

One of the most ubiquitous signs of aging are memory failures. These memory problems are easy to observe whenever an older adult simply fails to retrieve appropriate information when prompted. A second, less obvious example of memory decline can be observed in situations in which an older adult confidently makes a memory error. Both failures to retrieve and confidently held mistakes may lead to a variety of problems in everyday life. When one fails to remember the precise instructions that a drug should be taken on an empty stomach it is almost as dangerous as a case in which one is certain, albeit erroneously, that the particular drug should be taken with a meal.

What are the mechanisms responsible for these two failures of memory? Science of memory indicates that one source of such errors could stem from improper use of contextual cues that accompany memory retrieval: cues like physical environment – a room in which one performs a memory task – or even a scent that is present in a particular room. A well-known example of how context influences remembering can be found in *Remembrance of the Things Past*, by Marcel Proust: reinstating the context of a flavour of madeleine dipped in a cup of tea is capable of evoking a multitude of childhood memories. There is thus a distinct possibility that issues with using contextual cues are responsible, at least in part, for memory deficits associated with aging. Failures to retrieve appropriate memories experienced by older adults may be due to poor learning of context, which subsequently precludes efficient use of contextual cues at retrieval. When an older adult is wrongly convinced that the correct information is remembered, this may be due to the misleading effects of context – research on young adults shows that being tested in a familiar context results in greater confidence in one's memories, whether correct or incorrect. This mechanism of creating 'illusions of knowing' may be even stronger in older adults, particularly when contextual cues remain uncoupled from other memories due to poor learning.

The project will examine the effects of context on memory errors in older adults. First, the project will investigate whether appropriate contextual cues presented at the time of memory testing would augment older adults' memory. The assessed hypothesis is that failures of retrieval in older adults reflect not the way older adults use context at retrieval, but rather deficient learning of context at the earlier stages. Second, the project will investigate whether familiar context affects how older adults appraise their own memories, both correct and incorrect. The assessed hypothesis is that older adults will be particularly prone to infer that their memories are correct just because they experience them in a familiar testing context.