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Technology 'tells' could save lives

FRED PAWLE

In poker, a "tell" is a sign you inadvertently give to other players revealing what is in your hand. Being aware of them reduces the risk of you losing your shirt.

In the new field of driver-fatigue monitoring, a "tell" is a sign you give a machine that you may no longer be fit to be behind the wheel. Unlike in poker, this "tell" could save more than your shirt.

The signs vary from one driver to another. It could be driving fast downhill or slow uphill, blinking often, dropping the head, being distracted or shifting around in the seat.

One of the fascinating and unforeseen findings in this new field has been that drivers who use the technology become aware of their own "tells" and act on them before the machine warns them to.

Professor Drew Dawson, of Central Queensland University's Adelaide campus, who is one of the nation's leading experts on sleep and fatigue, has just co-authored a report on fatigue monitoring systems for the National Heavy Vehicle Register.

Several systems were studied, but the most common one was the Guardian, by Seeing Machines, a company based in Canberra, which has a camera aimed at the driver's face. When the driver starts displaying "tells", both he and his base are warned and the camera starts recording the driver.

Dawson is clearly delighted with the way drivers have adapted to the technology, especially given that many were initially suspicious of it.

"This is the thing we didn't expect, which is fascinating," he says.

"The drivers are using it as a biofeedback tool. They told us they were learning their 'tells' so they can work out if they are fatigued before the machine does."

In those instances, they invariably pulled over for a rest and drank coffee to avoid a warning being sent back to base.

"They don't like getting caught by the machine," Dawson says.

Many of these drivers were initially sceptical about the technology, especially about having a camera in the cabin.

"Some of them thought that management had nothing better to do than sit around at base watching drivers, and thought it was like Big Brother," Dawson says.

But the camera in most systems only starts recording when there is a fatigue event, and even then only for a few seconds. When this footage is later shown to a driver for the first time, it is often a revelation, says Dawson.

"Drivers say, 'I had no idea!' Sometimes people don't realise how fatigued they are."

These findings are leaving the current methods of fatigue management — log books — far behind, and for good reason. One of the assumptions upon which the logbook system is based is that fatigue is largely determined by how long the driver has been behind the wheel.

"There is no scientific evidence to support that," Dawson says.

"What the scientific findings show is that your alertness is as much dependent on the time of day as it is to how long you've been awake."

A driver is typically more tired when he leaves a depot at 3am than he is after six hours of driving, when the sun is up and his body clock is at a high point.

Dawson says the National Transport Commission's current Regulation Impact Statement, which will be released for discussion in a few months, should recommend this technology be implemented in the most pragmatic way possible. In other words, "You shouldn't have to comply (with prescriptive rules), you should just have to prove you can do it safely."

This is because there is so much variation in the products on the market, and in the types of trucking operations that would use them. To apply fairly to the whole industry, a uniform set of rules would be complex and difficult.

Transport veteran Ron Finemore has kitted all of his 250 vehicles with Guardian units
SIMON DALLINGER

> 'This is the greatest thing I've seen in my 59 years in the industry. It proves what I've been saying to anybody who will listen for the last 40 years'
>
> RON FINEMORE

For example, should an operator kit all his trucks out with cheap monitoring systems, which are less reliable, or install the best technology in a select few trucks and assign drivers who are identified on the day as most at risk?

Operators should be free to make the best decisions for their own circumstances if they can prove their systems are safe, Dawson says.

"From a regulatory perspective, that makes sense. But companies need guidance on how to do that."

One operator who doesn't need to be convinced about the benefits of this is transport veteran Ron Finemore, who has kitted all of his 250 vehicles with Guardian units.

"This is the greatest thing I've seen in my 59 years in the industry," he says.

"It proves what I've been saying to anybody who will listen for the last 40 years."

He says these systems are not just for the big operators. "The small operators can do it better than me," he says.

A lot of them are family-operated, in which the manager at home is the spouse, which can alleviate the problem of the driver feeling persecuted by a boss. "They have an easier ability to talk to their people," he says.

Finemore says his own management team did a good job persuading the firm's drivers to embrace the technology.

"We said we are only interested in keeping you safe and getting you home safe."

Like Dawson, he says operators need to be given as much flexibility as possible to implement the benefits.

Dawson says it sometimes takes a "complacency disruption event" — in other words, a near miss or, in extreme cases, the death of an employee — to convince operators to adopt lifesaving technology.

"That's when people say, 'We've got to do something'. They don't want their people to die. It really shocks them."

This has often been the reason operators have adopted it until now, given that there are no regulatory benefits.

But there is one other compelling benefit, which is financial. Being able to provide an insurance company with detailed safety procedures and records will lower premiums.

"The companies that are operating safely get a good deal, and are more competitive," Dawson says. That forces the "cowboys" to lift their game.

Report finds accidents attributable to truck-driver fatigue at lowest levels

FRED PAWLE

Accidents caused by truck-driver fatigue have declined dramatically since 2005, the latest figures from NTI, the nation's leading truck insurer, reveal.

NTI was due to release its biennial Accident Investigation Report at the Trucking Australia annual conference in April, but the conference has been postponed by the coronavirus pandemic, and the report has been postponed with it.

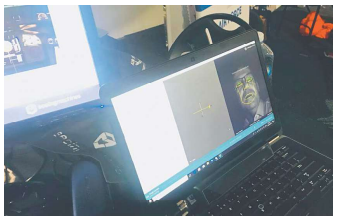
Instead, NTI has given The Australian some of the report's key findings. The most significant of these is that the proportion of large-loss accidents (from which total costs exceed $50,000) attributable to fatigue are at the lowest level since NTI published its first report in 2005. Seventeen years ago the proportion was 27 per cent; the figure now is 9.6 per cent.

Fatigue is particularly dangerous, says the author of the report, Adam Gibson.

"Drivers have no opportunity to respond," he says.

"If you're asleep, you can't mitigate the severity of the accident. Anything we can do to push that down is important to the safety of drivers."

The two sharpest declines have coincided with changes to regulations, in 2008 and 2018, which firstly forced drivers and companies to keep detailed diaries then empowered drivers to pull over when they thought they were not in a condition to drive.



Seeing Machines' driver-fatigue monitoring technology

"We think that's off the back of a lot of hard work in the industry to work on that issue," Gibson says.

Reducing fatigue-related accidents will now rely on the implementation of new technology, which is already providing NTI with useful data.

NTI's analysis from clients who use Seeing Machines' driver-fatigue monitoring technology has found that truck drivers are significantly less likely than car drivers to use mobile phones while driving.

"We see that 76 per cent of trucks fitted with Seeing Machines recorded zero mobile phone usage events," he says.

Gibson says this contrasts starkly with figures from the Queensland University of Technology's Centre for Accident Research and Road Safety.

In a survey of 800 car drivers, 77 per cent said they used their mobile phones while driving, and 40 per cent said they used phones daily (handheld or hands-free) while driving. Another key finding is that in 80 per cent of fatal accidents involving a truck, the other driver or person is at fault.

"This challenges the stereotype around heavy vehicles and the transport industry," Gibson says, adding that this figure has been consistent for 12 years. "It goes against a lot of assumptions about truck drivers."

Gibson's colleague, NTI's chief sustainability officer Chris Hogarty, says it's a good reflection of the industry, especially in comparison to car drivers.

"The behavioural insights from the statistics that we have show that truck drivers treat driving as a profession, which sometimes gets lost in the perception of our industry," he says.

The paradox of NTI's safety initiatives is that they decrease the premiums the company can charge.

"As the harm measures reduce, that has a consequential effect on premiums," Hogarty says. "It's a by-product, it's not an objective — that's one way to put ourselves out of business."

NTI's approach is to ensure that the technology is not only installed but is used properly.

"You don't always see the benefits just because they've implemented it," Hogarty says.

Hogarty equates safety with sustainability for both the trucking industry and its insurers.

"We are using that as a driving force behind what we do," he says.

'Smart caps' to improve health and safety

ROSANNE BARRETT

Hats that measure brainwave patterns of truck drivers are reducing the impacts of fatigue on the roads.

The Heavy Vehicle Safety Around Port project provided 75 drivers around the Port of Brisbane with "smart caps" in a 12-month pilot program to improve health and safety. It used electroencephalogram-measuring headbands to provide real-time data to operators and drivers about their alertness during a period of 18,500 hours.

Queensland Trucking Association chief executive officer Gary Mahon says it was a very successful initiative they hope to extend more broadly.

"One of the causes that we push for is the adoption of technological improvements for the management of fatigue," he says.

"Fatigue management has been fundamentally managed via a logbook and prescriptive hours, which is a system that has been in place for about 86 years.

"There is a lot of technology available now that are considerable improvements on counting some hours and writing them in a book, and the smart cap technology is one element."

The pilot program found almost half the fatigue alarms went off during 9am to 2pm, and the early warning system was highly effective. There were no fatigue-related incidents during the pilot. There were also other activities aimed at improving wellness in truck drivers, including health checks, flu vaccinations and skin checks. The pilot received $302,000 in funding under the NHVR safety initiative.

PBPL (Port of Brisbane Pty Ltd) COO Peter Keyte said the lessons identified in the trial will be shared with the broader port community.

"Both the QTA and PBPL are strongly committed to the heavy vehicle safety agenda, and this project has delivered safety-focused, tangible improvements for businesses and drivers in and around the port precinct," he says.

The urban port has more than 3.1 million vehicular movements on its roads each year, with a growing proportion of freight trucks.

Safety is an ongoing issue for the trucking industry, including issues around fatigue-management, driver inattention, safer roads, training and more appropriate rest areas.

Too many truck drivers die at work. In the last quarter of 2019, 19 road deaths involved articulated trucks, and another 20 deaths involved heavy rigid trucks.

While the decadal trend is down, last year's toll was a spike on the previous 12 months', according to the Fatal Heavy Vehicle Crashes Australia Quarterly Bulletins.

The Transport Workers' Union has called for the reinstatement of an oversight body to set minimum awards as a "safe wage" across industry. Industry disagrees.

At the end of a decade-long national road safety strategy, last year the Senate Standing Committee on Rural and Regional Affairs and Transport established an inquiry into the importance of a viable, safe, sustainable and efficient road transport industry. The wide-ranging review is investigating the importance of a minimum award rate for drivers, appropriate regulation and infrastructure, training standards, and the social and economic impact of road deaths and injuries.

Recent public hearings have been cancelled due to the coronavirus pandemic.