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Driven to distraction: New study shows driving hinders talking

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Gary Dell, a psycholinguist in the department of psychology at Illinois, and his colleagues found that young and old drivers lose about 20 percent of their ability to retain and retell a story while driving. Credit: Photo by L. Brian Stauffer, U. of I. News Bureau.

It is well known that having a conversation (for example on a cell phone) impairs one's driving. A new study indicates the reverse is also true: Driving reduces one's ability to comprehend and use language.

The findings, from researchers at the University of Illinois, appear in the journal *Psychonomic Bulletin & Review*.

This is the first study to find that driving impairs language skills, said Gary Dell, a psycholinguist in the department of psychology at Illinois and corresponding author on the study. Two previous studies had reported that driving did not impair the accuracy and comprehension of speech.

"The previous findings made no sense to those of us who have studied language," Dell said. "You might think that talking is an easy thing to do and that comprehending language is easy. But it's not. Speech production and speech comprehension are attention-demanding activities, and so they ought to compete with other tasks that require your attention - like driving."

The new study was conducted in a driving simulator at the Beckman Institute for Advanced Science and Technology at Illinois. The participants worked in pairs - one as a driver and the other as a conversation partner who was either in the simulator with the driver or talking with the driver via a hands-free cell phone from a remote location. Half of the 96 participants were adults over the age of 65 and half were in their late teens and early 20s.

Participants either sat in an unmoving vehicle or navigated through busy urban traffic while listening to, and then retelling, a brief story that they had never heard before. Using a headphone and a microphone, each participant heard and retold four stories. After leaving the simulator, all participants were asked to recall everything that they remembered about the stories.

As the researchers expected, a participant's ability to remember and retell a story declined significantly if he or she was also driving during the exercise. The older subjects performed more poorly on these tasks to begin with, and their ability to retain and retell the stories worsened as much as that of their younger peers.

In contrast to their performance while sitting still, Dell said, "the drivers remembered 20 percent less of what was told to them when they were driving." Declines in the accuracy of retelling the stories were most pronounced while drivers navigated through intersections or encountered more demanding traffic conditions.

"This study shows that various aspects of language go to hell when you're driving," said psychology professor Art Kramer, who collaborated on the study.

The study reflects the tradeoffs that occur when people try to communicate while performing other tasks, Dell said. "The relative balance of attention to any two tasks is going to vary," he said. "And perhaps we don't understand one another as well as we should because of this. With modern technology, we're talking more and more while we are doing other things, but we may be understanding one another less and less."

More information: The paper "Driving Impairs Talking," is available online: pbr.psychonomic-journals.org/content/17/1.toc

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