

Abstract

The role of hazard perception in the development of safe driving has been focus of much research over the last two decades, and it has become increasingly clear that ability to perceive hazards and correctly quantify their potential for danger plays a major role in the driver's 'aptitude for safe driving'.

It is, therefore, reasonable to expect that hazard perception test becomes part of the driver licensing process. However, for any such test to be effective, it must be seen to be a reliable means of testing the drivers' potential for safe driving.

In this paper, I argue that the current Hazard Perception Test which is part of the UK Driving Theory Test:

- Does not realistically measure the candidates skill in scanning and hazard perception
- Encourages reactive behaviour, and;
- The scores awarded in this test do not help separate 'safe drivers' from those who could turn out to be unsafe.

Hazard Perception Test is not fit for the purpose

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I wrote a paper ¹ in February 2006 entitled "Hazard Perception Test is failing to detect unsafe drivers".

In that paper I questioned the validity of the DSA Hazard Perception Test (HPT) and indicted that, in my opinion, this test does not realistically measure the candidate's skill in scanning and hazard perception, which according to the DSA were the main reasons for introducing HPT. That conclusion was based on experience and knowledge of how a driver perceives hazards and reacts to them

Using the Freedom of Information Act, I have now obtained the HTP pass rate for the various categories of candidates (Car, motorbike LGV and PCV Learner Drivers as well as PDI's and ADI's).

Hazard Perception Test (HPT) pass rates (measured over a period one year- December 2005 to December 2006) are as follows:

	Pass rate	Pass mark
Car (learner Drivers)	86.06%	44
Bike	94.31%	44
LGV	85.70%	50
PCV	84.06%	50
PDI	62.46%	57
ADI	62.33%	57

Please Note that 62.33% of the tests taken by ADI's, who are clearly much more experienced drivers than learner drivers, have resulted in passes as opposed to 86.06% of the learners' tests.

In realistic terms these results could indicate one or other of the two possibilities listed below:

- That either the ADI's, who are licensed by the DSA to teach/train the learner drivers, are far less adept in their anticipation and Hazard Perception than the learners they are training! or;
- That the test does not measure what it was designed to measure

You may quite rightly point out that the pass rates are different. In that case, I will point out that it is the DSA who have determined these pass rates, presumably on the basis that an ADI should score 13 points higher than a learner driver, which they clearly do not!

Before we blame the instructor, lets look at the statistics. If such a test is suitable for measuring the candidates ability/skill, one would expect the more experienced/skilled person to score higher than the less experienced. Alternatively, if the pass marks were set at different levels to even out the difference in experience, then one would expect the average scores to be roughly the same.

However, if the results were related more to chance than skill/experience, then more of the candidates in the category with lower pass mark would be expected to pass the test - Because in any random search for a target, it is more likely to reach the target less often than more. In other words it is easier to obtain a total of 44 out of 75 than it is to reach a total of 50 or 57 out of 75 by chance. Which, in fact, is the case in this test as the pass rate for every category increases almost in proportion to the reduction in pass marks! (Irrespective of the candidates' expected ability to detect 'developing' hazards).

It is also possible that the test is measuring something else other than the candidates' 'road sense', which I believe was (and should be) the reason for developing this test.

In my opinion the best definition of hazard perception is that given by Brown & Groeger ² (1998) "*Hazard perception can be defined as the process of identifying hazards and quantifying their potential for danger*". This definition could help explain why less experienced drivers perform better in the DSA test than the more experienced ones. It could relate to the point I raised in my previous paper ¹ That experienced drivers differ from the novice drivers in that experienced drivers do not react immediately to any potential hazard instead they judge potential danger and hence potential hazard as part of the total clues they receive from the surrounding environment (e.g. from the side and rear views as well as the speed of their cars and that of other surrounding road users). Most of these clues are missing in this test.

I believe the HPT pass rates, for various categories of candidates, help emphasize my earlier conclusion that the current DSA Hazard Perception Test:

- Does not realistically measure the candidates skill in scanning and hazard perception
- Encourages reactive behaviour which is in direct contrast to the aims of the exercise to encourage better scanning and anticipation, and;
- More important and worrying than all, scores awarded in this test do not, in any way, help separate 'safe drivers' from those who could turn out to be unsafe drivers.

I have no doubt that improved hazards perception ability will reduce drivers' risk of being involved in accidents and as early as in 1982, I tried to show the value of training drivers to improve their anticipation and Hazard Perception ability ³. However, I am concerned that it is unfair to fail candidates on the basis of a test, which has become increasingly apparent that does not measure what it is supposed to measure.

On the above basis, I call upon the DSA to speed up the process of replacing this flawed test with a test, which is more realistically capable of measuring the candidate's anticipation and Hazard Perception.

I am familiar with the previous research programmes and in particular that of the NFER ⁴ and TRL ⁵, which led to the introduction of this HPT. However, according to the TRL report ⁴(commenting on the NFER study) "*It was the inability to demonstrate a clear relationship with accident liability that raised serious questions about this NFER test. It is a well-designed test that reliably measures something! But the 'something' would not appear to be predictive of accident liability.*"

Turning to the TRL report. Having pointed out the serious shortcoming of the NFER ⁴ study, they then designed a research programme with objectives that did not include examining whether this HPT was suitable for testing the

candidates' road safety potential in line with the main aim of the test, which was stated as that of 'helping to reduce the road accidents caused by poor anticipation and hazard perception'

This is not a criticism of a very well designed research programme that again measures 'something' but that something seems to show that participants in the test could improve their scores by learning more about the test. (I do not mean the contents of the test but how this test works)

If one of the main reasons for introducing this test was to help improve the potential safety of the drivers, then none of the studies, so far, have attempted to show that candidates who score higher in this test are safer drivers than the ones who score lower.

I am aware that other research programmes are underway, or are planned, to test the validity of this HPT. Again, understandably, most of these research programmes only take into account the variables, which are clearly understood or are possible to measure within the constraints of the research programme. For example comparing the behaviour of drivers, before and after the test was put into place, can not take into account all the other changes which took place at the same time- such as changes in verifying the identity of the theory/practical test candidates.

Impersonating a candidate on driving tests had been a very serious problem for a long time. Recently, this problem has been reduced considerably, but unfortunately due to the DSA's belated acceptance that the problem existed, there are many "licensed" drivers on our roads who have never taken driving theory or practical tests. This, for example, can make the 'before' and 'after' research results unreliable as there is no way of identifying these drivers and no way of knowing that they are not included in any research sample.

However, in my opinion, there is a cost effective and valid form of research, with readily available appropriate data, which could provide a very good indication of whether this HPT achieves what it is meant to achieve.

Most of the learner drivers who had taken the Hazard Perception Test, have taken their Practical Test soon after. In that case, they are examined by a skilled DSA trained Examiner. If the HPT pass marks of these candidates were to be compared with the appropriate section of the results they obtained in their practical test (DL25), it will give a very good indication of whether the HPT results are valid or not.

I sincerely hope that the DSA will take notice of the serious concerns of the Road Safety and Driver Training professionals about this test and either proves to us that this test is valid or speed up the process of replacing this test.

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