Bidirectional interference between simulated driving and speaking

Christopher Dromey
Kelsey Simmons

The study's purpose was to examine interference between speaking and driving tasks. Three age groups included 20 participants each: younger (20s), middle-aged (40s), and older (60s). Participants completed a monologue task and a computer-simulated driving task both separately and concurrently. The driving task involved maintaining a constant speed and lane position on a freeway. There were significant divided attention effects in the speaking/pausing ratio, speech intensity, driving speed, and steering wheel control. The younger group had less variation in intensity and fundamental frequency compared to the other age groups. The younger group had less variation in lane position compared to the other groups and the older group had more variation in speed and steering wheel position. The females had less variation in intensity and more variation in lane position compared to the males. These findings suggest that divided attention conditions impact both speech and driving performance. The results also shed some light on the effects of age on concurrently performed speech and driving tasks. It may be helpful to incorporate divided attention conditions into treatment to help patients generalize the skills learned in therapy to everyday communication where distractions are common.