Are episodic memory deficits in old age mediated by sensory loss? Investigating the Associative Deficit

Research has shown that episodic memory performance declines with age, and the Associative-Deficit Hypothesis (ADH) (Naveh-Benjamin, 2000) attributes much of the deficient episodic memory performance of older adults to their difficulty in binding unrelated components of a situation into an organized, interrelated memory unit. Therefore, the memory of older adults for associations is proportionally much worse than their memory for items. The current study investigated loss of perceptual acuity as one potential source of the associative deficit. Face/name pairs were “perceptually degraded”, or blurred, at three different levels (none, slight, severe) to mimic the visual sensory losses that older adults experience. Younger and older adults were compared across their performance several trials consisting of a study list of face/name pairs followed by two types of memory tests (item and associative). The item tests required subjects to recognize individual faces and names, and the associative tests tested recognition for the pairings of faces and names. I expect to find a significant triple interaction between age, type of test, and perceptual degradation level. I predict that younger adults will perform at the same level on the item and associative test under the non degradation condition, and that perceptual degradation will cause poorer performance on the associative test, relative to the item test, as degradation level increases. For older adults, I predict that performance will be worse on the associative test relative to the item test across all three perceptual degradation conditions, with associative performance further declining as degradation level increases.

This project was completed to fulfill a Capstone requirement.