

HOW LANGUAGE MEDIATES THE CREATION OF FALSE MEMORIES

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How does linguistic proficiency influence memory for verbal information? Sampaio and Konopka (2012, *Memory*) showed that non-native (L2) speakers have better memory for the surface form of simple sentences (*verbatim memory*) than native (L1) speakers, particularly when sentences include contextually dispreferred words, likely due to more effortful processing of L2 input. The present study tests whether better retention of surface form also has implications for retention of sentence meaning (*gist memory*) by comparing false memory rates in L1 and L2 speakers.

30 adult L1 speakers and 24 fluent L2 speakers of Dutch (L1 German, mean age of acquisition of Dutch = 19 years) studied pictures presented with recorded descriptions. Target pictures showed transitive events (e.g., a dog chasing a mailman; $n=42$) and were described with active sentences. The sentences were selected from descriptions produced spontaneously by L1 speakers ($n>400$) in earlier production experiments, and were either the modal description of these events (preferred [PR] version: *The dog ran after the mailman*) or a less frequent description (using a synonymous [SYN] verb: *The dog chased the mailman*). Sentence type (PR vs. SYN) was confirmed by norming. Participants were asked to pay attention to sentence wording for a later memory test.

At test, participants made recognition judgments for a list of studied and unstudied sentences on a 1-5 scale (1=new, 5=old; they were asked to rate sentences with wording changes as *new* sentences). Test lists included PR sentences, SYN sentences, and novel sentences describing an implied event (unstudied INFERENCES [INF], e.g., *The dog bit the mailman*, that differed from PR and SYN items only with respect to the main verb). Recognition memory was compared using d' in two steps.

The first analysis tested memory for surface form (*verbatim memory*) by comparing ratings given to PR and SYN sentences. Overall, participants gave higher ratings to studied than unstudied sentences (means = 4.0 and 2.8 respectively). L1 and L2 speakers gave similar ratings to sentences studied in the PR version, both when the sentences were presented in the PR version (*hits*) and the SYN version at test (*false alarms*; $d' = 1.2$ vs. 1.0 in L1 and L2, $p=.4$). However, for sentences studied in the SYN version, L2 speakers were more accurate at recognizing the same SYN sentences at test than L1 speakers ($d' = .8$ and 1.3 in L1 and L2, $p<.05$), as expected.

The second analysis assessed memory for sentence meaning (*gist memory*) by comparing ratings given to studied sentences (*hits*) and unstudied INF sentences (*false alarms*) in the two groups. L2 speakers gave *lower* ratings to INF sentences than L1 speakers (means = 1.9 vs. 2.1). The effect was observed for sentences studied in the SYN version ($d' = 1.6$ vs. 2.2 in L1 and L2, $p<.05$) and not in the PR version ($d' = 1.9$ vs. 1.8 in L1 and L2, $p=.6$). Thus L2 speakers had selectively better memory for sentences originally studied with less preferred wording and were less likely to endorse a corresponding INF sentence as having been studied (a false memory).

The results are the first to show that linguistic proficiency influences the accuracy of memory representations at multiple levels. Fluent L2 speakers outperform L1 speakers in memory for sentence form (*verbatim memory*) and sentence meaning (*gist memory*): better retention of surface form details during non-native language processing can reduce the likelihood of committing costly false memory errors (i.e., errors with broader real-world implications than errors in recall of surface form).