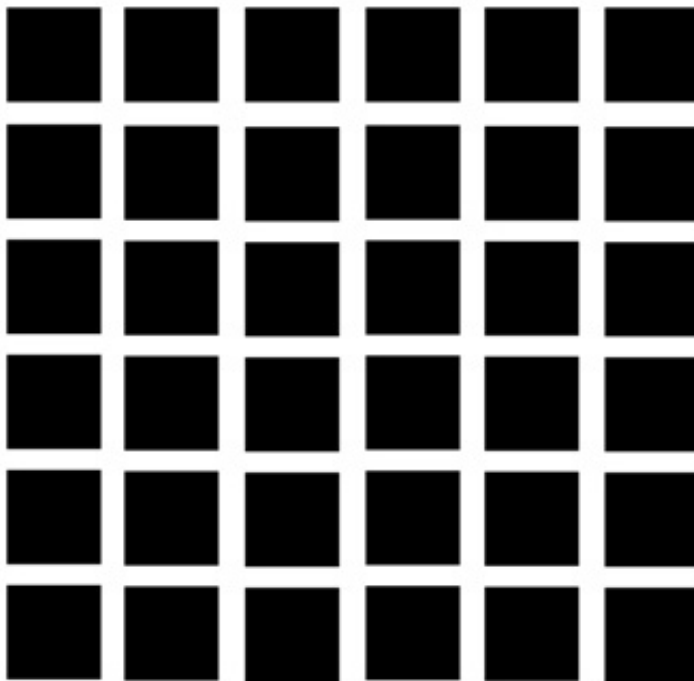


# New study shows alcohol impacts vision by 30 per cent

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Western researches used the Hermann Grid, an optical illusion described by Ludimar Hermann in 1870, to understand how alcohol affects the perception of contrast. The Hermann Grid is basically a grid of black squares on a white background where you see ghost-like dark spots at the intersections of the grid but they are not actually there.

Using a 144-year-old optical illusion, Western researchers have

determined drinking the legal limit of alcohol impairs some aspects of vision by 30 per cent.

In findings published in the journal *Perception*, Kevin Johnston and Brian Timney from the Schulich School of Medicine & Dentistry and the Faculty of Social Science have shown [alcohol](#) greatly affects the ability to adjust [vision](#) for brightness and contrast, which may be increasingly problematic when driving at twilight, as the sun dips below the horizon.

"We obviously know alcohol impairs our decision making and motor skills but until now, we did not know how alcohol affects our vision," said Johnston, a research scientist at the Department of Physiology and Pharmacology's Laboratory for Neural Circuits and Behaviour. "What we have done now, using century-old methods, is find out exactly how much vision is impaired after drinking alcohol."

Johnston and Timney, who serves as Social Science dean, used the Hermann Grid, an [optical illusion](#) described by Ludimar Hermann in 1870, to understand how alcohol affects the perception of contrast.

"The Hermann Grid is basically a grid of black squares on a white background. You see ghost-like dark spots at the intersections of the grid but they are not actually there," Johnston said. "It's the way our visual system processes contrast or brightness differences that creates this illusion."

The researchers were able to show that the apparent contrast of the illusory spots in the grid is reduced by 30 per cent at a blood alcohol level around the legal driving limit. This means making distinctions between different objects based on lightness and darkness becomes increasingly difficult.

"This is obviously important when you are driving at twilight, when

objects are more difficult to see and more difficult to discriminate, even without alcohol," Timney said. "It's at those times when you are going to be most affected, and impaired."

Provided by University of Western Ontario

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