



**XXIVth WORLD
ROAD CONGRESS**
Mexico City 2011

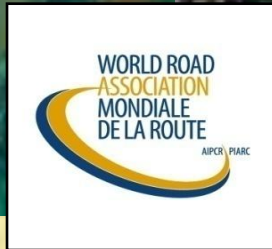
SOCIAL PERCEPTION OF RISKS IN THE FRAME OF ROAD OPERATION

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“MAN WAS BORN IN LABOUR, AND BIRTH ITSELF MEANS A RISK OF DEATH”



PIARC TC C3

- So, if risk is embedded in our existence, the role that risk perception and risk acceptance play by moulding the individual reaction are a crucial contextual element for policy makers.

GENERAL APPROACH TO RISK

Risks are frequent in every field and situation, including the management of road infrastructures

BUT

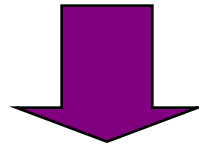
not all risks affect and interest people:
the attention focuses selectively on specific hazards, while other risks are fully neglected.

Sometimes the neglected risks rose suddenly in the limelight as a function of specific events and/or media campaigns.



WHAT IS THE ACCEPTABILITY OF A RISK?

The anthropologist *Mary Douglas* speaks about "social" acceptability



They are *socially standardized conventions* determining *what risks are acceptable.*

It is the culture that leads to define the risks considered acceptable and risks to be feared and therefore refused.

The specialists of the risk perception attempted to systematically identify what makes a risk more acceptable than others and also addressed the issue of different thresholds of tolerance.



THE FACTORS INFLUENCE THE PERCEPTION OF RISK

According to Vincent Covello the most important factor is the **TRUST**



DISPROPORTIONATE PERCEPTION OF SPECIFIC EVENTS

Covello researching in psychological sciences has identified “47 known factors that influence the perception of risk”

CATASTROPHIC POTENTIAL

FAMILIARITY

IMPACT ON CHILDREN

UNDERSTANDING

DREAD

SCIENTIFIC UNCERTAINTY

MEDIA ATTENTION

CONTROLLABILITY



DISPROPORTIONATE PERCEPTION OF SPECIFIC EVENTS



“CATASTROPHIC POTENTIAL” AN EXAMPLE THE CASE OF TUNNELS

The three fires of Mont Blanc, Tauern and Gotthard tunnels showed the potential for significant loss of life, bodily injury, property damage and business interruption arising from motor accidents when compared to other road accidents.



On the other hand no relevance on the perception of people has the fact that very few fire accidents in the history of worldwide transportation resulted in fatalities and only the three above listed accidents resulted in more than 10 fatalities each



FAMILIARITY

People is more concerned about unfamiliar risks: people is not familiar to fires in tunnels while almost every week, driving in a major town, we can experience to see a car accident or a hurt motorcyclist laying on the ground



VOLUNTARINESS OF EXPOSURE

People are more concerned about risks that are imposed rather than voluntarily accepted; we can consider that over-speeding related accidents are extent the consequence of a voluntary exposition, while it is not the case of being hurted by dangerous hot smoke travelling in a tunnel in the event of a fire



SCIENTIFIC UNCERTAINTY

People are more concerned about poorly understood activities (exposure to radiation) than those that may be understood (slipping on ice)



CONTROLLABILITY

People are more concerned about risks not under personal control. When a major fire ignites in a tunnel, the physics of the phenomena could be out of human control



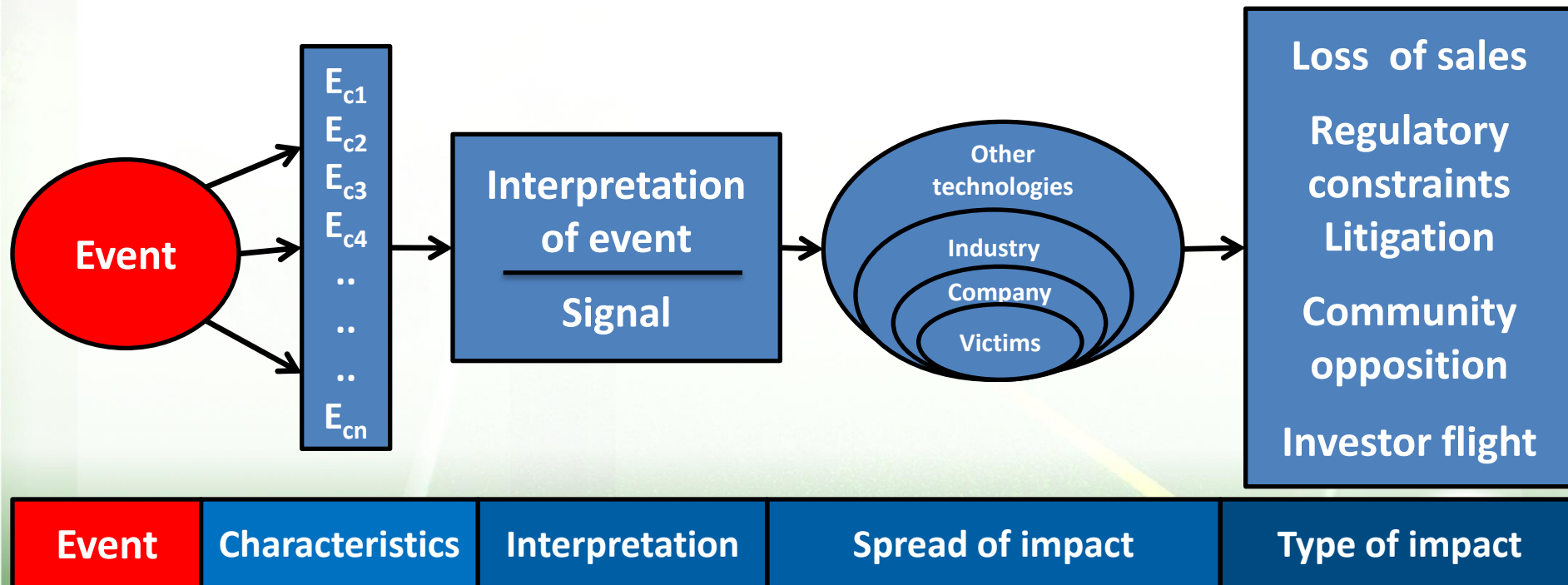
MEDIA ATTENTION

The attention of media is a key element for the

modulation and amplification

of the risk perception on the public opinion;
even a minor event related to fire trigger the attention of media worldwide and quickly go front-page.

Process of social amplification of risk



IL MATTINO ILLUSTRATO

ANNI VI - N. 3 - NAPOLI, 4 - 7 MARZO 1929

ILLUSTRATO



Lo spaventoso incendio di un treno sotterraneo, durante la corsa, a New York, nel tunnel sotto il ponte Hudson. Nove morti e centinaia di feriti, tra i viaggiatori travolti, in fuga tra le tenebre.

A pre-war vintage example: in March 1929 a New York rail fire in tunnel (9 fatalities) made the front-page in the “il Mattino illustrato”, newspaper of Naples (Italy)



A grayscale photograph of a winter scene. A person is walking away from the camera on a path that is partially covered in snow. The path is flanked by trees, some of which are bare and some with dark leaves. The background is heavily obscured by fog, creating a sense of depth and atmosphere. The overall tone is muted and somber.

Fog



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At Least 14 Die in Italy Car Crash

Rome
13 March 2003

At least 14 people have been killed and more than 70 injured in a massive traffic crash on a northern Italian highway, with thick fog being blamed for the pile-up, involving more than 200 vehicles.

The series of collisions on the highway between the cities of Verona and Trieste, in what police said was one of Italy's worst road accidents, involved cars and trucks going in both directions along a four-kilometre stretch.

Thick fog had seriously reduced visibility during the crash. Police say two trucks heading north first crashed into each other and stopped in the middle of the highway. In the opposite lane, drivers stopped to look at the accident, causing a second pileup.

Among the vehicles involved in the accident was a truck carrying hydrogen and another carrying a fire, killing the animals.

Italian police have opened an investigation into the crash, one of the worst road incidents in Italian history.

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12 dead in Italy's car pile-up

At least 12 people have been killed and more than 70 injured in a massive pile-up involving about 200 vehicles in northeastern Italy, police said.

Cars and lorries crashed into each other in thick fog along a motorway between the cities of Verona and Trieste, in what the police said was one of Italy's worst road accidents.

"They were driving too fast in the conditions," highway police official Pietro Luigi Saga was quoted as saying by the Associated Press news agency.

Mr Saga said that 15 of the injured were in critical condition.

The scene of the accident stretched for about four kilometres (2.5 miles) along the highway, as firefighters rushed to rescue drivers.

SEE ALSO:

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- Ex-KGB spy 'killed'

News feeds

A fog accident in Italy reaches both the British and US media

Links do not bring to statistics but to other "media impacting" events i.e. fire in tunnels

Snapshots of news from the web of BBC and VOA are reported. These two articles present a multiple crash in Italy (2003) subsequent to a sudden, thick fog.

The event of 2003 was extremely severe resulting in several fatalities. However, “extremely severe consequences to human life” are not the only triggers for media attention. For instance, a pile-up collision resulting in a single fatality in Austria garnered broad media attention (e.g. on Spiegel). A similar interest from media wouldn’t have occurred for a single fatality related to “ordinary” road accidents.



ABOUT THE REPORT

Key categories for risk perception on road operations

Miscellaneous

Cross-cultural differences and beliefs

Road elements

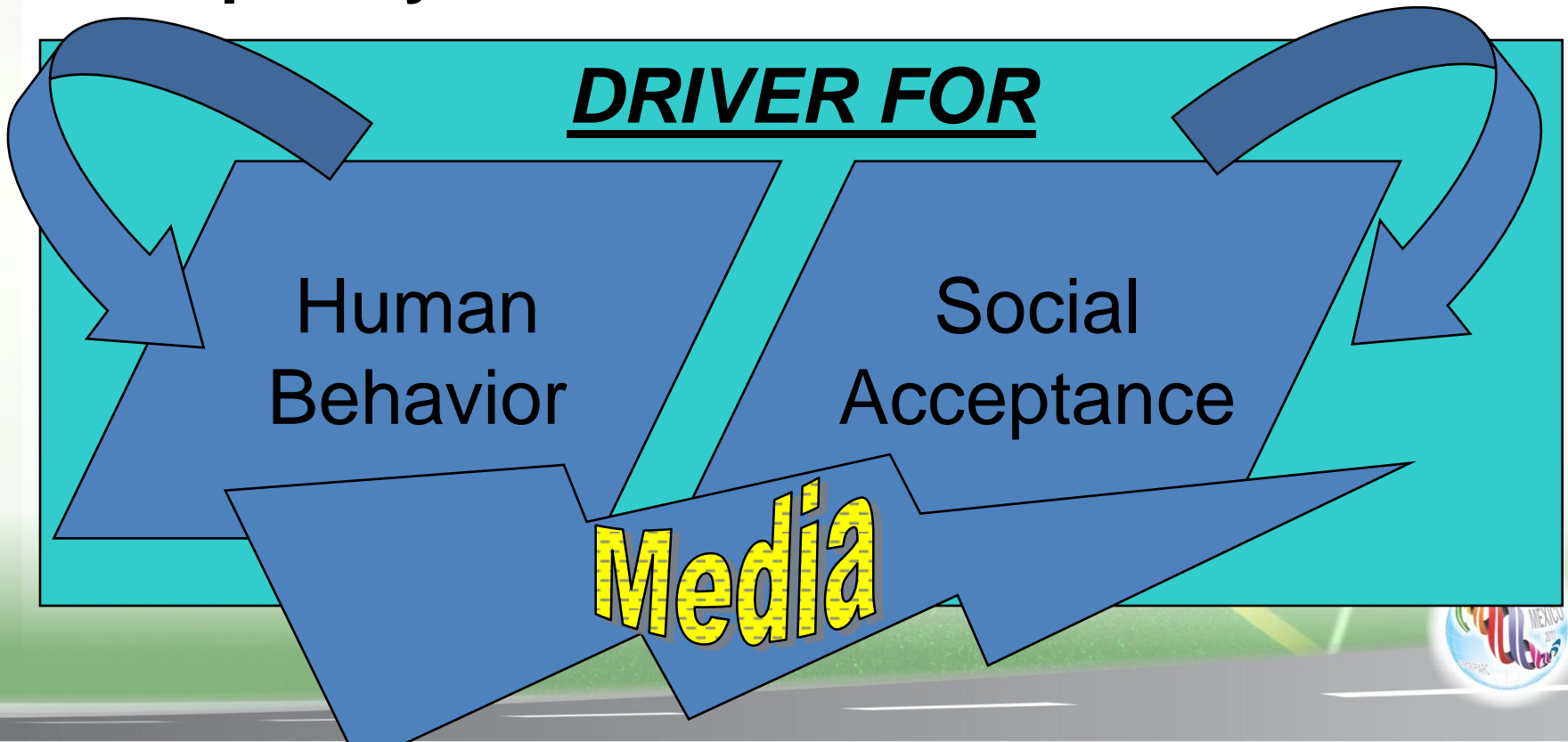
Population user characteristics

User categories

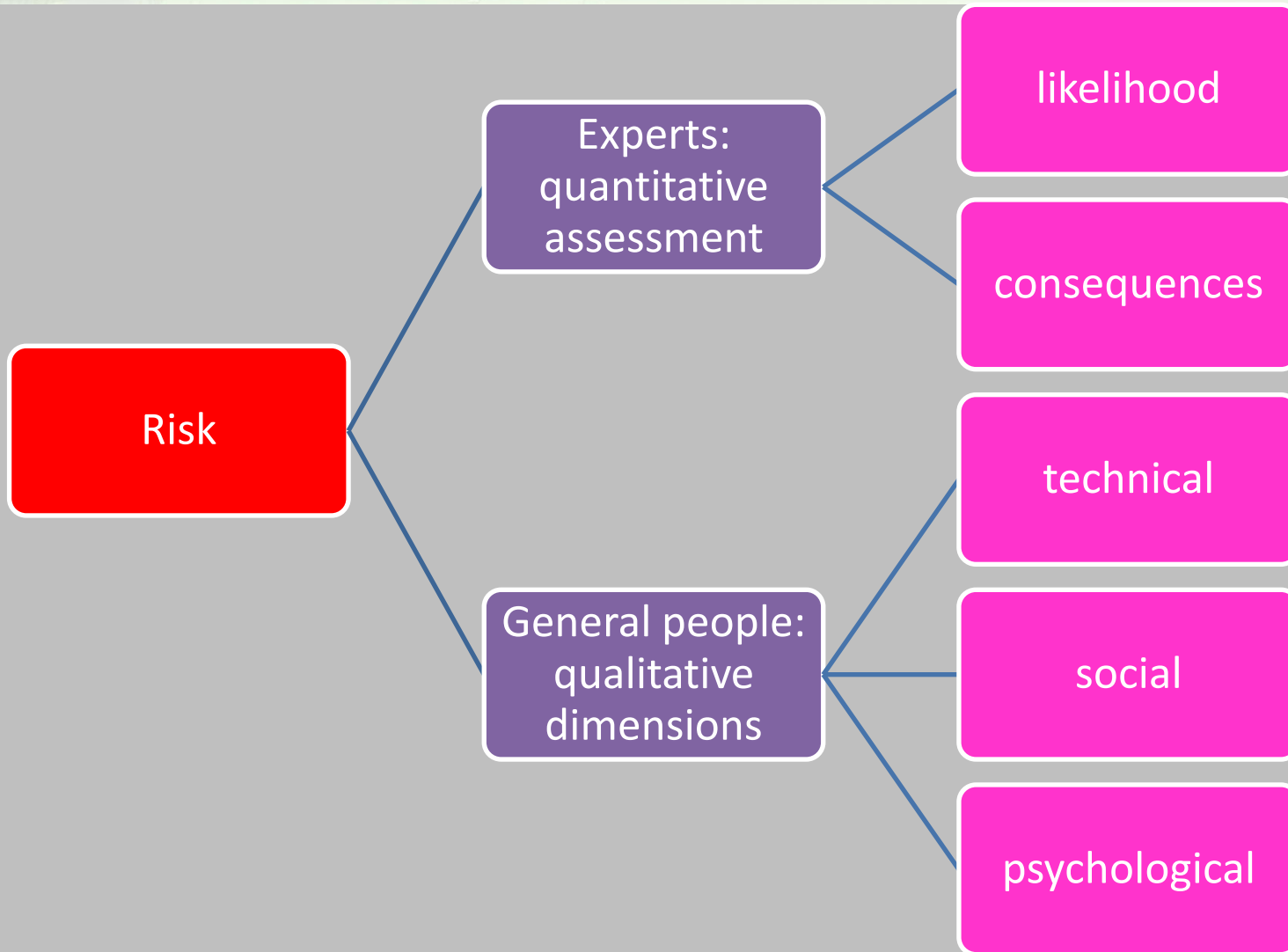


CONCLUSIONS

Culture leads the perception of risks and influences the social definition of risks considered “acceptable” and those “feared” and consequently refused. Culture become the



CONCLUSIONS



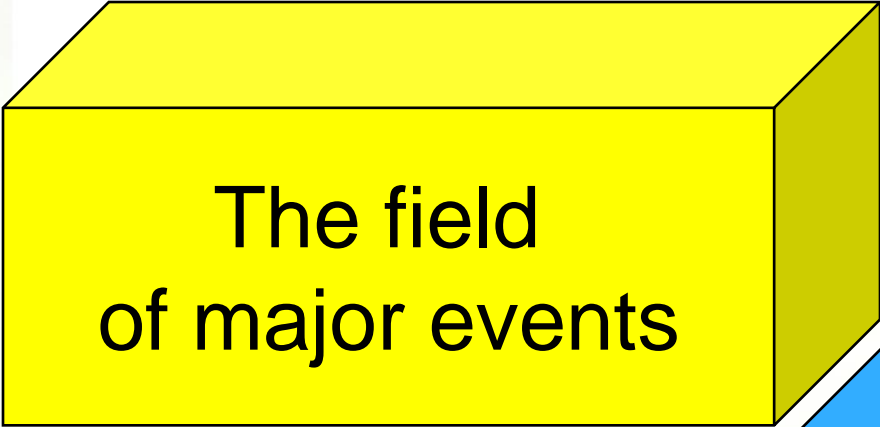
CONCLUSIONS

- Risk perception is a phenomena strictly depending on culture
- Different cultures could lead to different personal and social approaches to key risk influencing factors such as:



CONCLUSIONS

The perception of risk has two major consequences identified as fields of interest for the operation of roads:



The field
of major events

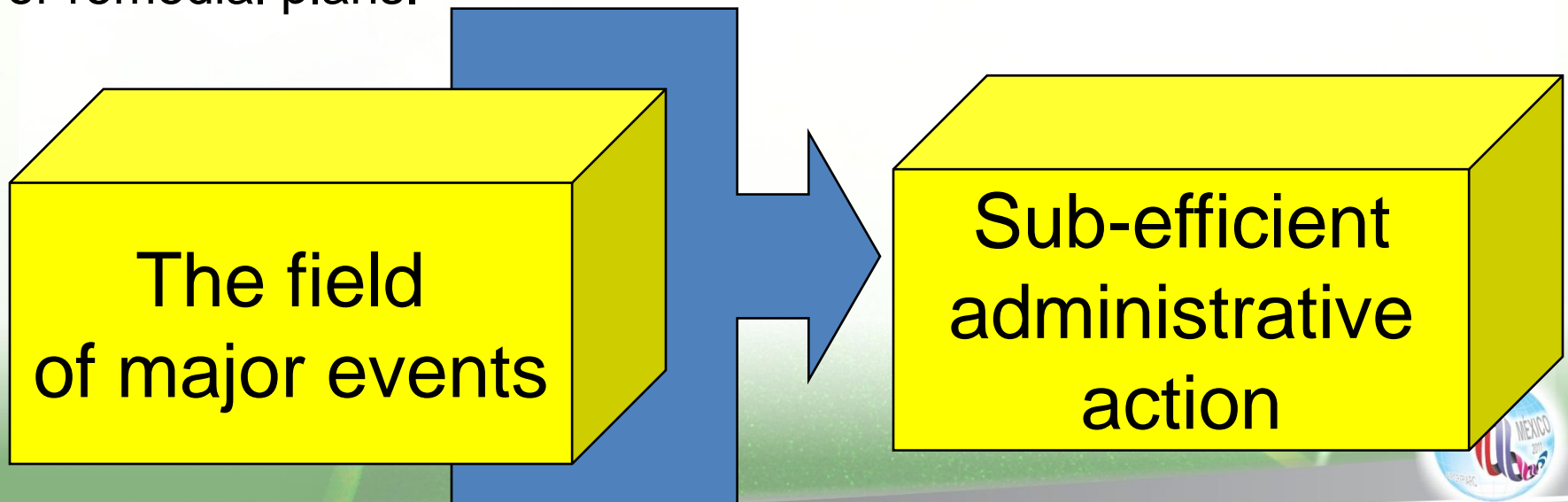


The field of
Human behavior



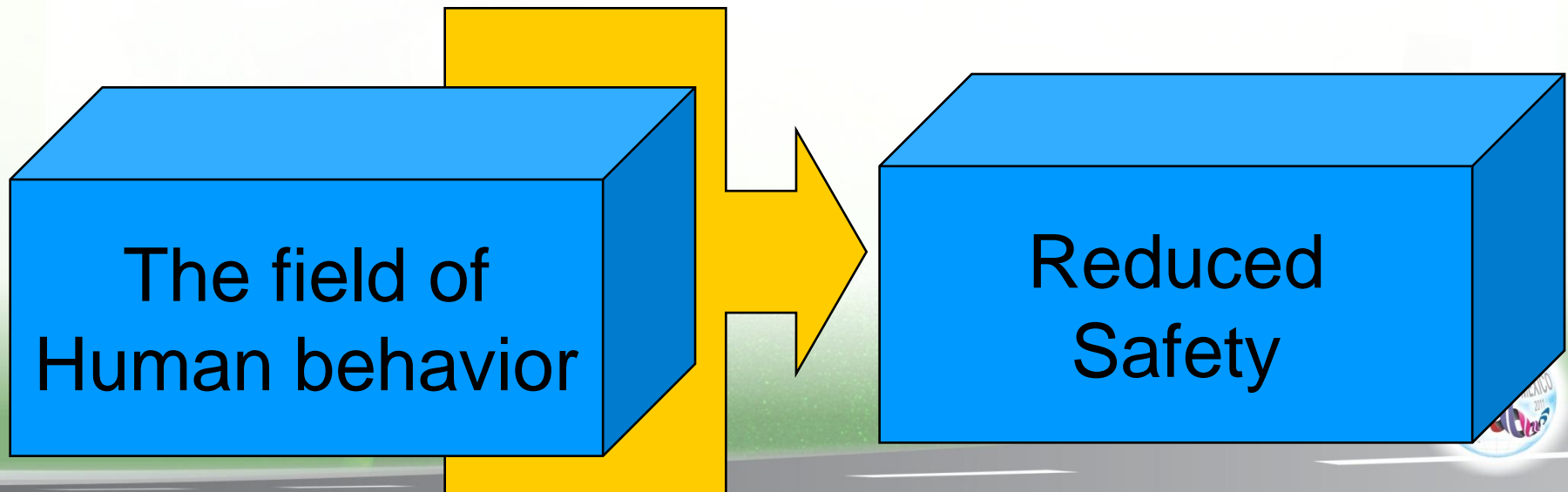
CONCLUSION

a. **The field of major events:** Road Authorities and Operators need to make choices and investments discriminating among hazards with a reasonably high probability and other risks. The perception of risk and the social amplification of major events can have an impact on the assessment process, bringing the overall action to unpredictable results in terms of assessment, provisions or remedial plans.



CONCLUSION

b. The field of human behavior: Understanding the phenomena and appropriate perception of user's risks in order to underpin the proper overall function and bring a coherent approach. The misperception or underestimation of risks could be considered a key factor impacting a good approach to driving.

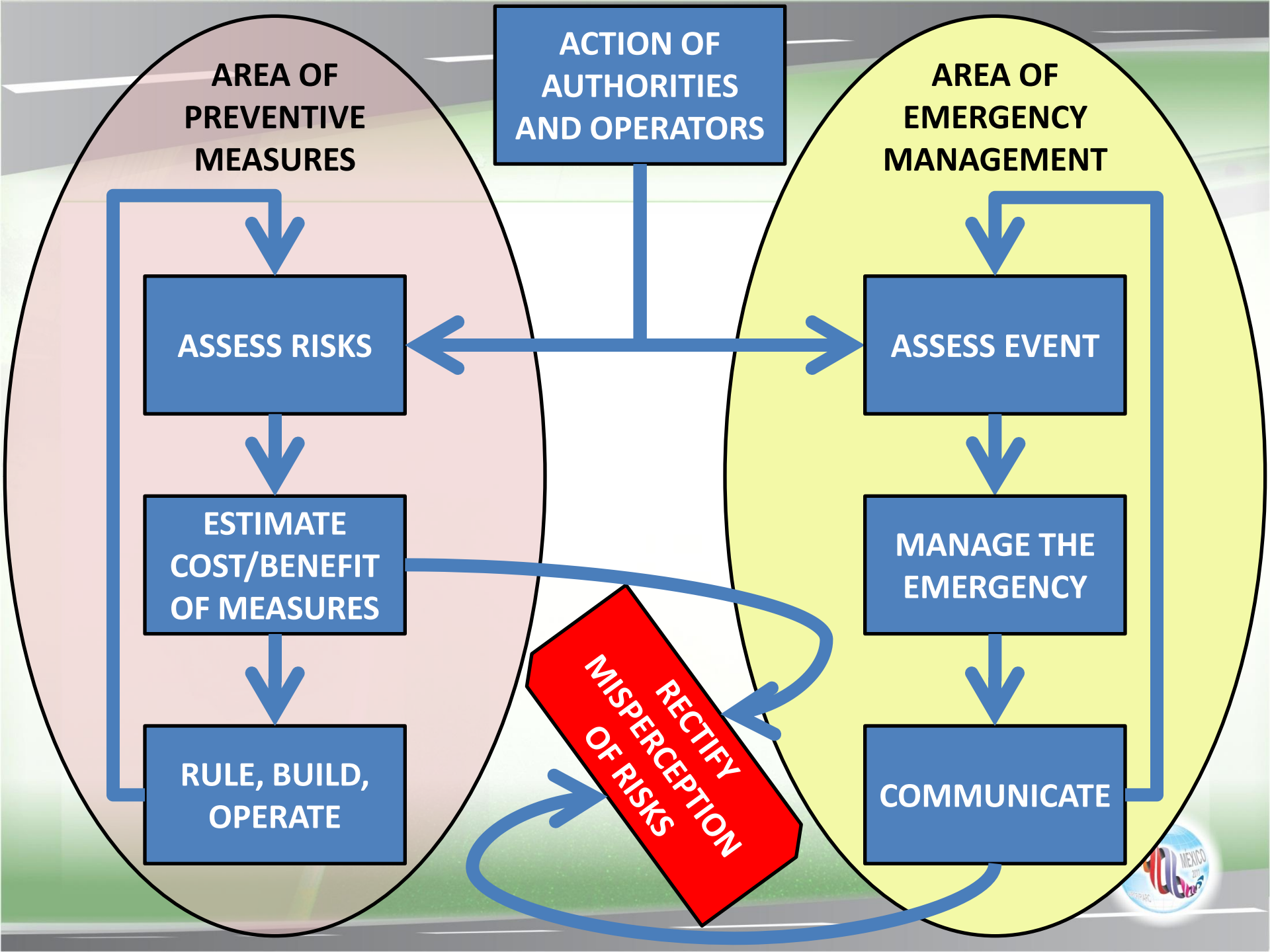


CONCLUSION

risk perception is a culture-led issue. It has a sensible impact on road related policies.

Impact on people can be influenced, improved through education, communication etc.

Authorities and operators need to know the effects and make use cost/benefit, and impact assessment



AREA OF PREVENTIVE MEASURES

ACTION OF AUTHORITIES AND OPERATORS

AREA OF EMERGENCY MANAGEMENT

ASSESS RISKS

ASSESS EVENT

ESTIMATE COST/BENEFIT OF MEASURES

MANAGE THE EMERGENCY

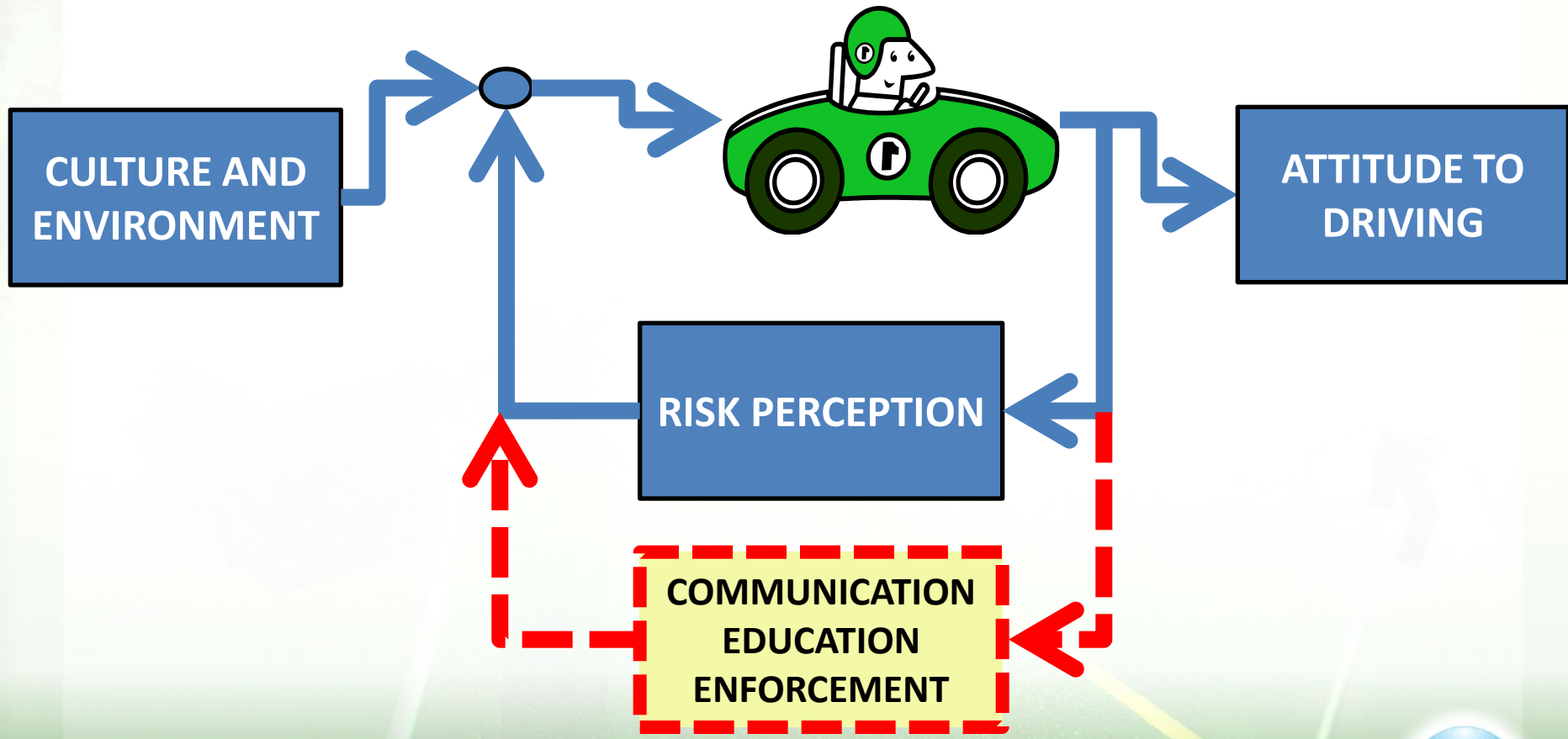
RULE, BUILD, OPERATE

COMMUNICATE

RECTIFY MISPERCEPTION OF RISKS



RISK PERCEPTION IN A FEEDBACK LOOP



THANK YOU FOR YOUR ATTENTION



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