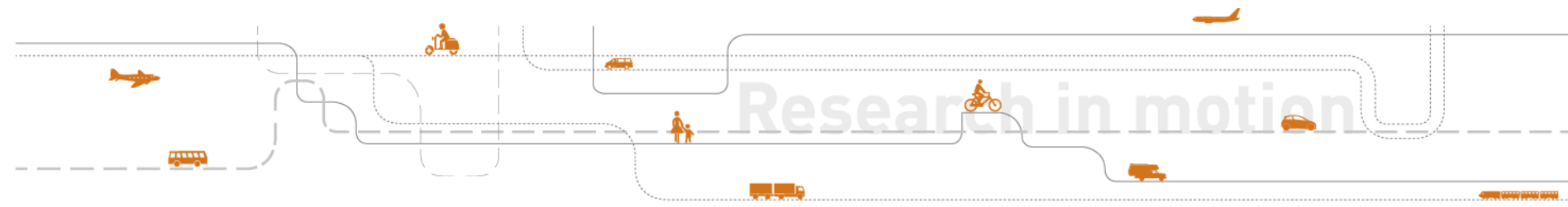


# Speed limit policy: The role of policy analysis

Vision Zero Conference 2020

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# Principles for setting speed limits

- Adapting speed limits to driver speed choice
  - *The 85% rule in the United States*
- Basing speed limits on road alignment
  - *Low speed on narrow and winding roads*
- Basing speed limits on roadside development
  - *The more houses, the lower the speed*
- Vision Zero speed limits
  - *Based on human injury tolerance (biomechanics)*
- Optimal speed limits
  - *Minimising the sum of all costs of traffic*

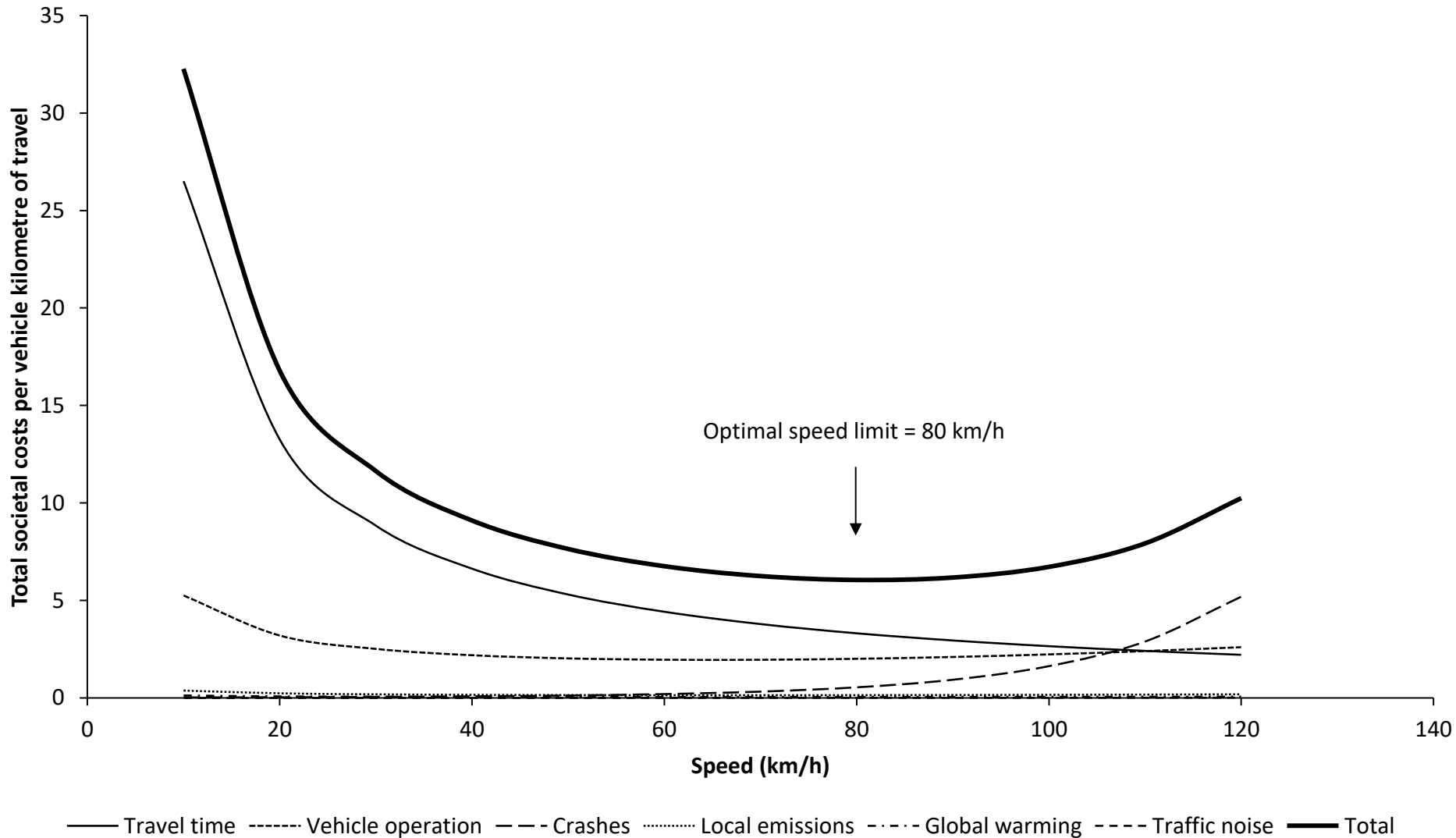
# Vision Zero speed limits

Potential crashes	Recommended speed limit
Crashes involving motor vehicles and pedestrians or cyclists are possible	30 km/h
Crashes involving side impacts between motor vehicles are possible	50 km/h
Frontal crashes between motor vehicles are possible	70 km/h
No crashes involving pedestrians, cyclists, side impacts or frontal impacts are possible	≥ 90 km/h

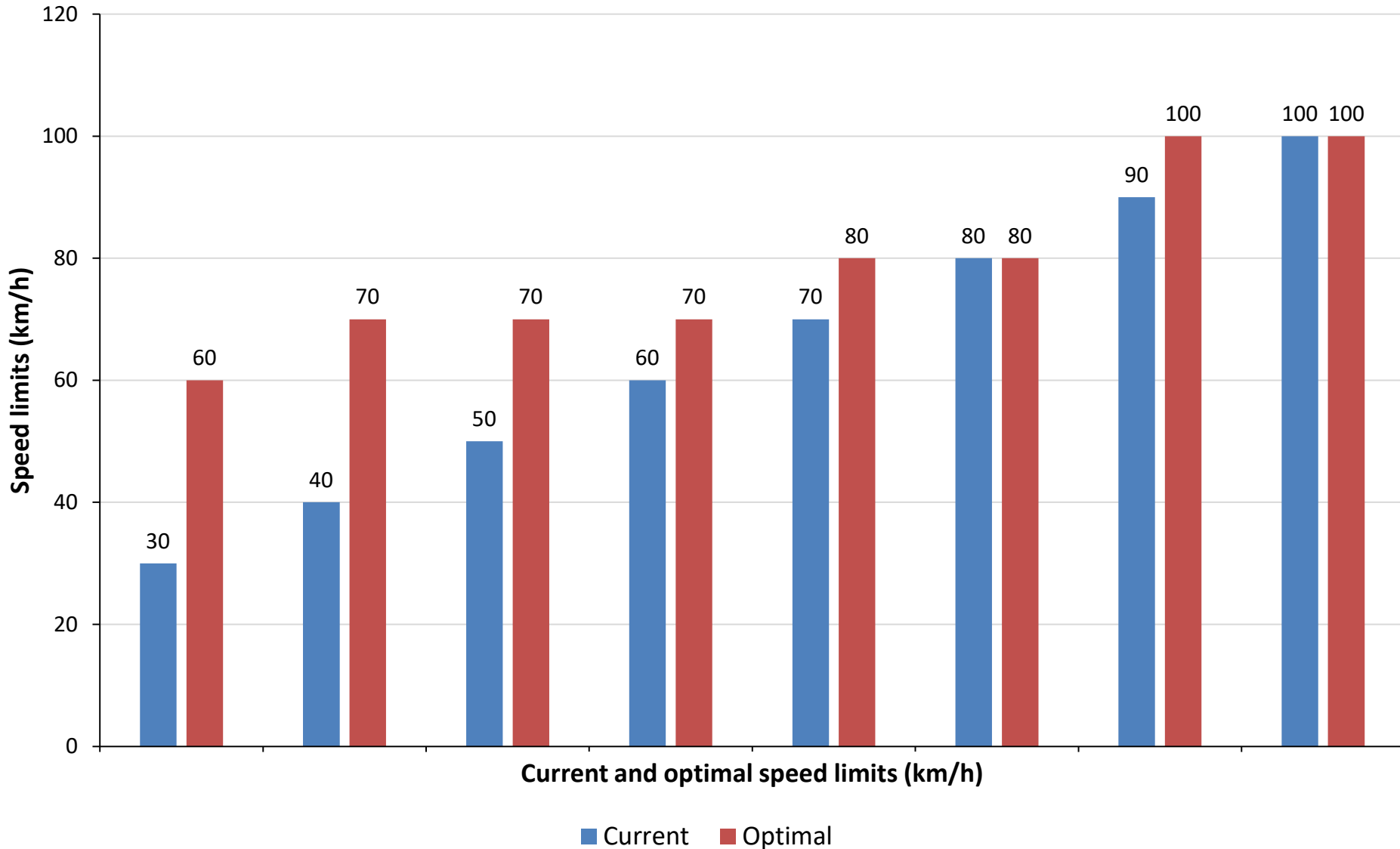
# Speed limit policy in practice

- Is based on a mixture of the different principles
- Not even countries that have adopted Vision Zero have fully implemented Vision Zero speed limits
- Can policy analysis, in particular an analysis of optimal speed limits, guide policy?
- A Norwegian analysis in 2017 will be used as case

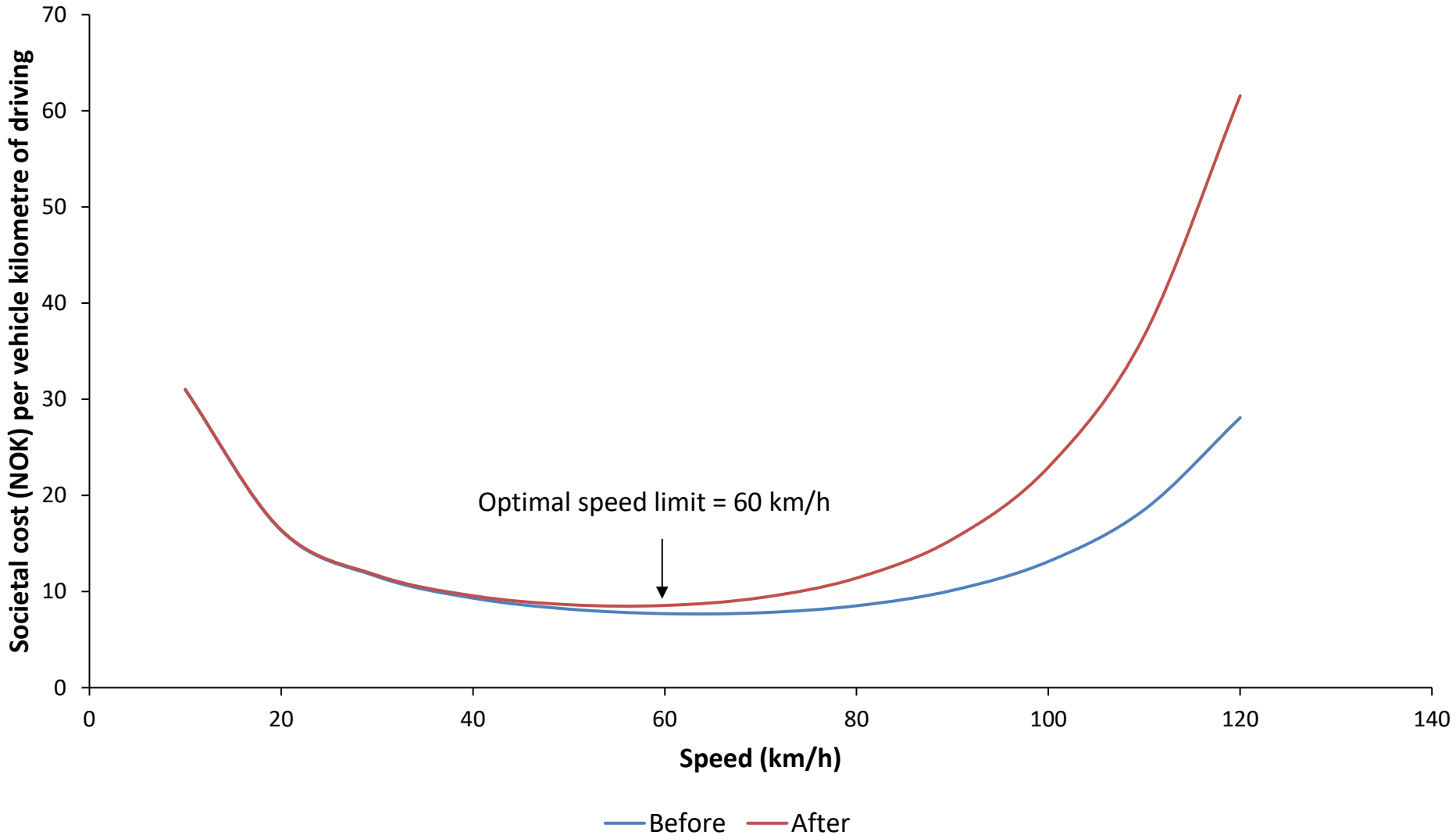
# Example of how the optimal speed limit is determined - roads in Norway with a current speed limit of 80 km/h



## Current and optimal speed limits in Norway (km/h)



# Societal costs of travel on roads with a speed limit of 30 km/h before and after introducing an optimal speed limit of 60 km/h



# The results are highly problematic

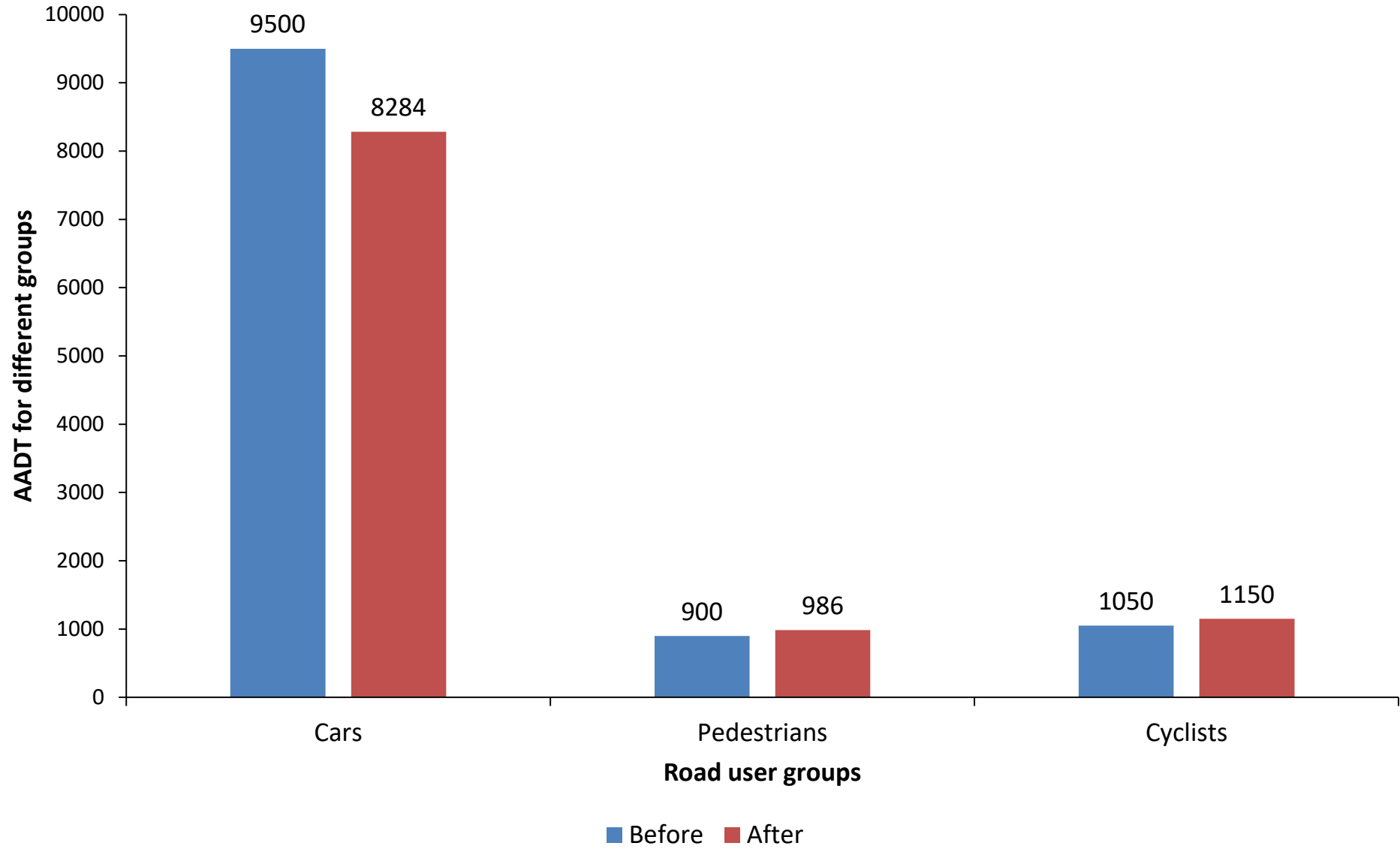
- Basically the message given by the results of the analysis of optimal speed limits is:
- ***Too few people get killed or injured in traffic and society would be better off by increasing the number of killed or injured road users***
- This cannot be right
- There must be something wrong with the analysis



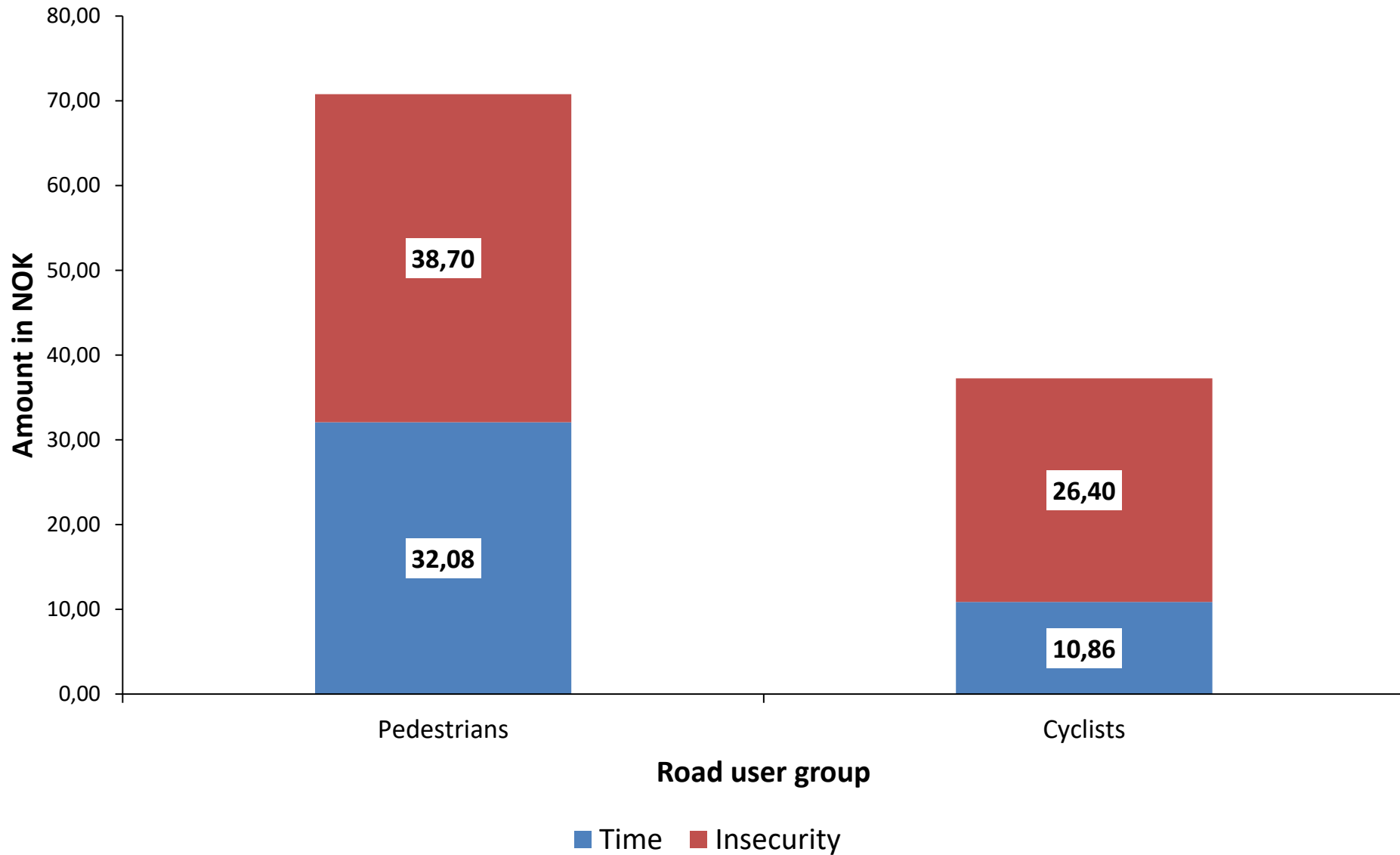
# What is wrong with the analysis?

- Traditional analyses of optimal speed limits include only the costs for motorists
- The impacts of speed on non-motorised travel are not included
- We know that high speeds in residential or urban areas discourage walking or cycling
- We also know that more walking or cycling is good for public health
- Analyses need to include non-motorised travel

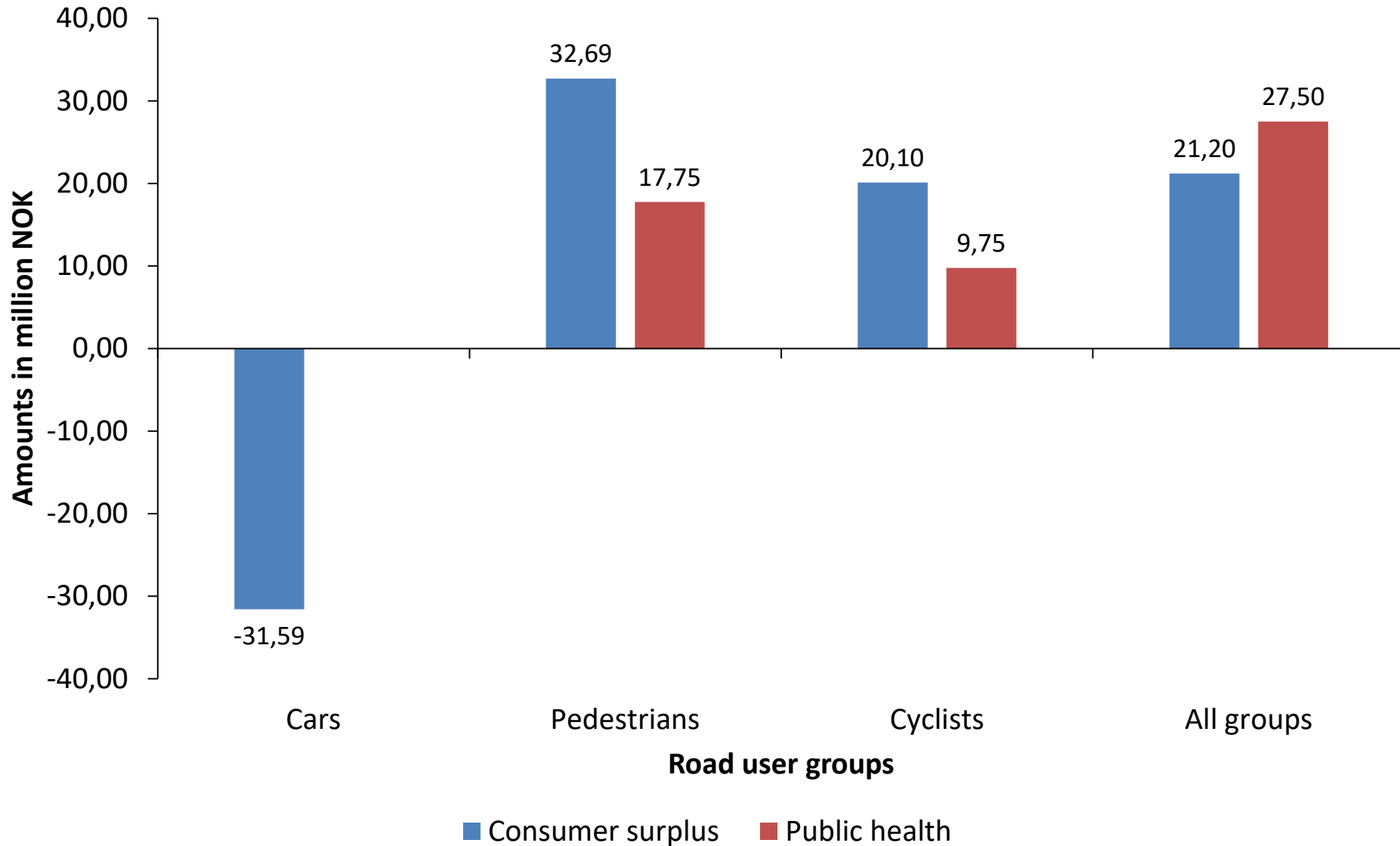
# Lowering speed limit from 50 to 30 km/h - five Swedish cities (Jonsson 2005)



## Generalised cost of travel per kilometre for pedestrians and cyclists



## A case where benefits are greater than costs



# Lessons learnt - 1

- Analyses of optimal speed limits should at least include impacts on all groups of road users
- The analysis should – at least in residential areas – also include impacts on livability in a wide sense, not just related to travel as such
- Including impacts on non-motorised travel and public health can make a large difference to the results of analysis
- Without = 60 km/h
- With = 30 km/h (if there is some walking or cycling)

# Lessons learnt - 2

- There is a sharp conflict of interest between motorists and non-motorised travel
- A low speed limit (30 km/h) gives no benefits to motorists – it is a pure loss
- A low speed limit (30 km/h) gives large benefits to non-motorised road users
  
- There is, nevertheless, widespread acceptance for a speed limit of 30 km/h in residential areas in Norway
- A speed limit of 30 km/h should become the norm in towns and cities

# For further details, see:

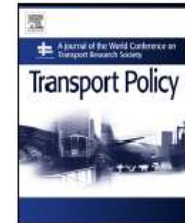
Transport Policy 68 (2018) 170–177



Contents lists available at [ScienceDirect](#)

## Transport Policy

journal homepage: [www.elsevier.com/locate/tranpol](http://www.elsevier.com/locate/tranpol)



## How can the notion of optimal speed limits best be applied in urban areas?

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### ARTICLE INFO

#### Keywords:

Optimal speed limits  
Economic analysis  
Public health  
Walking  
Cycling

### ABSTRACT

This paper reviews estimates of optimal speed limits made in the past 30 years. A tendency is seen for optimal speed limits to become higher. In the most recent estimates made for Norway, the optimal speed limit was in no case lower than 60 km/h. Adopting a speed limit of 60 km/h on roads in urban areas now having speed limits of 30, 40 or 50 km/h would most likely lead to an increase in the number of accidents and killed or injured road users. It is a political objective in Norway to reduce the number of killed or injured road users and to encourage more walking and cycling. Raising speed limits would conflict with both these objectives. This paper discusses if a re-interpretation of the notion of optimal speed limits can be applied to justify low speed limits in urban areas. Traditionally, analyses of optimal speed limits have included motorised travel only. It is shown by means of simple numerical examples, that by including the effects of motorised travel speed on walking and cycling, optimal speed limits tend to be lower than when only motorised travel is included.