



Children, attention and bicycling

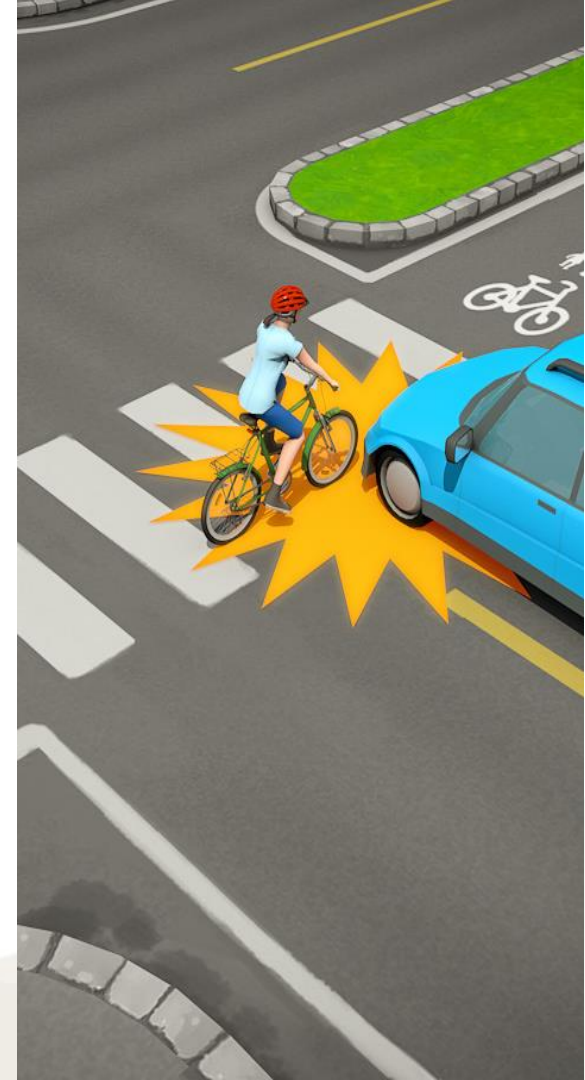
Research programme in cooperation with SINTEF and Nord University

Senior adviser Bård Morten Johansen
Norwegian Council for Road safety



Problem

- Lack of systematical traffic education for young cyclists
- Authorities policy: Traffic growth should be taken by cycling, walking and public transport
- Municipalities wants children to bike more and earlier.
- New legislation: Parents can decide when children should ride to school



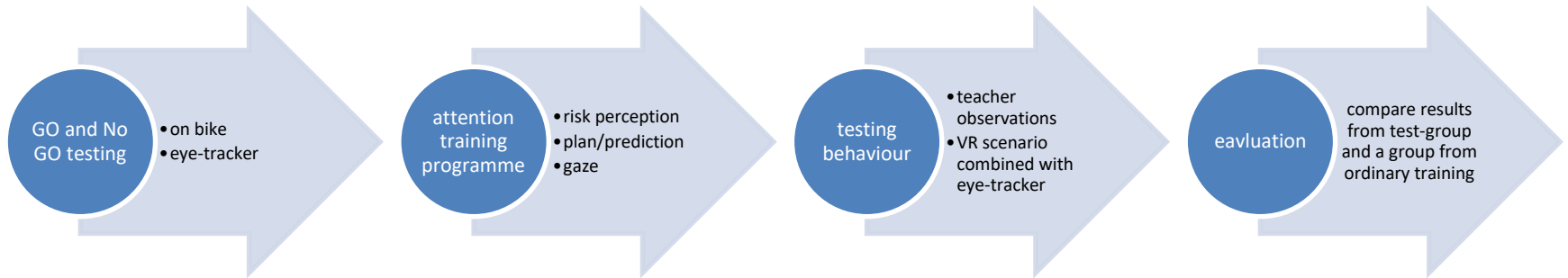
Goals

1. Building knowledge on how childrens attention development could be used in road safety education.
2. Use this knowledge in an attention training programme (real life) and study the effects on behavior in spesific situations (VR/eyetracking)

Mind-brain-education (MBE)

- » Combining knowledge from psychology, neuroscience and education (pedagogics) to develop a practical training programme.
- » Testing childrens ability to inhibit in practical situations compared to earlier reasearch results from laboratoty studies.
- » Develop and evaluate a training programme based on brain maturation, childrens development and high degree of student activity.

Flow chart



8 år

12 år

16 år

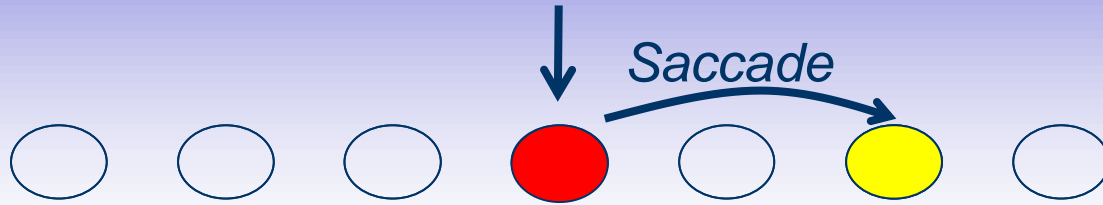
20 år

(Pre frontal cortex to the left)

We want to influence the growing of new synapsis and make the brain produce new compounds

Tamnes m.fl. UiO 2013

Fixation point

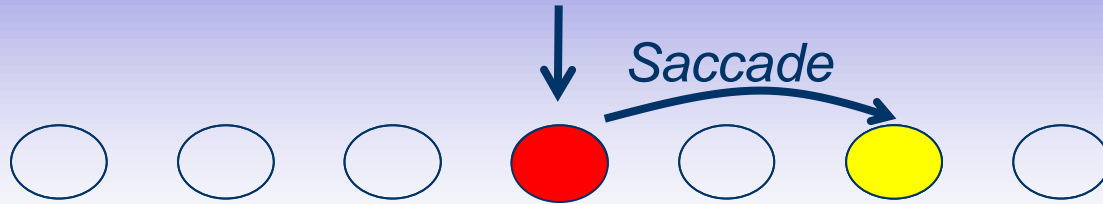


«Go»

Saccade-move your gaze



Fixation point

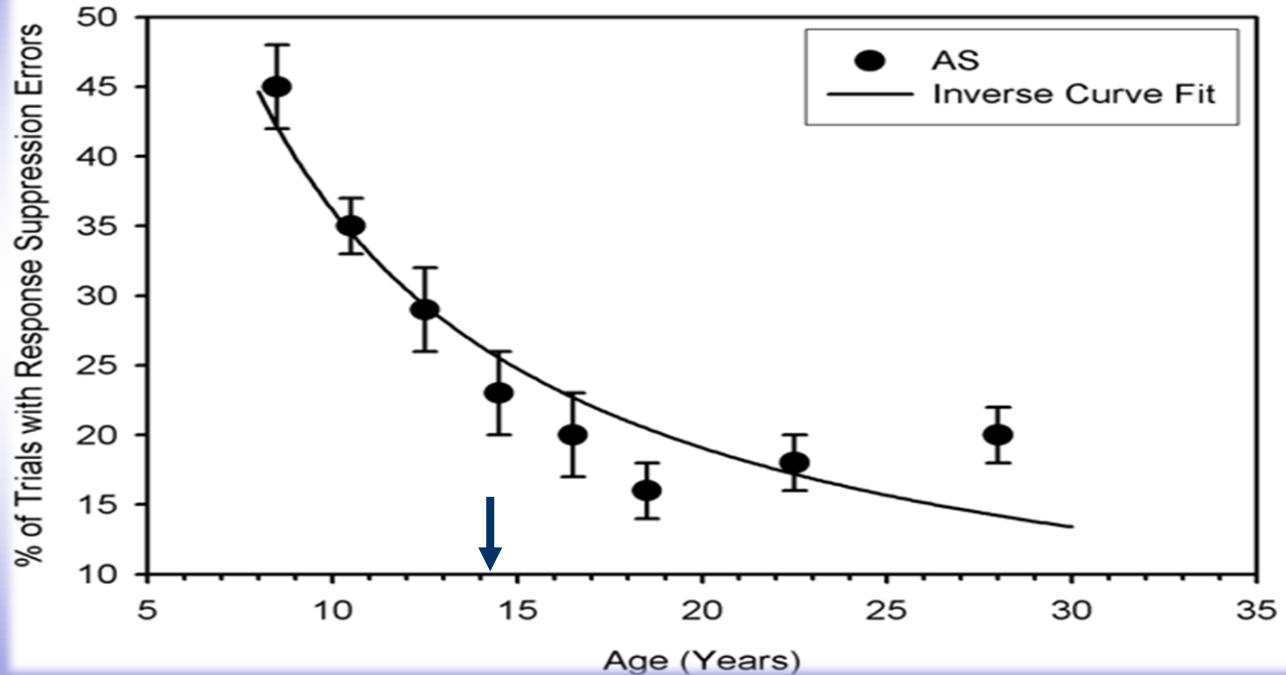


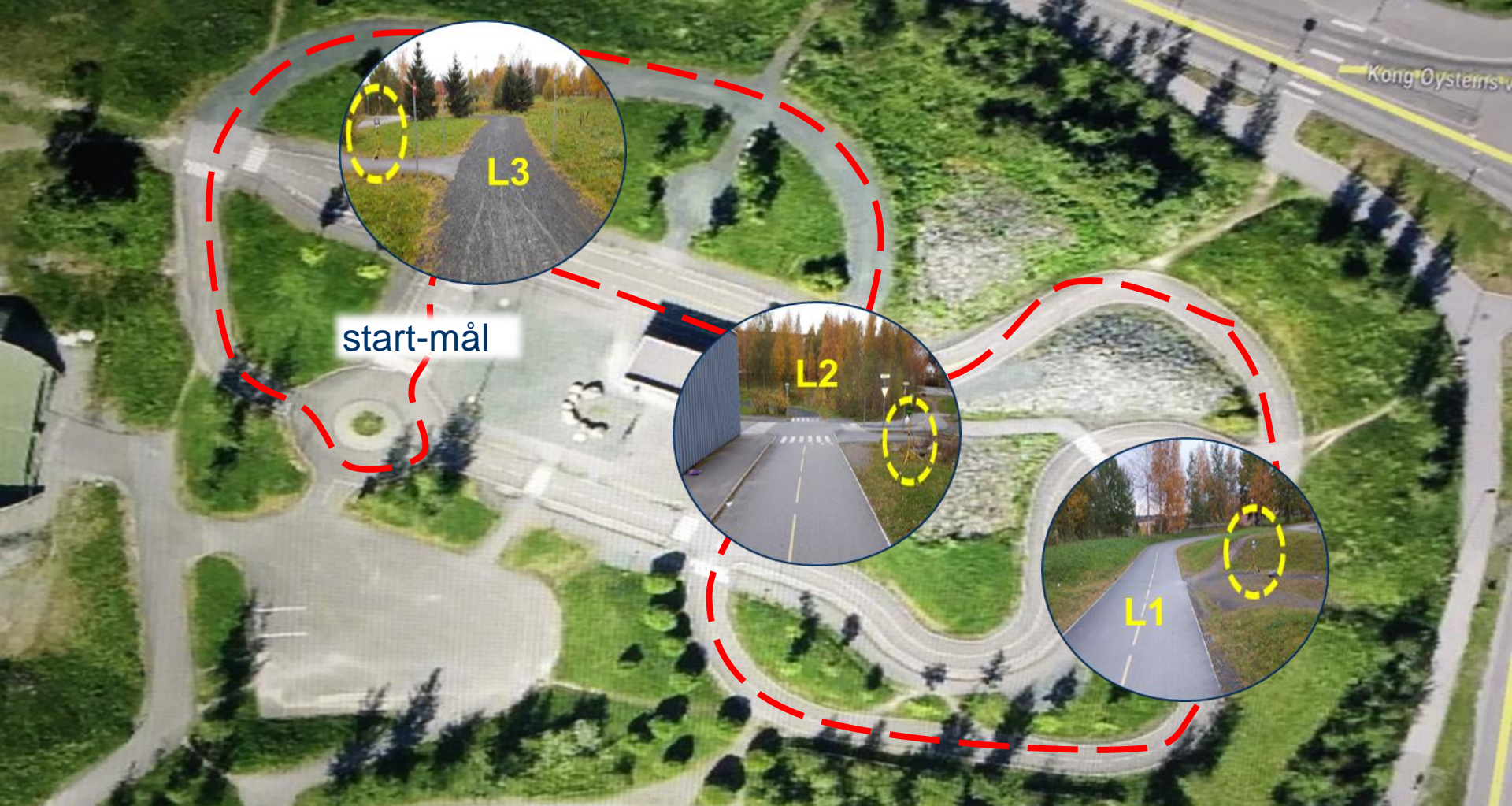
"No-Go»

Inhibition of saccade



Voluntary Response Inhibition





- 59 children from 3.-5. degree
- Boys and girls
- Ability test
- Cooperation school-home

- Get known tour
- 2 rounds Go
- 2 rounds NoGo



Tobii Eyetracker System

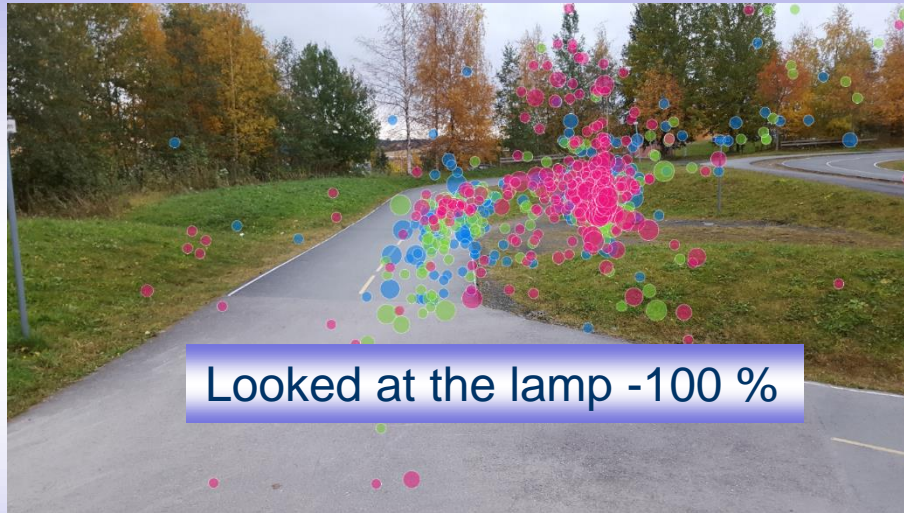


Tobii eyetracker Go-fixations



Attention - Inhibition - Executive control

Go-fixations



No-Go-fixations



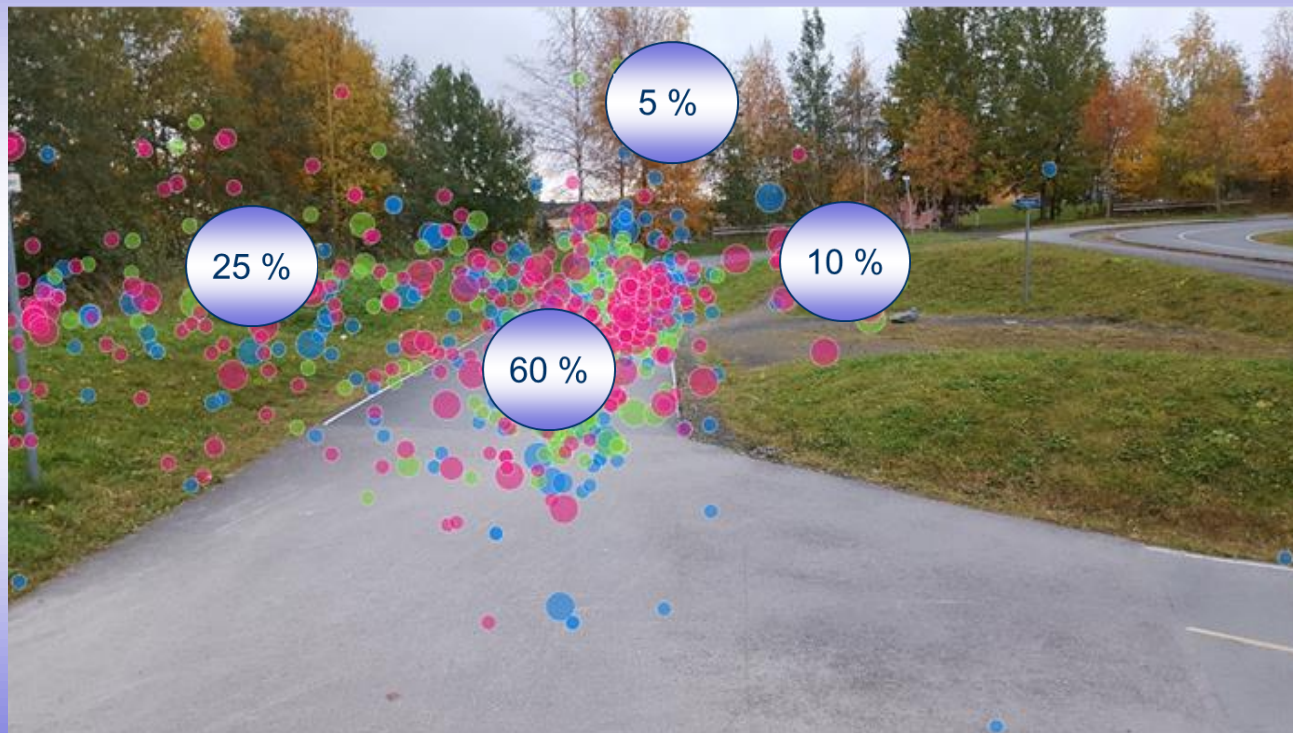
Attention allocation- test period 2-3 sek.

GO-fixations



Attention allocation- test period 2-3 sek.

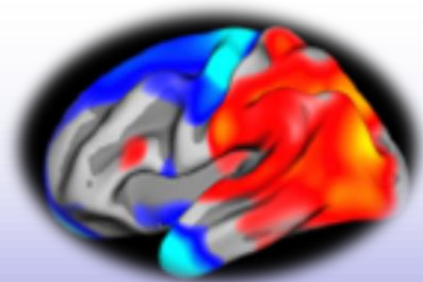
NO-GO-fixations



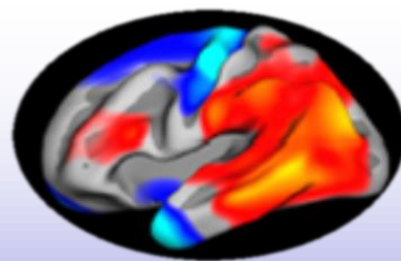
we learn best at an early age

- neuroplasticity
- Skills-knowledge
- Attention functions
- Develop the childrens "executive control"

8 år



12 år



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Attention training

Risk perception:

- walk and talk (small groups) – find difficult situations
- describe and discuss – teacher as an advisor
- Make a list – describe and predict what can happen.
- Most important: Make a plan for your own behaviour in the situation

On the bike

- 3 situations (intersections) - groups circulate
- Teacher (advisor) organize and tell exactly what to do
- Focus on where to look and what to look for
- Advising conversation before, during and after should have the same focus

Rehearsal moments in intersections

- Identify a road junction
- Predict possible conflicts
- Identify risk situations
- Choose the right speed
- Use your gaze to obtain adequate information
- Choose smart behavior
- Mapping: Observation, Film, VR, Eyetracker



Mapping (May 2019)

- Students sit on a bicycle with VR glasses
- Orient in a scenario from the traffic yard
- The VR glasses are combined with eye-tracker
- Two groups will be compared: Those who have completed the program and those who have ordinary bike training



Article

Go/No Go testing and road safety education for young cyclists

Isabelle Roche-Cerasi, Dagfinn Moe, Jo Skjermo, Robert Oppland
SINTEF Technology and Society, Transport reseach, Trondheim,
Norway

Jan Petter Wigum, Nord university, Stjørdal, Norway

<http://liseuse.harmattan.fr/978-2-343-13076-7>



johansen@tryggtrafikk.no

Web: tryggtrafikk.no

Gracias por su atencion!

