



A Review of the Impact of First Language on the Acquisition and Processing of Second Language Collocations

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Abstract

This study reviews the research progress on the influence of the first language on the acquisition and processing of second language collocations at home and abroad from 2000 to 2026. To clarify the processing mechanism of second language collocations, researchers must understand key mechanisms in the mental lexicon of learners. Therefore, it is crucial to study the influence of L1 transfer on the acquisition of L2 collocations. The paper systematically summarizes the empirical evidence and theoretical explanations of L1 transfer, including positive, negative, and null transfer. At the same time, it further explores the key factors that moderate the transfer effect, including second language proficiency, input frequency, and collocation type, and indicates that there are complex interactions between these factors and congruency. Although previous research has achieved fruitful results, there are still limitations. Future research should adopt diachronic studies, improve the ecological validity, deepen the exploration of multi-factor interactions, paying attention to individual differences of learners, and broaden research on different languages and different modalities of materials.

Keywords

L2 collocations; L1 transfer; congruency effects

1. Introduction

Collocation refers to lexical combinations with relatively transparent meanings (Wolter & Yamashita, 2017). However, there is no consensus on the definition of collocation. Terms such as collocation, phrase, formulaic language, multi-word unit, and chunk all have similar definitions. Collocation plays a crucial role in language acquisition. Mastering collocation not only helps learners understand effectively but also enables them to produce a native-like second language. A large number of research results on collocation show that learners' acquisition of collocation is not satisfactory, and even high proficiency learners frequently make mistakes in collocation, which is a challenge in second language learning. First Language (L1) is one of the key factors influencing the acquisition and processing of second language collocation. Therefore, the study aims to integrate the relevant research on the influence of first language on second language collocation at home and abroad from 2000 to 2026, focusing on two aspects—L1 transfer and its moderating factors, and proposes suggestions for future research, in order to provide inspiration for second language collocation research and teaching.

2. L1 Transfer

Kellerman (1979) divided transfer into positive transfer, negative transfer, and null transfer. In the field of collocation

acquisition, the concept of transfer is the concept of congruency. Congruent collocations are positive transfer, and congruent collocations refer to the one-to-one correspondence of collocations between L1 and L2 in terms of literal meaning (Hu, 2005). Incongruent collocations include negative transfer and null transfer. Negative transfer collocations refer to collocations that exist in L1 but have no congruent collocations in L2; null transfer refers to collocations that exist in L2 but have no congruent collocations in L1 (Wolter & Gyllstad, 2011).

2.1 Positive Transfer

A considerable number of studies have confirmed the positive transfer effect when L1 and L2 are congruent. Yamashita and Jiang (2010), through a phrase-acceptability judgment task, found that Japanese ESL and EFL learners made fewer processing errors and responded faster to L1-L2 congruent collocations. Wolter and Gyllstad (2011; 2013) respectively confirmed through priming lexical judgment tasks and receptive tests, as well as frequency effect studies, that Swedish native speakers had higher processing efficiency and recognition accuracy for L1-L2 congruent collocations, and the positive transfer remained significant under high-frequency input. Zhang et al. (2017)'s online word judgment task compared native English speakers with Chinese learners and found that both groups took longer to process word pairs that did not match their L1 collocations, but the processing of bilingual congruent collocations was the fastest. All these studies have confirmed the congruency effect, that is, faster and more accurate processing of congruent multi-word units. This effect has been observed in learners with different L1 backgrounds, such as Japanese (Yamashita & Jiang, 2010), Swedish (Wolter & Gyllstad, 2011), Chinese (Xu & Wang, 2015), Turkish (Cangir & Durrant, 2021), and Vietnamese (Cao & Badger, 2023), thus demonstrating its cross-linguistic universality. Many scholars have explained this based on the theory of L2 mental lexicon. Compared to L1-L2 congruent chunks, the acquisition of incongruent chunks takes longer and is more difficult to enter the L2 mental lexicon, which verifies connectionism, that is, previous learning experiences influence subsequent input (Wang, 2001).

According to the distributed feature model of conceptual representation, for L1-L2 congruent collocations, the conceptual layers of the L1 and L2 partially overlap, and the shared conceptual layer corresponds to positive transfer. For positive transfer collocations, the conceptual layers of the L1 and L2 are shared in syntax and semantics. When learners process such collocations, they can more smoothly associate from the L2 lexical level to the conceptual level, thereby strengthening the connection between the L2 collocation form and the concept, and helping learners better learn and master L2 collocations.

2.2 Negative Transfer and Null Transfer

Researchers have conducted many empirical studies on the negative transfer and null transfer effects in the acquisition and processing of second language collocations.

Li et al. (2025) investigated the processing of L1 only and L2 only collocations by Chinese EFL learners through an acceptability judgment task. The research results showed that completely congruent collocations were processed the fastest and most accurately, while L1 only collocations were processed the slowest and least accurately. According to the distributed feature model of conceptual representation, the incongruent parts of the two languages are stored independently; among them, the L1 only conceptual layer corresponds to negative transfer, and the L2 only conceptual layer corresponds to null transfer. Null transfer collocations are the easiest for learners to master. The reason is that such collocations are not affected by L1, and learners do not need to distinguish whether they belong to positive or negative transfer. They are independent of L1 concepts and can be learned by pure memory without interference from L1. In addition, null transfer collocations are mostly products of specific cultures or regions and do not conform to the rules, syntax, and logic that learners have summarized for L2. When learning, there is no need to mobilize existing L2 knowledge to assist in understanding. Therefore, learning null transfer collocations only requires the learner's pure memory and does not need to be integrated into the existing L2 semantic connection network.

3. Moderating Factors of L1 Transfer

The study mainly reviews the research results from three aspects: L2 proficiency, frequency, and collocation type, and analyzes how they regulate the influence of L1 transfer on L2 collocations.

3.1 L2 Proficiency

Regarding the moderating effect of second language proficiency on the L1-L2 congruency effect, existing research

conclusions are not entirely consistent. Some studies have shown that L2 proficiency has a significant moderating effect on the congruency effect, meaning that the congruency effect is more significant for lower proficiency learners. Xu and Wang (2015) took two groups of Chinese EFL learners of different proficiency levels as participants and conducted an online grammar judgment experiment. They found that although the congruency factor affected both high and low proficiency learners, its impact was greater on the low proficiency group. The reason for this might be that for higher proficiency learners, regardless of whether the chunks are congruent or not, the connection weights between the nodes of the chunks are enhanced and form a relatively stable mapping relationship, and the degree of automation in chunk processing continuously increases, thereby reducing the influence of the native language. For lower proficiency learners, the connection strength between the nodes of incongruent chunks is relatively weak, resulting in a slower recognition speed.

However, other studies have found that second language proficiency does not moderate the congruency effect. Zhao and Zhang (2022) used corpus research and associative priming experiments and found that English proficiency had no impact on the reaction time of Chinese EFL learners, and positive transfer of concepts did not weaken with the improvement of learners' English proficiency. The reason for this might be that even for high proficiency learners, the concept representations they have acquired are not the same as those of native speakers. It could also be because, compared to second language proficiency, learners' exposure to the L2 environment is more important, and concept categories change with exposure to the social and cultural environment of English-speaking countries. Therefore, what causes these changes is not so much the language itself as the accompanying culture.

Further research has found that this moderating effect is also interactively influenced by other factors, such as the activation state of L1. Ma and Hong (2025) used an acceptability judgment task and found that the moderating effect of second language proficiency on the congruency effect varies with the activation state of L1: in L1 baseline activation state, the congruency effect between medium proficiency and high proficiency learners is almost negligible; while in L1 enhanced activation state, the intensity of the congruency effect gradually weakens with the improvement of L2 proficiency.

3.2 Collocational Frequency

Regarding the moderating effect of frequency on the L1-L2 congruency effect, existing research indicates that the two are not independent but interact significantly in the process of second language collocation processing. Fang & Zhang (2019) conducted an online phrase judgment task and found that the processing of incongruent collocations is more affected by the combined effect of word frequency and collocation frequency compared to congruent collocations. This might be because incongruent collocations cannot be processed by directly relying on the stable collocation knowledge from L1. Therefore, learners need to simultaneously activate the independent representations of the individual words that make up the collocation and the overall representation of the collocation structure. This phenomenon of co-activation of the two types of representations is more pronounced in incongruent collocations. During the processing of incongruent collocations, the variable of word frequency significantly modulates the collocation frequency effect: when the word frequency in the collocation is low, the collocation frequency has a dominant influence on the processing, meaning that high-frequency collocations are processed faster and more accurately than low-frequency ones; however, as the word frequency increases, the original effect of collocation frequency gradually weakens, and even a reverse effect occurs. The independent representation of high-frequency words is over-activated, which interferes with the recognition of the entire collocation structure, resulting in the processing advantage of high-frequency collocations no longer being obvious, and even lower than that of low-frequency collocations. Liu (2024)'s research on Japanese noun-verb collocations also provides evidence for this interaction. The study shows that regardless of the learners' proficiency level, the acquisition of congruent collocations is not significantly affected by collocation frequency; however, for Japanese-specific incongruent collocations, high-frequency exposure significantly promotes acquisition.

4. Future Research Directions

Based on the review of previous research, the study has found that considerable achievements have been made in the study of the transfer effect of L1 on L2 collocations and its moderating mechanisms. However, there are still some limitations. Future research can be conducted in the following directions.

4.1 Enrich Research Methods, Adopt Longitudinal Studies, and Focus on Ecological Validity

Most existing studies have adopted cross-sectional designs, which can only study the characteristics of different groups or the same group at a specific time point, and cannot track the dynamic changes of the influence of L1 knowledge on L2 collocations over time. Therefore, this study suggests that future research should adopt more longitudinal research designs to clearly outline the evolution trajectory of L1 transfer effects at different acquisition stages.

Most previous studies adopt a quantitative research paradigm, strictly controlling relevant variables to ensure that the learning results of target collocations can be attributed to specific factors, which has a significant gap from real language learning and usage scenarios and weak ecological validity. Future research should conduct longitudinal studies, combine them with natural corpus analysis, and attempt to carry out intervention studies in real teaching scenarios to enhance the ecological validity and generalization value of research results, making the research conclusions more capable of guiding actual L2 teaching practices.

4.2 Further Explore Interactive Effects and Pay Attention to Individual Differences

The L1 transfer effect does not occur independently but often interacts with other factors. Currently, there are studies on the interaction between L1-L2 congruency and other factors, but the research conclusions are not unified. Future research needs to further design multi-factor mixed experiments to systematically investigate the interaction mechanisms among these variables, such as L1 activation state, collocation type, L1 background, and semantic transparency, etc.

In addition, individual differences of learners are important variables that regulate the L1 transfer effect, but existing research pays insufficient attention to their specific mechanisms and has not yet formed a systematic understanding. Learning motivation, as a key factor driving learners to invest cognitive resources, may directly affect their reliance on L1 knowledge. Learning styles (such as field-dependent and field-independent) may also regulate transfer performance. In addition, working memory capacity and whether learners have overseas experience also need to be taken into consideration. The influence of individual differences among learners on the effect of L1 transfer remains unclear and deserves in-depth exploration to provide more empirical evidence for the study of L2 collocations and promote the development of L2 teaching.

4.3 Expand the Types and Modalities of Research Materials

Most previous studies focus on English as a second language, making it difficult for the relevant research conclusions to have wide universality and be fully applicable to different types of language acquisition situations. Therefore, it is crucial to expand the scope of research, especially to strengthen the study of L2 collocations in non-alphabetic languages, such as Chinese. This may reveal that L1 transfer presents different characteristics in collocation acquisition compared to Indo-European languages.

At the same time, the research should use both written and spoken materials to examine the similarities and differences in transfer effects under different modalities. Currently, some related studies rely on written materials and neglect the spoken modality. Spoken materials have features such as strong real-time performance and high pressure, which may cause L1 transfer to exhibit different characteristics from written language.

5. Conclusion

This study, through a review of research on the influence of L1 on L2 collocations from 2000 to 2026, verifies the core role of L1 transfer in the acquisition and processing of L2 collocations, summarizes the interactive effects of other factors and L1 transfer, and finds the limitations of previous research. A large number of studies have shown that L1-L2 congruency, that is, positive transfer, can significantly promote the processing speed of collocations. However, in an incongruent situation, the results of negative transfer and null transfer are not uniform. The transfer effect is not isolated but is moderated by multiple factors such as second language proficiency, input frequency, collocation type, and so on. Future research should adopt diachronic studies, pay attention to ecological validity, deeply explore the interaction between other factors and L1 transfer, pay more attention to other languages to verify universality, and use different modalities of materials, such as spoken language.

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