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
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!
Honda Motorcycle Trainer

Motorcycle-perspective Hazard Perception clips
## Study 2

<table>
<thead>
<tr>
<th>Simulator</th>
<th>Car</th>
<th>Motorcycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>N = 32</td>
<td>N = 33</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>N = 36</td>
<td>N = 35</td>
</tr>
</tbody>
</table>
Self-reported attitudes towards motorcyclists improved most when motorcycle HP clips were used.

(Shahar, Clarke and Crundall, 2011)
<table>
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<tr>
<th>So less of this...</th>
<th>And more of this...?</th>
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- Also provide knowledge of legal manoeuvres to reduce surprise and mitigate negative attitudes
Instead we got...
• But drivers often claim they ‘Looked But Failed To See’
Look But Fail To See errors
(Crundall, et al., 2012)
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
Paris in the spring

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

Find the Pairs

You have found all the matching pairs.

play again

0 min 57 secs  goes: 28

Find the Pairs

You have found a matching pair.

Find another pair.

1 min 31 secs  goes: 38
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