Official Pre-Event:

Globalizing Vision Zero: Generating Scientific Evidence for the Road Ahead

3RD GLOBAL MINISTERIAL CONFERENCE ON ROAD SAFETY

ACHIEVING GLOBAL GOALS 2030

Evidence and Road Safety

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Overview of this talk

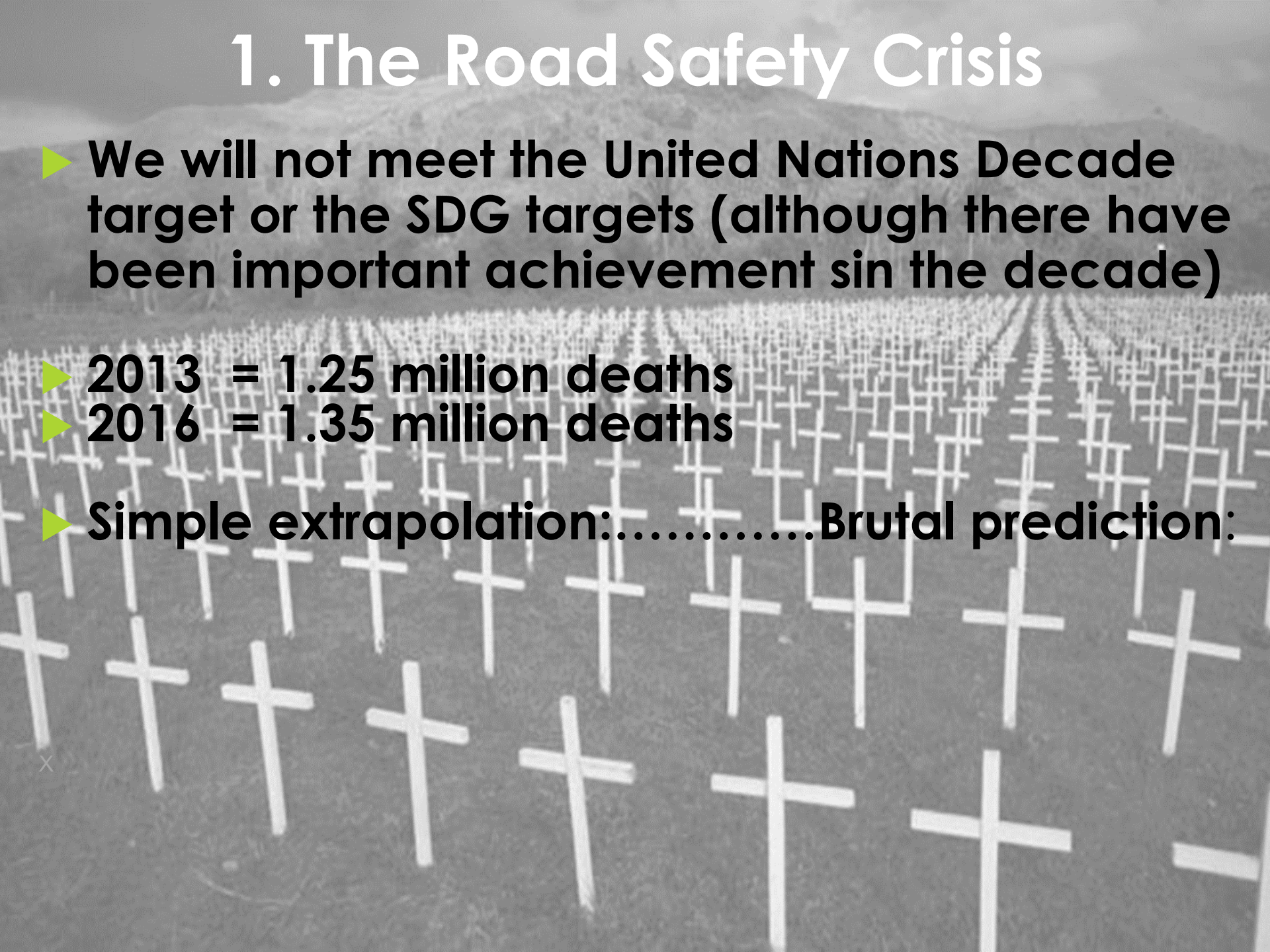
1. The road safety crisis
2. A great deal is known (by too few)
3. The evidence base is not sufficiently adopted
4. Misconceptions and errors
5. Recommendations

1. The Road Safety Crisis

- We will not meet the United Nations Decade target or the SDG targets (although there have been important achievement sin the decade)

- 2013 = 1.25 million deaths
- 2016 = 1.35 million deaths

- Simple extrapolation:……Brutal prediction:



1. The Road Safety Crisis

- We will not meet the United Nations Decade target or the SDG targets (although there have been important achievements in the decade)

- 2013 = 1.25 million deaths
- 2016 = 1.35 million deaths

- Simple extrapolation:……Brutal prediction:

The decade 2021 to 2030 =
17.4 million deaths and 500m+ injuries

Road crashes are the scale of a World War

2. A great deal is known (by too few)

- Economic analysis of 5 countries by World Bank/GRSF: What is the effect of halving deaths and injuries?

- GDP grows faster: 7% to 22% more over 24 years

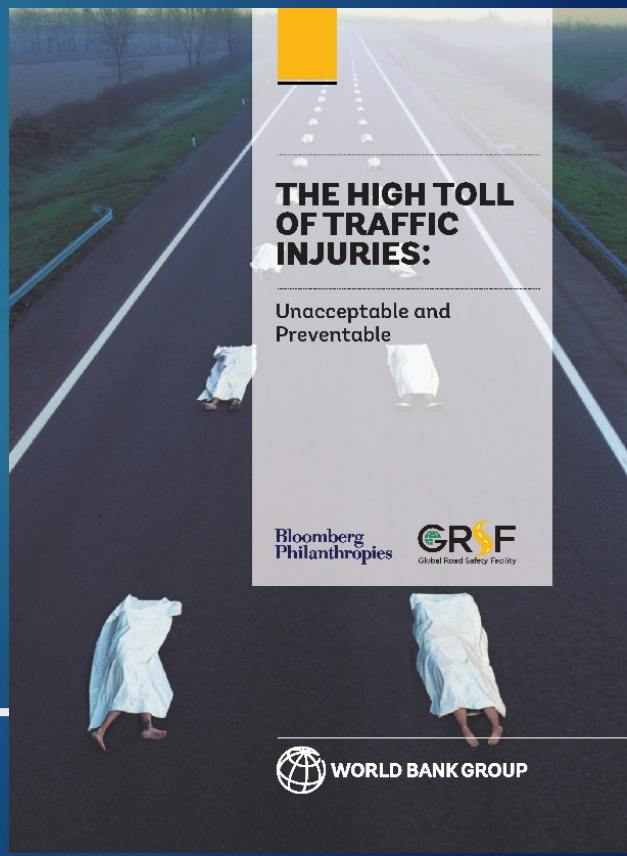
- For some countries almost an extra 1% per year.

Road safety =

good economic investment

This is vital Research for Advocacy

Other examples covered as we go



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3. The evidence base is not sufficiently adopted

Is there any dispute on this?

Is there any doubt that it is huge problem?

3. Misconceptions and errors (versus the evidence)

Examples which materially impact road safety delivery

a. Misjudgment of risk
b. Commonsense Misjudgment of trading off lives and injuries for speed (economic gain)
c. Commonsense Misjudgment of speed and congestion
d. Commonsense Misjudgment of differences in speed
e. Errors in selection of interventions to improve road safety

a. Misjudgment of risk (evidence)

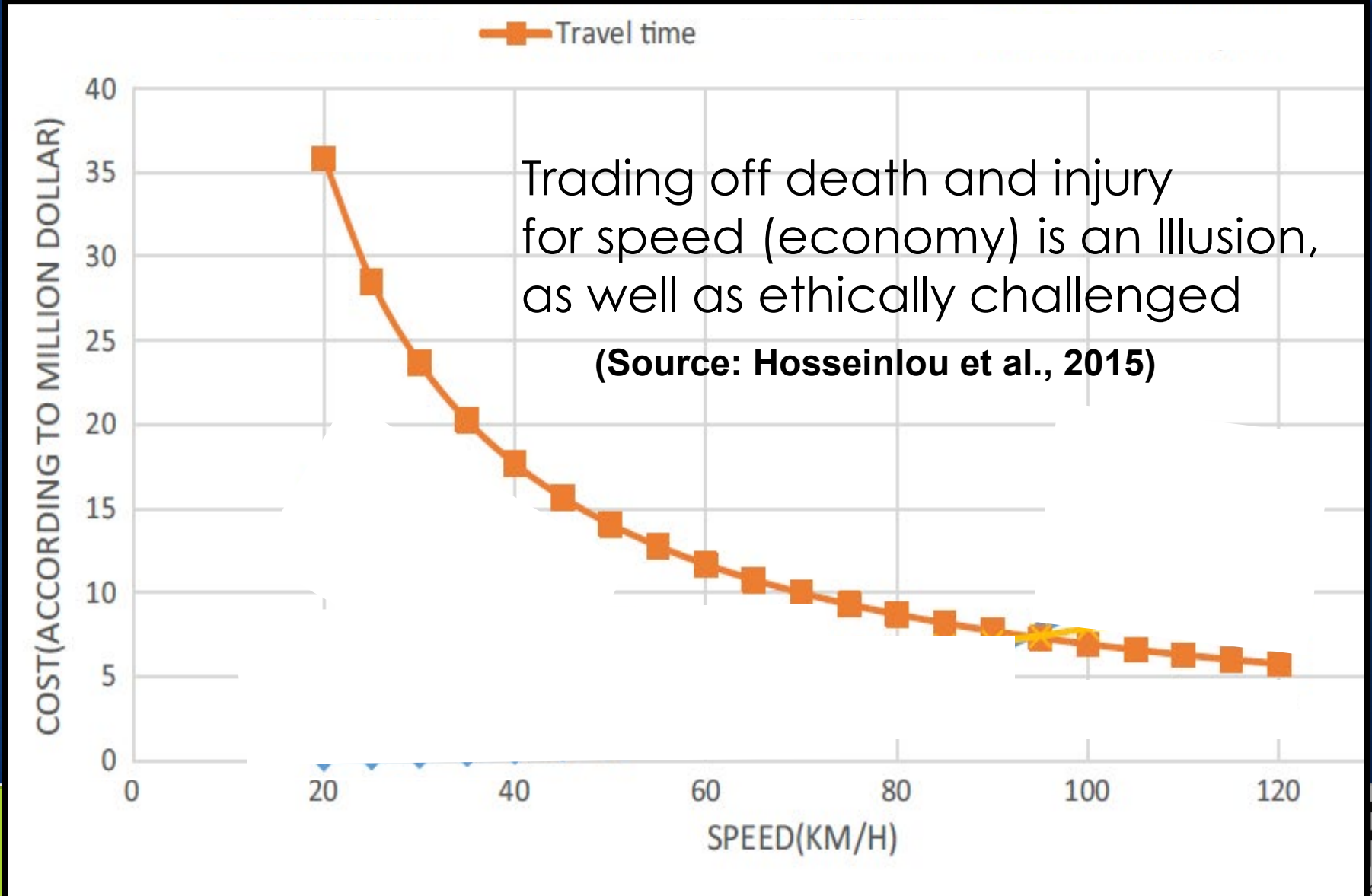
Examples:

1. Estimating low probabilities
2. Personal experience
3. Optimism bias

Worse than average	Average	Better than average

Source: Adapted from Job (1990)

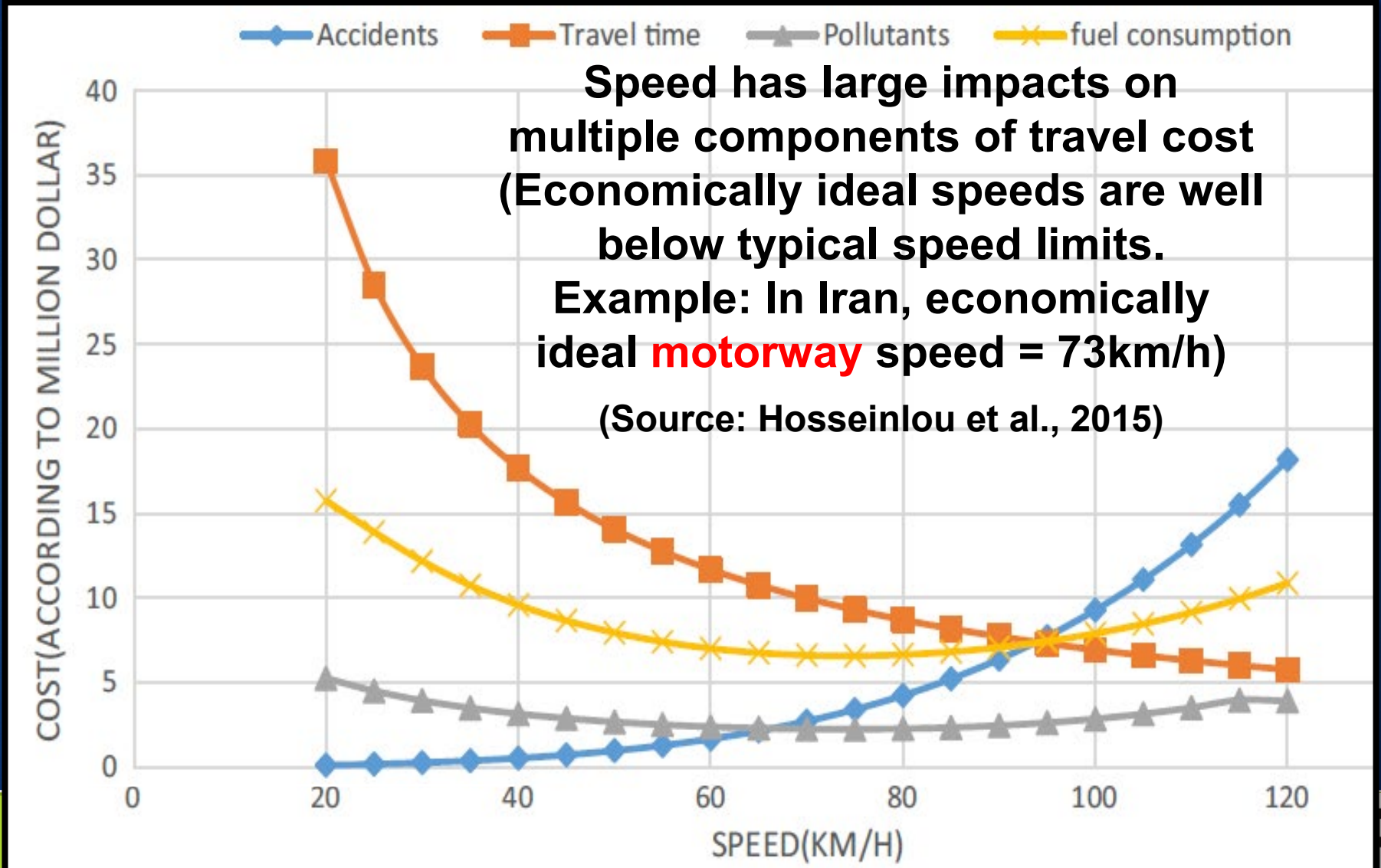
b. Commonsense Misjudgment of trading off lives and injuries for speed



Trading off death and injury for speed (economy) is an Illusion, as well as ethically challenged

(Source: Hosseinlou et al., 2015)

b. Commonsense Misjudgment of trading off lives and injuries for speed

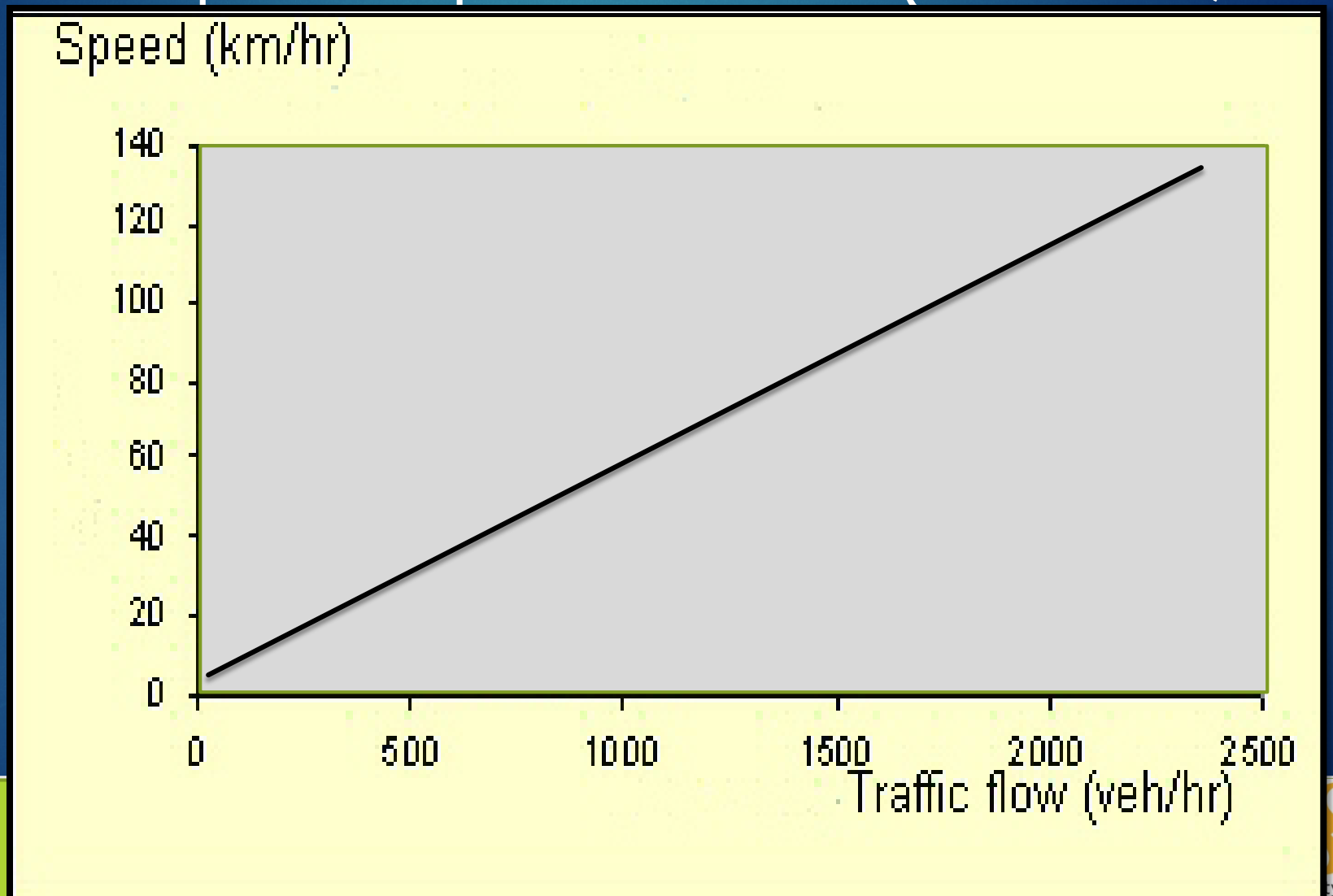


Speed has large impacts on multiple components of travel cost (Economically ideal speeds are well below typical speed limits. Example: In Iran, economically ideal motorway speed = 73km/h)

(Source: Hosseinlou et al., 2015)

c. Commonsense Misjudgment of speed and congestion

Real relationship between speed and traffic flow (Source: OECD, 2006)



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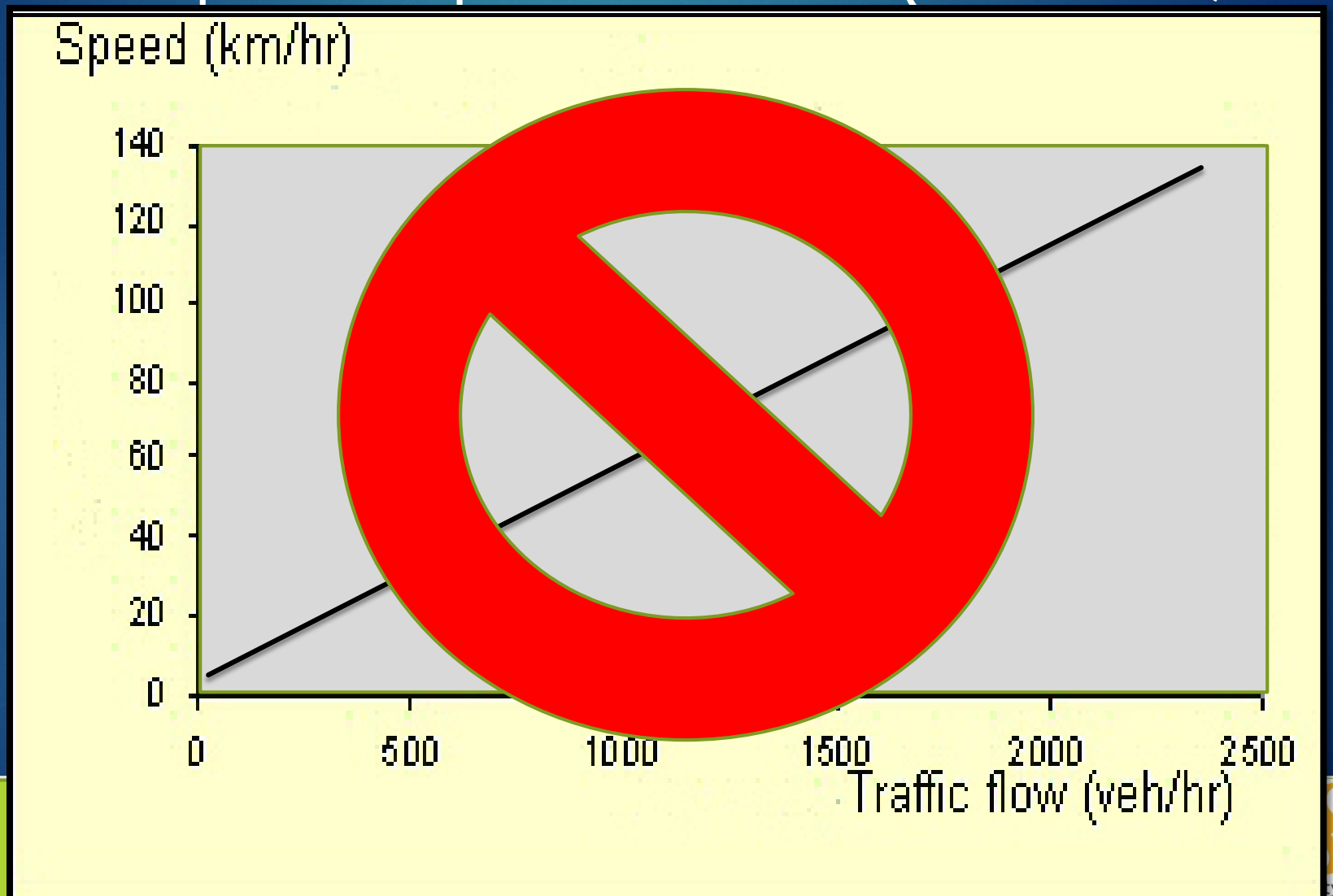
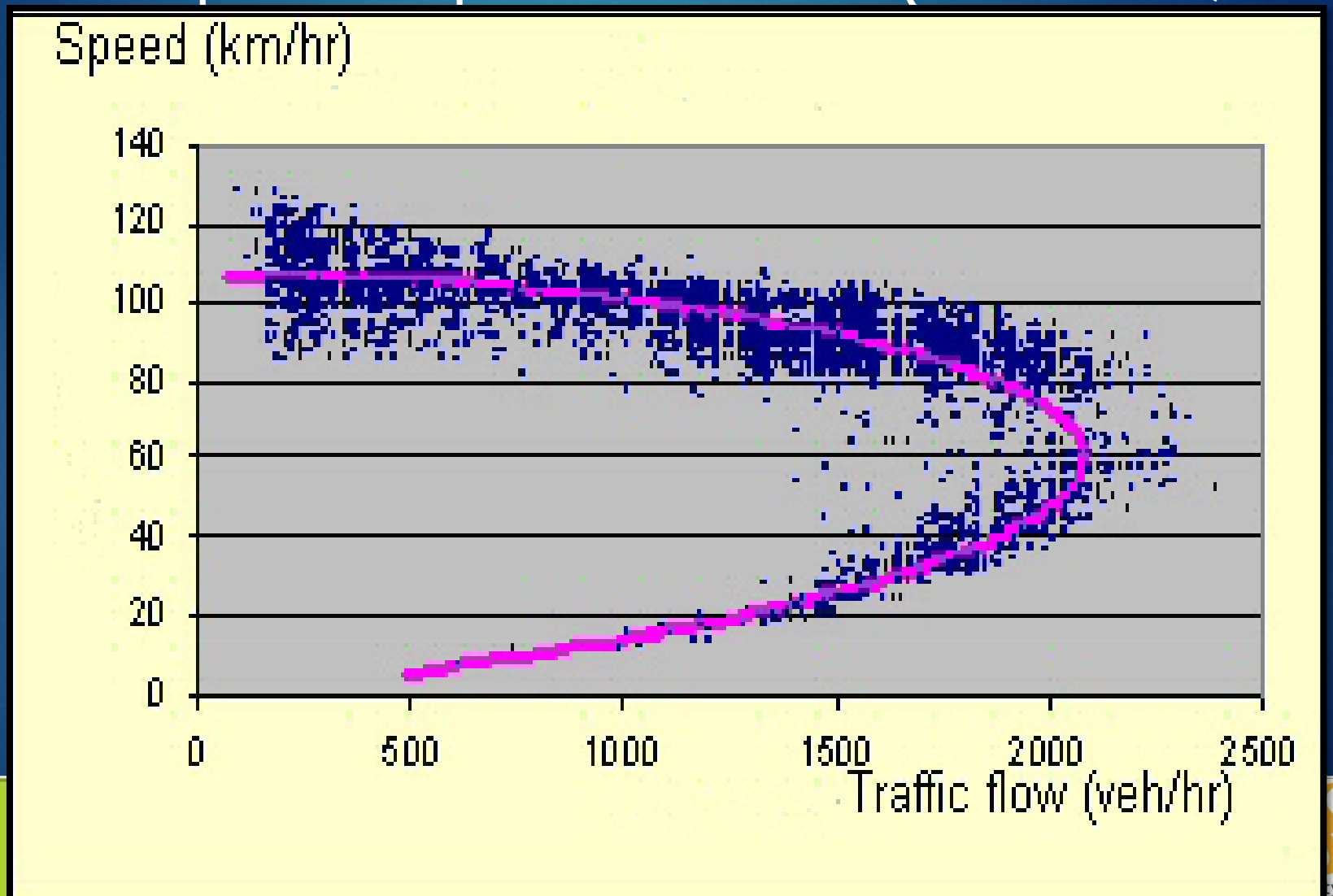


c. Evidence on speed and congestion

Real relationship between speed and traffic flow (Source: OECD, 2006)



d. Commonsense Misjudgment of differences in speed

MISTAKE:

10kmh difference at the start = 10kmh difference at the of stopping (not very important)

EVIDENCE

10kmh difference at the start (100kmh versus 110kmh)

Considering

- **judgement time**
- **reaction time**
- **braking deceleration**

= ? kmh difference at the end

Reality of Physics
Small differences at start = LARGE difference at end

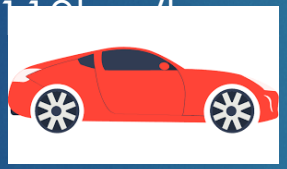
Judgement Time

Reaction Time

Stopping Distance

100 km/h

Just stops in time



Hits at 59km/h

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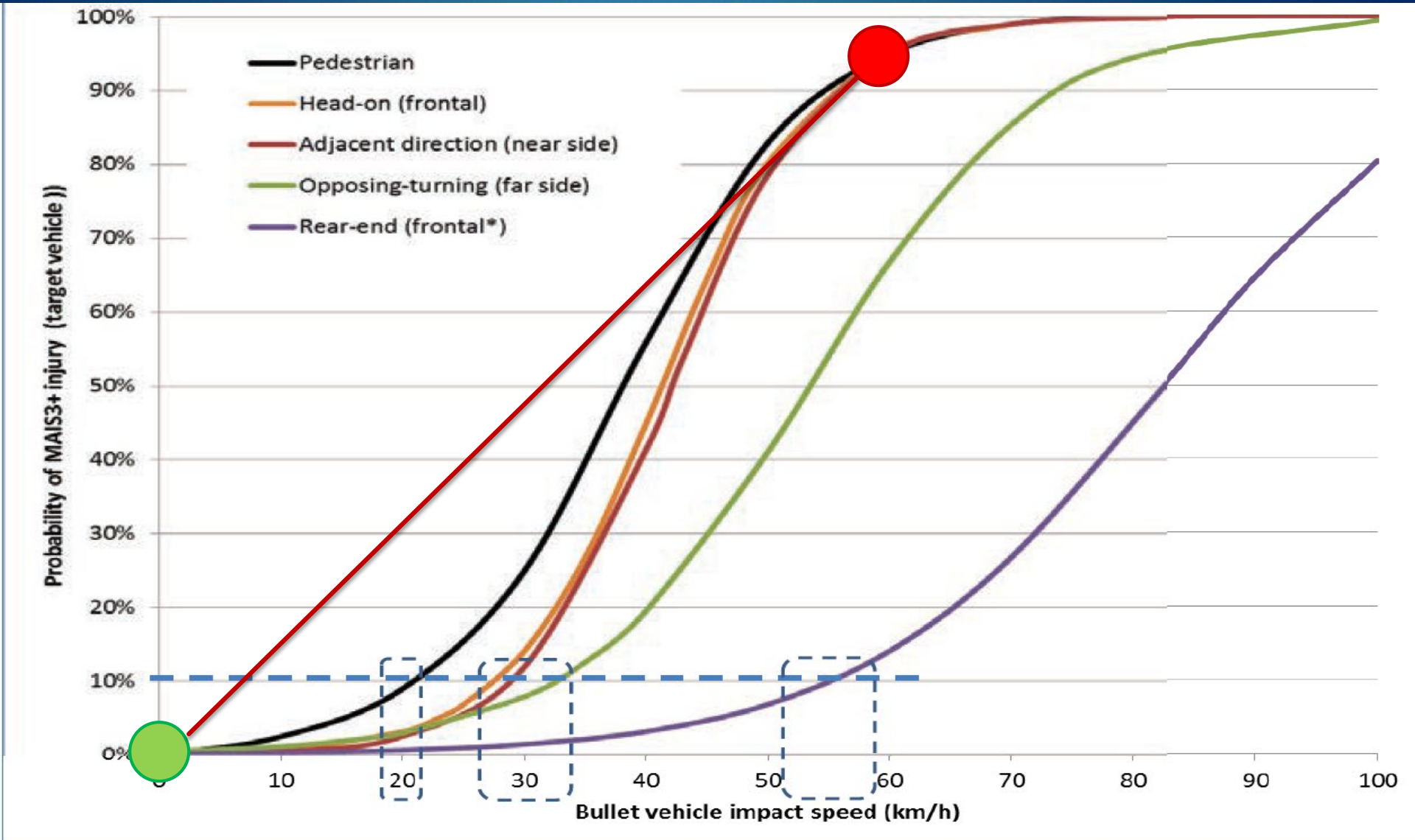
SPEED is critical for pedestrians:

Speed of impact and probability of Major Injury

Best available analysis (Jurewicz et al., 2016)



Mistake: People don't want speeds down, don't want speed humps ……

Community resistance limits actions

e. Errors in selection of interventions to improve road safety

Error: The best road safety intervention is teaching school children

Evidence: Minimal value (except two specific instances)

Error: Vehicle handling skills training saves crashes (including for school children)

Evidence: No it does not (it may increase crashes)

- **Cochrane Library Review fo school-based driver training**: "The results …. provide no evidence that driver education reduces road crash involvement, and suggest that it may lead to a modest but potentially important increase in the proportion of teenagers involved in traffic crashes."
- **O'Neill (2020) review**: "The consistent findings from these studies have been that high school driver education does not reduce crashes."

Underlying psychological error

Error: Road safety (in respect of road users) is a skill and knowledge problem

Reality: Road safety (in respect of road users) is a motivation problem

Desert Highway in Chad:
Road surface and designated purpose of the road are key in setting speed limits and managing safety

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Rest of my Photo: It's a shopping Centre

Take Home Messages & Recommendation's

- There is a massive body of relevant evidence
- The evidence is known to too few people
- The evidence base is often not used to guide road safety decisions

Recommendations:

1. **We need more research on how to get the evidence-base for road safety adopted**
2. **We need more advocacy to the community for what works**
3. **We need more education of decision makers on the expertise required**
4. **Road safety must be led by experts**

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Thank you for your attention