



FINDING A BETTER WAY

# **Effects of electronic billboards on drivers...or does electronic billboards have an influence on traffic safety?**

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# What do we know about billboards and traffic safety?

- Most studies have been done in USA, Canada, Australia and New Zealand, both in the field and in simulator.
- Difficult to find an effect on traffic safety but some factors have been identified as negative:
  - moving/dynamic content (video worst)
  - location of the billboards (crossing and curves most dangerous),
  - light intensity / blending effect
- Older and novice drivers more prone to be distracted by billboards

# Method

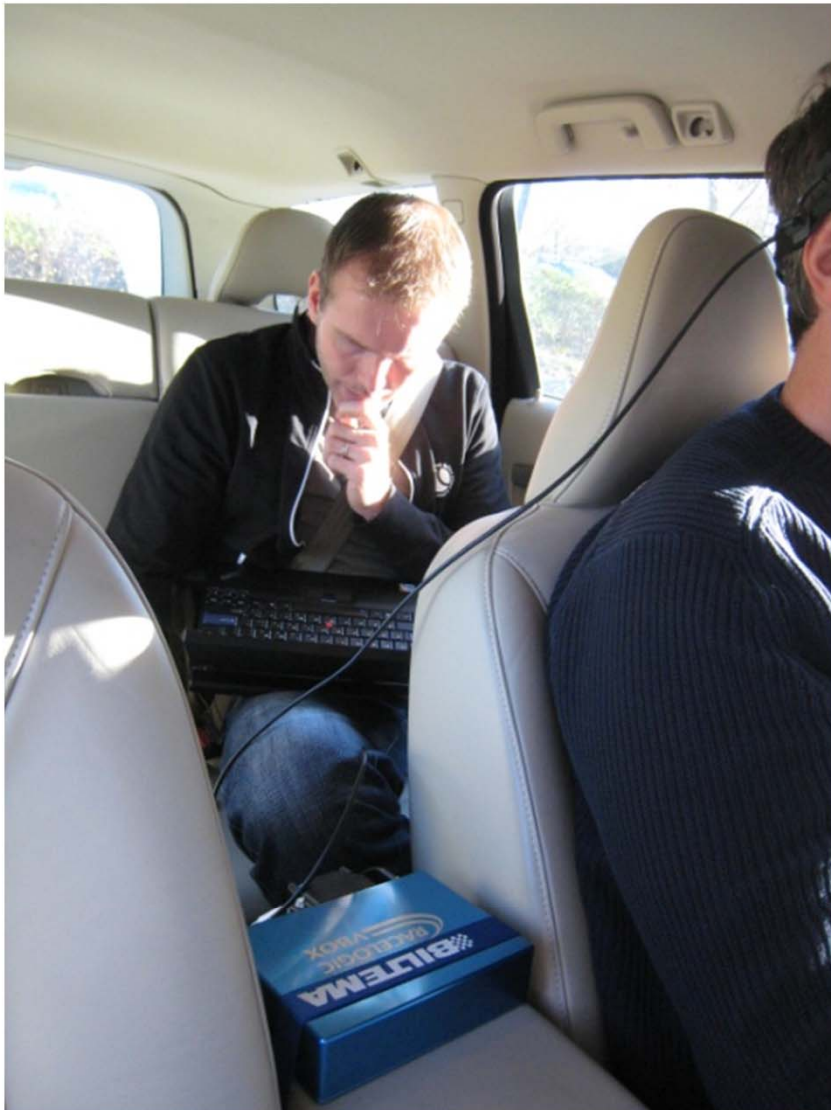
- Field study with head mounted eye tracker from SMI with two groups (daylight/darkness)
- Billboards characteristics:
  - Location: motorway around Stockholm E4 passing
  - 12 installed, field study include 4 billboards and other traffic signs.
  - Static/dynamic, 4-5 messages could be seen
- Measurements in October but very sunny weather ☹
- Data: questionnaire/interview, eye movements, driving data.
- Instruction: no specific instruction to look at billboards to not influence their top –down processes
- Participants:

	Participants (women/men)	Age (mean)
Daylight	20 (5/15)	44
Darkness	21 (9/12)	39







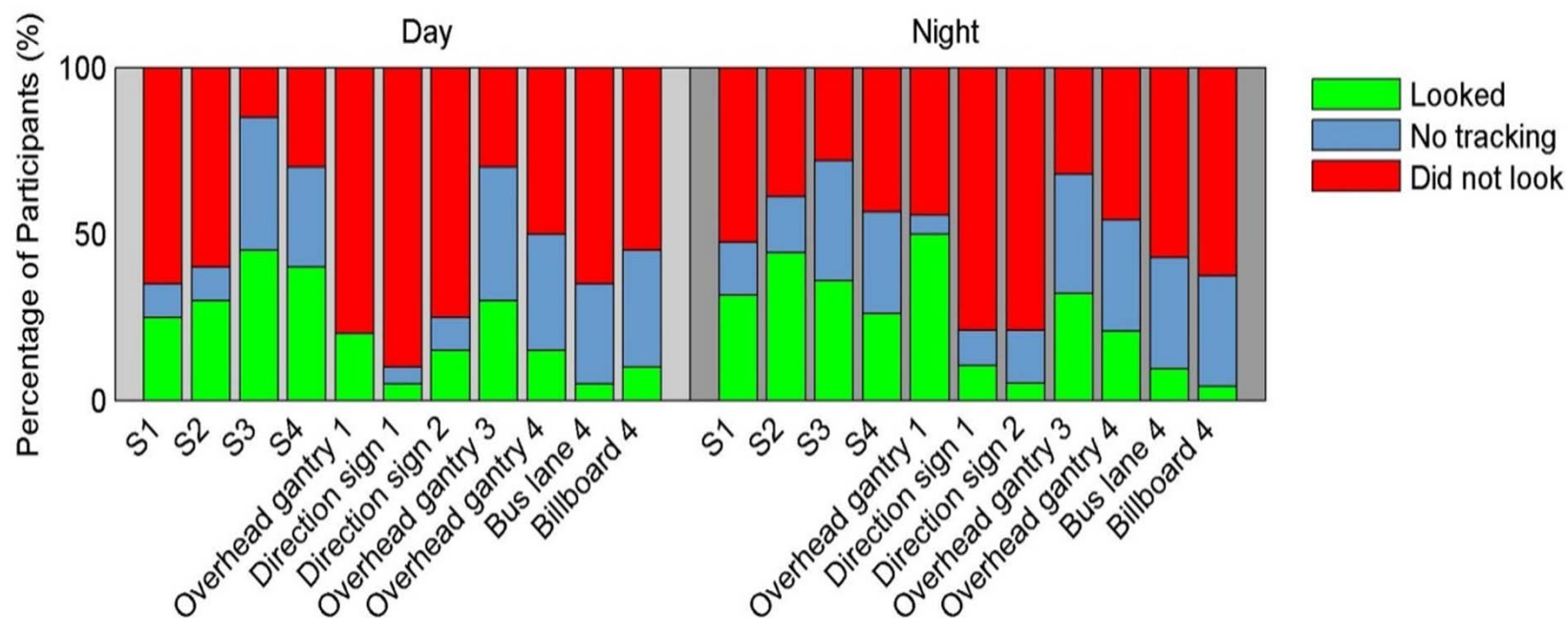


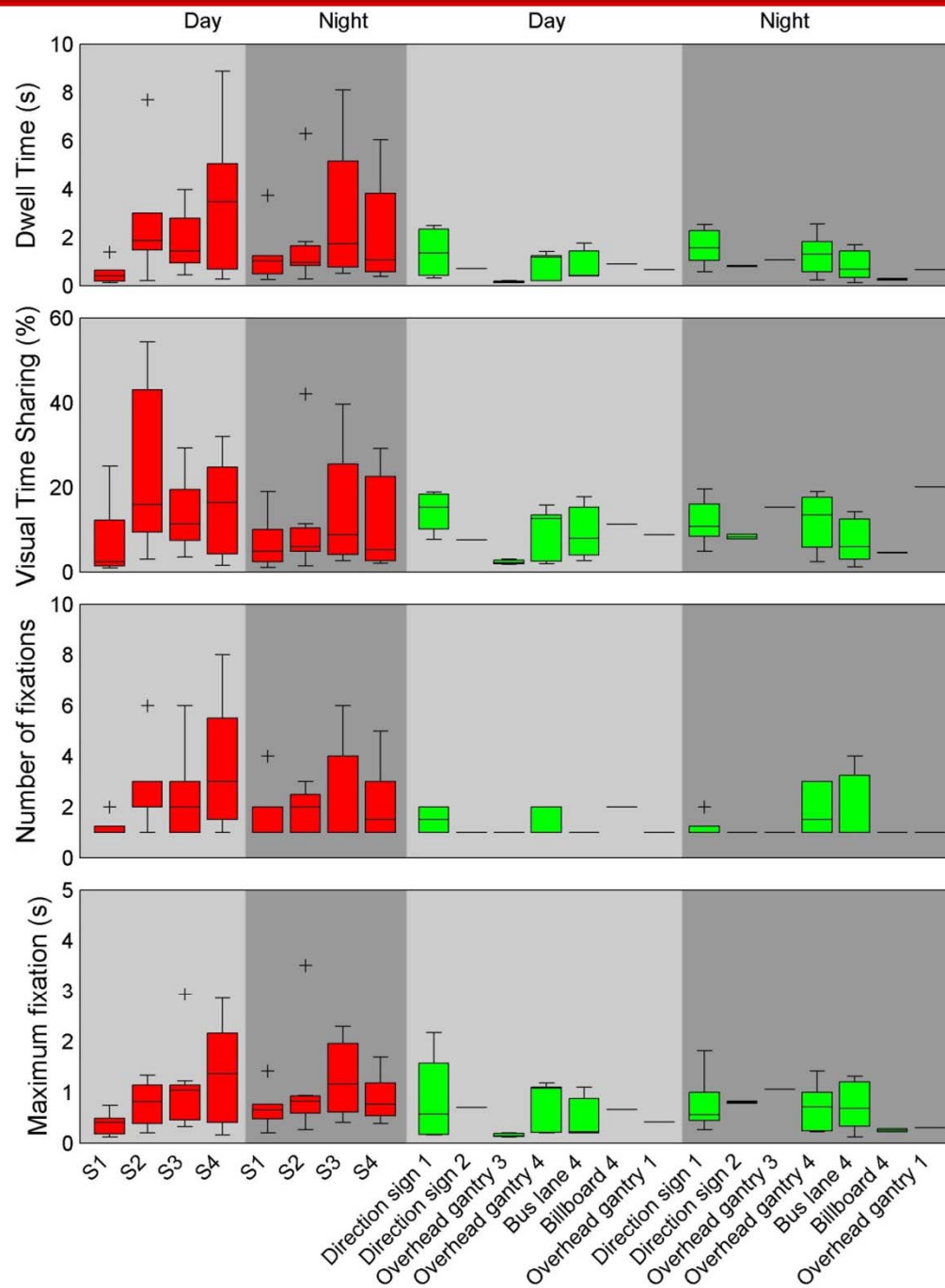
# Movie

vti

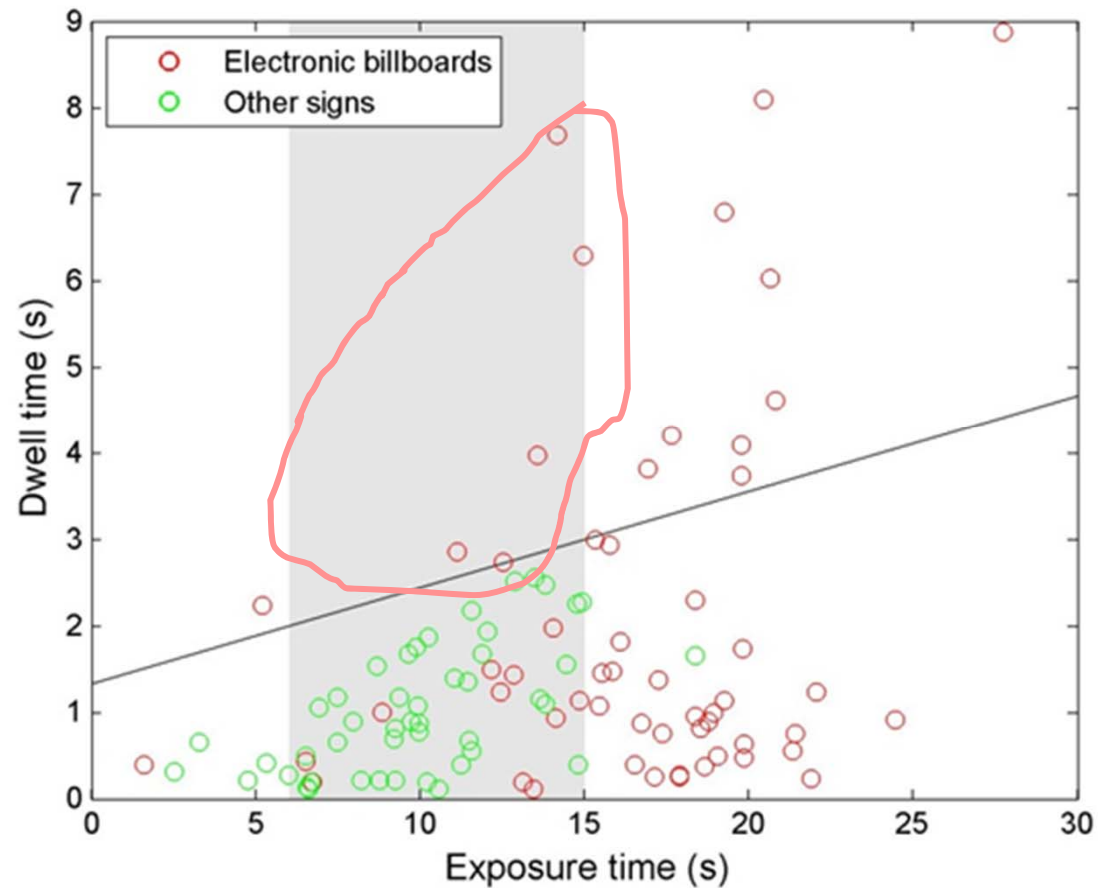


# Distribution of drivers that looked at the various signs





# Distracted drivers?



Definition of visual distraction as a compilation of Klauer et al. (2006) and Klauer et al. (2010).

## Summary

- Half of the drivers did not look at the billboards at all
- If the drivers did look, less than half of them could recall one or more of the message
- 74% wanted to forbid advertisement on the road



# Implications

- In total 9 cases of visual distractions for 41 drivers: how does it look like every day for 180.000 cars passing the billboards?
- Billboards are designed to attract attention of the drivers! Electronic billboards attract more visual attention than regular traffic signs (they are more salient – bigger, brighter, more dynamic)
- Billboards increase the number of distractors to find the relevant information in the traffic environment
- The visual distraction effects should be considered as a best-case scenario because our participants were experienced middle aged drivers who were familiar with the route. Novice drivers or older drivers could be more affected.
- Do electronic billboards have an impact on traffic safety?

**Thank you for listening!**

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