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Episodic memory and aging: The effect of perceptual processing fluency on recognition memory processes

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Normal aging is characterized by decreased recollection, but better preserved familiarity. Memory tasks that facilitate the use of familiarity should allow attenuating age-related differences in memory. The study tested two hypotheses: (1) can the reliance on familiarity during recognition memory be promoted by increasing the difference in perceptual processing fluency between old and new items; (2) can this manipulation reduce age-related difficulties in episodic memory? Twenty-four young and 24 older adults performed two verbal recognition memory tasks. In the No-Overlap task, target words and new words did not share any letter. Prior exposition to the target words thus induced increased processing fluency of the words and letters, so that fluency difference was a salient and reliable cue to discriminate between old and new words. In the Overlap task, target and new words had letters in common, so fluency cues were less useful. Recollection and familiarity was assessed with the Remember/Know/Guess paradigm. The results showed an age effect on recollection but intact familiarity. Moreover, (1) memory performance was better in the No Overlap than the Overlap task, with a greater hit rate and a smaller false alarm rate associated with familiarity. And, (2) age-related differences in recognition accuracy (hits – false alarms) were significantly attenuated in the No Overlap task compared to the Overlap task. These findings suggest that minimizing the perceptual similarity between targets and distractors, and thus increasing processing fluency differences, allowed to reduce the effect of age on recognition memory performance by facilitating the use of familiarity.