

# BSM

## DEVELOPING HAZARD PERCEPTION DURING DRIVING LESSONS



# INTRODUCTION

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Driving Instructor Training Manager  
AA Driving School  
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### Background:

- 2005 – Approved Driving Instructor
- 2009 - ORDIT
- 2011 – Daimler, Mercedes-Benz
- 2017 – AA|BSM Driving Instructor Training
- Supported the development and delivery of classroom and online hazard perception training programmes in United States, Canada and China
- Train 1000+ UK driving instructors per year for AA Driving School & BSM

# HAZARD PERCEPTION AND DRIVER TRAINING



Most crashes occur due to human error.

This error is often associated with the driver either not identifying a hazardous situation early enough and/or failing to respond early enough or appropriately (Lewin, 1982).

Hazard perception training has been positively evaluated to have a direct benefit on the safety of new drivers.

How do the actions and teaching of an in-car driving instructor support the development of effective hazard perception skills?

*Lewin, I., 1982. Driver training: a perceptual-motor skill approach. Ergonomics 25, 917–924*

# HOW GOOD IS YOUR FOCUS?

Quirkology Channel

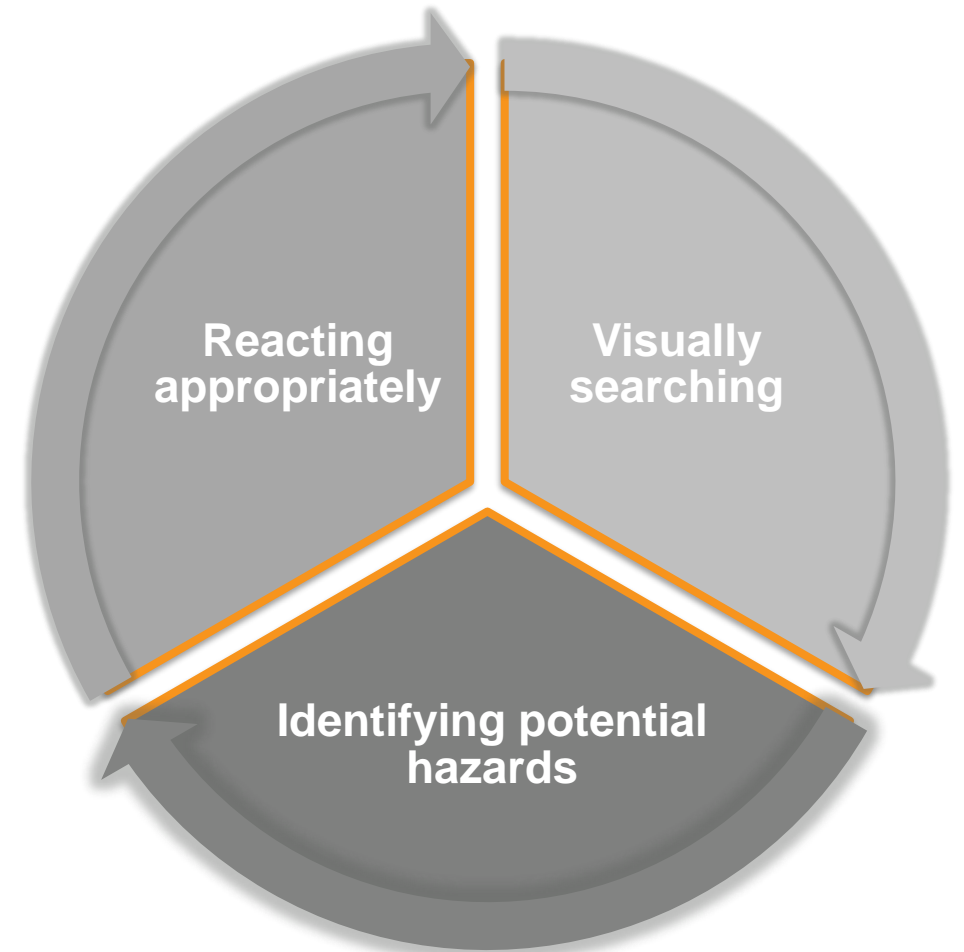
**THE COLOUR  
CHANGING  
CARD TRICK**

[www.RichardWiseman.com](http://www.RichardWiseman.com)

# HAZARD PERCEPTION MEANING

## Common themes of hazard perception definitions

- Visually search the environment
  - Scanning the whole environment
  - Identifying areas where dangers may appear
- Identify potential dangers
  - Identify
  - Prioritise & reprioritise
- React appropriately to situations



# VISUAL SEARCH – NOVICE VERSUS EXPERIENCED

## Novice

- Smaller area of focus
- Very close to the front of the car
- Directed downwards towards the road surface
- Longer fixation periods
- Minimal head movement
- Slower to use their peripheral vision

## Experienced

- Start to move their head to the side before moving their eyes
- Wider horizontal search patterns
- However, still many weaknesses
  - Maintaining attention
  - Expanding visual search
  - Not identifying where dangers may come from

# IDENTIFYING HAZARDS – NOVICE VERSES EXPERIENCED

## Novice

- Poor visual search means novice drivers:
  - May see hazards much later
  - Have less time to react to what they see
- Limited experience in understanding a complex and constantly changing environment
- Task overload – still need time to think
- Task focus – may be prioritising other activities

## Experienced

- Has the ability to identify hazards
- Demonstrates greater levels of situation awareness
- However, still many weaknesses
  - Inattention blindness – think of the colour changing card trick
  - Distraction
  - Speed and space choices

# REACTING TO HAZARDS – NOVICE VERSES EXPERIENCED

## Novice

- Lack of experience in knowing what to do
- Less time to react
- Limited awareness of risk – weighing up the benefits and disadvantages of possible courses of action

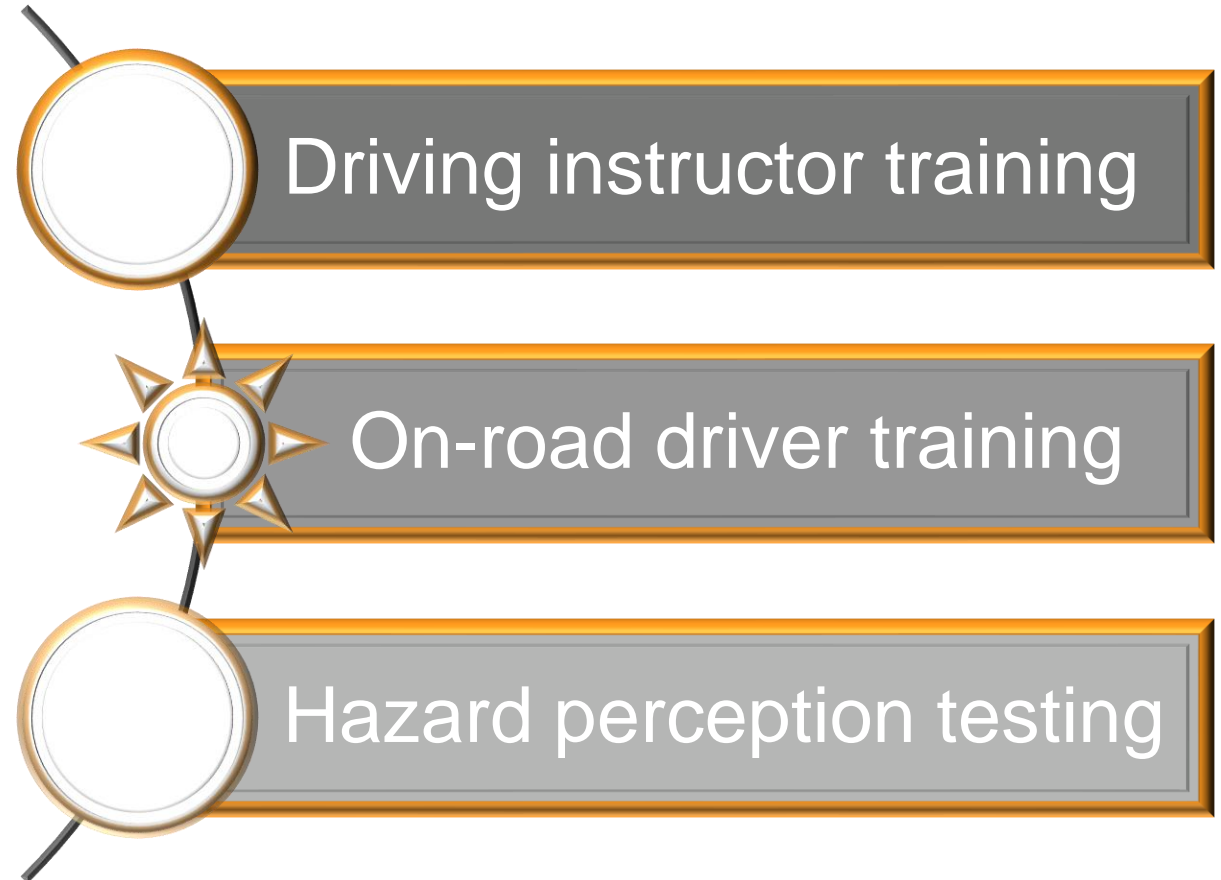
## Experienced

- Draw upon previous experiences
- Have learnt coping strategies and engage with limited cognitive effort
- However, still many weaknesses
  - Context – running late? Frustrated?
  - Attitude – who should have priority?
  - Decisions – limited perhaps by speed and space choices



# CONCLUSION

- Novice drivers are at a significant disadvantage across all 3 areas of hazard perception.
- Hazard Perception training is an area of road safety that has had significant research to support its importance in all driver training.



# ON ROAD DRIVER TRAINING

## Commentary driving

- Commentary driving typically involves being trained in how to produce a verbal running commentary about:
  - what you can see
  - what you are doing
  - what might happen
  - what action you will take to avoid potential hazards
- However, research suggests that this type of commentary can be detrimental to hazard perception.

# ON ROAD DRIVER TRAINING

## Hazard perception commentary driving

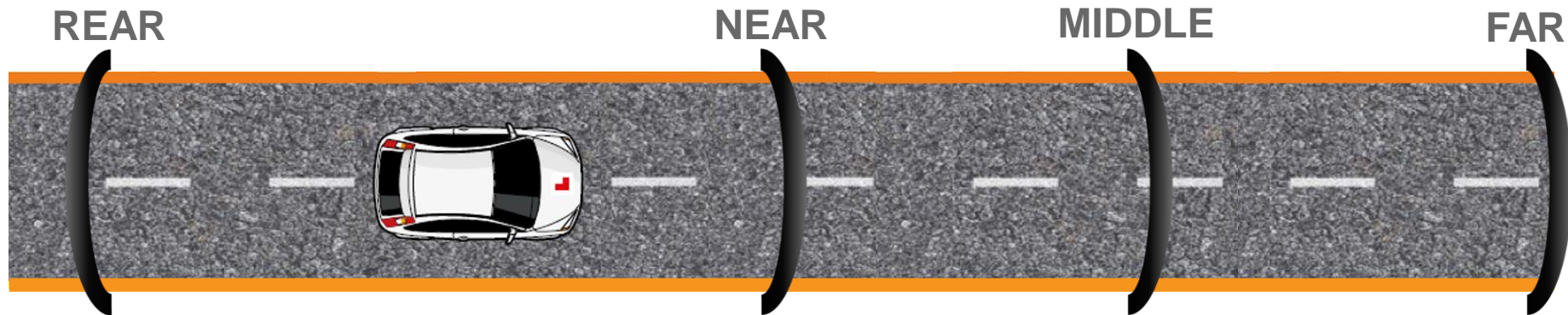
Focus on just two questions

- What do you see on the road clearly that could affect your driving?
- Where could hidden/less obvious danger come from?

**NOTE:** If you only ask these questions when you spot a hazard for your pupil to deal with you will not fully develop their hazard perception skills. They need to be asked as part of a continuous active hazard perception exercise.

# ON ROAD DRIVER TRAINING

Developing prototypes for hazard perception – actively involved



- Use a pattern to support active scanning
- Vision needs to be aimed high and wide

# ON ROAD DRIVER TRAINING

## Reference points

- There are many mentions regarding the use of fixed reference points to help with; slow speed manoeuvres, positioning and judgement of learner drivers.
- The use of these reference points may
  - encourage a smaller area of focus
  - prolonged fixation
  - downward vision
  - poor awareness of hazards



# ON ROAD DRIVER TRAINING

## Snap Shot

- Place your learner driver in the appropriate position.
- Take a mental picture from a number of different points of view.
- Discuss the viewpoints encouraging high aim vision and different levels of distance.
- Help support your learner identify potential risks or hazards.
- Test their awareness by providing opportunity for independent practice.



# SUMMARY

Thank you for your participation today

- What do you feel you have discovered today?
- What questions/comments do you have?
- What can we do to support you further?

