

## Input Modality Effect on L2 Lexical Recall and Recognition

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Studies on the effect of input modality on memory have demonstrated superior retention advantage to language input encoded with active articulation over language input encoded passively (Forrin et al., 2012; Hopkins & Edwards, 1972; MacLeod et al., 2010). The present study examined the modality effect on explicit memory of L2 English words by employing recall and recognition paradigms. Fifty Korean-speaking learners of English participated in two retention experiments, one with high frequency words (Mean Log HAL = 9.9,  $SD = 1.02$ ) and the other with relatively low frequency words (Mean Log HAL = 7.3,  $SD = .28$ ). In each experiment, participants read 24 English words in one of the three reading lists – pure reading lists (either silent or aloud) or mixed reading list (50% silent and 50% aloud). A free recall and a word recognition task followed the reading phase.

The experiment with high frequency words revealed no main effect of reading list ( $F(2, 48) = 3.7, p > .05$ ); pure and mixed readings were not different in recall. However, there was a main effect of encoding mode ( $F(2, 63) = 4.1, p < .05$ ); the words that were read aloud were recalled more accurately than the words read silently. The interaction between reading list and encoding mode was also significant ( $F(2, 48) = 2.3, p < .05$ ), implying that the articulation benefit was made at the cost of silent items in the mixed design. The subsequent recognition task showed main effects of reading list ( $F(2, 48) = 26.87, p < .001$ ) and encoding mode ( $F(2, 48) = 14.74, p < .001$ ), with no significant interaction between them ( $F(2, 48) = 1.6, p > .05$ ). Unlike recall, recognition of words was significantly facilitated if the words were encoded through pure reading rather than through mixed reading. Superior recognition was also made for the words read aloud over the words read silently. However, there was not significant memory loss for silent items in the mixed list.

The experiment with low frequency words showed very similar results to the first experiment with high frequency, though the recall and recognition were much less accurate compared to the first experiment. Recall did not reveal any main effects and the interaction ( $ps > .05$ ). That is, the articulation did not yield any recalling advantage to L2 words of low frequency. Interestingly, however, recognition showed a significant effect of encoding mode and a significant interaction between encoding mode and reading list, with greater recognition of spoken words over unspoken words only in the mixed design.

The results tell that the production benefit is enduring and generalized to the retention of linguistic information in an L2. The results of the two retention experiments showed that the production effect stands out itself and also bears a memory decrement for L2 input of silent mode in L2 learners. The intrinsic encoding distinctiveness of produced items and also the relatively strong distinctiveness of articulated items in comparison to silent items can account for the production benefit in L2 learners' retention of L2 words.

## References

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