

Collisions and near accidents between pedestrians and cyclists

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Aim and method

■ Research aims

- Investigate the characteristics of collisions and near accidents between pedestrians and cyclists
- Estimate the frequency of near accidents
- Investigate cyclists' and pedestrians' sense of safety in traffic

■ Method

- Online survey, directed to Finnish cities with over 100,000 population

Finnish traffic context

- Typical cyclist/pedestrian paths in Finnish urban areas
 - Pedestrian paths (cycling forbidden for those over the age of 12)
 - Shared paths where pedestrians and cyclists share space
 - Shared paths where pedestrians and cyclists are separated side by side



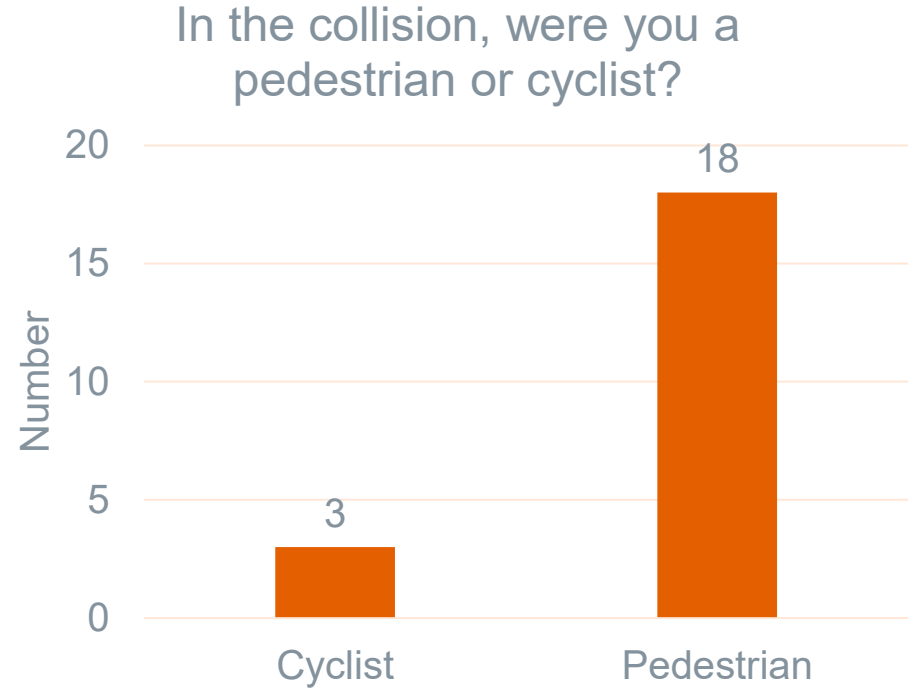
(Finnish Transport Infrastructure Agency, 2020)

Characteristics of respondents

- **Sample size:** 1,046
- **Gender split:** 51.8% male and 48.2% female
- **Age distribution:** 15–17 (0.5%), 18–24 (1.9 %), 25–34 (9.7 %), 35–49 (20.3 %), 50–64 (37.9 %), 65–79 (29.8 %)
- **Road user type:** 1,043 regular pedestrians and 649 regular cyclists
 - All but three cyclist respondents also provided answers from a pedestrian perspective

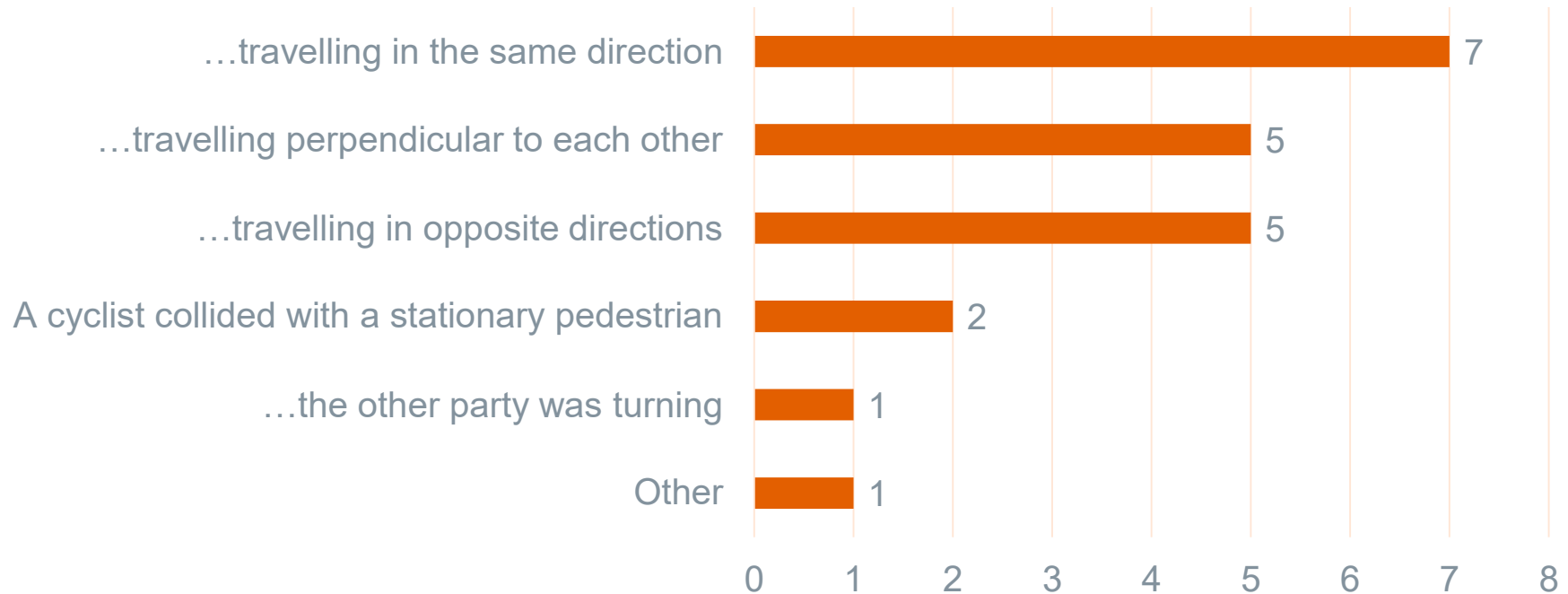
Number of collisions

- Experienced by respondents in the previous three years
- **Detailed accounts of 21 collisions**

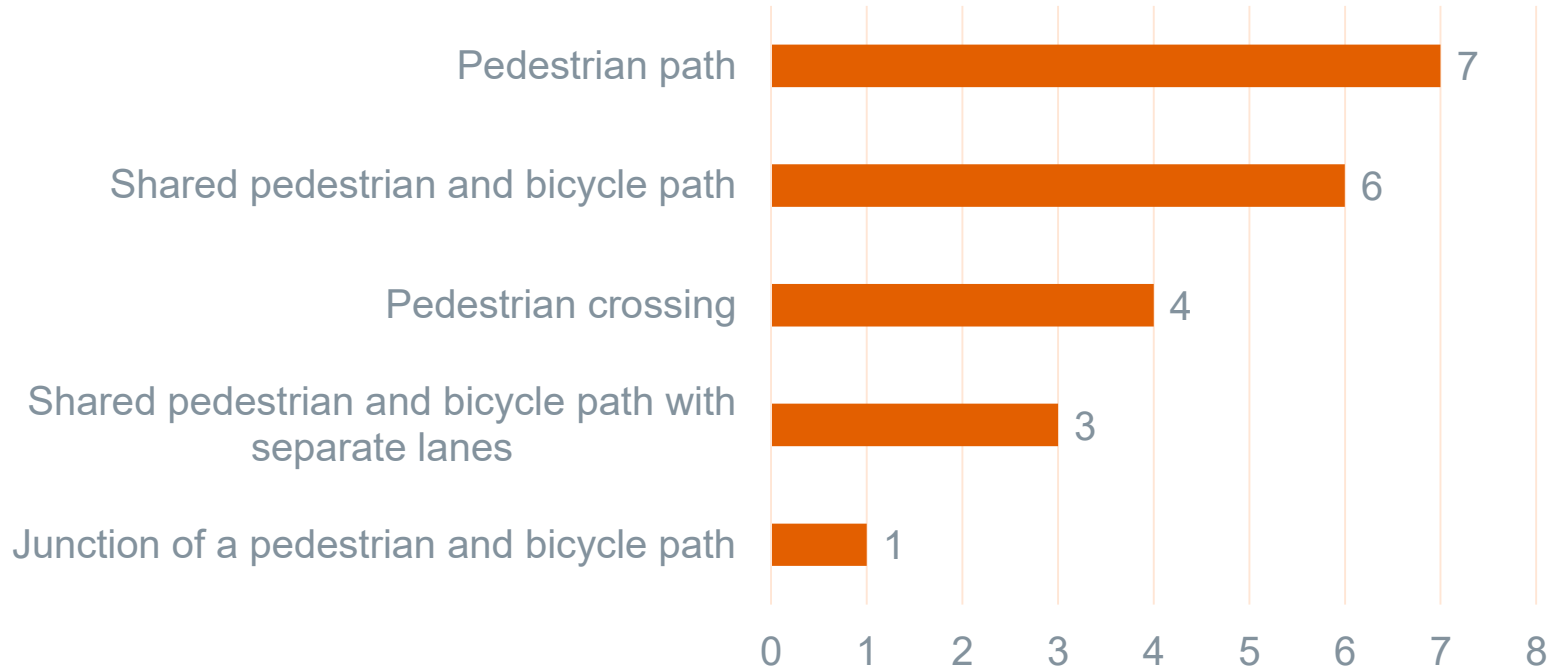


Collision event descriptions

A cyclist and pedestrian collided when...

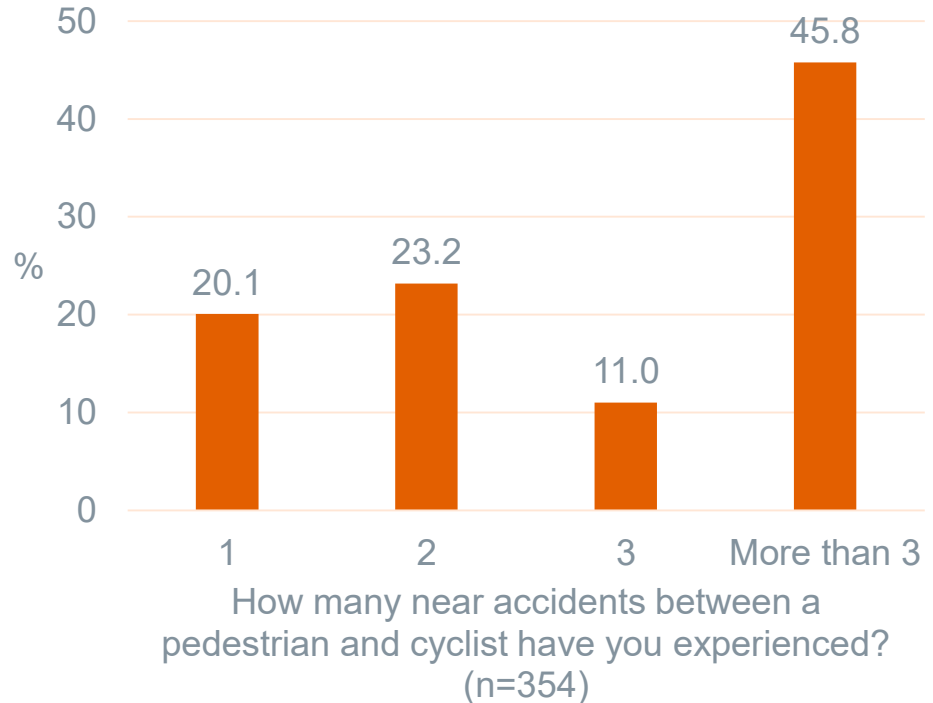


Collision road environments



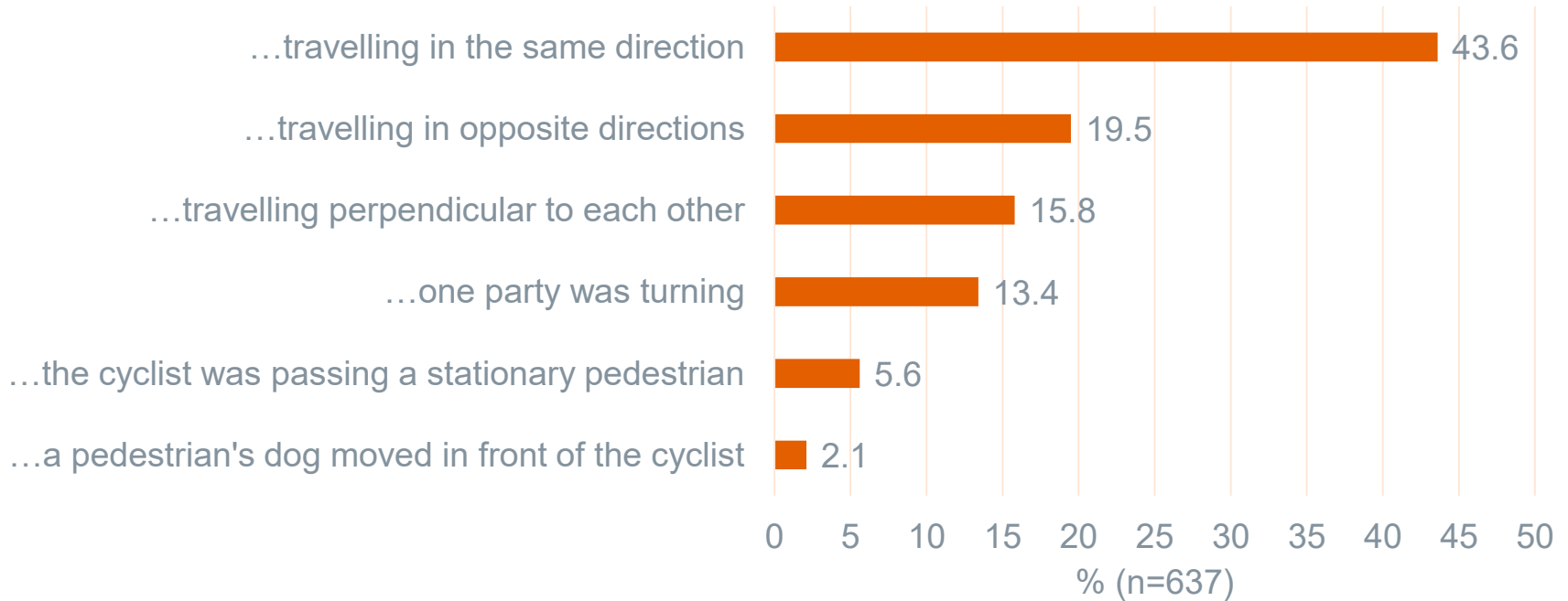
Number of near accidents

- Experienced by respondents in the previous three years
- Roughly a third of respondents had experienced a near accident
 - Detailed accounts of 637 near accidents
 - Approx. 50 times more frequent than collisions
- Near accident involvement:
 - 1/3 as a cyclist
 - 2/3 as a pedestrian

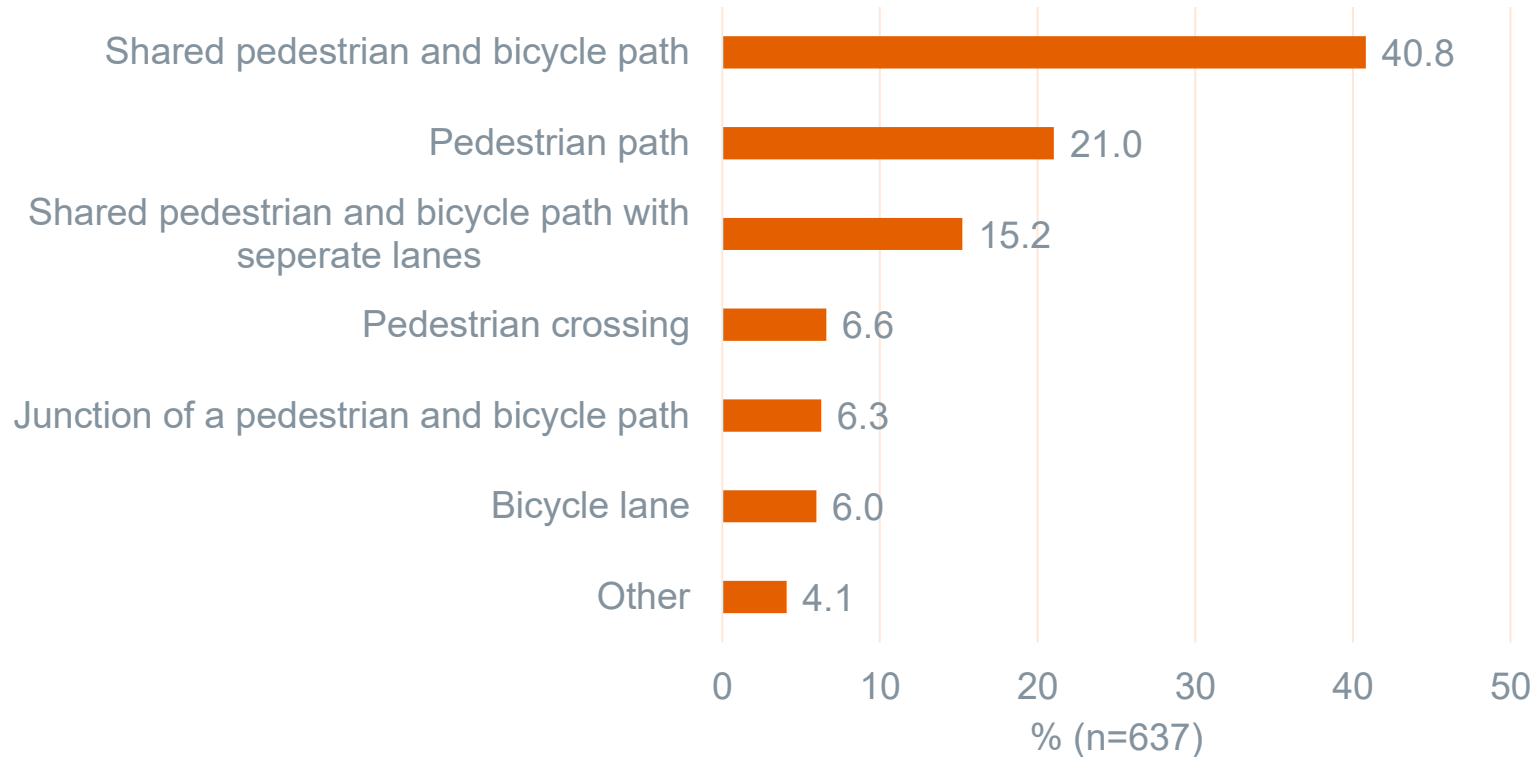


Near accident event descriptions

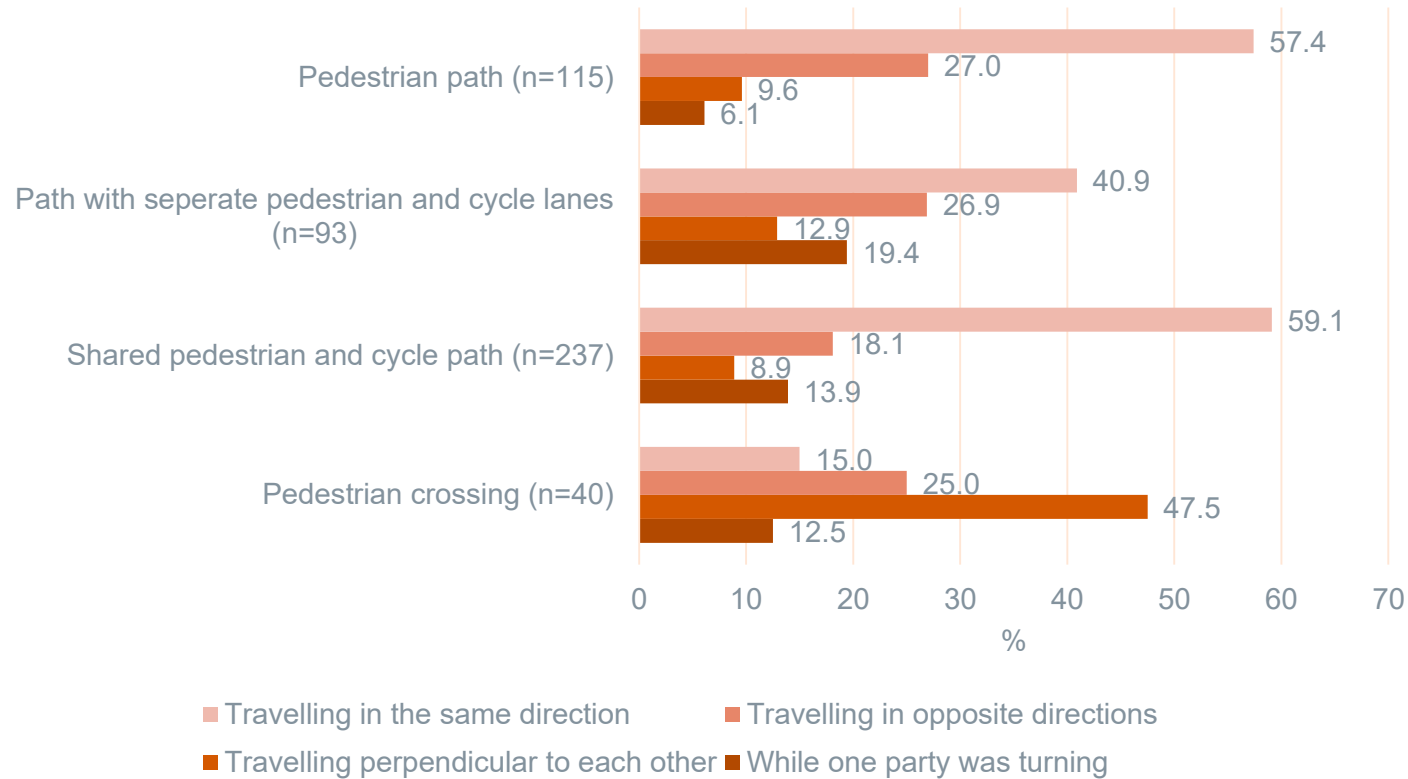
A pedestrian and cyclist almost collided when...



Near accident road environments



Near accident road environments



Factors contributing to near accidents

- **Directed at pedestrian behaviour (n=562):**
 - Unexpected manoeuvre (33.5%)
 - Observation error (27.4%)
 - Mobile phone use (15.8%)

- **Directed at cyclist behaviour (n=988):**
 - Excessive speed (38.4%)
 - Observation error (18.7%)
 - Rule violation (14.9%)

Sense of safety

- Both pedestrians and cyclists felt safer and were more willing to use shared pedestrian and bicycle paths **with** separate lanes than shared paths **without** separate lanes
- Cyclists generally agreed that other cyclists were considerate toward them, but felt that pedestrians were not as considerate
- Pedestrians agreed that other pedestrians were considerate toward each other, but strongly disagreed that cyclists were considerate toward them
- Responses from older respondents and those given from a pedestrian perspective associated with a lower sense of safety

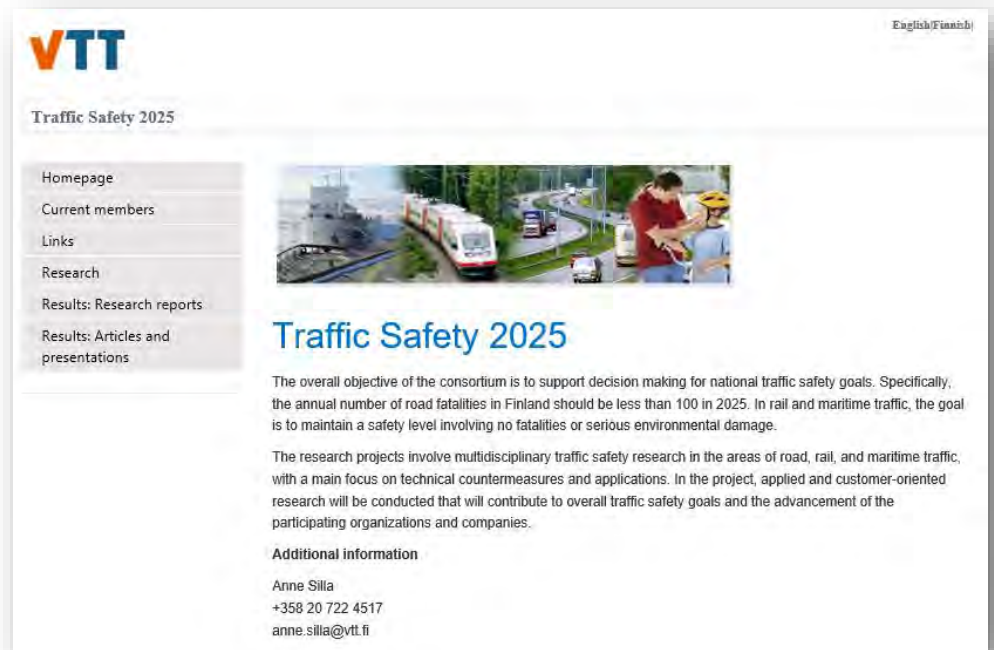
Conclusions

- Near accidents between pedestrians and cyclists are very common, but collisions are rare
 - Near accidents roughly 50 times more frequent than collisions
- Shared pedestrian and bicycle paths are problematic from a safety perspective
 - Space separation may reduce near accidents and collisions
 - Respondents considered space separation safer and preferable to space sharing

Funding

'Traffic Safety 2025'
consortium project

<https://www.vtt.fi/sites/tl2025/en>



English/Finnish

VTT

Traffic Safety 2025

- Homepage
- Current members
- Links
- Research
- Results: Research reports
- Results: Articles and presentations

Traffic Safety 2025

The overall objective of the consortium is to support decision making for national traffic safety goals. Specifically, the annual number of road fatalities in Finland should be less than 100 in 2025. In rail and maritime traffic, the goal is to maintain a safety level involving no fatalities or serious environmental damage.

The research projects involve multidisciplinary traffic safety research in the areas of road, rail, and maritime traffic, with a main focus on technical countermeasures and applications. In the project, applied and customer-oriented research will be conducted that will contribute to overall traffic safety goals and the advancement of the participating organizations and companies.

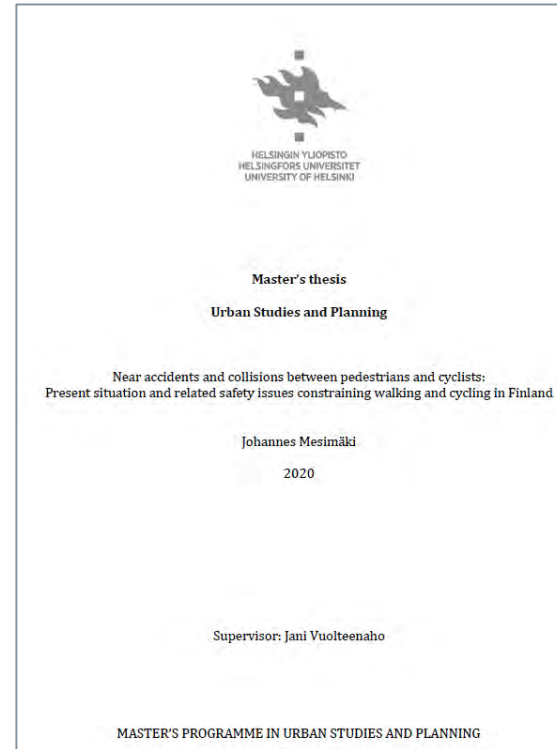
Additional information

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Master's thesis version

English version of the research
with broader research aims and
analyses

<https://helda.helsinki.fi/handle/10138/326272>



A large, repeating geometric pattern in various shades of blue (light, medium, and dark) covers the left half of the slide. The pattern consists of interlocking, rounded shapes that create a 3D effect of overlapping planes.

Thank you!

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