

Ambiguous word recognition in sentence contexts by L2 speakers

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This paper presents the results of an experiment investigating the effect of sentence context on the recognition times (RTs) of ambiguous words in second language (L2) learners with native speaker (L1) participants as a control group. In the L1 domain, some studies have investigated the effect of sentence context on the recognition process of ambiguous words (e.g., *solution*: [1] the fix to a problem, [2] a liquid suspension). For example, the Selective Access Model suggests that only the appropriate meaning of an ambiguous word is accessed when presented within a context that is biasing for that meaning (Simpson, 1981; Van Pattern & Kutas, 1978) whereas the Autonomous Access model posits that all related meanings of an ambiguous word are accessed even when the context is biasing for only one meaning (e.g., Onifer & Swinney, 1981). However, the Reordered Access Model suggests that all meanings of an ambiguous word are accessed, but a biasing context makes the subordinate meaning available earlier than it usually is, resulting in a competition between the dominant and the subordinate meaning (Duffy et al., 2001; Duffy, Morris, & Rayner, 1988; Sheridan et al., 2009). However, very little work has been done with the recognition process of L2 speakers. For example, Love et al. (2003) found that both L1 and L2 speakers were able to access both the dominant and the subordinate meanings in dominant-biasing context, a result taken as a support for an autonomous access in L1 and L2. However, the L2 participants in Love and colleagues' study were a mix of both simultaneous L2 speakers (20 participants who acquired English alongside their mother tongue) and sequential L2 learners (10 participants who learned English as an L2 after they acquired their native languages). As there were more simultaneous bilinguals than sequential bilinguals, their native-like recognition may not be representative of all L2 learners. In addition, the study did not provide evidence for whether their L2 participants knew both the dominant and the subordinate meanings of the target ambiguous words.

To test whether the interpretation of any of the above models would account for the processing of sequential L2 learners, 24 native English speakers and 24 advanced L2 English speakers (L1: Arabic) performed a self-paced reading task. The subordinate meaning of an ambiguous word was always the target meaning. Participants read sentences presented one word at a time in a biasing or non-biasing context, such as "The blue *solution* that was *spilled* on the floor made a little mess" (biasing) or "The *solution* that was *spilled* on the floor made a little mess" (non-biasing). Trials were counterbalanced and randomized across participants to avoid any repetition effects. The RTs of the target words (i.e., *solution* and *spilled* in this example) were recorded for statistical analysis. A multiple-choice questionnaire including the ambiguous words with related and unrelated words was given to these participants in order to know whether they know both meanings of the experiment ambiguous words. The words that were not known were removed from a participant's analysis.

A linear mixed effects regression showed that L1 participants were able to use the preceding biasing context to activate the subordinate meaning as much as the dominant meaning, which is compatible with the explanation of the Reordered Access Model. That is, the RT on the target word (*solution*) was longer in the biasing context (i.e., *blue solution*) but not statistically significant ($p > 0.05$) from that of the non-biasing context (... *solution*), indicating the activation of the subordinate meaning (*liquid*) was as fast as that of the dominant meaning (*the fix to a problem*). However, L2 participants had a significantly longer RT ($p < 0.05$) on ambiguous words even in the biasing context, a result that is not compatible with any of the above-mentioned models. That is, these L2 speakers seem to initially activate the dominant meaning first even when an ambiguous word is embedded within a subordinate-biasing context. However, a reanalysis process starts when the ambiguous word was hard to integrate into the preceding context. This L2 result indicates a supremacy of the dominant meaning when processing L2 ambiguous words online.