

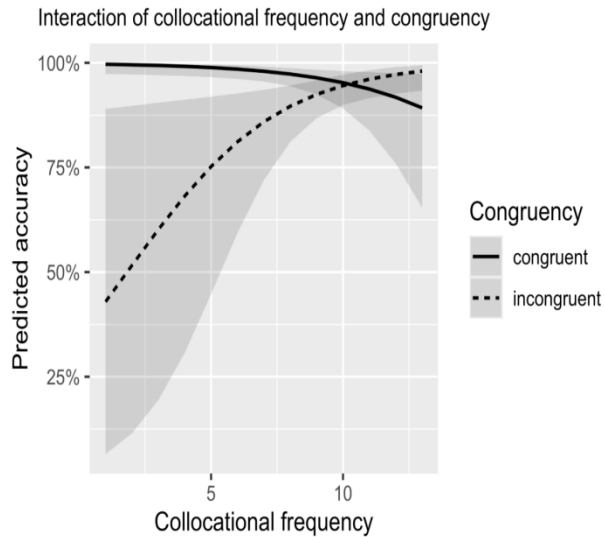
## How Frequency and L2 Proficiency Moderate the Congruency Effect in Collocational Processing? Evidence from L2 Chinese Learners in an Acceptability Judgment Task

In Chinese, collocations are linguistic structures that are frequently used, consisting of two or more characters. Most research on L2 collocational processing focused on L2 English (Chen, 2024; Sonbul & El-Dakhs, 2020), with limited attention to L2 Chinese. Examining collocational processing in Chinese tests the generalizability of L1-L2 congruency and frequency effects in a typologically distinct, morphosyllabic language. To fill this gap, this study examines if and how L1-L2 congruency (word-by-word literally translated equivalents) affects the L2 processing of Chinese collocations. Two questions are: (1) Does L1-L2 congruency affect the L2 processing of Chinese collocations? (2) To what extent do L2 proficiency and frequency modulate the congruency effect on the processing?

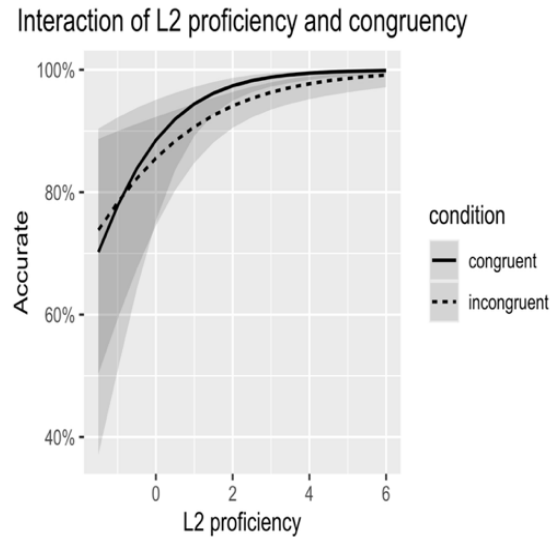
We tested 35 L1 English learners of Chinese (NNSs) and 45 native speakers (NSs) using a timed binary acceptability judgment task, implemented through PCIBex. Materials included critical items: 25 congruent (e.g., 绿茶 = ‘green tea’) and 25 incongruent (e.g., 大雨 ‘heavy rain’ ≠ \*big rain) collocations, matched for length, collocational strength, and frequency. These critical items were pseudorandomized with 50 filler items. L2 proficiency was measured through a cloze test and self-ratings. Accuracy of judgments and reaction times (RTs) were recorded. The frequencies of both Word 1 and Word 2, as well as the entire collocation, were checked using the multi-source database in the BCC Corpus (<https://bcc.blcu.edu.cn/zh/cid/0>).

Linear and logistic mixed-effects models revealed distinct patterns in NS and NNS processing of Chinese collocations. NSs performed at ceiling ( $M = 0.96$  accuracy for both congruent and incongruent items), showing no significant differences across conditions. This uniformity confirms the reliability of the materials and indicates native-like automatization of collocational knowledge. Among NNSs, several notable effects emerged. There were significant main effects of congruency ( $\beta = -3.03, p = .024$ ) and L2 proficiency ( $\beta = 0.727, p = .026$ ), indicating higher accuracy for congruent than incongruent collocations and an overall facilitative effect of greater proficiency on processing accuracy. More importantly, congruency significantly interacted with collocational frequency ( $\beta = 0.334, p = .025$ ; Figure 1), such that sensitivity to congruency diminished as collocational frequency increased. A further interaction between congruency and L2 proficiency ( $\beta = -1.492, p = .018$ ; Figure 2) revealed that accuracy improved with proficiency in both conditions, with sharper gains from low to intermediate proficiency followed by a plateau at higher proficiency levels. For the RT data, effects were observed only for collocational frequency in both NSs ( $\beta = -0.017, p = .004$ ) and NNSs ( $\beta = -0.051, p < .001$ ), with higher frequency collocations processed more rapidly. No effects of L2 proficiency were found in the NNS group, nor were there interactions involving L2 proficiency or collocational frequency with congruency.

Together, these findings highlight the joint contributions of linguistic properties and experience-based factors, including L2 proficiency and collocational frequency, to collocational processing in L2 Chinese, with effects emerging primarily in offline rather than online measures.



**Figure 1.** Influence of collocational frequency in NNSs



**Figure 2.** Interaction of congruency and L2 proficiency in NNSs

### Selected References:

- Chen, Y. (2024). The congruency effect in L2 collocational processing: The underlying mechanism and moderating factors. *Studies in Second Language Acquisition*, 46(1), 75-95. <https://doi.org/10.1017/S0272263123000281>
- Sonbul, S., & El-Dakhs, D. (2020). Timed versus untimed recognition of L2 collocations: Does estimated proficiency modulate congruency effects?. *Applied Psycholinguistics*, 41(5), 1197-1222. <https://doi.org/10.1017/S014271642000051X>