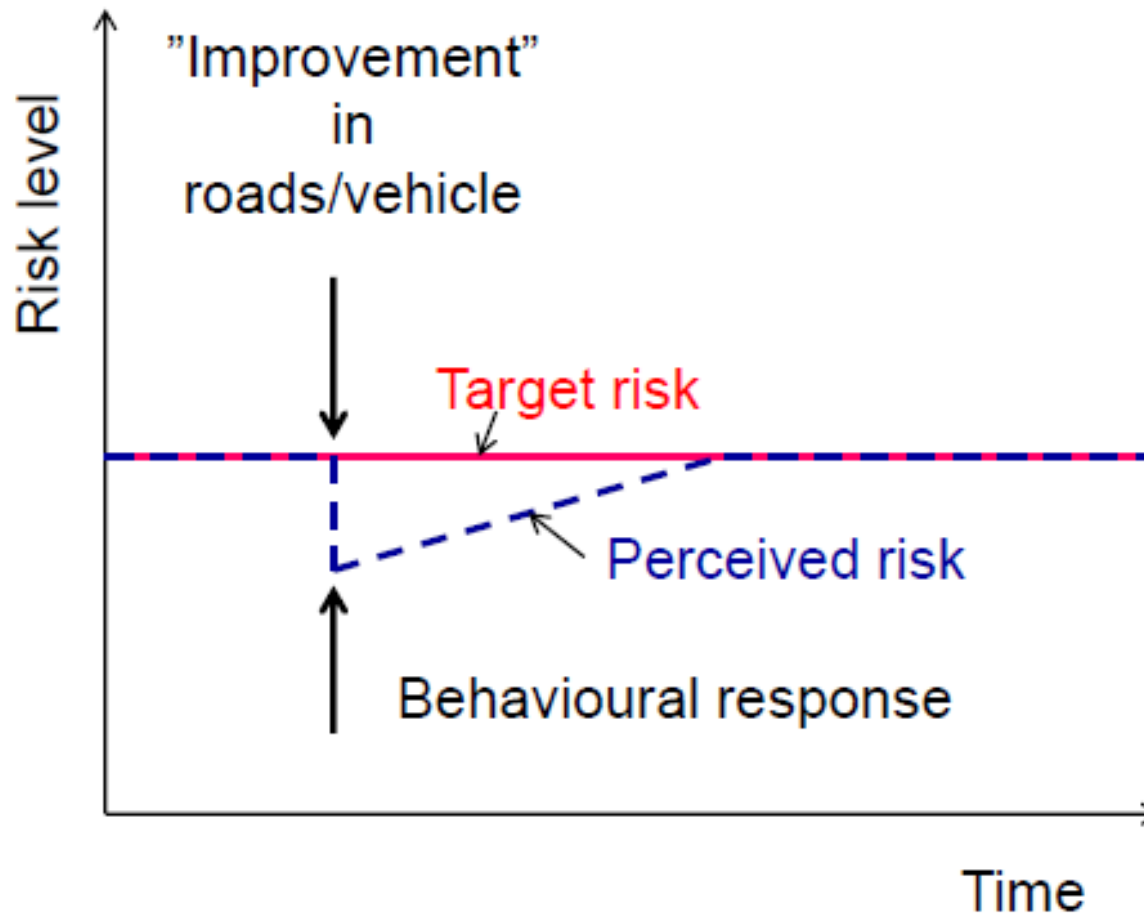
This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 645690.

Theoretical Model

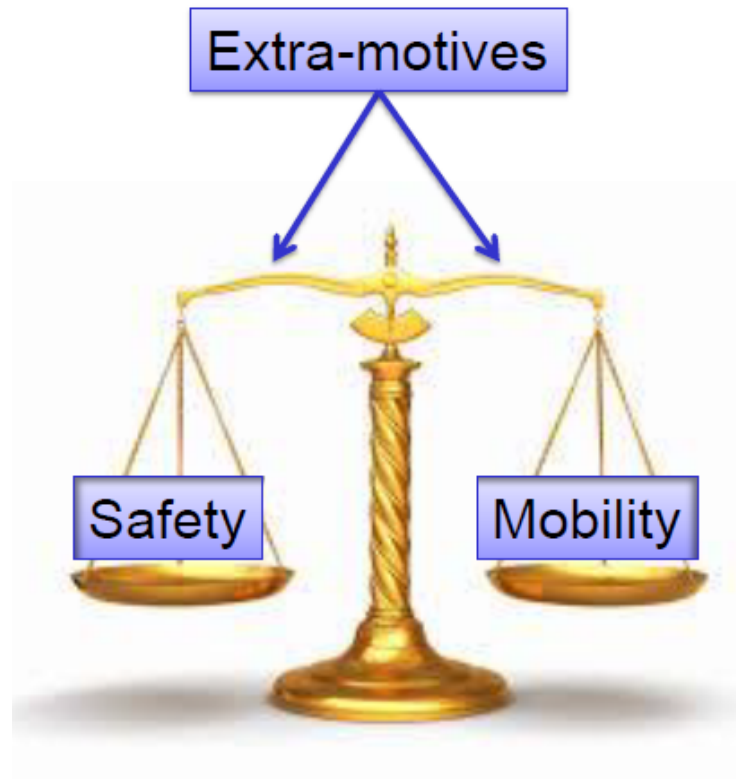
- Why the current approach is not enough? Why do we need a safety culture model?
 - Traffic safety work split to different bodies



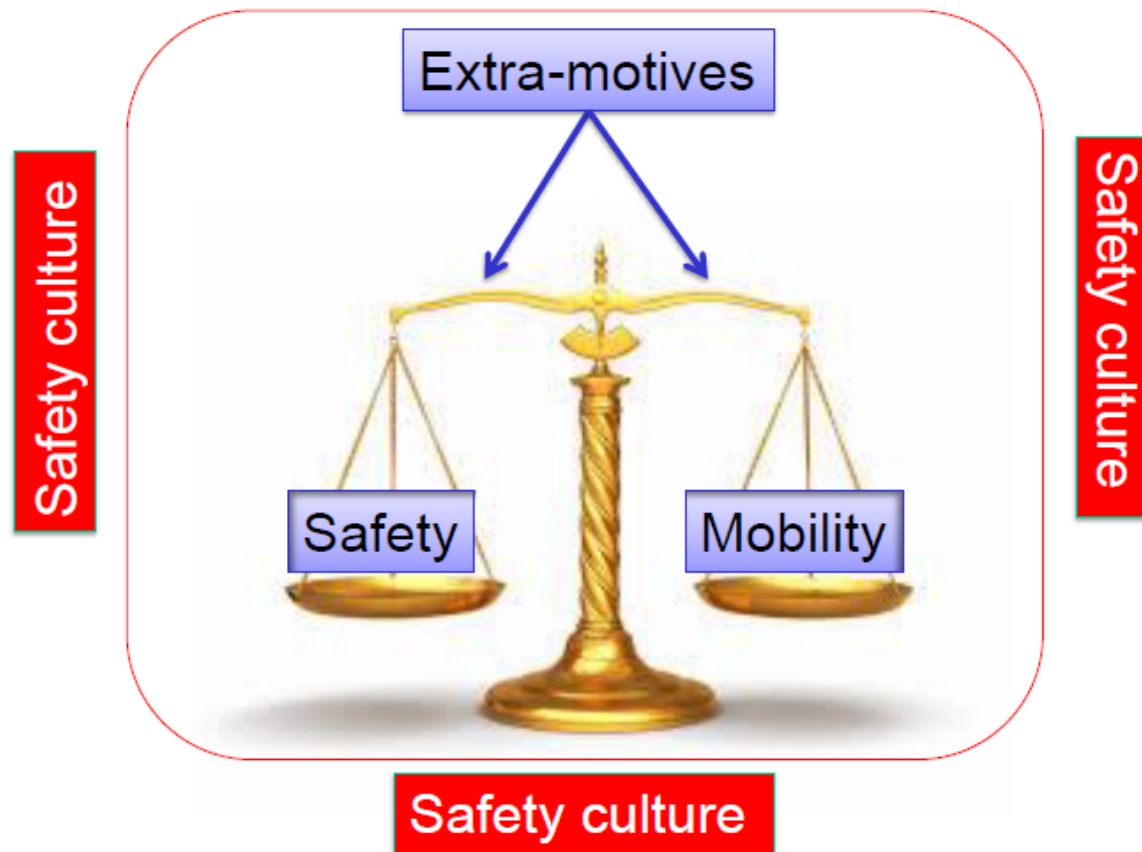
Risk Homeostasis Theory (RHT)



Goal of transportation



Goal of transportation

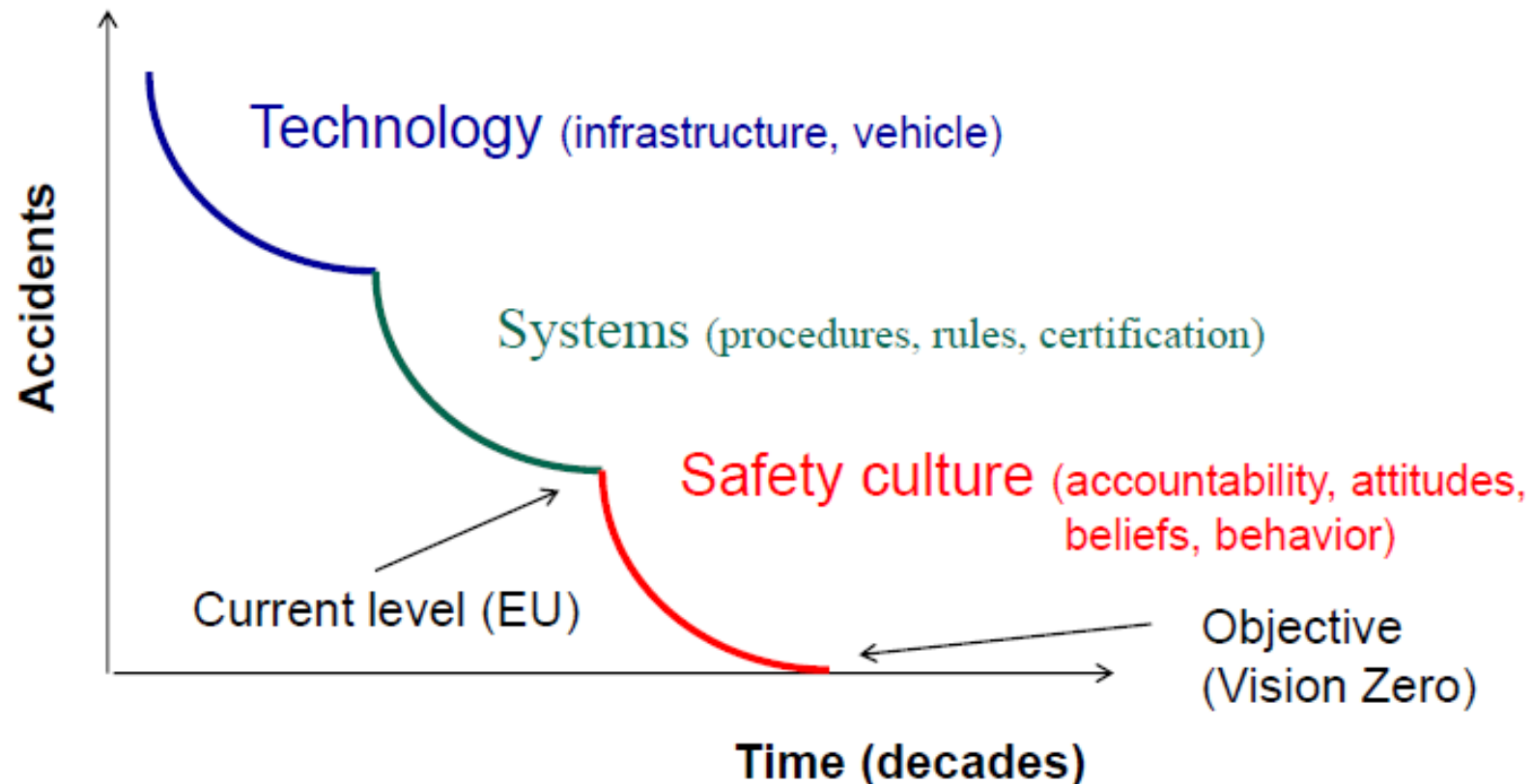


What is safety culture?

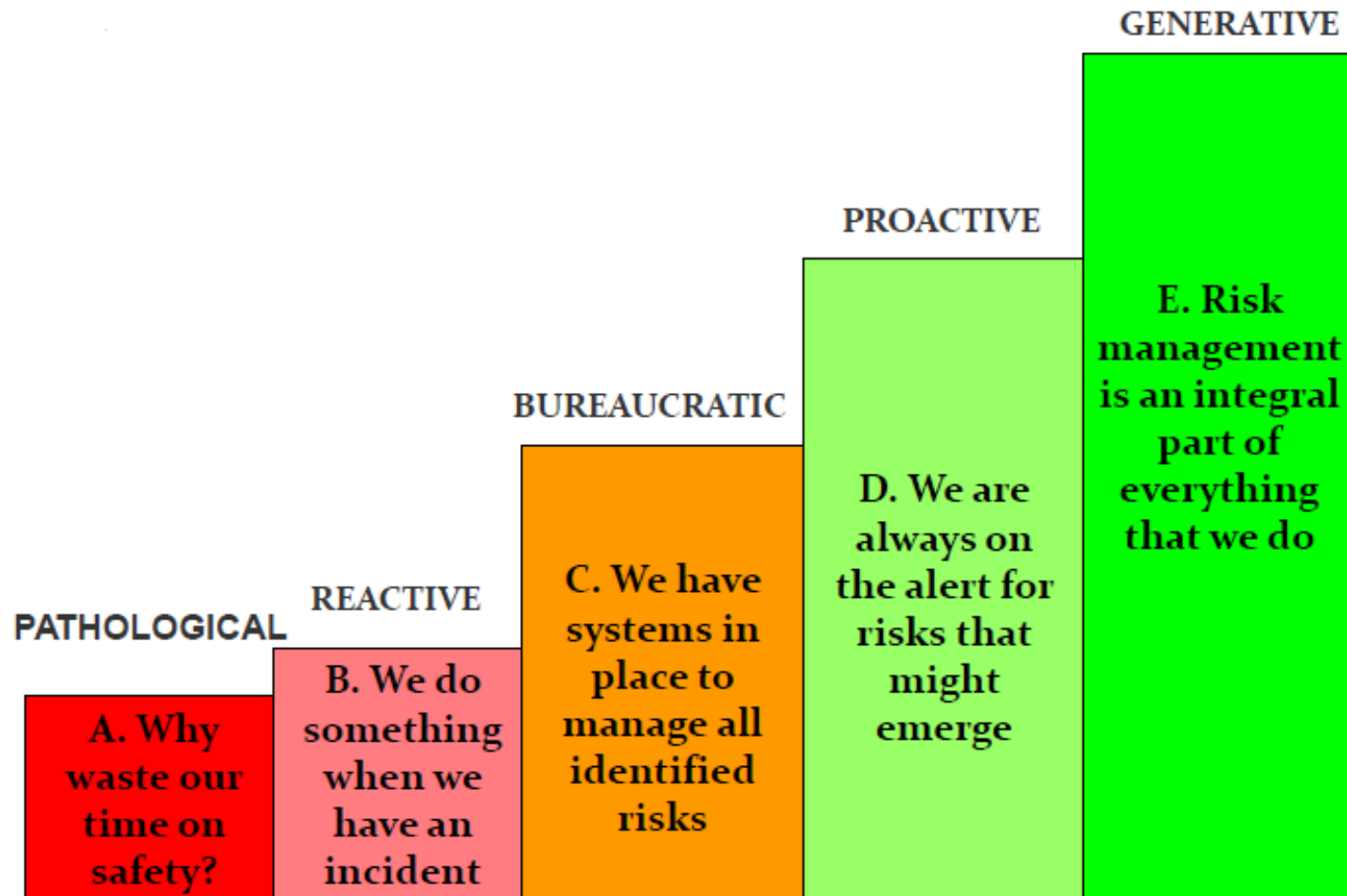
- For a transportation organization (e.g., company, public transport agent):
 - The shared beliefs and values of members of working in an organization that determine the commitment to and quality of an organization's health and safety management
- For traffic system:
 - A social climate in which traffic safety is highly valued and rigorously pursued
- TraSaCu:
 - Traffic safety culture is defined as the shared values, actions, and behaviours that demonstrate a commitment to safety over competing goals and demands. (US Department of Transportation Safety Council)

Traffic (safety) culture as a new paradigm

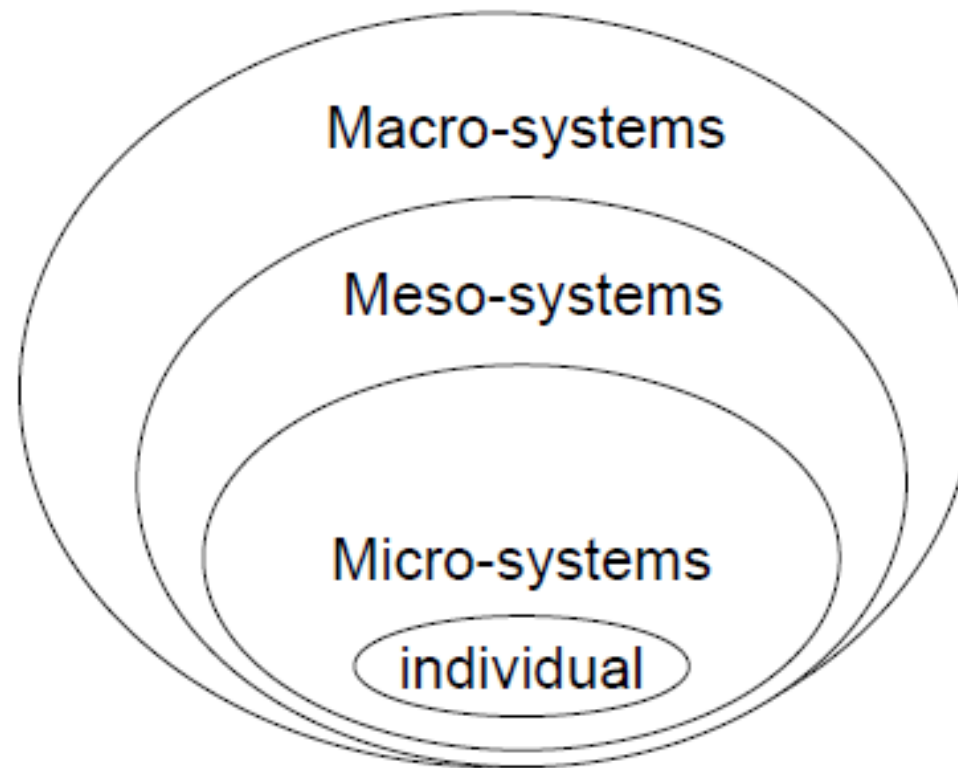
- Parker (2007) described the three eras of safety as an expansion of perspectives on accident phenomena by emphasizing their supplementary characteristics.



Levels of maturity with respect to a safety culture



Traffic culture means interaction between individuals and social systems



General Traffic Safety Culture Model

- Vertical levels:
 1. Micro: individual road user
 2. Meso: organization/group
 3. Macro: county/region/country
 4. Magna: overall culture

General Traffic Safety Culture Model

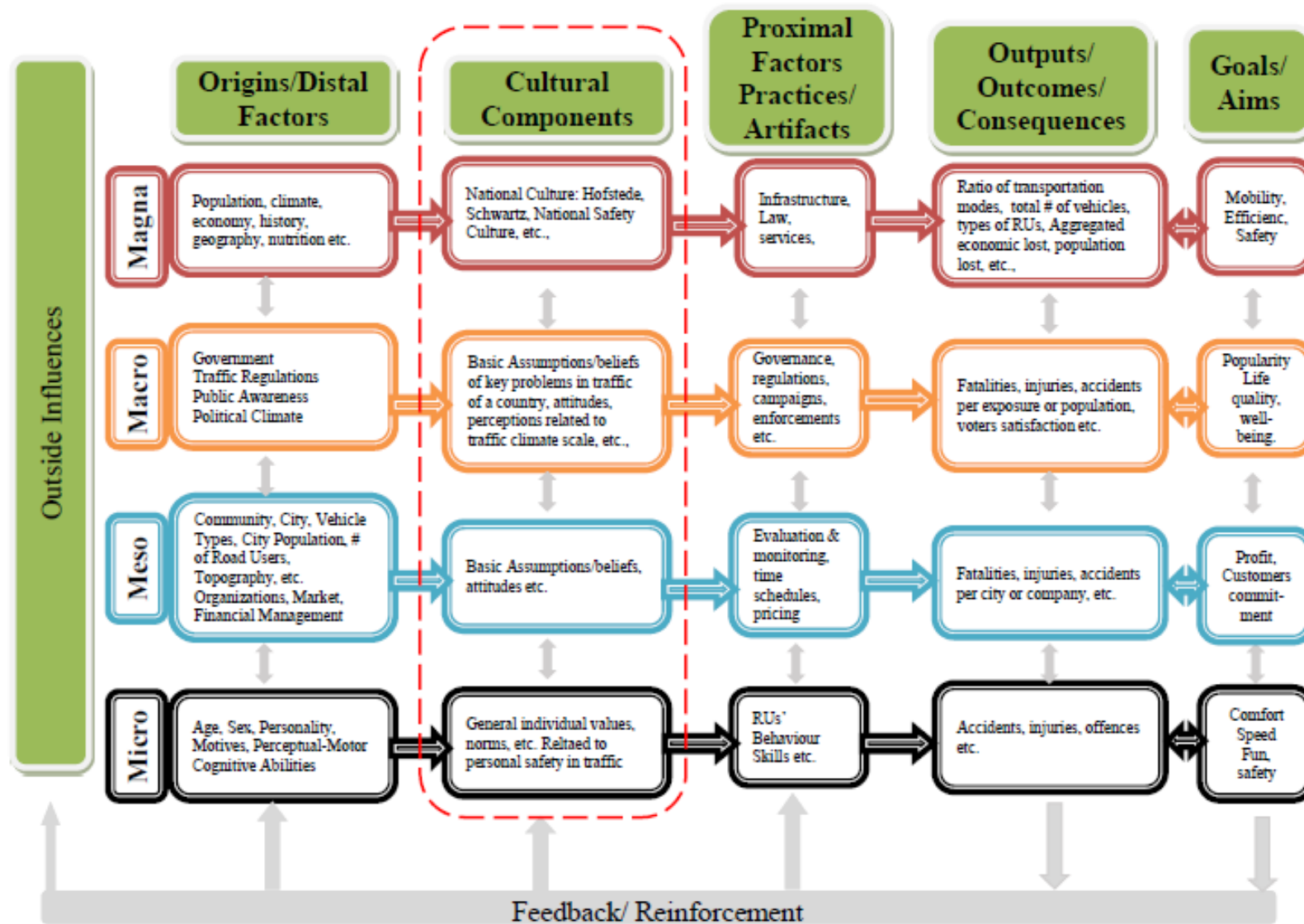
- Horizontal dimensions:
 1. Origins: distal factors
 2. **Cultural components** (e.g. values, norms)
 3. Proximal factors (practices, artifacts)
 4. Outcomes/consequences

General Traffic Safety Culture Model

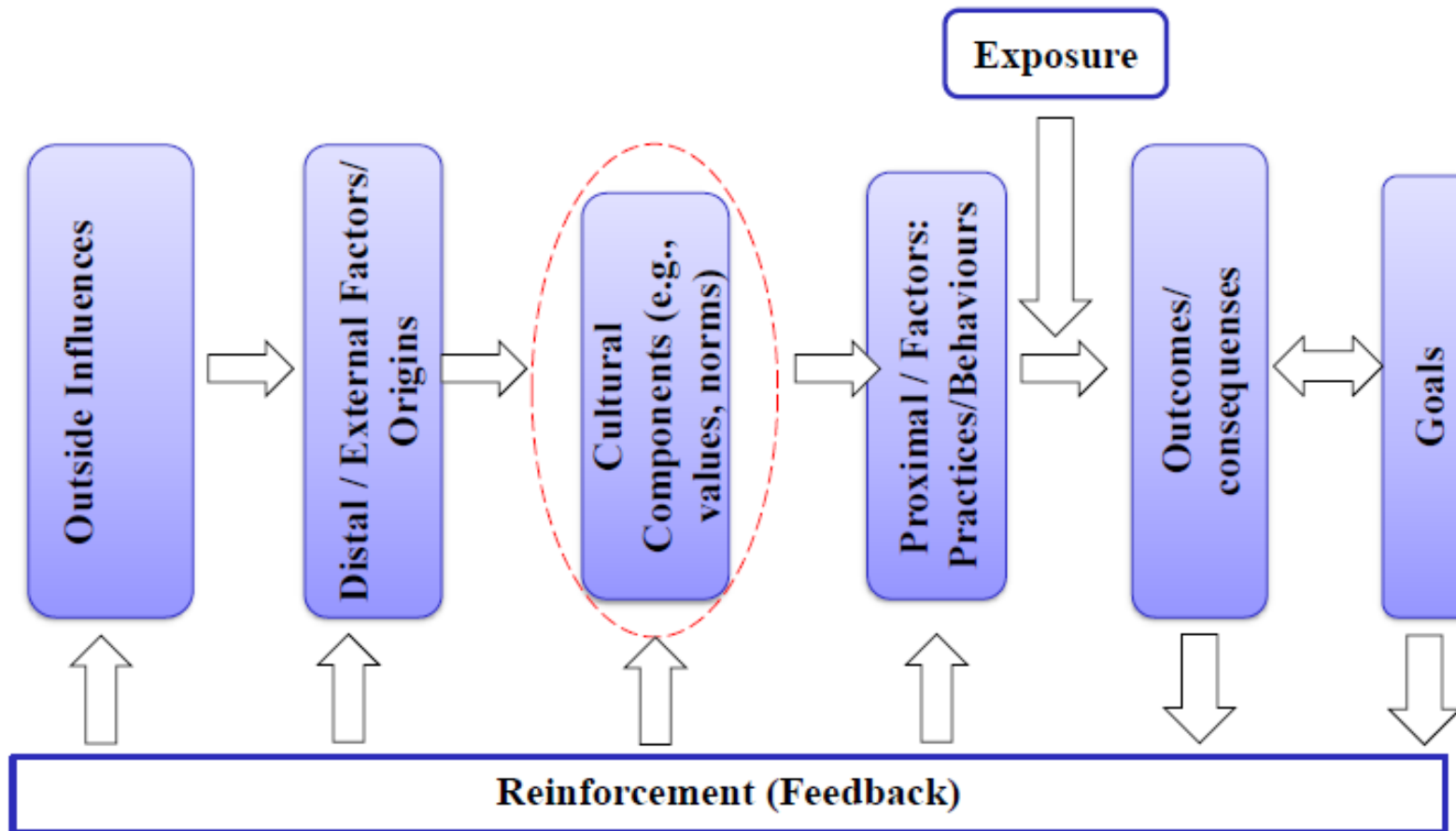
- Model includes also:
 1. Outside influences
 2. Main goals and aims
 3. Interdependency and feedback between levels and dimensions



General Traffic Safety Culture Model



General Traffic Safety Culture Model



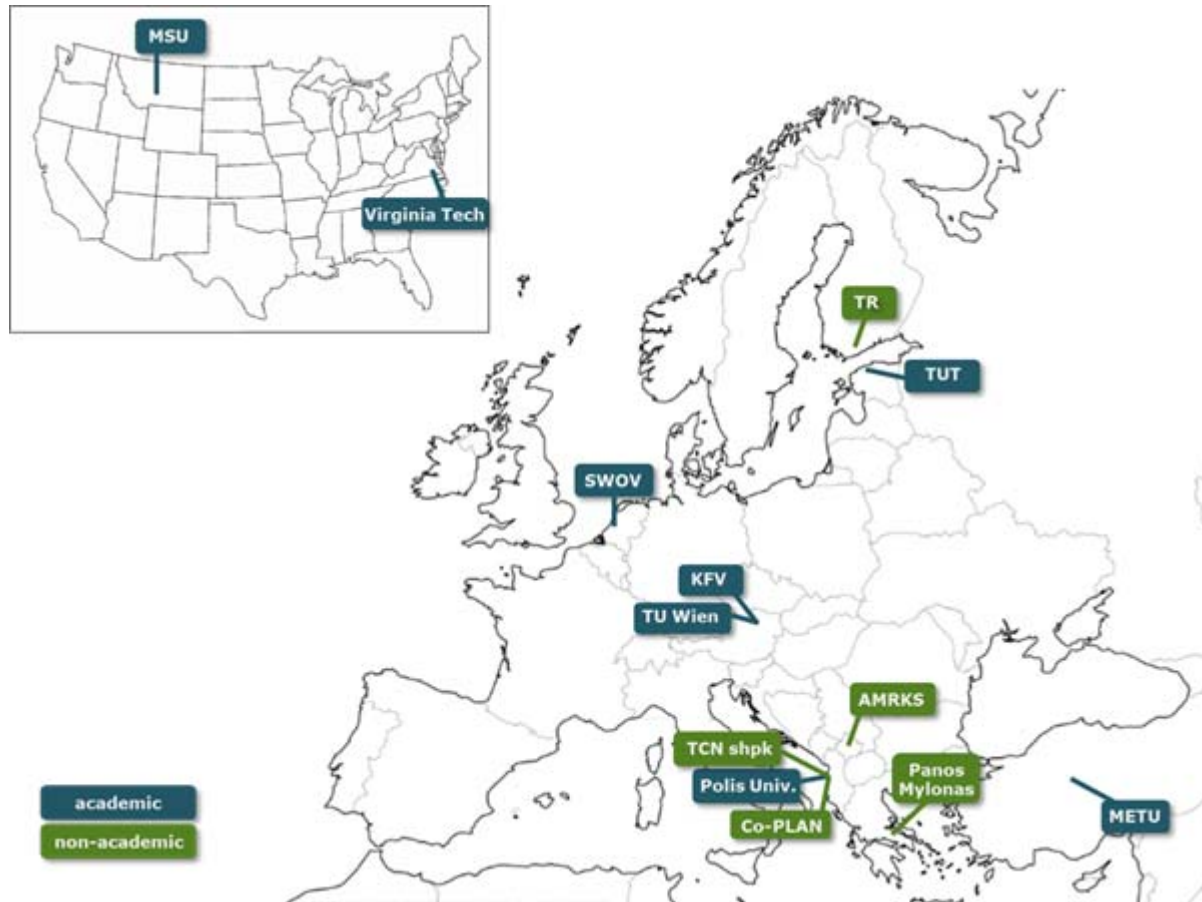
Exposure—that is, the degree to which a driver exposes him- or herself to traffic and thus the probability of being involved in an accident—is “a systematic process affecting the crash system” (Chapman, 1973)

What is the benefit of the holistic safety culture model?

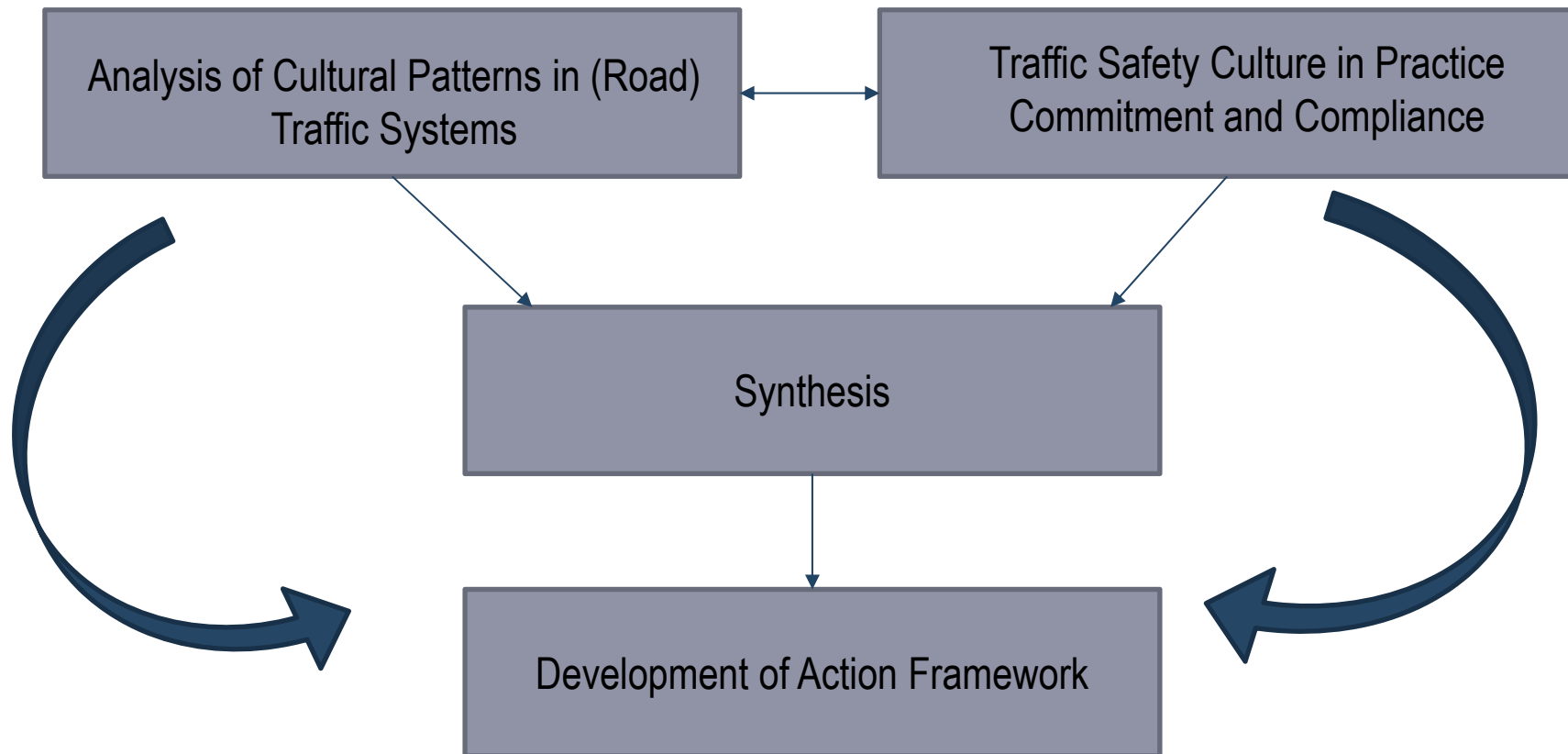
- Describes the complexity of cultural processes in one holistic model
- Takes the interdependency of different levels into account
- Makes clear the cultural mechanisms so that interventions can be targeted according to level and dimension
 - Method of intervention should be chosen according to the target level
- Works not only for prevention, but also promotion

TraSaCu Project

- <http://www.trasacu.eu/>



TraSaCu Project



TraSaCu Project – Methodology

- Country Reports
- Expert Interviews
- Fieldwork Diary
- Observations
- Internet Surveys
- Available secondary data

TraSaCu Project – Methodology – Expert Interviews

- Experts in
 - policy making
 - safety engineering
 - accident analysis
 - accident prevention
 - road policing

TraSaCu Project – Methodology – Fieldwork Diary

- Adapting to the new situation
- Integration in the flow of work of the hosting organization
- Encounters with experts
- Personal experiences with traffic situations
- Feelings and emotions
- Becoming aware of difference: What makes the difference between the culture in which you are socialized as compared to the culture you are facing now?
- Some hypotheses about the underlying pattern of your observations.
- The researcher's personal view.

TraSaCu Project – Methodology – Observations

- Aim: to provide behavioral data for country descriptions and comparisons
- Assumption: even rough measurements reflect that aspect of safe behaviors in a country
- Method: measurements in roughly similar sites and times
- Topics:
 1. Seat belt wearing
 2. Bicycle helmet use
 3. Child seat use
 4. Indicator use
 5. Motorcycle helmet use
 6. Non-signalized crossing
 7. Signalized crossing

TraSaCu Project – Methodology – Survey

- Contents:
 - Background
 - Exposure, accidents, demographics...
 - Transport mode choice
 - Road user behaviors (with modified DBQ)
 - Driver, cyclist, motorcyclist
 - Traffic Climate Scale
 - Portrait Value Questionnaire (Schwartz values)
 - Driver Aggression – self vs. other



Traffic Safety Culture



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Thank you!

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