MS-03 **Effectively Communicating Motorcycle Safety Messages**

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What Motorists Know and Don't Know (about motorcyclists)

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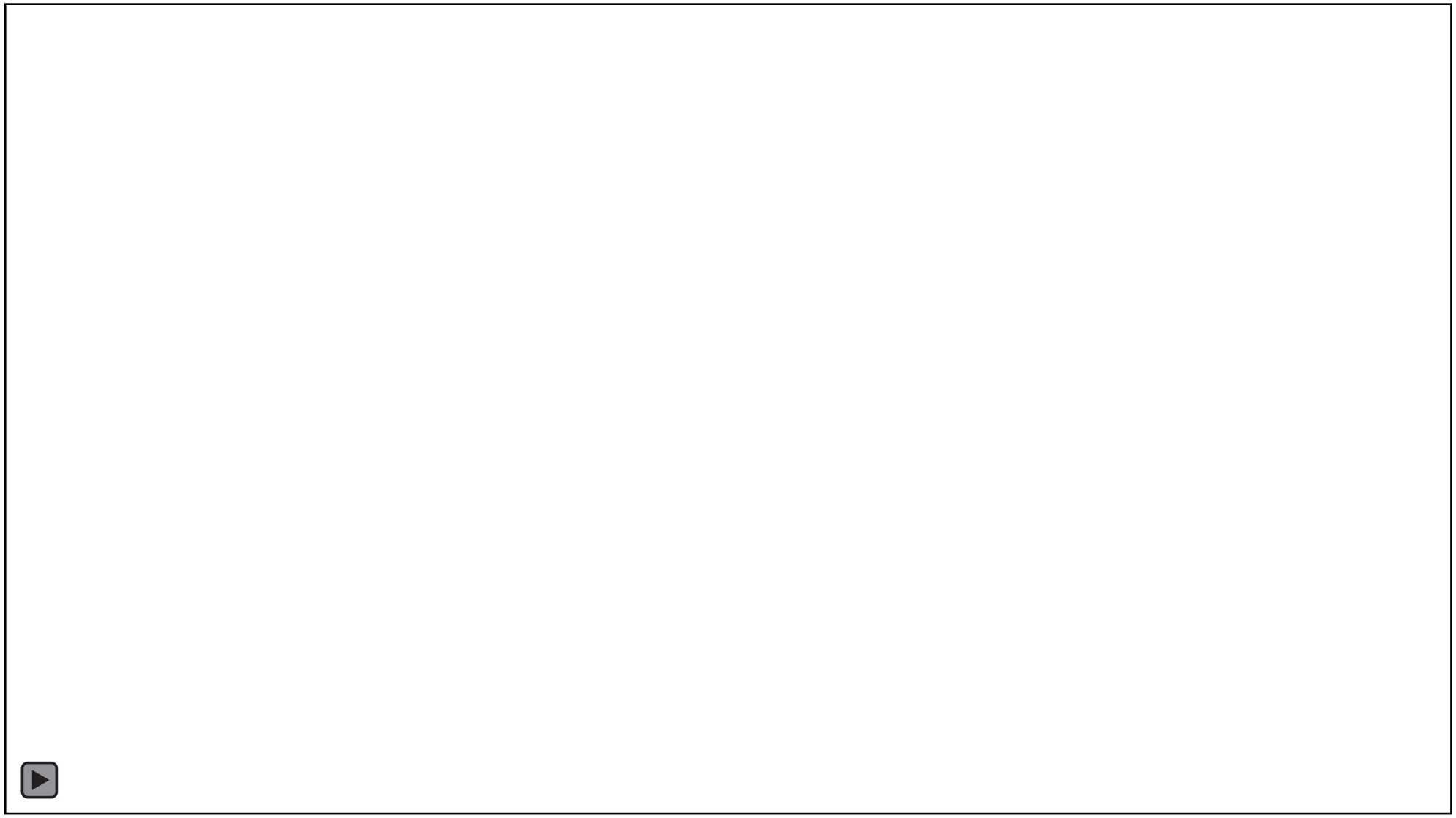
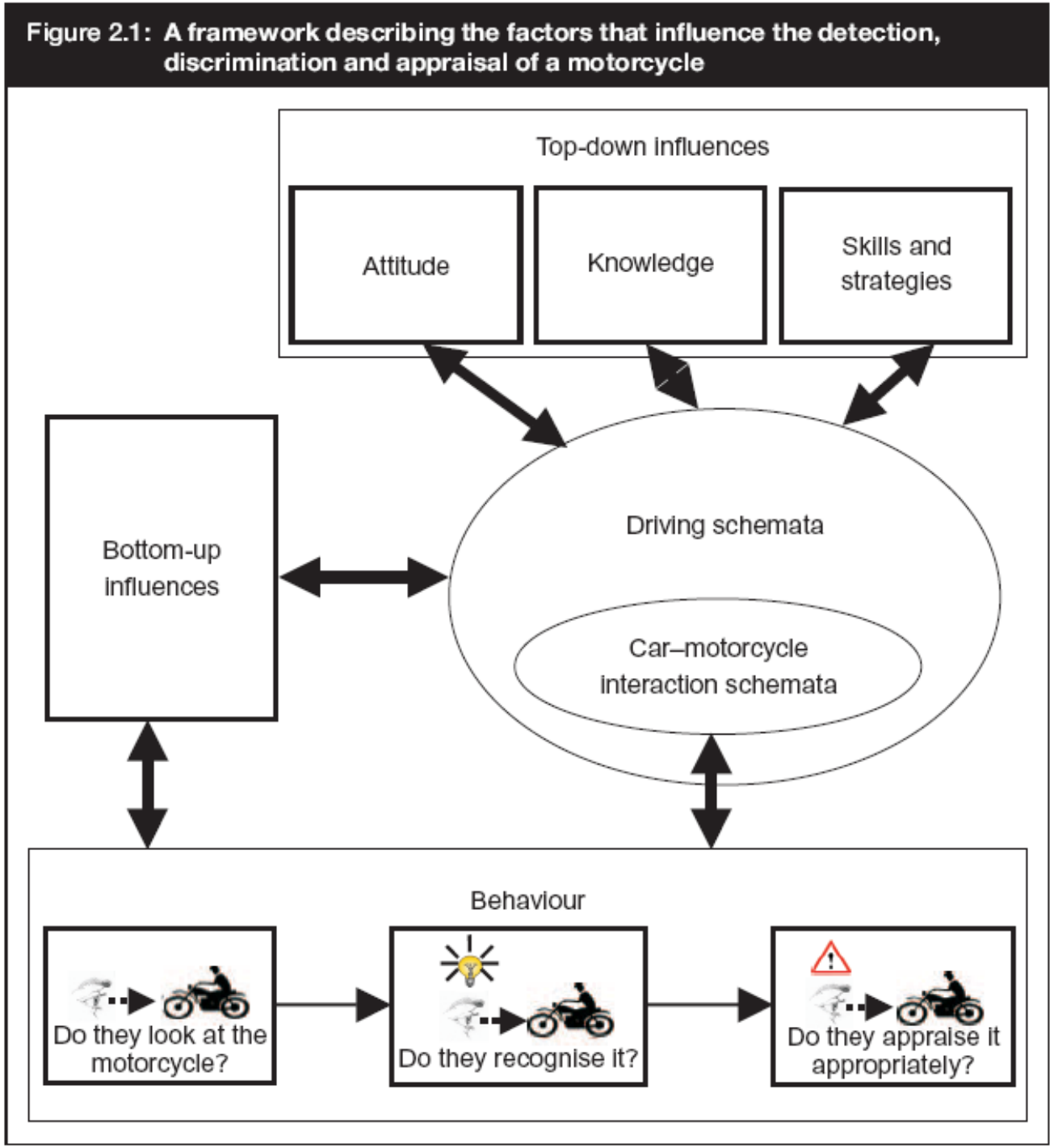
The biggest killer of UK motorcyclists



(ACEM, 2009; Clarke et al., 2007)



Targeting other road users for intervention

- A framework to investigate t-junction collisions (Crundall et al., 2008)
- Schemata differ across road users (Salmon et al., 2014)
- Dual-drivers are safest (Magazzù et al., 2006; Crundall et al., 2012)

Attitudes and Knowledge
What drivers' *think* they know…

- Questionnaire with 1355 responses
- Inexperienced drivers, moderate experience, highly experienced, & dual drivers
- Four factors emerged
  - Negative attitudes
  - Empathic attitudes
  - Awareness of perceptual difficulties spotting motorcyclists
  - Spatial understanding

Study 1

Attitudes and Knowledge
What drivers' *think* they know…

- Dual Drivers had better empathy and lower negative attitudes towards riders than all other car drivers
- Highly experienced car drivers also had better empathy and attitudes compared to less experienced drivers

(Crundall et al., 2008)

Attitudes and Knowledge
What drivers' *think* they know…

- Novice car drivers thought motorcyclists could swerve easily to avoid obstacles
- Car drivers believed the ideal lane position for a motorcycle was further towards the kerb than dual drivers
- Car drivers questioned the legality of filtering, and reported being surprised when this happened

Improving attitudes*:*

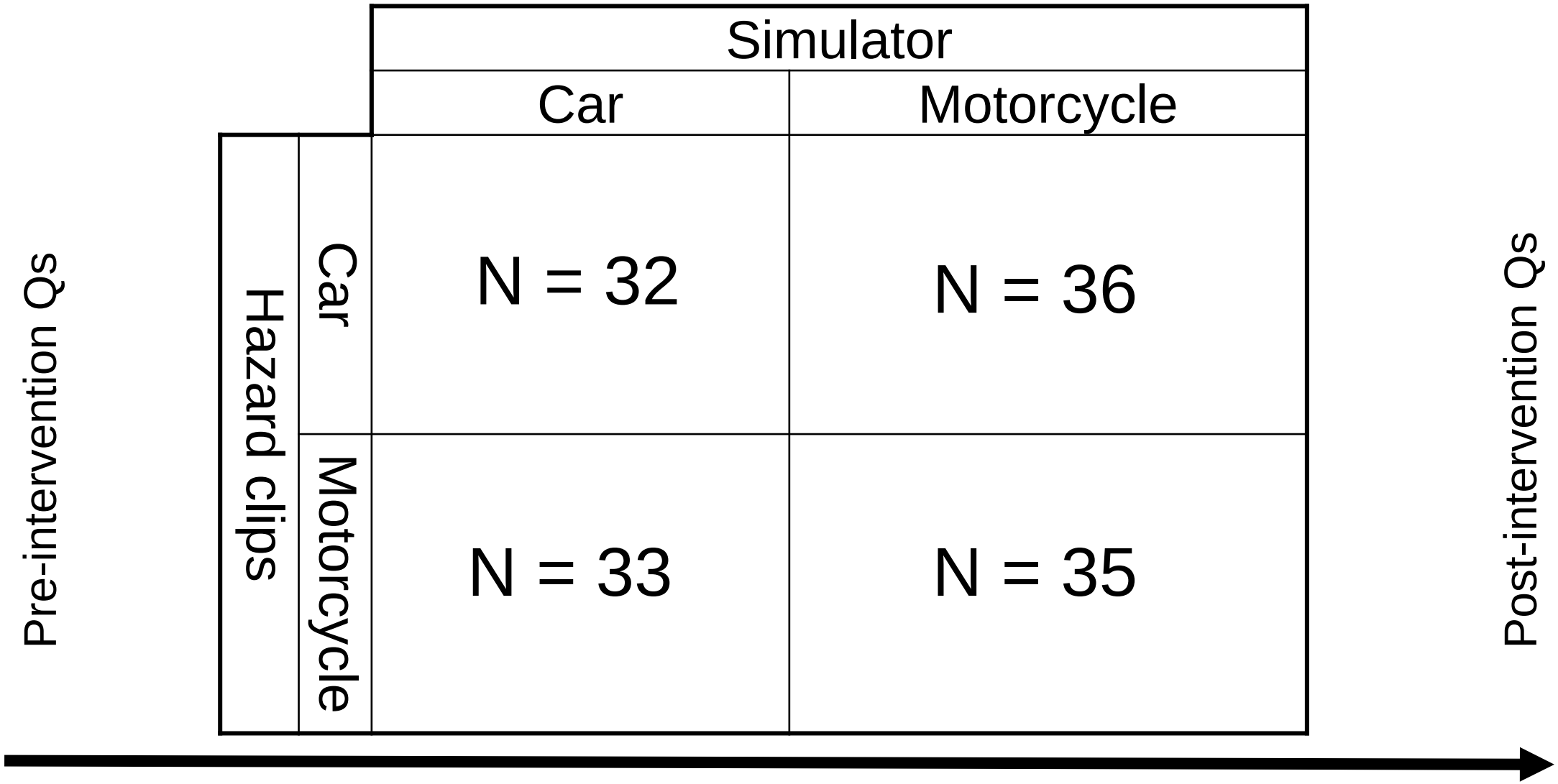
- If dual drivers have best empathy and attitudes, we should just make all drivers ride motorcycles

- Or at least take on the perspective of a motorcyclist!

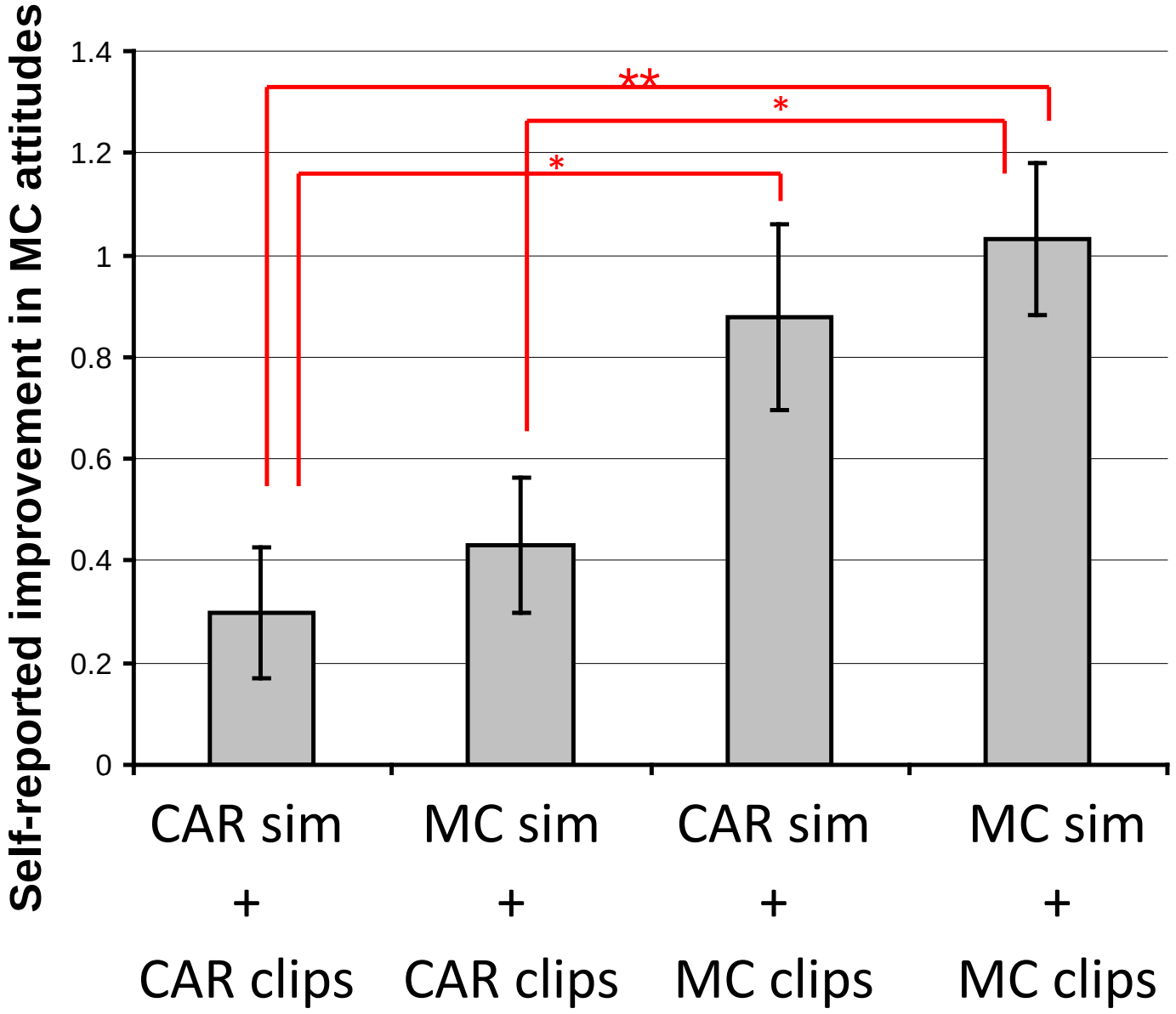
Study 2

Honda Motorcycle Trainer

Motorcycle-perspective Hazard Perception clips


Simulator
Car
Motorcycle
Hazard clips
Car
Motorcycle
N = 32
N = 36
N = 33
N = 35
Pre-intervention Qs
Post-intervention Qs

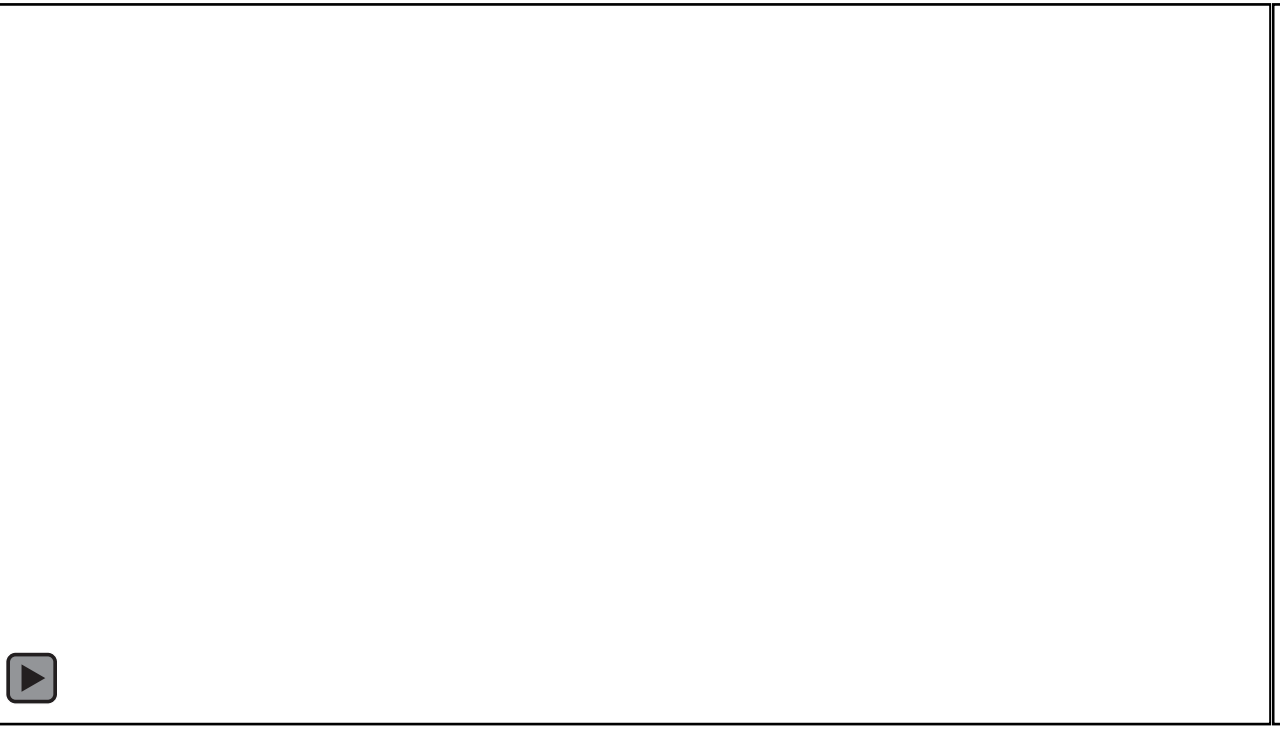
Study 2



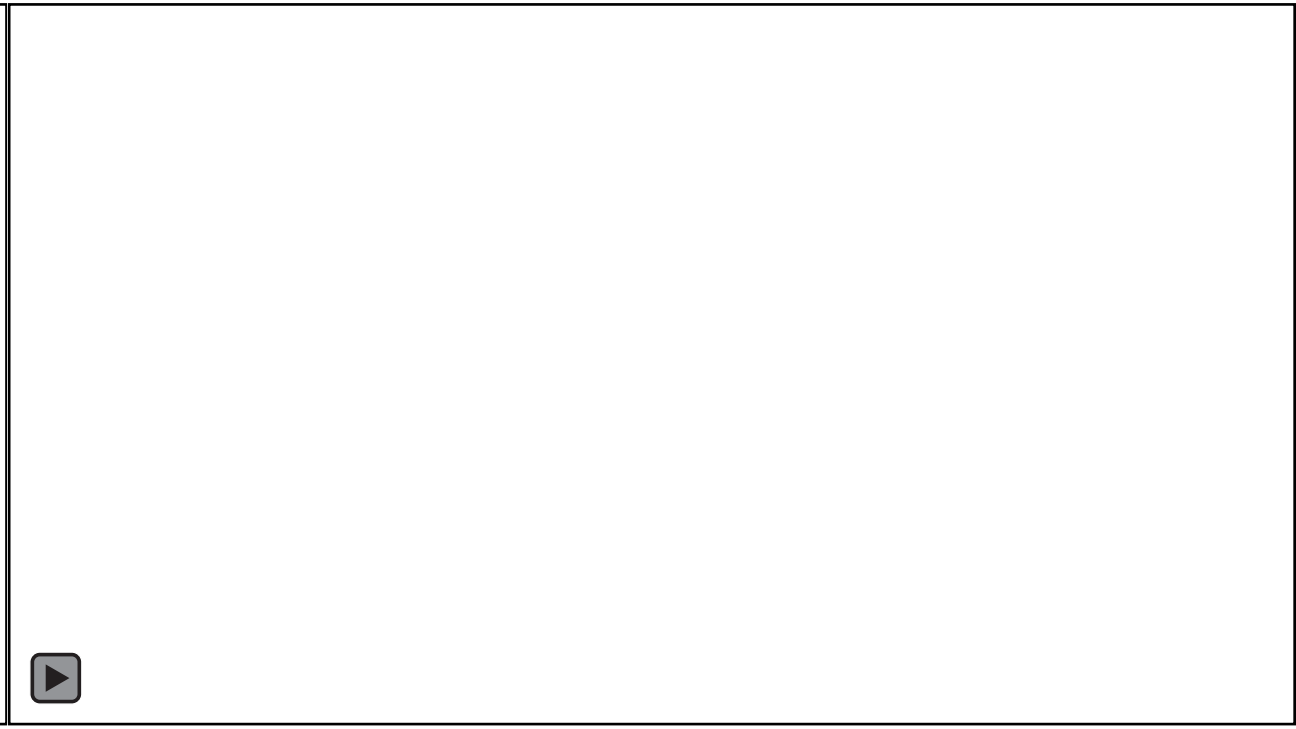
- Self-reported attitudes towards motorcyclists improved most when motorcycle HP clips were used

(Shahar, Clarke and Crundall, 2011)

So less of this…



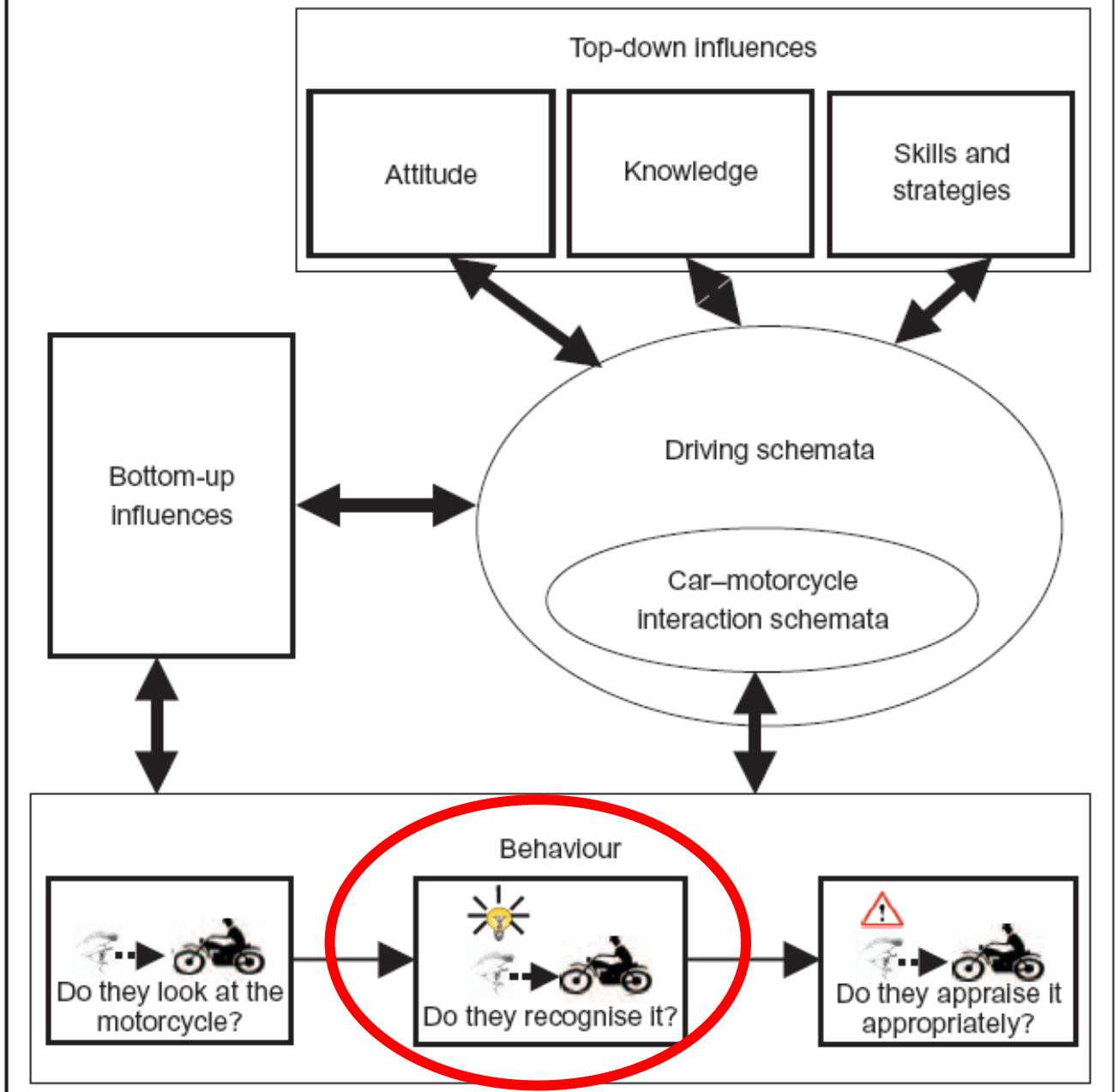
And more of this…?



- Also provide knowledge of legal manoeuvres to reduce surprise and mitigate negative attitudes

Instead we got…

Figure 2.1: A framework describing the factors that influence the detection, discrimination and appraisal of a motorcycle



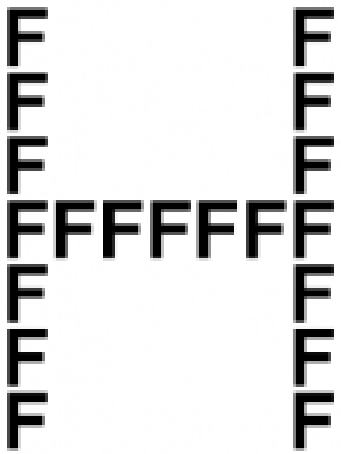
- But drivers often claim they ‘Looked But Failed To See’

Look But Fail To See errors

Study 3

(Crundall, et al., 2012)

Spatial Frequencies



Spatial Frequencies

Global Precedence theory – faster to process the whole (‘H’) than the parts (‘F’)

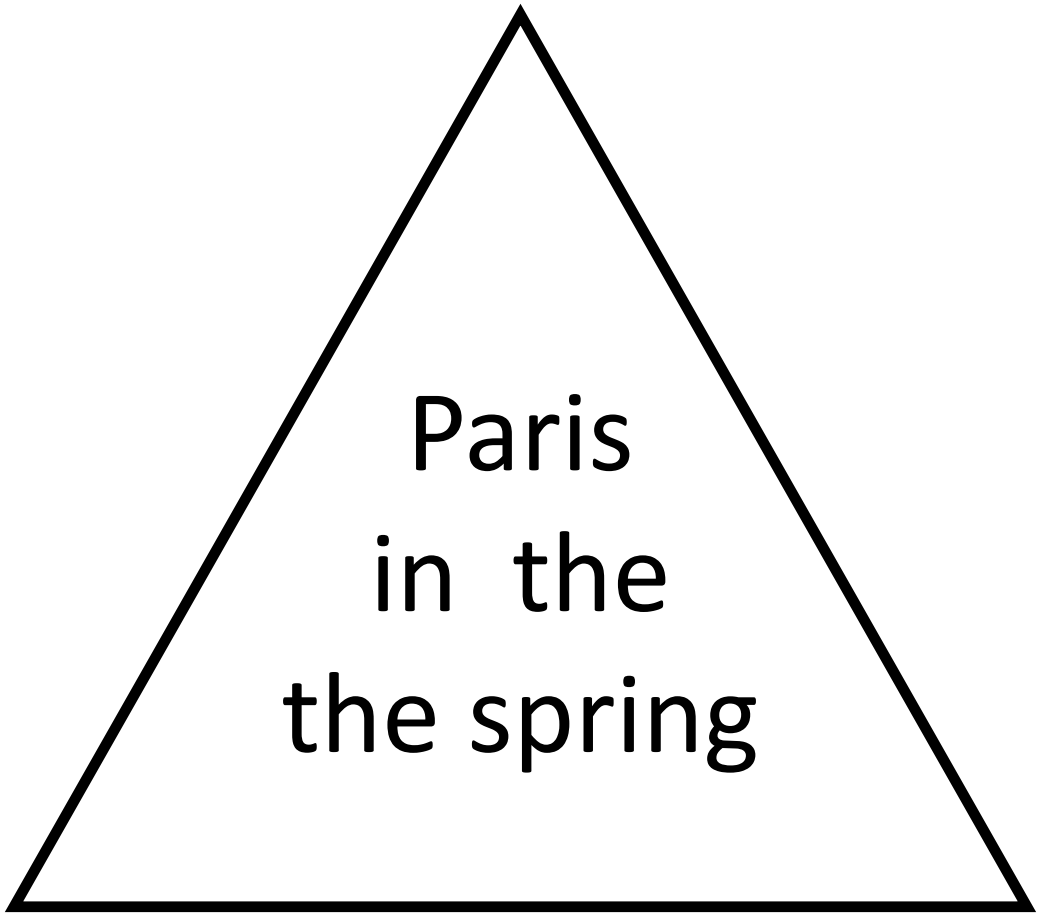
(Navon, 1977)

But why? Because low spatial frequencies get priority access into the visual system

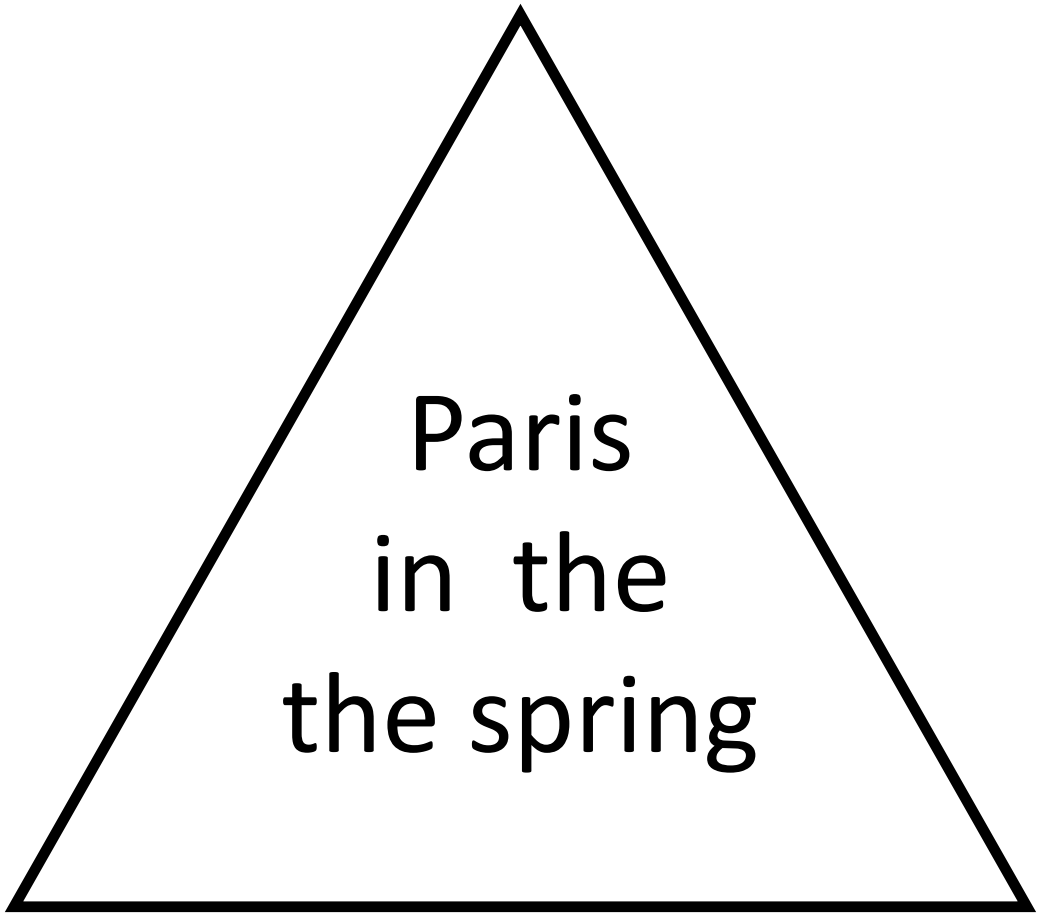
(Hughes, Nozawa & Kirrerle 1996)

Spatial Frequencies

Expectations



Expectations

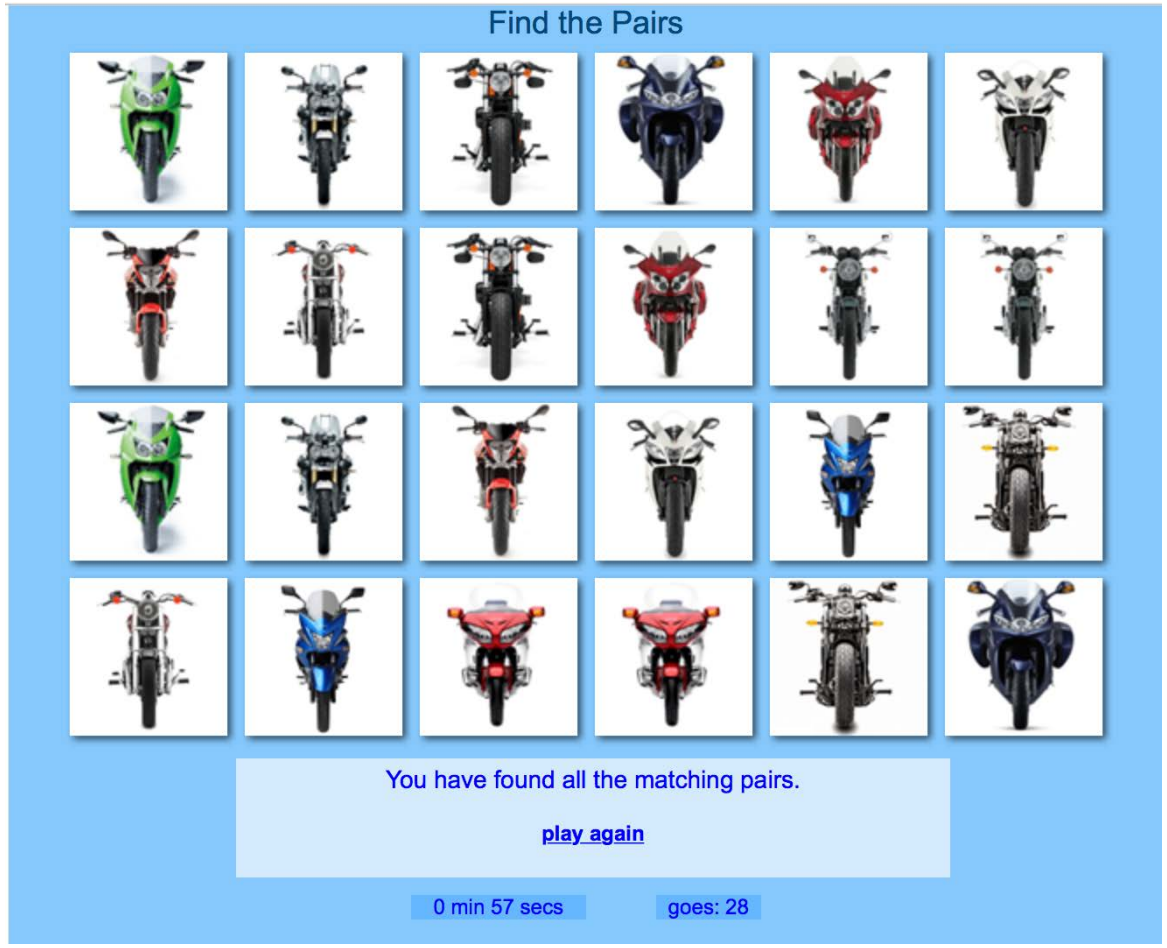


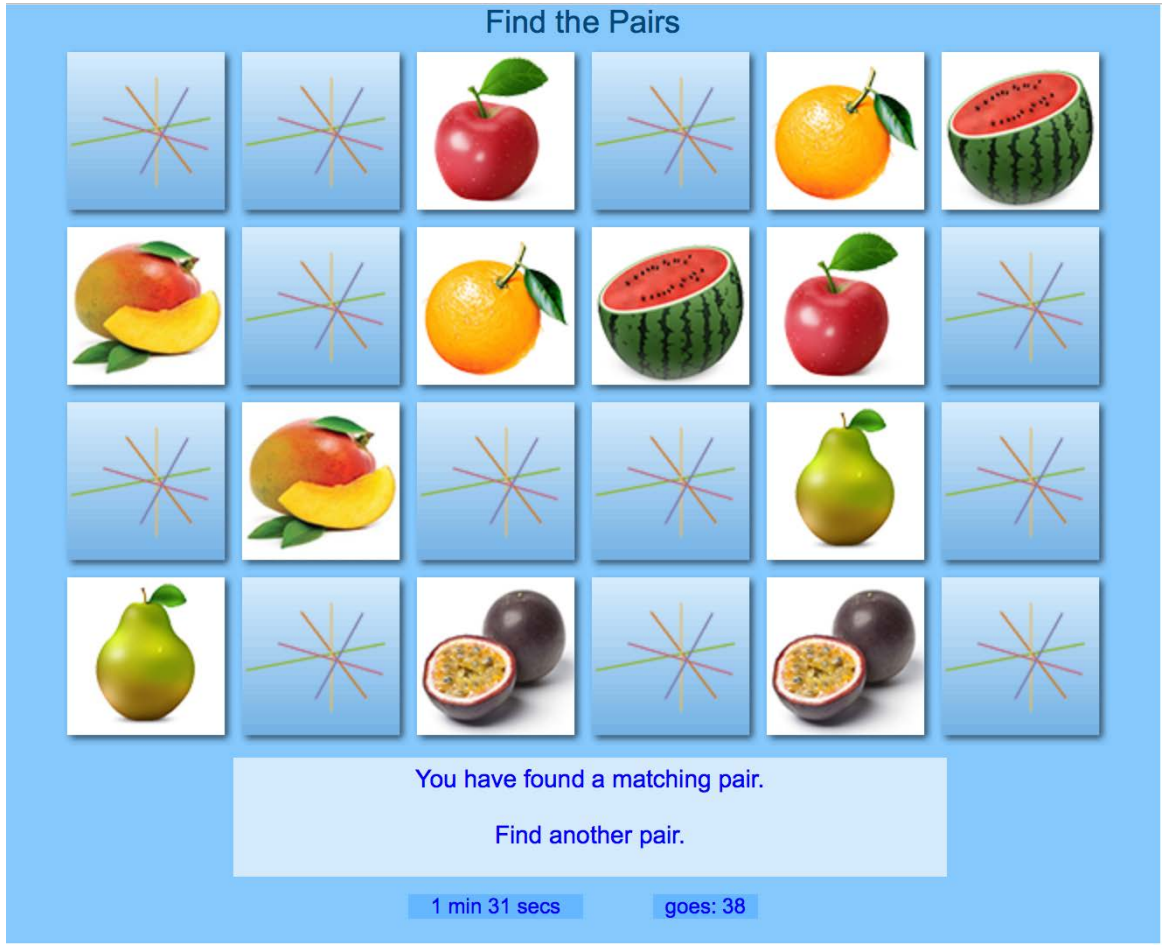
How do we reduce LBFTS errors?

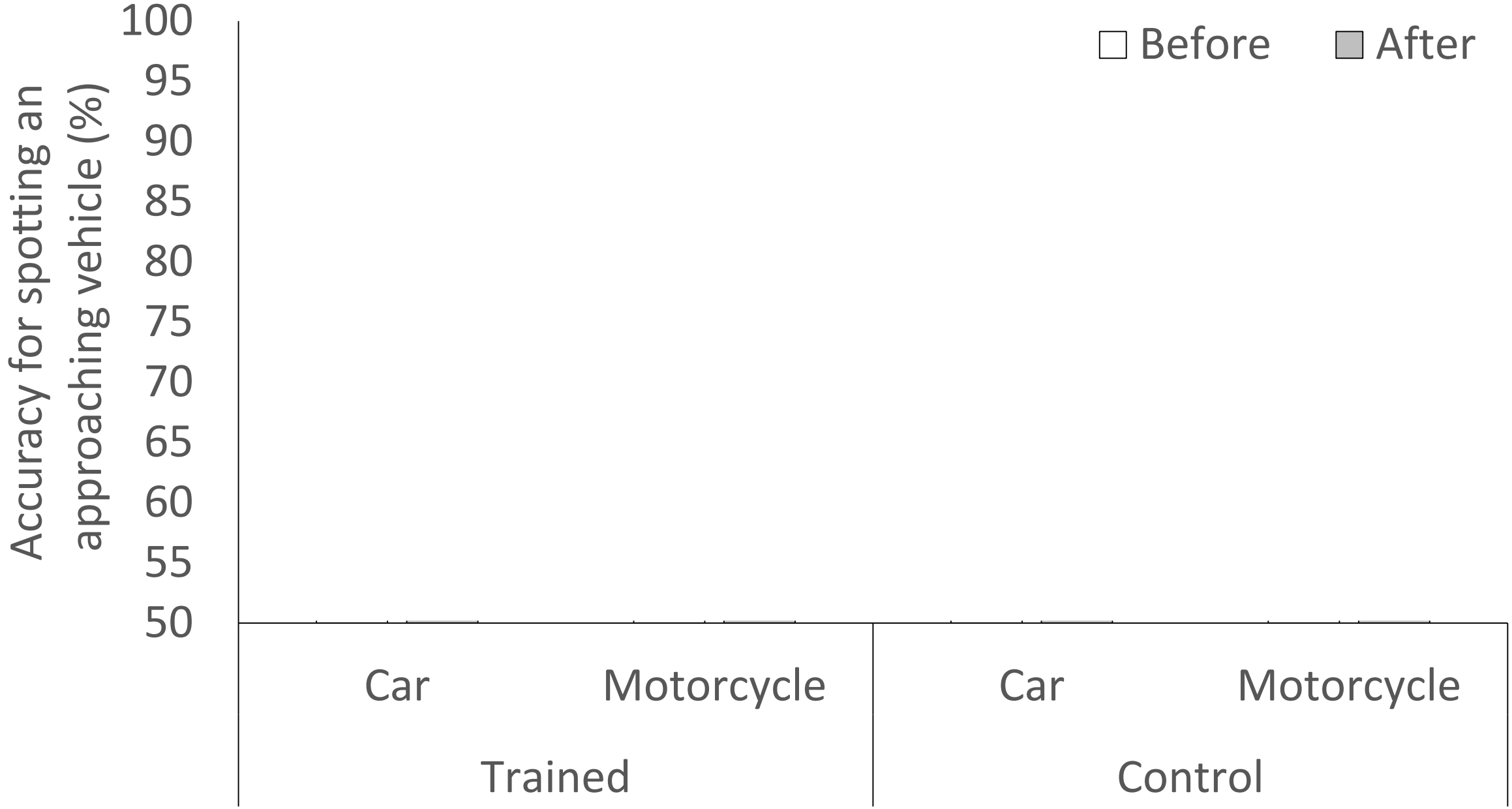
- We can’t make motorcycles fatter
- We can try to increase expectations

- Or we can try to improve car drivers’ processing speed for motorcycles

A Pelmanism Intervention






Accuracy for spotting an approaching vehicle (%)
100
95
90
85
80
75
70
65
60
55
50
Before
After
Car
Motorcycle
Car
Motorcycle
Trained
Control

Final Conclusions

- If you want to change car driver attitudes, change their perspective
- Video might be better than simulation
- Inform drivers of legal and likely motorcycle behaviour

- If you want to reduce Look But Fail To See errors, train their processing speed
- Gamification opens the way to viral training

- Salmon, p. M. (2014). Exploring schema-driven differences in situation awareness between road users: an on-road study of driver, cyclist and motorcyclist situation awareness. *Ergonomics, 57, 2,* 191-209.