

Effects of Interpreting Training on L2 Predictive and Integrative Semantic Processing

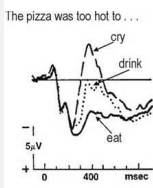
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Introduction

Prediction refers to activation of the features of the upcoming words before it appears. Integration refers to the process of integrating a lexical element into a higher order meaning representation of the entire sentence or discourse.

The left hemisphere of the brain is sensitive to the predictive process while both hemispheres are sensitive to the integrative process.

As interpreting training involves the practice of predictive and integrative strategies, it may enhance these abilities. Examining the relationship between interpreting training and L2 prediction and integration may enrich the extant literature on interpreter advantage and provide more evidence for learning and neuroplasticity.



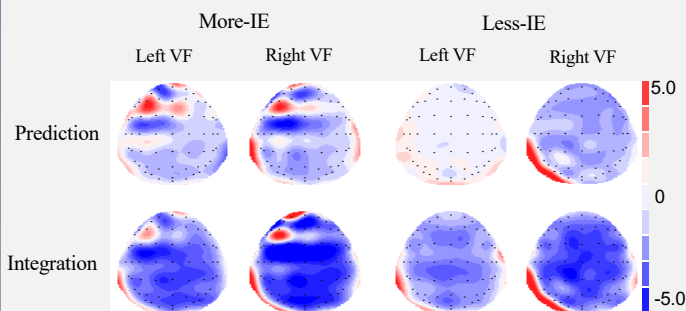
N400 ERP component reflects the fitness between a word and the preceding context. The more inappropriate the words, the larger the N400 amplitude. Prediction and integration can be indexed by different operations of the N400 amplitude (see methods part.)

The present study conducted an ERP experiment to investigate effects of interpreting training on L2 semantic prediction and integration processing.

Results

The figure in the right presents results in the posterior area. The predictive component (larger N400 amplitude for unrelated violation than related violation, indexed by the green arrow) only appeared in the more-IE group, but not in the less-IE group.

The integrative component (larger N400 amplitude for unrelated violation than expected words, indexed by the black arrow) is larger in the more-IE group than in the less-IE group (longer arrow).



Topographic map for prediction and integration in two interpreter groups and visual fields at 400-500ms

Methods and Materials

Participants:

More-IE group: juniors receiving relatively more interpreting training every week;
Less-IE group: juniors receiving relatively less interpreting training every week.

Paradigm:

Half visual field sentence pair reading

1st sentence: a context sentence presented as a whole on the screen

2nd sentence: one word each time, presented in the center of the screen. The final word is either in the left or right visual field.

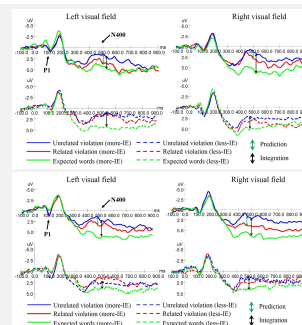
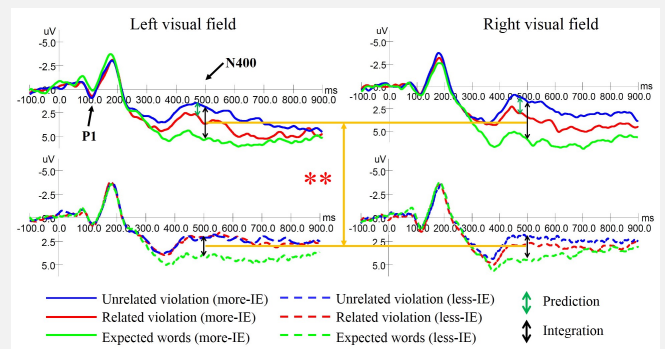
Three types of final words: expected words, related violation and unrelated violation. For example: At the zoo, my little sister asked whether they painted the black and white stripes on the animal. I explained to her that they were natural features of a _____



Expected words (EW) Related violation (RV) Unrelated violation (UV)

(N400 amplitude) UV-EW: Integration

(N400 amplitude) UV-RV: Prediction



Advanced L2 proficiency groups

Group differences in different interpreting groups remained the same, and it did not interact with the L2 proficiency level.

Intermediate L2 proficiency groups

Discussion

Each group was then divided into two subgroups with different L2 proficiency level. The proficiency level did not modulate previous results.

Participants with more interpreting training experience exhibited better L2 semantic prediction and integration abilities.

Interpreting training may help interpreters form a language processing style of proactive prediction and integration. It may also facilitate the efficiency of language processing so that the more-IE group can be better prepared for the predictive and integrative processes.

L2 proficiency level in the present study, with relatively small differences between the advanced and intermediate groups, did not modulate the effects of interpreting training.