

A street scene with a car and a cyclist. A silver Bentley Continental is driving towards the camera on a city street. To the left, a cyclist is riding in the same direction. The background shows buildings and a pedestrian crossing sign. The image is overlaid with a semi-transparent white box containing text.

SHARING DIFFERENT WORLDS

An Attention Perspective on Different Road User Types

Katja Kircher, VTI

MIXED TRAFFIC

Is the same environment really the same?



driver view

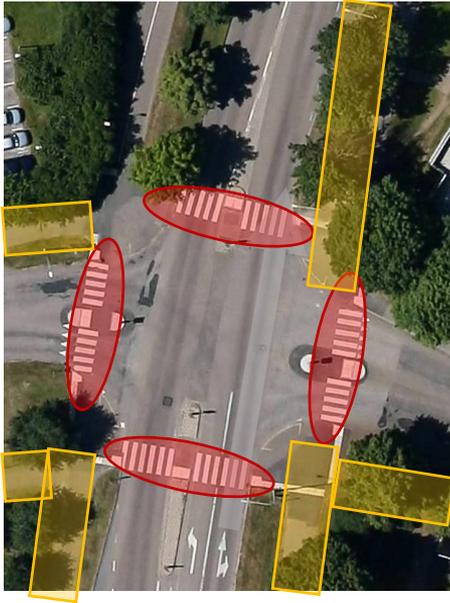


cyclist view



”SEPARATED” TRAFFIC

Are the different road user groups really that separated?



driver view



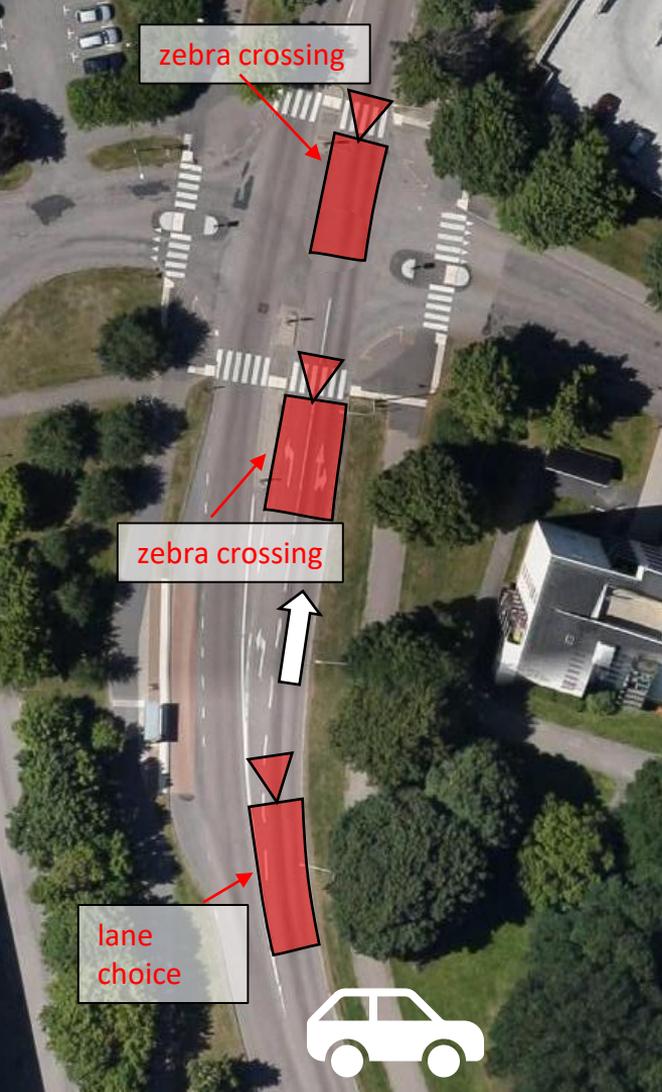
cyclist view



DIFFERENT WORLDS ...

- maintenance
 - surface quality
 - connectedness
 - “straightness”
 - efficiency
 - forgivingness
 - logic
 - ...
- mass
 - normal speed
 - within-group variation
 - ...
-
- and also requirements on attention





(MINIMUM) REQUIREMENTS ON ATTENTION

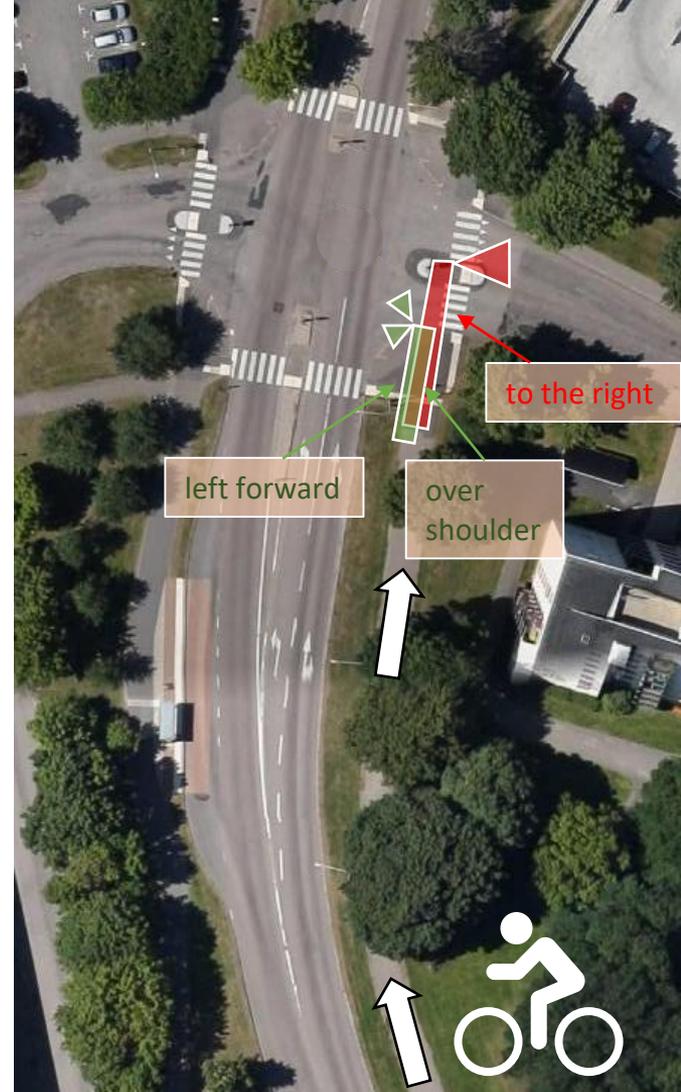
necessary vs. useful

explicit or implicit

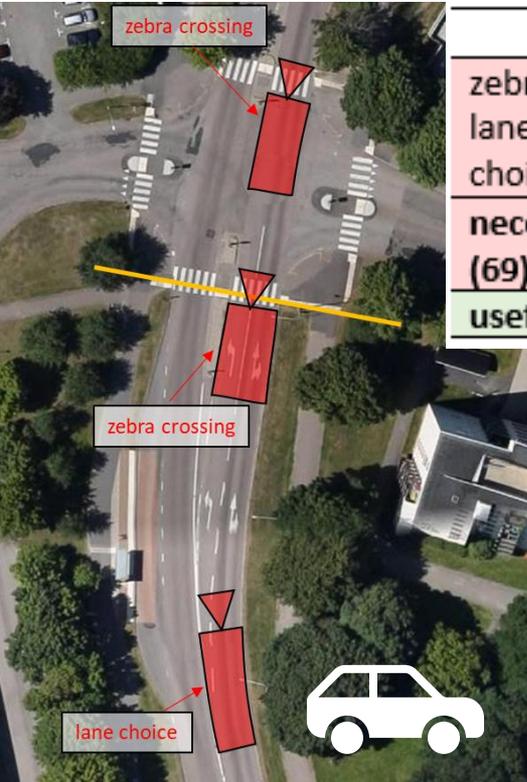
size

overlapping or not

sampling directions

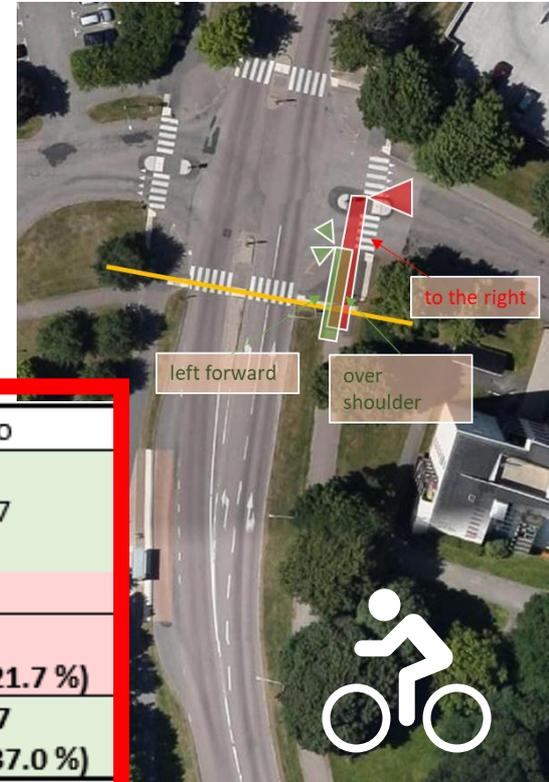


REQUIREMENTS ON ATTENTION

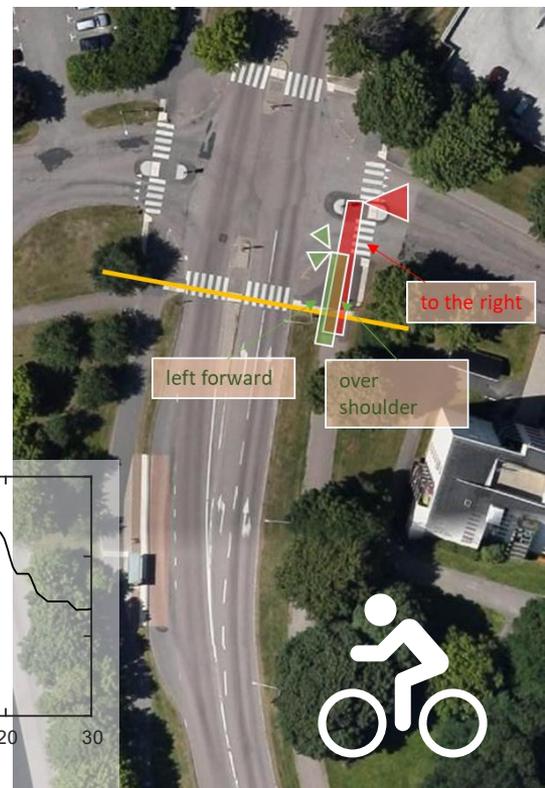
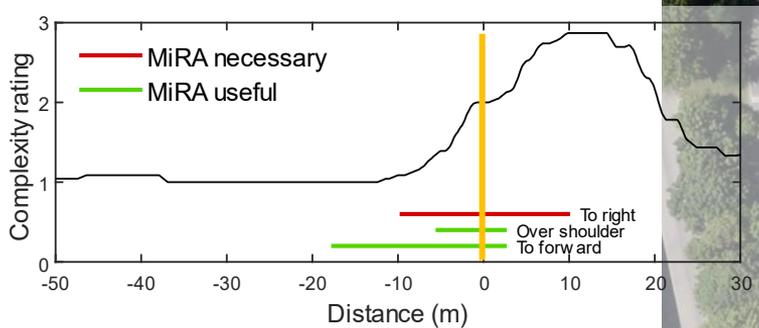
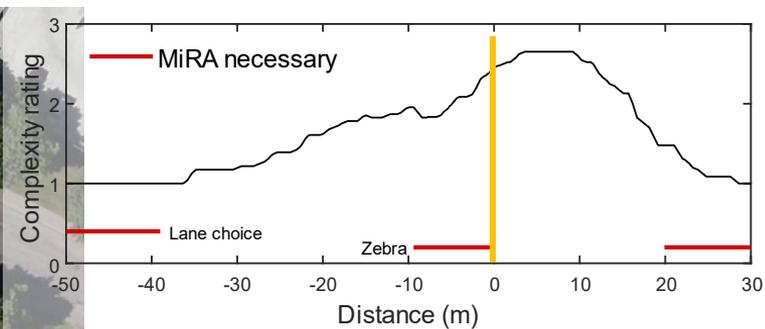
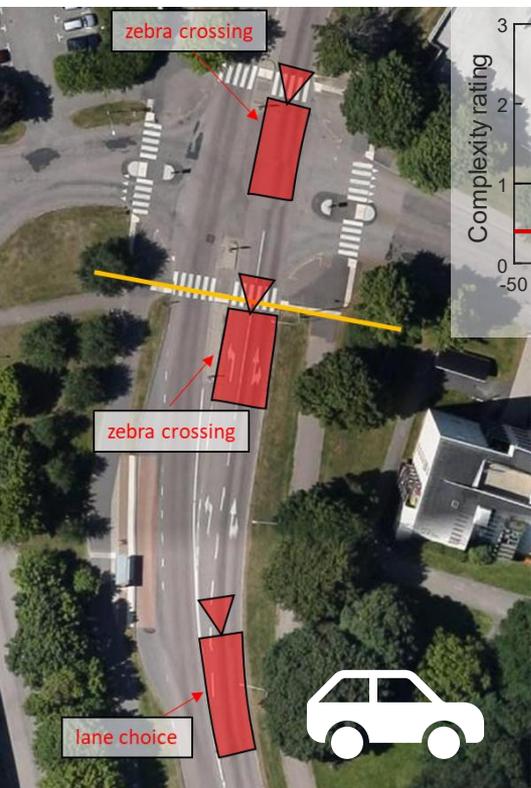


	yes	unclear	no
zebra	14	32	0
lane choice	23	0	0
necessary	37	32	0
(69)	(53.6 %)	(46.4 %)	
useful (0)	0	0	0

	yes	unclear	no
to forward	1	22	0
over shoulder	6	0	17
to right	18	0	5
necessary	18	0	5
(23)	(78.3 %)		(21.7 %)
useful (46)	7	22	17
	(15.2 %)	(47.8 %)	(37.0 %)

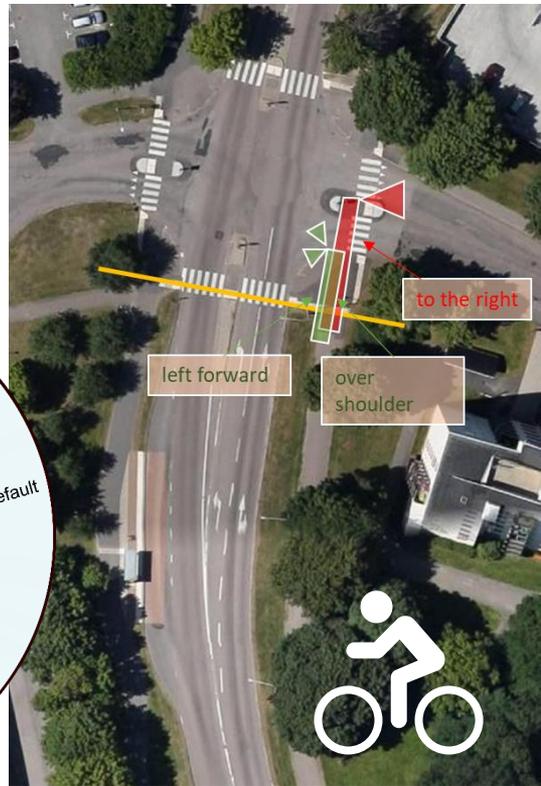
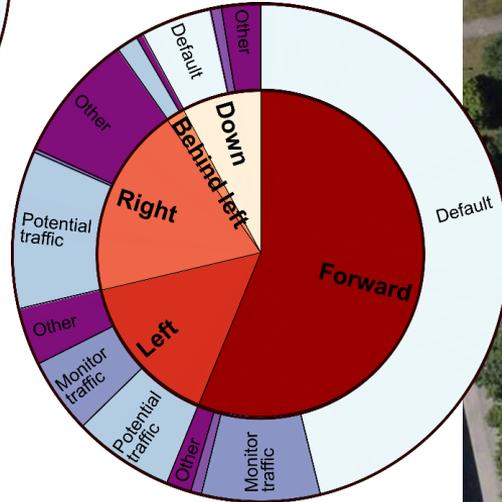
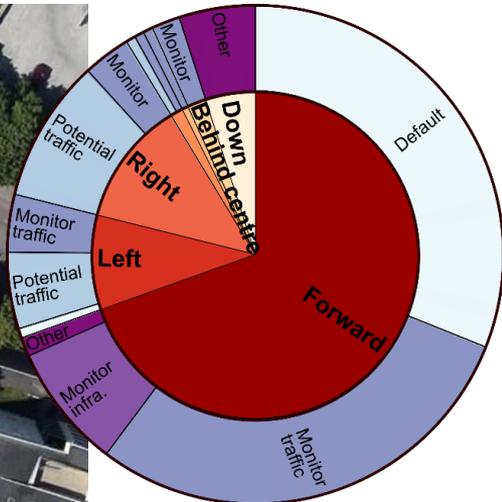
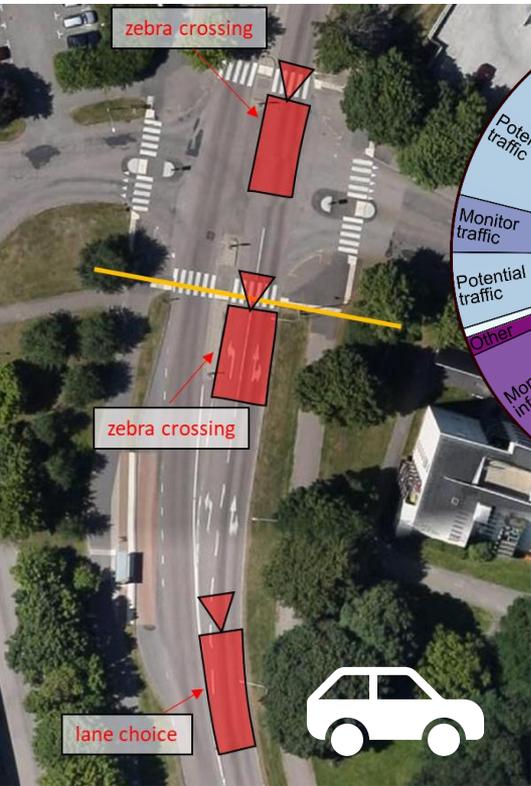


COMPLEXITY



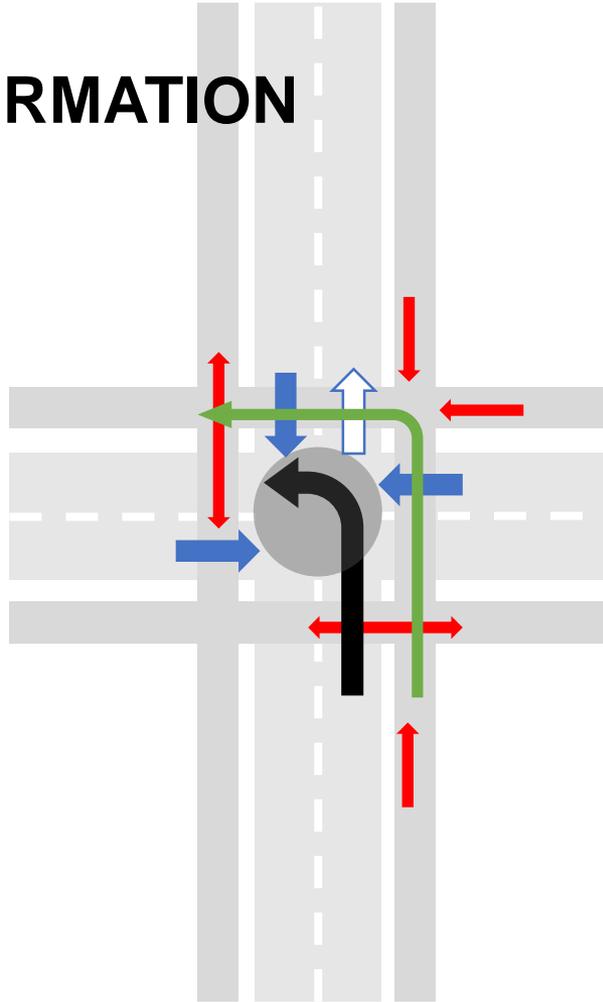
GLANCE DISTRIBUTION

- Forward
- Left
- Default
- Potential traffic
- Right
- Monitor traffic
- Behind left
- Monitor infrastructure
- Behind right
- Other
- Down
- Other



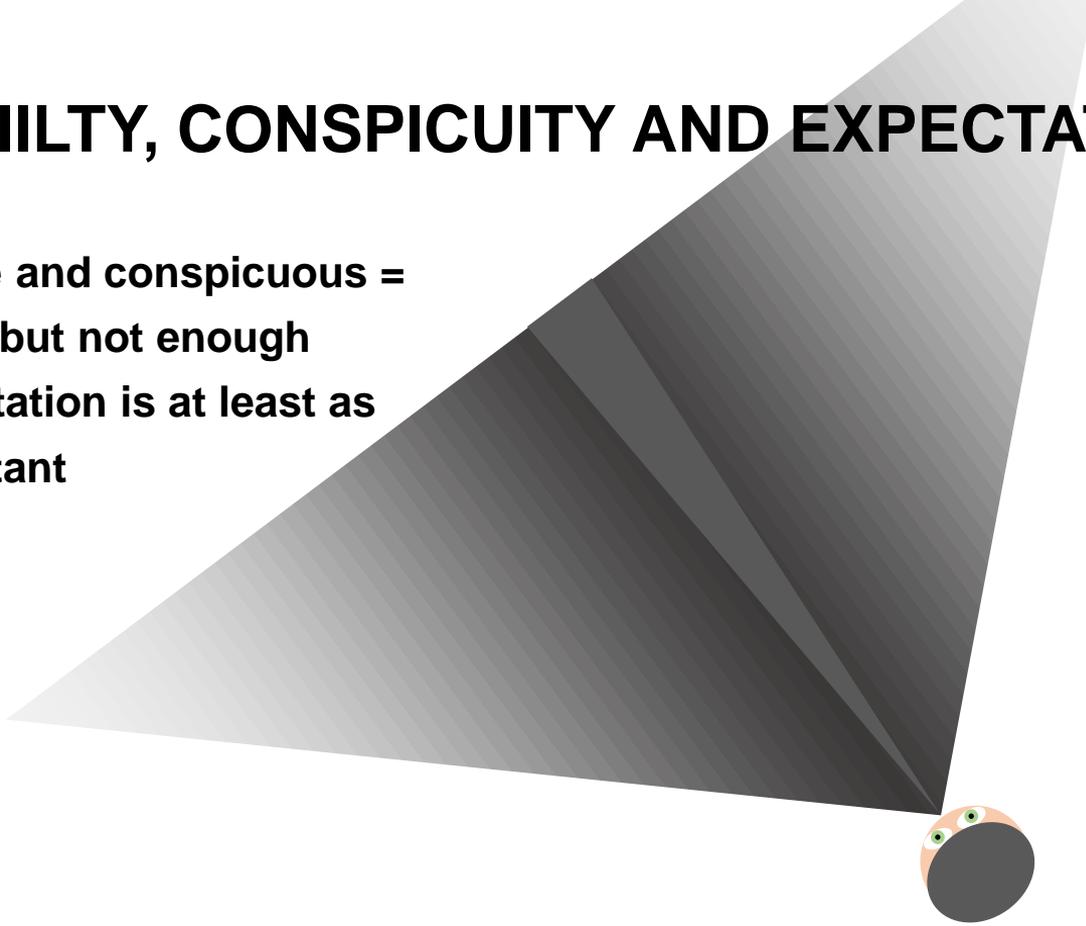
RELEVANT INFORMATION

- requirements on drivers
- requirements on cyclists
- positioning and peripheral vision



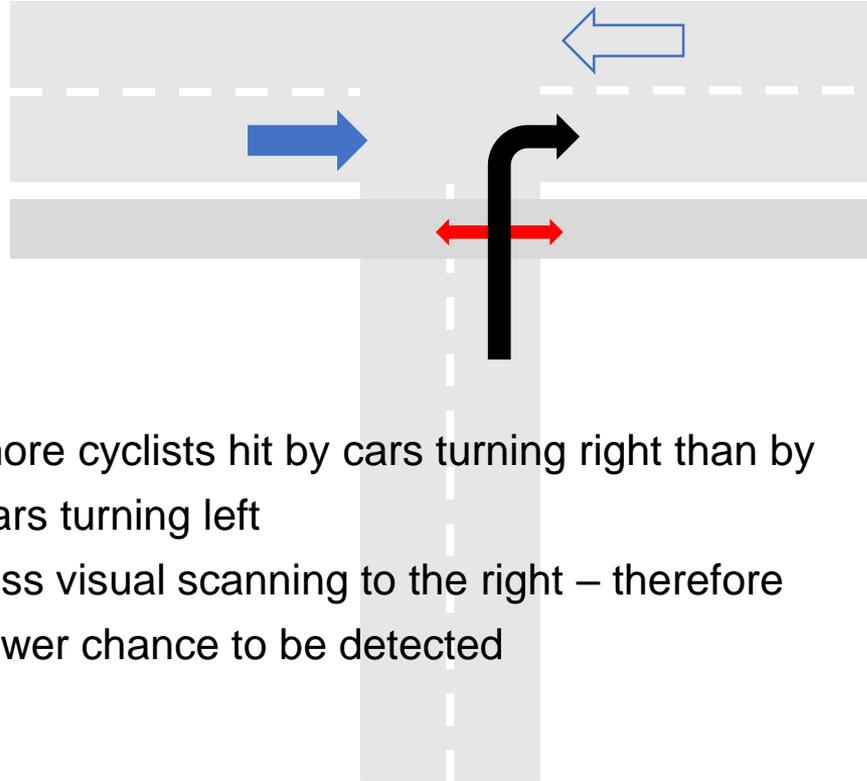
VISIBILITY, CONSPICUITY AND EXPECTATIONS

- **visible and conspicuous = good, but not enough**
- **expectation is at least as important**





DRIVERS' GAZE BEHAVIOUR



- more cyclists hit by cars turning right than by cars turning left
- less visual scanning to the right – therefore lower chance to be detected



HOW TO IMPROVE THE SITUATION?

- Become aware of the issues
- Acknowledge them as actual issues
- Study and understand the issues and develop possible solutions
- Act accordingly



CHILDREN'S ACTIVE TRAVEL

(Project funded by Länsförsäkringars Forskningsfond)

Can we create an environment that is user-centred around children's needs?

- Where do children travel?
- Which attentional demands are put on them?
- How do children of different ages meet those demands when
 - cycling
 - walking



THANK YOU!

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