

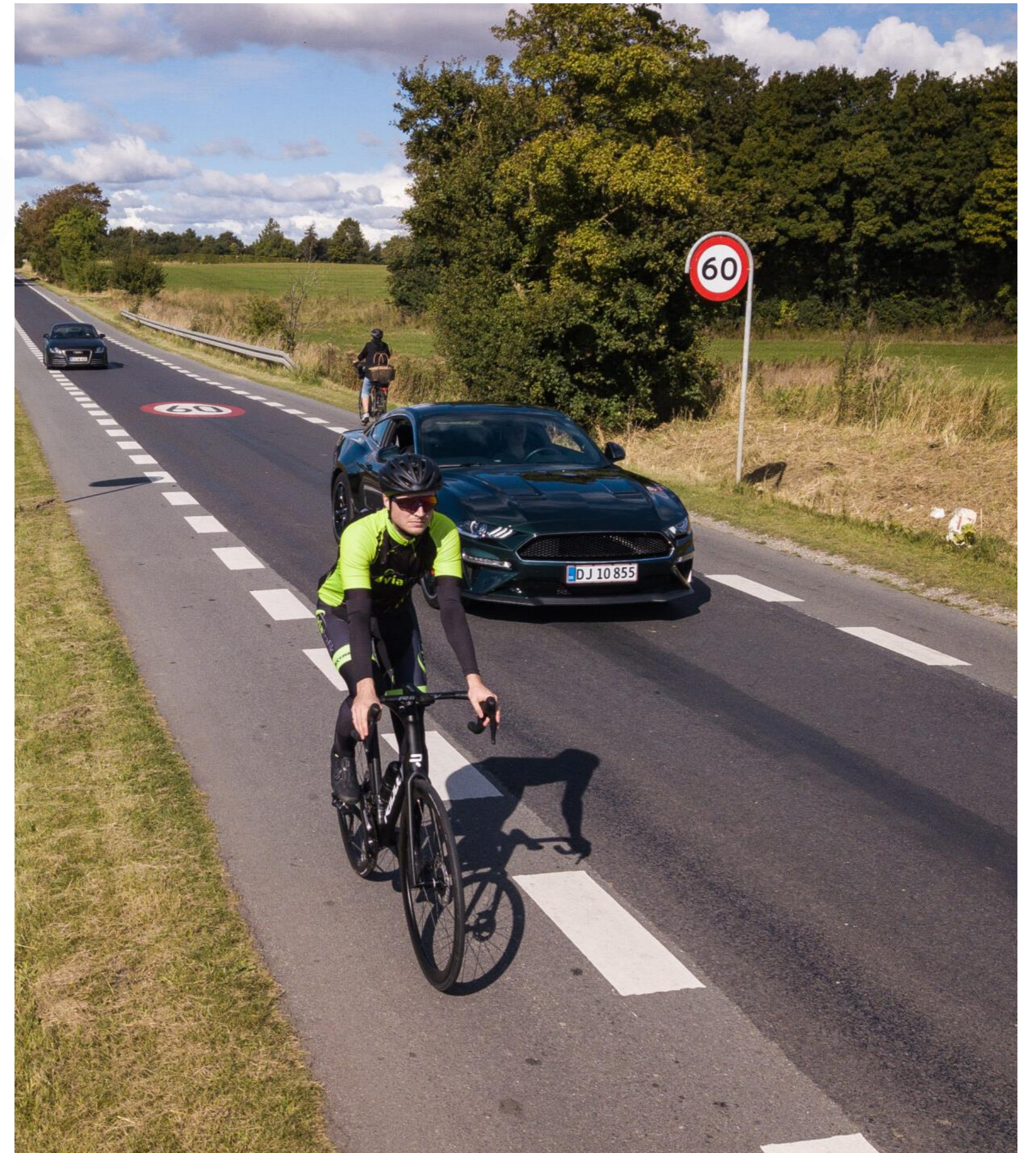
# 2-MINUS-1-ROADS

## A LITERATURE BASED REVIEW

### INTRODUCTION

What are 2-minus-1-roads?

- Road with cycle lanes
- No centre line
- Narrow two way motor lane
- Motor vehicles drive in motor lane and swerve on cycle lane when there is oncoming traffic



### WHAT WE DID

In this study, we analysed (1) how different countries design 2-minus-1-roads and (2) what effects these roads have on the objective and subjective safety of cyclists based on a literature review. In the long term, we aim to find out, whether 2-minus-1-roads could successfully be transferred to Germany.

### A FEW EXAMPLES

NETHERLANDS		1.70-2.20 m
		2.20-3.80 m
		3,000 MV/d
		30-60 km/h
DENMARK		0.90-1.50 m
		2.20-3.80 m
		3,000 MV/d
		50-60 km/h
USA		2.00 m (min. 1.20 m)
		3.00-5.50 m
		3,000 MV/d
		56 km/h (40 mph)
SWITZERLAND		min. 1.50 m
		min. 4.50 m
		5,000-15,000 MV/d
		n.a.

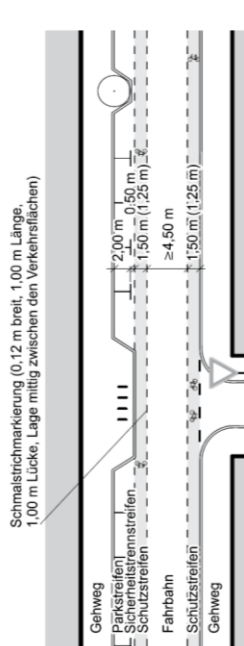
### THE RESULTS ARE MIXED

We conducted a literature review: 23 studies including 76 2-minus-1-roads from 8 countries + 2 studies with a nationwide scope.

Traffic accidents		Less traffic accidents. But: Only with simultaneous speed reduction
Subjective cycling safety		Increased: 7 x Unchanged: 1 x Decreased: 1 x
MV position		Mostly on bike lane: 16 x Mostly not on bike lane: 9 x
Lateral distances		Reduced: 11 x Unchanged: 2 x Increased: 3 x
MV speed		Reduced: 21 x Unchanged: 7 x Increased: 11 x But: Only small changes

### WHAT ABOUT GERMANY?

- Minimum width for motor lanes: 4.50 m  
→ 4.10 m in the state of Baden-Württemberg
- Bike lanes only in built-up areas  
→ Outside of built-up areas in Baden-Württemberg



### WHAT'S NEXT?

- Statistical analysis of studies
- Survey regarding acceptance and expected behaviour



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