

## How effective are speech adaptations? A closer look at the effects of elderspeak

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"Elderspeak" is a speaking style that younger adults often adopt when talking to older adults. Although some characteristics of elderspeak, such as repetitions and elaborations, appear to be beneficial, there is little evidence that *prosodic* characteristics, such as slow speech rate, have positive effects (Kemper & Harden, 1999). In fact, evidence suggests slow speech can hinder comprehension, particularly in individuals with low working memory (Small et al., 1997). To date, most studies have examined off-line comprehension, and thus the impact of elderspeak on *real-time* interpretation in older and younger adults is unknown. Because older adults often exhibit declines in cognitive processing (Salthouse, 2000), the slower speech rate of elderspeak might benefit their comprehension as it provides more processing time. However, the prosodic features of elderspeak might hinder comprehension because of the disruption to natural intonation and rhythm, and because slow speech "spreads out" words in time, perhaps making syntactic and semantic integration more difficult. To explore these possibilities, the present study examines how prosodic characteristics of elderspeak affect real-time comprehension in a situation where word meaning must be narrowed by sentence syntax and prosody.

Using a Visual-World eye-tracking methodology, we compared 40 younger and 40 older listeners' ability to resolve lexical ambiguity in real time. Gaze was monitored as participants listened to recorded sentences (e.g., *George saw a car crash last evening*) and clicked on an object that was mentioned (car crash) from among an array of images. Sentences were prerecorded by a native English speaker who had been asked to imagine a younger (normal speech) or older adult (elderspeak) as an addressee. Although participants heard sentences in both speech conditions, they heard a particular sentence only once. Of interest was the extent to which participants momentarily considered an (incorrect) interpretation for the main verb as it unfolded in time (e.g., "saw"- the tool rather than "saw"- past tense of *see*), as revealed by fixations to a competitor object representing the noun meaning (e.g., a saw). Gaze patterns revealed that both younger and older listeners made more temporary fixations to the competitor object in the elderspeak condition, indicating that elderspeak impairs the ability to use sentence-level cues to guide word-level interpretation. This outcome in turn suggests that the negative effect of elderspeak found in past studies of off-line comprehension (e.g., Small et al.) begins with disruption to core lexical processing, which then has cascading effects on higher-level interpretation.

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