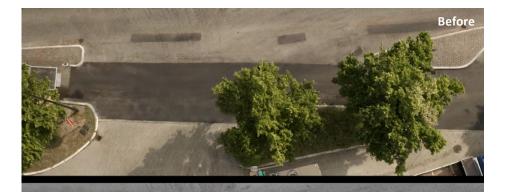






# How infrastructure development and road markings influence cycling habits



Geveko Markings – 2024

Anders Wellving

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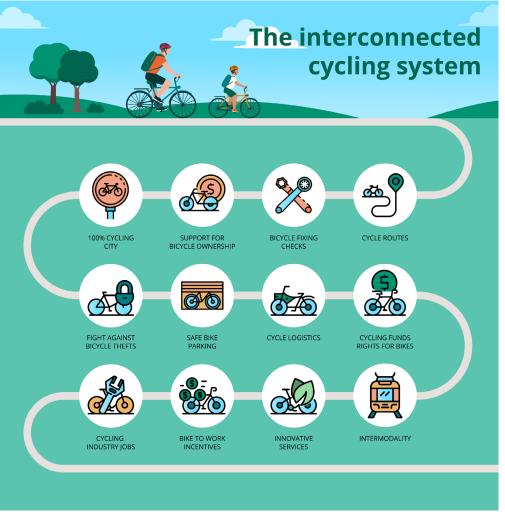
VVVV

After



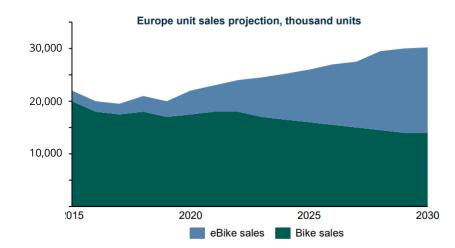
### Then and now







### Active e-mobility







- Vélostras in Strasbourg
- Bike network connecting the municipalities
- Way-finding system to guide users
- Horizontal signage along the routes and at decision points

- Big increase of cargo bikes.
- 50% of deliveries in European cities could be made with cargo bikes.
- Takes up more space.
- Weight >100 kg.



### Studies and political ambition supports development

**European cycling declaration with the aim of doubling the number of kilometers cycled in Europe by 2030** *"Significantly increase investments in safe, separated cycling infrastructure and integrate cycling into urban frameworks"* 

#### **CIE cycling manifesto:**

Double cycling infrastructure in Europe by 2030: the growth of cycling hinges upon the availability of safe, coherent, separate, well-connected infrastructure, backed by parking options

**The Green deal** Europe becoming a climate-neutral continent by 2050

"If it's built, cyclists will come"



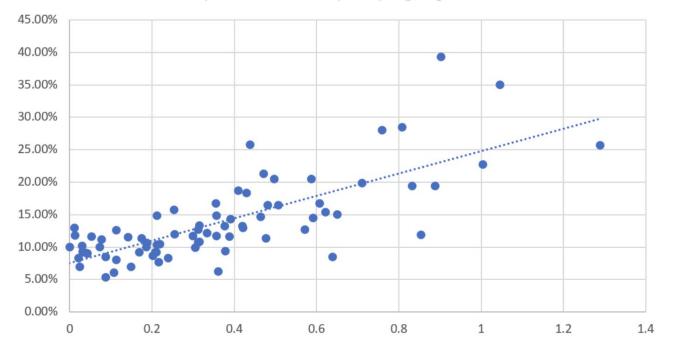
# Quality of life in European cities and cycling

### More cycling infrastructure is linked to higher cycling levels

Correlation between cycling infrastructure (ratio of the main road network covered by separated infrastructure) and cycling usage levels

#### **Cycling shares**

(in % of respondents that use cycling as (one of their) main modes of transport on a typical day).



#### Ratio of cycling infrastructure compared to the length of the main road network.

0 means no cycling infrastructure at all, values higher than 1 are also possible if there is a lot of cycling infrastructure not along roads (for example in forests or parks).

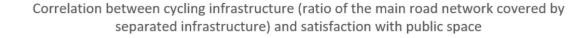


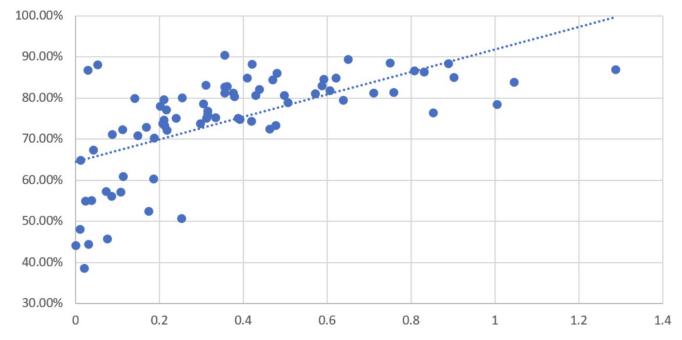


# Quality of life in European cities and cycling

### More cycling is linked to higher satisfaction of public spaces

**% share** of respondents that are rather satisfied or very satisfied with public spaces in their cities.





#### Ratio of cycling infrastructure compared to the length of the main road network.

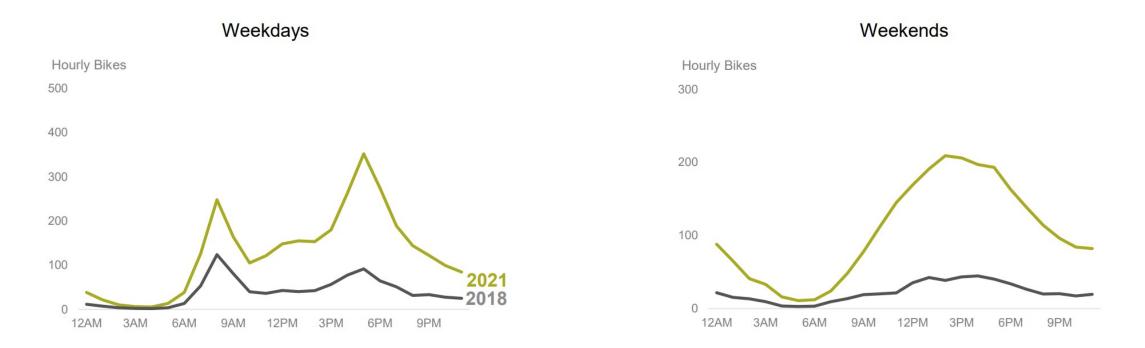
0 means no cycling infrastructure at all, values higher than 1 are also possible if there is a lot of cycling infrastructure not along roads (for example in forests or parks).





## Transformation of infrastructure gives results

#### Before / After Case study: the Transformation of Saint-Denis Street in Montreal, Canada



Investing in bike infrastructure has a significant impact on the growth of biking as a mode of transportation. It serves as a major driver in promoting the use of bicycles for commuting and other purposes.





## Cycling safety and road markings

### Navigate, separate and create traffic flow







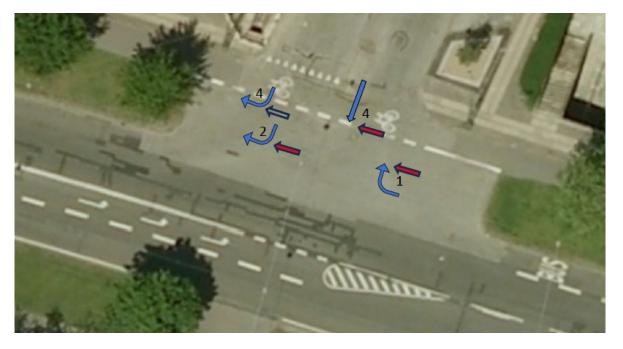
# Lack of road markings create danger Maintenance is crucial!





### Example of safety improvement Peder LykkesVej-Tingvej/ Copenhagen

#### Before



*Junction before improvement (photo 2010):* 7 injury accidents and 4 material damage accidents in 6 years 2007-2012 with cyclists and turning cars After



*After improvement (photo 2017):* continuous sidewalk and improved markings give narrow design which slows down turning cars: 1 material accident of this type in 6 years (2014-2019)



## Guiding cyclists to avoid hazards

- Many single bicycle crashes can be related to infrastructure design and cyclists not being able to see curbs, pathway shoulders, and obstacles.
- Independent studies show that pavement markings help making cycling safer.







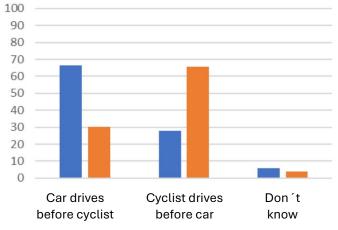
### Behaviour at cycling crossings? Swedish example

#### Who has right of way? - This study shows :

- Difficult for cyclists to understand that they approach a cycle crossing.
- Because road signs marking the cycle crossing are mostly only shown towards motorized traffic.
- Road markings signalizing to give way as well as traffic calming measures are positioned on the roadway.
- This makes it hard for cyclists to know which regulations apply and, as a consequence, to comply with them.
- The study shows that this unclarity leads to traffic conflict and risk of accidents.

### RESPONDED BEHAVIOUR

#### CYCLISTS / DRIVERS



#### Cyclist's perspectiv Drivers perspective



Swedish rules for cycle crossings in define that cyclists have right of way, but have to consider the distance and speed of approaching vehicles. In cyle passages cars have right of way. But difficult to telle the differance between the two variants.



Example for the US. Solid marking means cyclists have right of way. Intermittant means cars have right of way.



### Cyclists' attention sharing

- Cyclist's' attention is directed towards the road surface
- Surface markings are rarely vandalized
- Surface markings pose no risk of collision/injury







### Cycling Industries Europe

# CIE Consumer Research 8 Markets

**8.319 respondents from:** France / Germany / Italy / Netherlands / Poland / Spain / Sweden / UK



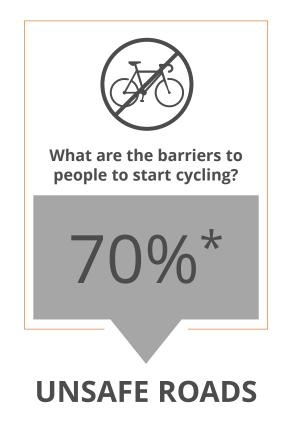
### Consumer study 2023

- Overall, a key barrier for non-cyclists is feeling that roads are unsafe for cyclists.
- Among the reasons asked, this is the most common for people to not take up cycling.
- This shows that a range of initiatives are needed to increase safety for vulnerable road users of all ages and abilities – and that road safety measures for cyclists should be key in any infrastructure planning.

### Four types of cyclists



- 1. No way, no how
- 2. Interested, but concerned
- 3. Enthused and confident
- 4. Strong and fearless







### Consumer study 2023

- Real and perceived safety is key for encouraging cycling and measures that make the infrastructure direct, logical, and inclusive (to people of all ages and abilities).
- A majority of non-cyclists would be encouraged to cycle with more protected lanes.
- This suggests that alternatives and options should be evaluated in terms of visual separation and retro-fit solutions when/where physical barriers or separation is not economically or practically feasible. Such measures have a high impact on cycling behaviour.



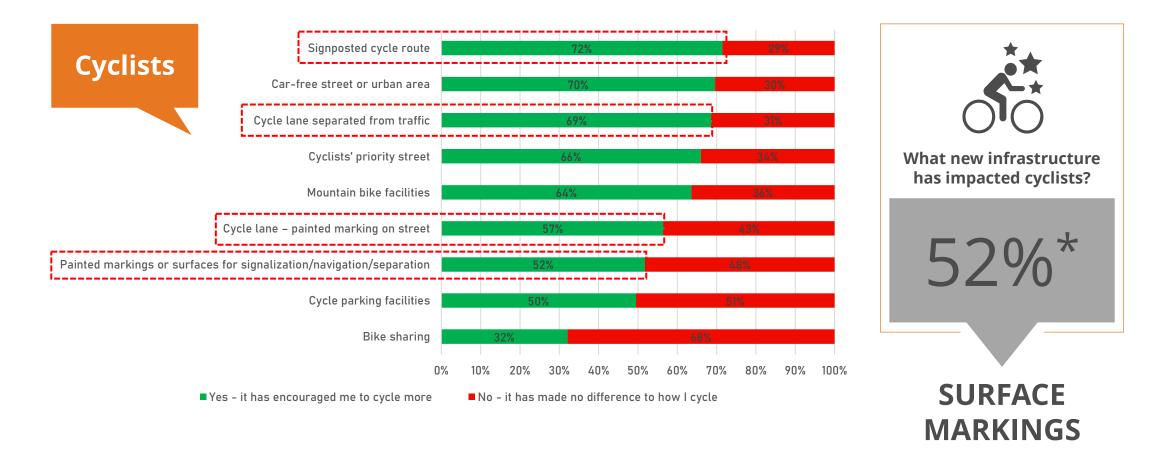






# Infrastructure | Impacted cycling behaviour

Q55. Have any of these infrastructure/facilities impacted the way that you cycle?

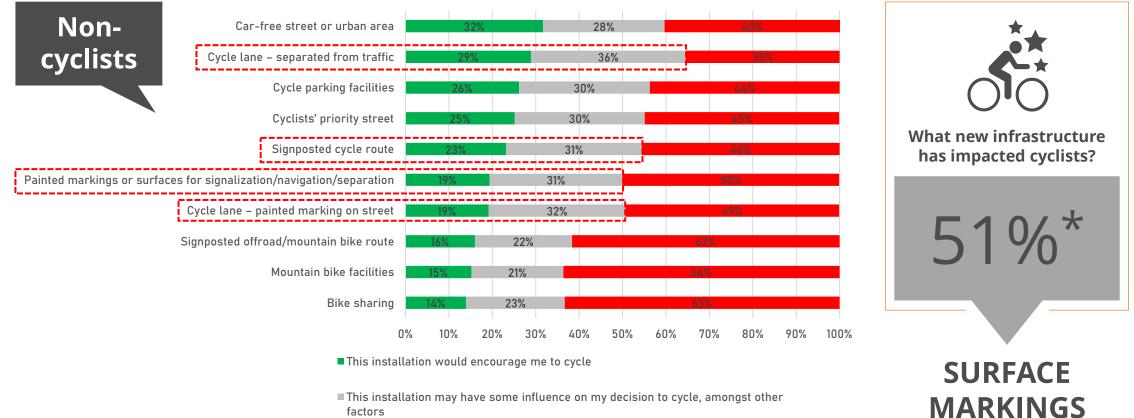






# Infrastructure | Impacted cycling behaviour

Q55. To what extent would installing the following cycling infrastructure/facilities encourage you to cycle?



factors



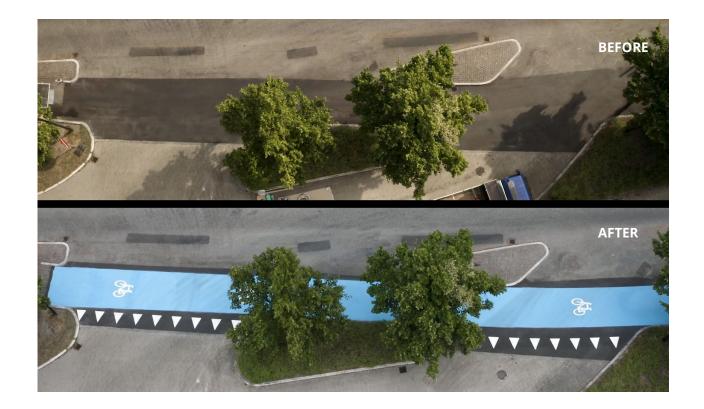


### Why road markings?

# "If it's built, cyclists will come"but it has to be built in the right way!

Road markings are can have both a direct and perceived impact on cycling safety, offering:

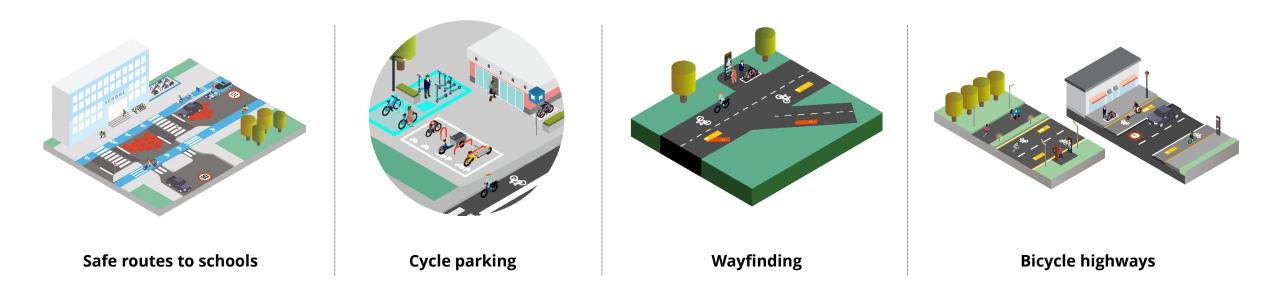
- flexibility
- work/space efficiency
- cost efficiency
- encourage cycling





### Safe and logic infrastructure is important

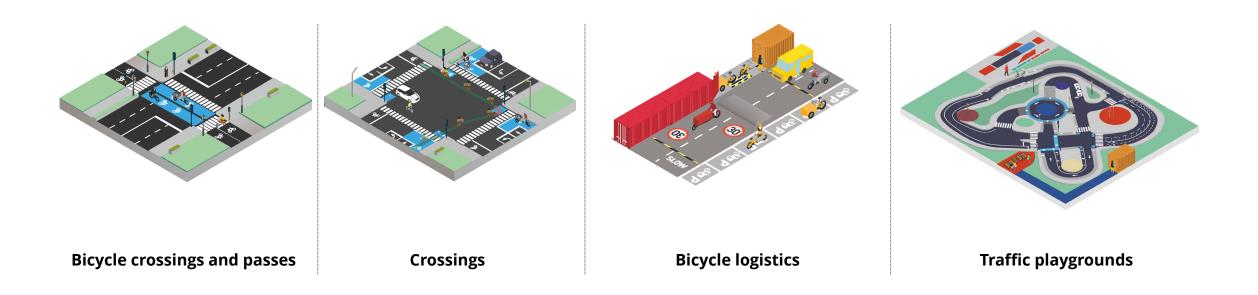
### **Examples:**





### Safe and logic infrastructure is important

### **Examples:**





### YEARS OF PASSION

### CELEBRATING THE JOURNEY

Presented by Anders Wellving awellving@gevekomarkings.com