You win some, you lose some: How brain atrophy and life experience shape word retrieval in aging

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Over the last century, the average human lifespan has nearly doubled, making the effects of aging on cognition, including language, an increasingly pressing research topic. Yet word retrieval, one of the most common and frustrating casualties of aging ("what's that word again?"), remains surprisingly poorly understood, both in its nature and in its neurocognitive bases.

In this talk, I will present three lines of research that together suggest a unifying account. First, I will show that age-related word-finding declines are driven not by a language-specific deficit, but by degeneration of the hippocampus, a structure better known for its role in memory than in language. Converging behavioral, neuroanatomical, and genetic evidence indicates that words learned later in life are especially vulnerable because they depend more heavily on this declining structure.

Second, I will extend this account to proper names, where the same logic predicts a striking pattern: while hippocampal atrophy renders recently-encountered names harder to retrieve with age, we found that older adults actually outperform younger adults at names they learned decades earlier.

Finally, I will turn to morphological production, where a lifetime of accumulated exposure produces an effect that runs counter to the usual pattern of aging: older adults are faster than younger adults at producing low-frequency irregular forms, for which additional exposure is particularly beneficial.

Across all three cases, time can exert opposing forces, driving hippocampal degradation while simultaneously accumulating the lifelong exposure that can facilitate retrieval of older representations. Together, these findings illustrate how examining language through the lens of well-studied memory systems can reveal the mechanisms underlying one of our most essential cognitive abilities.