



Safe driving for life:
changing attitude and behaviour
through education, training and testing.





Combining a Theory and Hazard Test in a single journey

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Agenda Overview

- Background to Project - *Michael*
- Objectives of the research project - *David*
- Results to date – *David*
- Summary - *Michael*



Background to the Project

- Currently the UK driving test comprises of 2 separate tests (Theory and Hazard Perception)
- Both tests are continuously being enhanced through the use of computer generated imagery (CGI).
 - Vulnerable road users (cyclists, horses, pedestrians, night driving, bad weather conditions)
 - Visual media clips for the Theory test (scenario based)



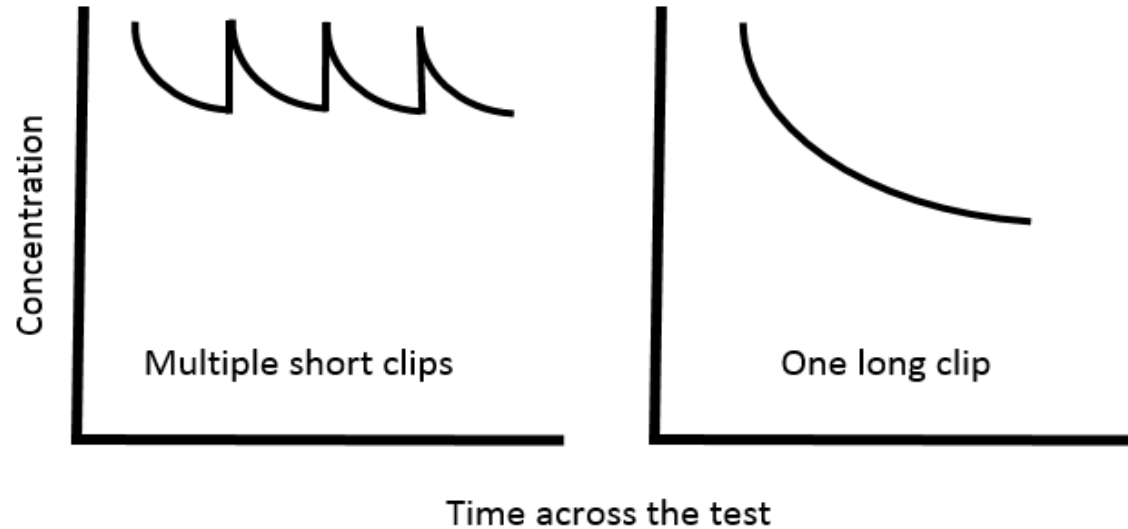
Background to the Project

- Grant aided research project (DfT) building on a concept developed by Jellylearn of a single continuous journey (CGI) that includes theory and hazard perception/prediction test questions for a driver licensing test.
- Combines a highly creative technology solution with road safety research, knowledge and expertise of Nottingham Trent University with input and oversight from the DVSA.



Why combine theory and HP in a single clip?

- Current theory Qs are devoid of context
- Current HP test has no secondary demands
- A “journey” is more immersive



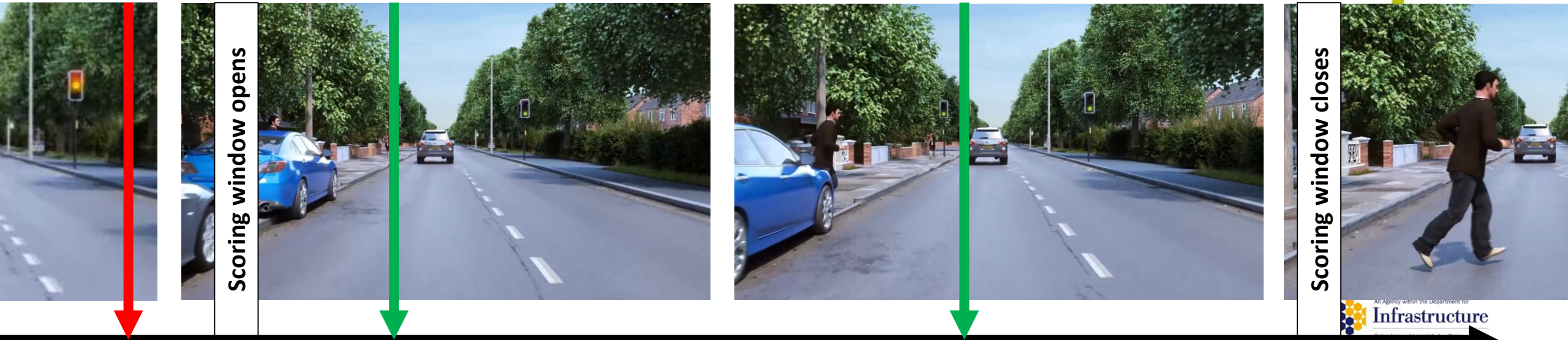
Test Development

- Ten hazards were storyboarded with the assistance of DVSA and ADI focus groups
- Eleven theory Qs were selected to fit the context
- Thirty-five weeks of development and iteration to produce the final HP/theory test
- But... 'hazard perception' has many flaws, so we also developed a 'hazard prediction' test



Why is prediction better than perception?

- Response times do not reflect accuracy
- Response times are sensitive to scoring windows



- Response times suffer from *criterion bias*

An example: hazard prediction



An example: hazard perception

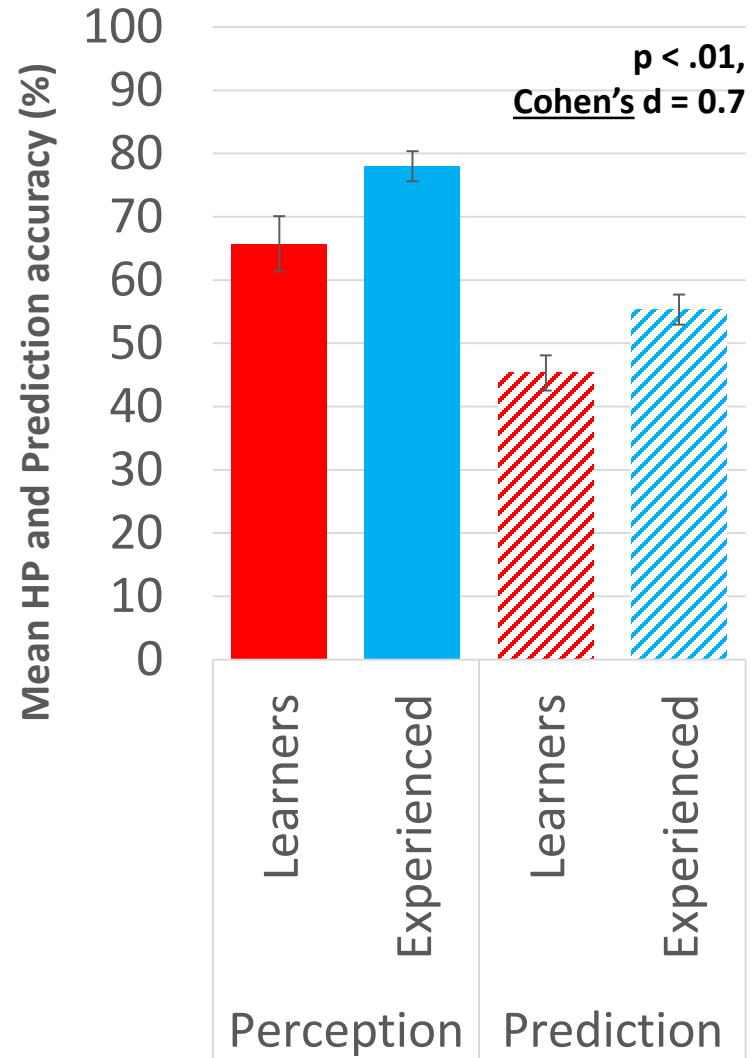
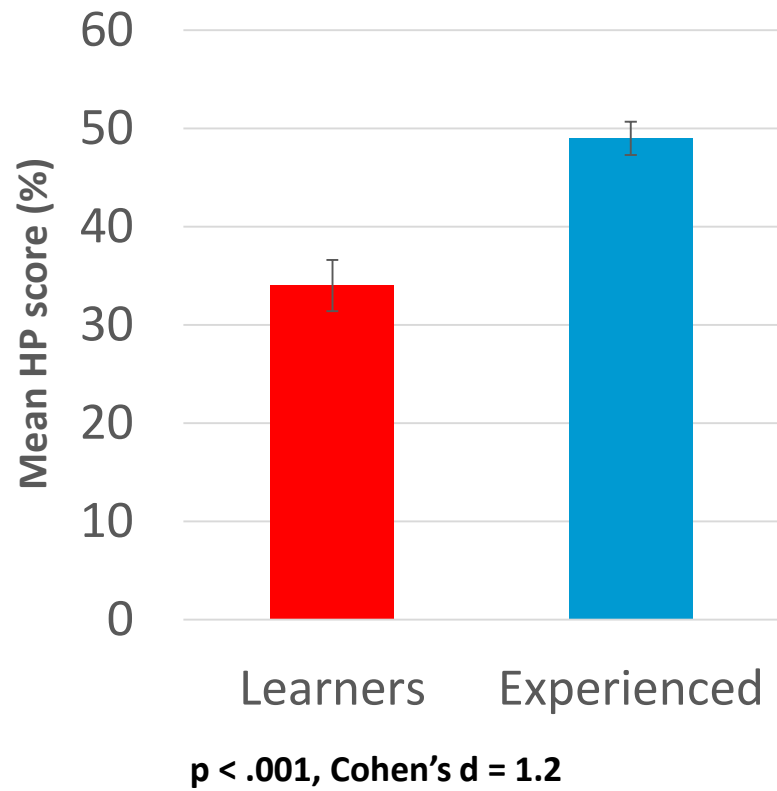


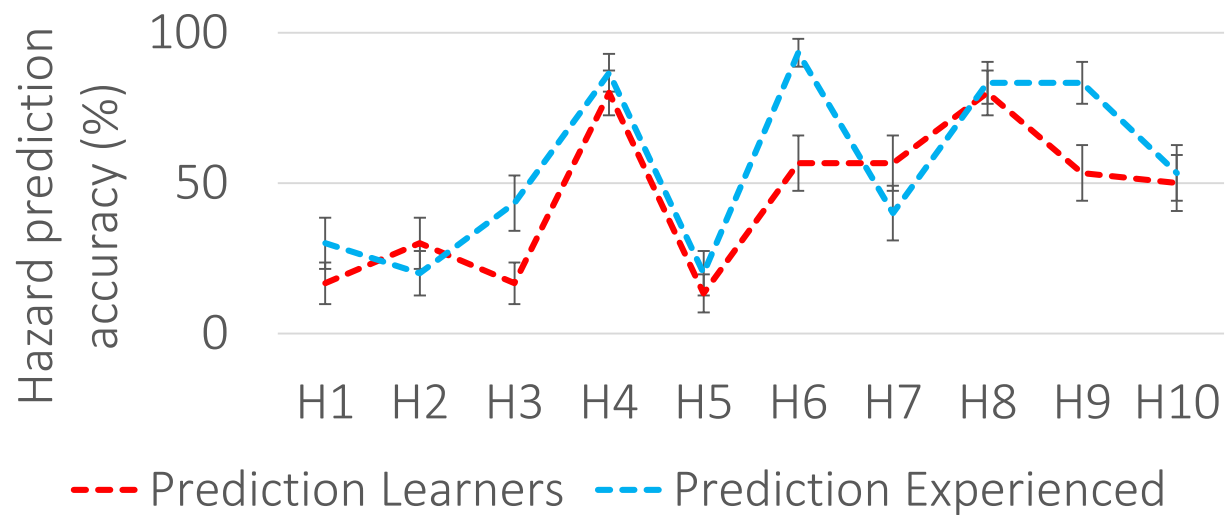
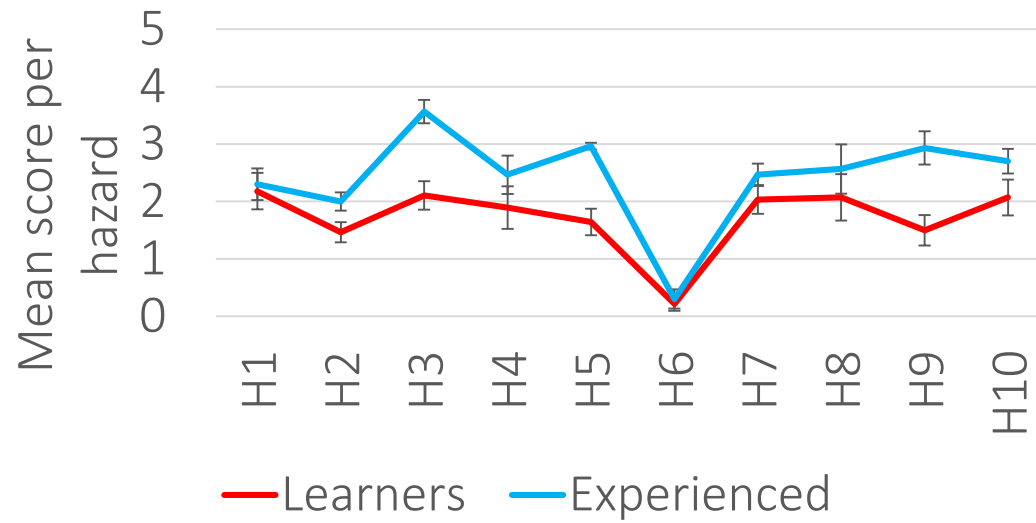
Validating the tests

- Experienced drivers should perform better at hazard prediction/perception than learner drivers
- Theory test scores of learners score correlate with their scores on the actual theory test
- 120 drivers were recruited (60 learners, 60 experienced)
- Half undertook the theory/hazard perception test
- The other half completed the theory/hazard prediction test



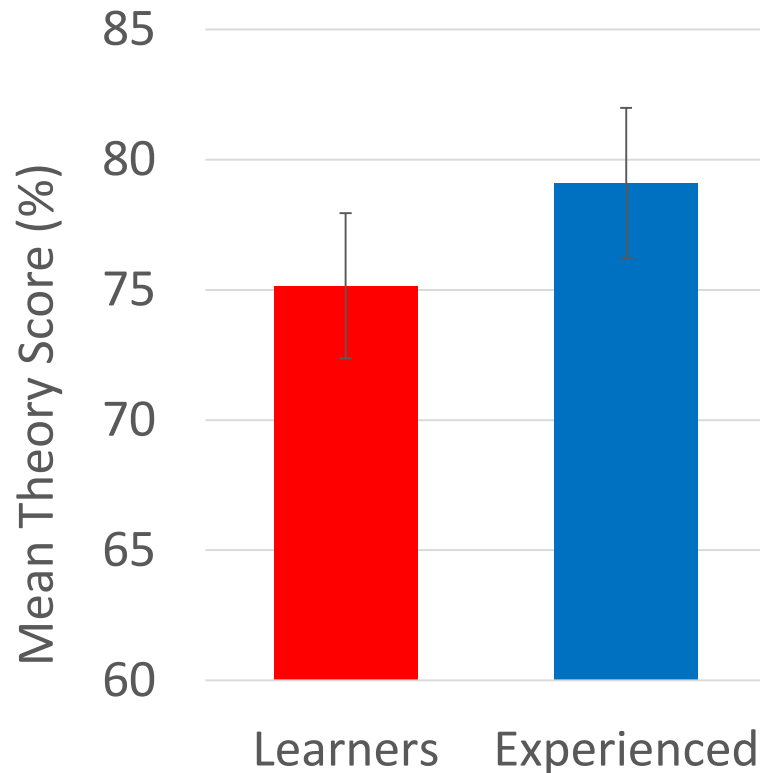
Validating the tests





Theory Scores

- No significant difference between the groups
- But there was a high correlation between learner scores on our theory test, and on the DVSA theory test ($r = .57, p < .001$)
- Theory scores were not affected by being embedded in either the prediction or perception test



Other Interesting Findings

- Participants preferred the combined test to separate tests (5.3/7), and found them more enjoyable and realistic than the official tests.
- Comments included:
 - *“I felt the experimental [test] was far more interesting than the current one, felt it kept you on your toes and it seemed more realistic” (Learner, hazard prediction test)*
 - *“very different, it was more difficult than small clips but it was interesting to see how it works” (Learner, hazard prediction test)*
 - *“The standard UK hazard perception test is less realistic compared to the experimental one. Although the experimental one is a bit more challenging, it is more like real life driving experiences.” (Learner, hazard prediction test)*



But...

- Self-rated engagement with driving-related video games is *negatively* correlated with both...
 - ... official DVSA HP scores ($r = -.45, p < .001$)
 - ... and our experimental HP scores ($r = -.31, p < .05$)
- Criterion bias?



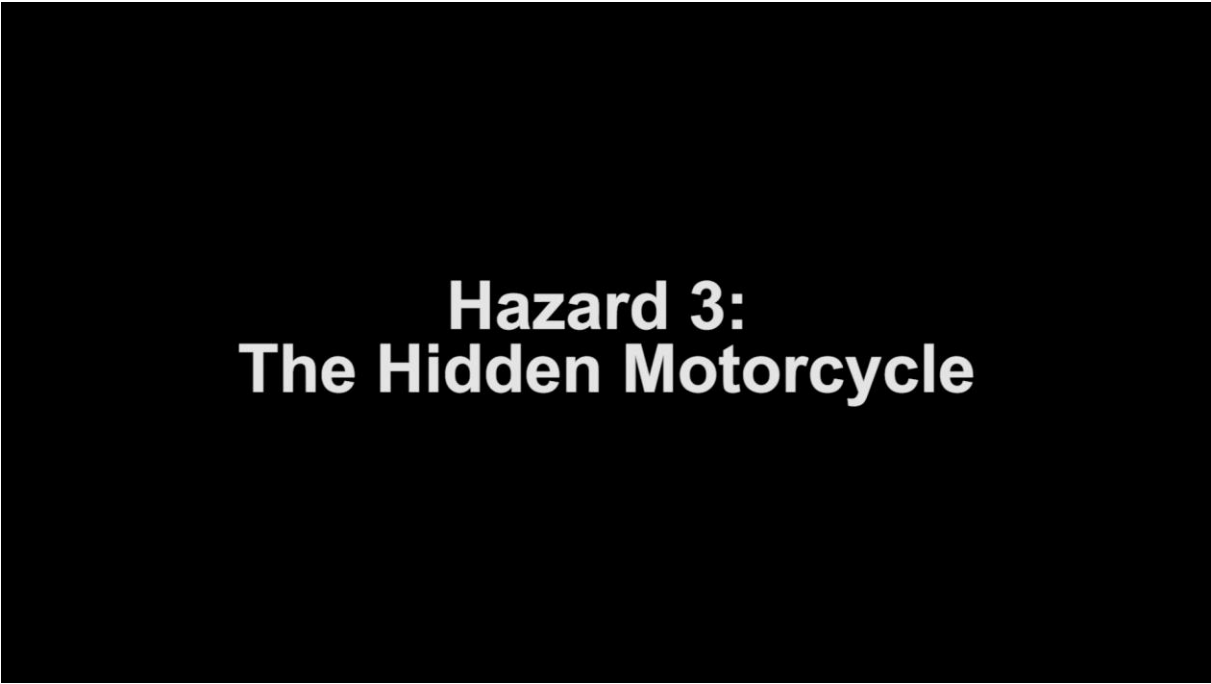
Research conclusions

- Group differences in performance were huge
- The new single journal, combined test is a success!
- Theory questions are not negatively impacted
- Drivers like the new test and think it more realistic
- Both prediction and perception tests found group differences, but the prediction test has other advantages.
- Some hazards suited response-time measures. Others better suited a prediction response. Perhaps a mixed approach is best.



Future directions

- All materials will be made freely available via **COMING SOON** www.cieca.com (including training materials!)



- A suite of journeys
- Varying road types, journey reason, weather and time of day
- And VR!



Summary

- CGI is a robust and proven technology platform for delivering photo realistic, highly visual, flexible and engaging content.
- Research indicates that a single integrated test using hazard perception and prediction clips in a real world scenario enhances driver learning and could help facilitate a potential change in attitude and behaviour.

Thank you for listening

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