RETHINKING SAFETY

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ROAD SAFETY
CULTURAL SAFETY

What we think is risky or safe
- Ideological construction

Affected by
- Morality
- Media
- Traffic safety agencies

Description by rhetorics
Appeals to emotions

ACTUAL SAFETY

What actually is risky or safe
- Mathematical concept

Defined by
- Physics
- Real world data

Description by numbers
Appeals to logic

Consider
- Blind spots
- Effectiveness
- Intrinsic value
- Implications
SAFETY VEST
IMPLICATIONS - ULTIMATE GOAL?
EFFECTIVENESS

Pedestrian deaths in Finland 2009 – 2015 and reflector

No evidence of effect 90%

“Possibly” 7%

“Probably” 3%

Might have been saved with a reflector

Deaths
ROAD SAFETY – INTRINSIC VALUE?

Causes of premature deaths in Finland

Deaths prevented if 100% wore a bicycle helmet

Deaths

- Physical inactivity: 4000
- Air pollution: 1500
- Cycling: 0

Causes: Physical inactivity, Air pollution, Cycling.
MORAL JUDGEMENTS AFFECT RISK ASSESSMENT

Same activity is more risky, if the reason for doing it is morally unacceptable

Intentional actions are seen as more harmful than unintentional actions

Confusing morality with risk
1. Emotion-based judgement
2. Rationalizing judgement with safety

“It’s not only wrong because it’s risky, it’s also risky because it’s wrong.”

Thomas et al 2016: No Child Left Alone: Moral Judgments about Parents Affect Estimates of Risk to Children

Ames & Fiske 2013: Intentional Harms Are Worse, Even When They’re Not
PAVEMENT CYCLING

“Cycling is dangerous”

“Cycling is safe”
**RISK SCALE**

**CULTURAL SAFETY**
Binary scale

- > 80 km/h
- = 80 km/h

No distinction between risk levels
It’s either “safe” or “dangerous”

**ACTUAL SAFETY**
Continuous scale

Various risk levels can be compared
CULTURAL SAFETY
Risk scale: Binary

ACTUAL SAFETY
Risk scale: Continuous

Cycling 30 km/h wearing a helmet is more dangerous than cycling 20 km/h without a helmet.
RISK CONTROL SCALE

CULTURAL SAFETY

Binary

No distinction between effective and ineffective safety measures – all safety measures are equally important

ACTUAL SAFETY

Continuous

Effectiveness of different safety measures can be compared

Increased safety
RISK AND RESPONSIBILITY

$E_k = \frac{1}{2} mv^2$

1500 kg
50 km/h

80 kg
20 km/h

Risk (actual)

Responsibility (cultural)

Risk not addressed
SAFETY RITUAL

“Safety measure” that has little or no effect on traffic safety

Primary motivations other than safety

● Morality
● Being accepted by others
● Personal gain

Examples

● Pedestrian waiting for a green light in an empty crossing
● Bicycle helmets in low risk activity
● Easier driving
### IMPLEMENTATION

#### CULTURAL SAFETY
Carried out by requiring behavior change from individuals
- Road safety campaigns
- Personal protective equipment
- Measures with no proven effect on injury rates (safety rituals)

#### ACTUAL SAFETY
Carried out by structural changes
- Car-free areas
- Lower speeds
- Safer street design
- Safety standards for vehicles
- Proven effective safety measures
HIERARCHY OF HAZARD CONTROLS

- **Actual safety**
  - Elimination: Physically remove the hazard
  - Substitution: Replace the hazard
  - Engineering: Redesign
  - Administration: Behavior change
  - PPE

- **Cultural safety**

- **Effectiveness**
OBJECTIVES

CULTURAL SAFETY

Ideological objectives

● Morality
● Conservatism
  ○ Maintaining status quo while doing “something” about safety

ACTUAL SAFETY

Safety objectives

● Reducing collision rates
● Reducing death and injury rates
Cyclist deaths and helmet wearing rate in Finland
Pedestrian and cyclist deaths and helmet wearing rate in Finland
Cultural safety is about ideology, morality, and conservatism

Actual safety is about *measurable* accident, injury and death rates