



Exploring psychology

The results of the analysis

Andrew Sparkes

The only two major measurements that we made where there was a consistent effect across all subjects was the average speed that they travelled, which was slower, and their tracking ability, their ability to stay within the lanes. Obviously the simulator is set up to measure how accurately people stay in the lane that they are in and drive as accurately, as normally, as they can. And the more that they weave about in that lane, this is a measure of the effect of cannabis on what we call their psychomotor performance, and cannabis has a significant effect on that. That was a consistent effect across all subjects.

Narrator

The tracking test shows that cannabis does affect hand-eye co-ordination. The simulator test measures the more complex decision making processes involved in driving. The computer records all this data sixty times a second and turns it into a graph for analysis. Here it took the participant 1.3 seconds to react by braking in response to the programmed event.

Barry Sexton

The conclusions here, generally speaking, were that there were some instances of differences in behaviour for the various measures being used. Which suggest that the higher the dose of cannabis, the more cautious perhaps they are going to be as a driver. More cautious on the one hand, but on the other hand they can't react as quickly, so anything sudden that happens or there are control skills that are needed fairly urgently then they have more difficulty.

Narrator

So, overall alcohol makes you more confident. Cannabis, it seems, makes you more cautious but not necessarily a safer driver. So how reliable are these conclusions? And if they are reliable, how relevant are they to what happens in the real world?

Andrew Sparkes

We've conducted a lot of trials over the years now using the driving simulator, and an important element of that has been to validate the test tool itself. Now we've done that in a variety of ways. Mostly we focus on speed choice, distances from other vehicles and lane position, and we've observed those in the driving simulator and out there in real life. Now those results have shown two things. Firstly that the driving simulator produces results that are very close to real life; however they are different, and most important they are systematically different to those you observe in real life. So we don't just get more variation, we tend to get with speed, for example, people will drive slightly quicker in the simulator than they would on the real road, particularly in motorway environments. However, it's systematic, that means it's repeatable, it's always in the same direction. Now when we know that, basically we can take the sort of data that we get from the simulator and scale it and make our predictions about what's going to happen out there in the real world.

Narrator

The testing techniques, the tracking task and the driving simulator prove to be valid and reliable measures of performance. What's been less successful is the premise that participants who regularly smoke cannabis can be given different doses of the drug, or none at all, and not notice a difference in the effect.

Rob Tunbridge

It's probably impossible in any sort of trial when something as strong as alcohol or cannabis is having an effect on you not to know whether it's a placebo or not. But I don't think in any sort of experimental situation we could have actually done better than we've done.

Narrator

Even in a carefully designed experiment such as this, there are some factors you simply cannot control. In this case it's the fact that the participants know how it feels to take the drug