Many studies of bilingualism document the attrition of L1, only few focus on the memory traces of the forgotten language. Some recent studies used relearning procedures to explore these traces. Ebbinghaus demonstrated that relearning is faster than new learning and argued that the relearning-savings reflect subtle memory traces that often cannot be measured in more direct memory tests. Indeed relearning-savings were shown in a language learning task that required participants to learn the translation of Russian words. Adult participants who were exposed in their early childhood to Russian showed faster learning than non-exposed participants. Another study that investigated phonological traces of the forgotten language showed that adult participants who were exposed in their early childhood to Zulu or Hindi learned subtle sound contrasts in these languages faster than participants who were not exposed to these languages. These studies suggest that the traces of the forgotten language may consist of phonological representations. To further understand the nature of memory traces of forgotten language the present study examined how they are affected by Age of Acquisition (AoA). It is widely assumed that there is a sensitive period for the acquisition of phonological representations in childhood. Hence, we hypothesized that phonological representations formed during this sensitive period will generate stronger memory traces than phonological representations formed later in life and that this differences should be reflected in faster learning.

Three groups of dominantly Hebrew speakers were tested: Participants who acquired French as L1 before they were 3 years old and didn’t use it after they were 6, participants who acquired it as L2 in junior high school (12-15), and a control group who never acquired French. All participants reported that they can’t speak or even understand French and this was confirmed in preliminary test. Participants learned 30 word-pairs composed of a French word and its Hebrew translation. Half of the pairs consisted of a real French word that children can be assumed to be familiar with, and the other half were French pseudo-words. Slow learning was found for the control group, and much faster learning for both the French L1 and L2 groups. Surprisingly the learning-curves from French L2 were similar to those of the L1 group; this pattern was shown for both words and pseudo-words, although generally faster learning was found for words. The findings clearly demonstrate that the relearning procedure can reveal unconscious traces of a forgotten language. They further suggest that these traces are not merely traces of lexical representations. However, as the effect of AoA was inconclusive there was no support for the hypothesis that earlier phonological representations generate stronger memory traces. Potential factors that may account for these findings will be discussed. For example French L1 was naturally acquired via incidental learning whereas French L2 was acquired by formal teaching, further research is required to explore these and other factors that may affect the strength of memory traces for forgotten language.

References