

THE EFFECT OF EMOTIONAL CONTENT AND LANGUAGE ON WORKING MEMORY

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Research has shown the effect of emotional content on working memory (WM) performance in L1, though the findings remain controversial. Besides, given that a lower emotional intensity of the second language was found compared to the native language, we assumed a reduced effect of emotional content on bilinguals' L2 WM performance than L1. Therefore, our study not only examined the effect of emotional content on WM performance, but also investigated whether the effect would be modulated by the nativeness of the language (L1 and L2).

48 two-syllable English words (16 for positive, negative, and neutral words respectively) were selected from the database of Affective Norms for English Words (Bradley & Lang, 1999), and were translated into two-syllable Chinese counterparts. Bilinguals (n=21, L1-Chinese, L2-English) were asked to do the English 3-back WM tasks three times for each type of word with intervals, and native speakers (n=21, L1-Chinese) were asked to do the Chinese 3-back WM tasks following the same procedure.

Results showed differential effects of negative and positive content. Negative content resulted in a decreased accuracy in verbal WM tasks when compared to neutral content ($F(1, 40) = 4.906, p < 0.05$); in contrast, positive content did not show an effect when compared to neutral content (Figure 1). These results support the negativity bias (stronger effect of negative than positive information) and the emotional impairment hypothesis (emotional content impairing rather than enhancing WM performance). Moreover, language did not modulate the effect of emotional content on WM performance, which suggests that near-native encoding of emotional content might be achieved. The impairment effect of the negative content implies that negative verbal information captures more processing resources and disrupts the active maintenance of other information.

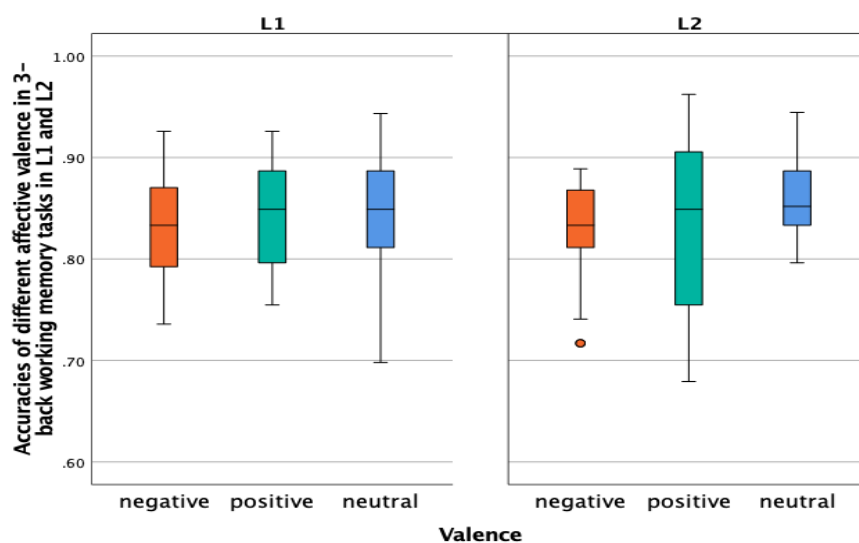


Figure 1. Accuracies of different affective valence in 3-back WM tasks in L1 and L2