

Hands-free cell phone conversations add 5 m to drivers' braking distances

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Research led by Psychology researchers at the University of Warwick reveals that cell phone conversations impair drivers' visual attention to such a degree that it can add over 5 metres to the braking distance of a car travelling at 60 miles and causes almost twice as many errors as drivers driving without the distraction of a hands free cell phone conversation.

Some of the participants carried out the task with no distraction. Others carried out the task while also using speaker phones to simultaneously engage in a normal phone conversation, discussing things such as their hobbies and interests. The researchers found that on average the reaction times of those engaging in the hands free telephone conversation were 212 milliseconds slower than those who undertook the task without the simultaneous telephone conversation. A car travelling at 60 miles an hour would travel 5.7 metres (18.7 feet) in that time so the distracting conversation would obviously increase any braking distance at that speed by the same amount. The test participants who were distracted by a phone conversation also made 83% more errors in the task than those not in phone conversations.

The researchers also looked at the effect the hands free telephone conversations had on visual attention if the phone conversation was skewed to a more passively orientated task. To do so they asked the test participants to listen over the speaker phones to a series of words and to repeat each word in turn. The research team also looked at the effect of a much more complicated conversational task in which the test

participants had to listen to a series of words and after each word then think of and say a new word which began with the last letter of the word they had just heard.

For the more passive speaking condition, in which words were simply heard and repeated, they found that performance of test participants in this condition was the same as when they took the task without any distraction. However, they found the more complicated conversation in which the test participants were required to create and respond with a new word dramatically worsened the participants' response times which were on average 480 milliseconds slower than those who undertook the task without any form of distracting telephone conversation. This suggests that hands free telephone conversations which require people to carefully consider the information they hear and then to make complex cognitive choices based on that information (a business decision for instance) have a particularly significant negative impact on a driver's ability to process and act on the visual information that is critical to their driving performance.

Interestingly the researchers also examined what the effect would be of simply listening to a story while carrying out the task – an experience not unlike listening to speech radio while driving. To test this some of the participants in the experiment tried to complete the task while listening to the first chapter of Bram Stoker's *Dracula*. They were also told they would have to answer questions on the story after the task was finished. The researchers found that in fact this activity made very little difference to the test participants response times or accuracy

The lead researcher in the project, Dr Melina Kunar from the University of Warwick's Department of Psychology, said: "Our research shows that simply using phones hands free is not enough to eliminate significant impacts on a driver's visual attention. Generating responses for a conversation competes for the brain's resources with other activities

which simply cannot run in parallel. This leads to a cognitive "bottleneck" developing in the brain, particularly with the more complicated task of word generation."

Source: University of Warwick

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