

# L1<sup>+</sup> Approach: Its Mechanism and Efficacy

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## Abstract

L1<sup>+</sup> approach is a novel methodology for ELT, which attempts to maximize the benefit of L1 knowledge for L2 language learning. This paper attempts to verify the mechanisms and efficacy of the L1<sup>+</sup> approach by discussing the concept of L1<sup>+</sup> language, which consists of L1 language in the word-order of the target language, and critically comparing it with other conventional approaches of teaching English grammar in Japan. The analysis suggests that the L1<sup>+</sup> approach has a prospect of better facilitating sentence productions, compared to other conventional Japanese approaches.

*Keywords:* L1<sup>+</sup>Approach, ELT, L1<sup>+</sup>Language, word-order, sentence production

## 1. L1<sup>+</sup> Approach: Its Mechanism and Efficacy Based on based on past psycholinguistic research findings

A critical factor in facilitating communication through language is to efficiently produce sentences in the target language that convey messages seamlessly. Past research findings in L2 (the second language) psycholinguistic studies suggest that 1. syntactic similarities or differences between L1 (the first language) and L2 facilitate or affect acquisitions of L2 target structures, 2. the prior language processing (prime) impacts the following (target), and 3. the awareness of efficacy required to transfer L1 knowledge to L2 acquisition can facilitate acquisition of the L2 target structure, 4. though language processing in L1 usually occurs unconsciously, that of L2 requires attention especially among novice learners. Based on the findings mentioned above, this paper attempts to verify the mechanisms and efficacy of the L1<sup>+</sup> approach to facilitate L2 sentence productions. The study discusses its theoretical background and critically compares the L1<sup>+</sup> approach with other conventional approaches prevalent in Japan.

## 2. Language Transfer and Cross-Linguistic Syntactic Priming

### Language Transfer

It is a widely known phenomenon that when communicating in a second language (L2), learners attempt to apply or transfer the knowledge of their first language (L1) (e.g., Gas, 1979). This process is known as language transfer. Under the language transfer theory, if the distance between L2 and L1 is close enough, L2 learning can be facilitated. For example, if the syntactic structure of L1 is similar to that of L2, the syntactic knowledge of L1 facilitates the learning of L2. However, if they are not similar, the syntactic knowledge of L1 affects the learning of L2. Let us take a look at the English sentence (SVO), “The taxi chased the truck.” Spanish has a similar syntactic structure (SVO) to English in comparison to Japanese (SOV), as shown in Table 1. In Spanish, the phrase can be translated as “El taxi (the taxi) perseguido (chased) el camión (the truck)”. In Japanese, “タクシーは (the taxi)、トラックを (the truck) 追いかけた (chased)”. Obviously, Spanish learners of the English language have a much higher probability of successfully learning the target structure by transferring the L1 knowledge than the Japanese, since the structure given in the example is very much similar.

*Table 1*

*An Example of syntactic structures between English and other languages*

Language	Sentence		
English	<u>The taxi</u>	<u>chased</u>	<u>the truck.</u>
	S	V	O
Spanish	<u>El taxi</u>	<u>perseguido</u>	<u>el camión.</u>
	(The taxi)	(chased)	(the truck)
	S	V	O
Japanese	<u>タクシーは</u>	<u>トラックを</u>	<u>追いかけた。</u>
	(The taxi)	(truck)	(chased)
	S	O	V

### Syntactic and Cross-Linguistic Syntactic Priming

Then, how can the learning of the target structure for the Japanese be facilitated? Previous studies on priming research may provide some insights. It is a widely known phenomenon that prior language processing (prime) impacts the following (target). For example, in conversation, if one person hears or reads the passive voice in advance, that person tends to use the same syntactic structure to convey a message in a different context. It is called the

syntactic priming effect (Bock, 1986). Syntactic priming occurs even in between different languages, also known as cross-linguistic syntactic priming. For instance, Hartsuiker, Pickering, and Veltkamp (2004) investigated whether cross-linguistic syntactic priming occurred between Spanish and English language and found that participants predominantly used passive voice to convey messages in English, provided they heard a passive voice in Spanish in advance. Cross-linguistic syntactic priming is confirmed to occur not only between Spanish and English language but also between German and English language (e.g., Loebell and Bock, 2003). Not only is it prevalent among multilingual Dutch, French, and English (Hartsuiker, Beerts, Loncke, Desmet & Bernolet, 2016), it is even common between transfers from English and Chinese, which have different syntactic structures (Chen, Jia, Wang, Dunlap, & Shin, 2013).

### **Mechanism of Cross-Linguistic Syntactic Priming**

Regarding the mechanism of how syntactic priming or cross-linguistic syntactic priming occurs, there are two necessary conditions; one is the similarity between the languages (Chen et al, 2013; Hartsuiker et al., 2016; Loebell & Bock, 2003) and the other is the awareness of its similarity among learners (Desmet and Declercq, 2006). Additionally, if learners are aware of the similarity and know that they can take advantage of applying their L1 knowledge to L2 processing, learning or use of the L2 target structure can be facilitated. Furthermore, repeated exposures of various combinations of the prime and its target can increase the magnitude of the priming effect (Neely, Keefe, & Ross, 1989). For example, if learners are repeatedly asked to hear a passive voice in one language and to describe a different context in another language, the probability of employing passive voice in the task increases since they make an expectancy (assumption) to use passive voice even without any instructions.

### **Summary**

This chapter discussed the theory of language transfer, cross-linguistic syntactic priming effects, and its mechanisms. The previous studies suggest that 1. the similar concepts between the L1 and L2 can facilitate the acquisition of L2 structures, 2. in order to facilitate the language transfer, learners have to be aware of the similarity between the languages, 3. repeated exposures of combination of the prime and its target can increase the magnitude of the priming effect. The next chapter introduces a new methodology based on the findings discussed in the present chapter called the L1<sup>+</sup> Approach.

### 3. L1<sup>+</sup> Approach and Conventional Pedagogy in ELT in Japan

#### L1<sup>+</sup> Approach

L1<sup>+</sup> approach is a novel methodology for second language acquisition based on the findings in priming studies discussed in the previous chapter. L1<sup>+</sup> approach attempts to maximize the effective use of L1 syntactic knowledge to facilitate L2 syntactic structure. In this chapter, maximizing the effective use of the L1 syntactic structure for L2 learning is discussed, using the example of the Japanese language as L1 (prime) and the English language as L2 (target).

The previous studies in language transfer and priming studies suggest that one of the critical factors to promote the affirmative transfer of L1 to L2 is the similarity in structures between L1 and L2. As described in table 1, the Japanese and English languages have quite different structures, especially when compared to Spanish. In order to facilitate a positive transfer between L1 and L2, it is necessary to have something in common between the languages. However, the word order in Japanese is quite different from the one in English. Thus, it is necessary to make a bridge between the languages. Therefore, it is assumed that a language called L1<sup>+</sup> is the bridge between Japanese and English, which is in a Japanese to English word order to facilitate a positive transfer. Table 2 shows the relation between Japanese L1<sup>+</sup> and the English language. Since L1<sup>+</sup> language consists of Japanese (L1) in English word order, learners can quickly transfer the L1<sup>+</sup> language knowledge to learn the English word order. Moreover, repeated exposures of the L1<sup>+</sup> language samples can increase the elicitation of the target structures, which leads to successful acquisitions.

*Table 2*

*Relation among Japanese, L1<sup>+</sup> language and English*

Japanese			L1 <sup>+</sup> language (Japanese in English word order)			English		
私は	犬が	好きだ。	私は	好きだ	犬が	I	like	dogs.
(I)	(dogs)	(like)	(I)	(like)	(dogs)			
S	O	V	S	V	O	S	V	O

#### Summary

This section discussed the concept of the L1<sup>+</sup> Approach. L1<sup>+</sup> approach is a new methodology that attempts to maximize positive language transfer of L1 knowledge to L2 learning via repeated exposures to L1<sup>+</sup> language, a Japanese language in English word order. The next

chapter will attempt to clarify the differences between the conventional approaches for ELT in Japan and the L1<sup>+</sup> approach by comparing the instruction processes and language processing of the two approaches.

#### **4. Instruction process in Conventional Approach in Japan**

##### **Conventional Approach in Japan**

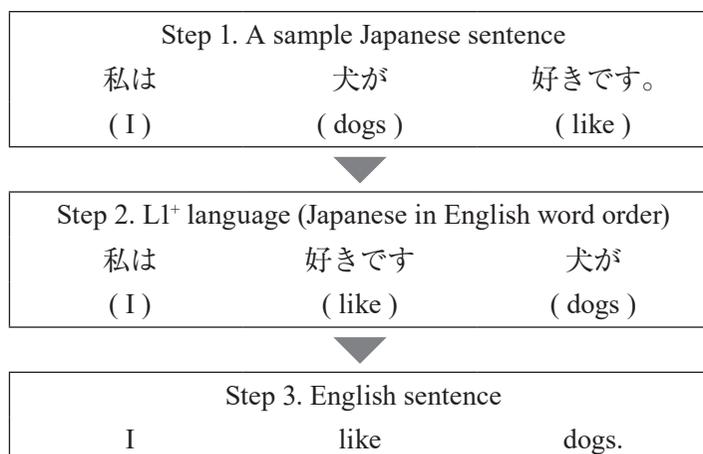
Conventional methodology for teaching English in Japan still depends on the traditional grammar-translation approach (Nishino & Watanabe, 2008). In typical English classes, instructors pick up a new grammar point and give explanations of the structure using grammar terms such as subject (S), verb (V), and objective (O). After the explanations, learners are given drills using the target structure.

The issue in the conventional approach is that students need to go through so many steps to reach the target structure they are supposed to learn in a classroom. Table 3 shows the expected learning process in the conventional English classroom in Japan. For example, if students need to learn the target structure, “I like dogs.” Students need to learn the vocabulary used in the target structure as step 1. Then as Step 2, teachers will instruct on grammar terms and concepts used in the target structure such as “Subject”, “Verb,” and “Object.” After students understand the concepts, teachers will explain the differences between English and Japanese structure using the grammar terms concerning the syntactic structure, as explained in Step 3. After they understand the target structure, they are asked to produce a sentence in English to exemplify their understanding. As a result of such instructions, students make an assumption that they need to follow the complex procedures described above whenever they convey a message in English, which causes students to give up learning English or give up speaking English. The grammar instructions in the Japanese conventional approach is one of the causes that demotivates the Japanese from learning or using English.

Table 3

The expected learning process in a conventional English classroom in Japan

Procedure	“I like dogs.”																					
Step 1. Understand the vocabulary	I= 私, like= 好きだ, dogs = 犬																					
Step 2. Understand the concepts of the grammar terms used in the target structure	<p><b>Subject:</b> A subject is the part of a sentence that indicates who or what performs an action.</p> <p><b>Verb:</b> A verb refers to actions or states.</p> <p><b>Object:</b> An object is a thing or a person affected by a verb.</p>																					
Step 3. Understand the target structure by knowing the differences between English and Japanese based on grammar terms	<table style="border-collapse: collapse; margin-left: 20px;"> <tr> <td style="padding-right: 20px;">1. <u>I</u></td> <td style="padding-right: 20px;"><u>like</u></td> <td><u>dogs.</u></td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> <tr> <td style="padding-right: 20px;">2. S</td> <td style="padding-right: 20px;">V</td> <td>O</td> </tr> <tr> <td style="padding-right: 20px;">3. S</td> <td style="padding-right: 20px;">O</td> <td>V</td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> <tr> <td style="padding-right: 20px;">4. <u>私は</u></td> <td style="padding-right: 20px;"><u>犬が</u></td> <td><u>好きだ</u></td> </tr> <tr> <td style="text-align: center;">S</td> <td style="text-align: center;">O</td> <td style="text-align: center;">V</td> </tr> </table>	1. <u>I</u>	<u>like</u>	<u>dogs.</u>	↓	↓	↓	2. S	V	O	3. S	O	V	↓	↓	↓	4. <u>私は</u>	<u>犬が</u>	<u>好きだ</u>	S	O	V
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↓	↓	↓																				
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S	O	V																				
Step 4. Apply the knowledge in a different context	<table style="border-collapse: collapse; margin-left: 20px;"> <tr> <td style="padding-right: 20px;">1. <u>彼は</u></td> <td style="padding-right: 20px;"><u>音楽が</u></td> <td><u>好きだ</u></td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> <tr> <td style="padding-right: 20px;">2. S</td> <td style="padding-right: 20px;">O</td> <td>V</td> </tr> <tr> <td style="padding-right: 20px;">3. S</td> <td style="padding-right: 20px;">V</td> <td>O</td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> <tr> <td style="padding-right: 20px;">4. <u>He</u></td> <td style="padding-right: 20px;"><u>likes</u></td> <td><u>music.</u></td> </tr> </table>	1. <u>彼は</u>	<u>音楽が</u>	<u>好きだ</u>	↓	↓	↓	2. S	O	V	3. S	V	O	↓	↓	↓	4. <u>He</u>	<u>likes</u>	<u>music.</u>			
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*Figure 1*

*Sample demonstration procedure in L1+ classroom*

### **L1+ Approach**

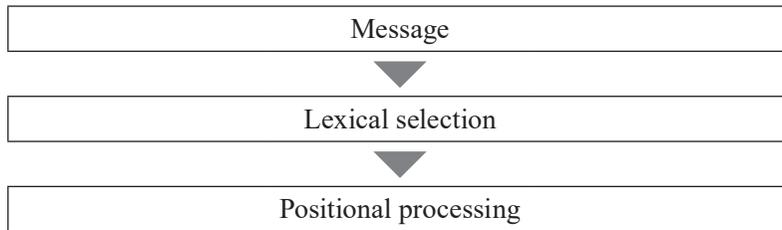
On the other hand, students in the L1+ approach learn grammar much more simply as compared to the conventional approach. First, instructors provide a sample pattern to students shown in Figure 1. In step 1, the instructor shows a sample Japanese sentence, including the target structure that students need to learn in the class. Then, the instructor shows the Japanese sentence in L1+ language, which is in Japanese to English word order as Step 2. Finally, the instructor demonstrates the sentence in English. After this demonstration, students are asked to produce English sentences of the same structure but of different contexts in English following the procedure. Since the L1+ approach utilizes demonstration and not an explicit explanation of grammar rules, instructors can avoid using grammar terms to explain the rules so that students do not need to learn the terms and meaning, which in fact reduce students' burden for learning the concept of the target language.

### **Summary**

This chapter discussed the differences in the instructional process between the conventional approach and the L1+ Approach. Since the conventional approach focuses on teaching syntax by using grammar terms, students not only need to learn how to construct the message in the target language but also the concepts of grammar terms as well as the mechanisms of the target language. On the other hand, the advantage of the L1+ approach is that students are only required to acquire English word order through repeated exposures of the samples of L1+ language. As discussed above, the L1+ approach is much less demanding for students who only desire to acquire practical skills in the target language and not the

syntactic knowledge of the target language. The next chapter will discuss how the two instructions differentiate language processing for producing a message in the target language based on the grammatical coding process of Nakayama (2020).

### 5. Comparison of Grammatical Coding Process between L1<sup>+</sup> Approach and Conventional Approach



*Figure 2*

*Grammatical coding process (adapted from Nakayama (2020))*

This chapter attempts to compare the grammatical coding process for producing a message in the target language between the L1<sup>+</sup> approach and the conventional approach. When a message is translated into another language in our brain, it is known that three steps will follow: 1. understanding the message, 2. choose vocabulary in L2 (lexical selection), 3. deciding the word-order in L2 as described in Figure 2.

Language processing occurs in working memory (Baddeley, 1986). According to Baddeley (1986), humans are believed to have two different kinds of memories, working memory and long-term memory. Long term memory is just unlimited storage of information. On the other hand, working memory is temporal storage with limited capacity for manipulation of human cognitive activities such as the grammatical coding process. Since the capacity of working memory is limited, it is necessary to make the processing of working memory efficient so that working memory can handle multiple tasks.

Regarding language processing, the processing of L1 can occur automatically because the processing usually occurs unconsciously. However, L2 grammatical coding requires conscious efforts, especially for novice learners. Then how can the load in working memory be reduced? One of the ways is to simplify the grammatical coding process. Therefore, this chapter will compare the grammatical coding process in terms of its simplicity between the L1<sup>+</sup> approach and the conventional approach.

Figure 3 illustrates examples of procedures that students in conventional classroom and students in L1<sup>+</sup> approach will follow when asked to translate a Japanese sentence “私は犬が”

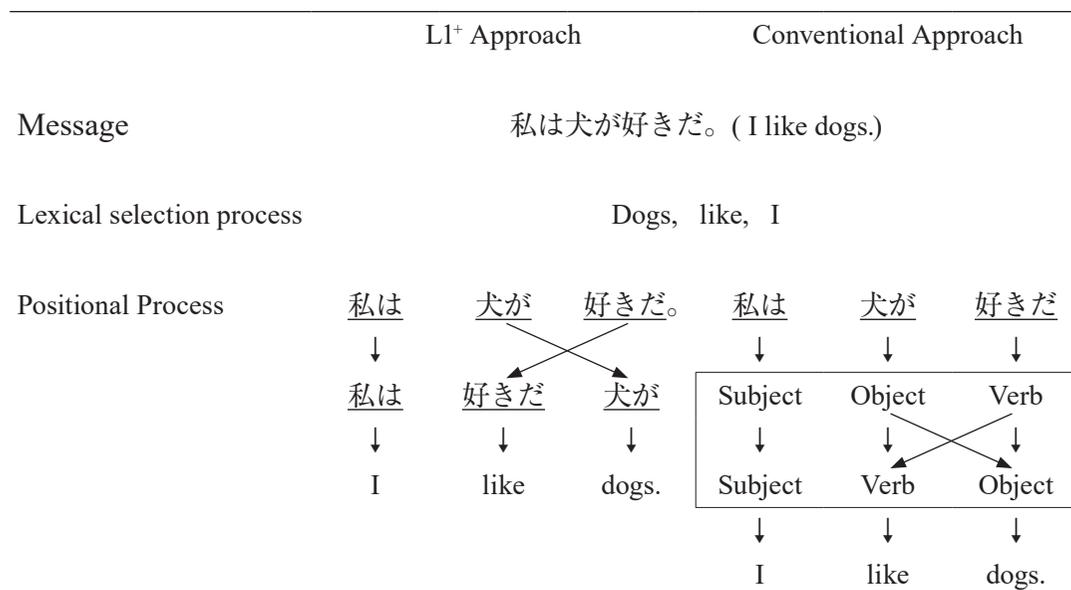


Figure 3

*Comparison of grammatical coding process between L1<sup>+</sup> Approach and Conventional Approach*

好きだ。( I like dogs.)” into English by applying the grammatical coding process.

The differences in the grammatical coding process between the L1<sup>+</sup> approach and the conventional approach appear in the positional process. Students who learned English in a conventional approach need to depend on syntactic knowledge before they convey a message in English. As described in Figure 3, students in the conventional approach need to follow the three steps to convey a message in English; first, they need to break Japanese sentence into elements such as subject, verb, and object; secondly, once students recognize the elements, they have to remember the sentence pattern in English (Subject + Verb + Object in this case); then finally, students put the words in an English order following the sentence pattern. On the other hand, students who learn English in the L1<sup>+</sup> approach follow a simple procedure comprising two steps; first, they put the Japanese words into L1<sup>+</sup> order, then replace the Japanese words into English order. Since there is no interference of grammatical terms and its concepts, students in the L1<sup>+</sup> approach can produce a sentence in the target language much more conveniently than those who learn through a conventional approach. Consequently, the grammatical coding process in the L1<sup>+</sup> approach is simpler than the conventional approach. In other words, the grammatical coding process in the L1<sup>+</sup> approach can reduce the load in working memory, compared to the conventional stratagem.

## Summary

This chapter discussed differences in the grammatical coding process for L2 production between the L1<sup>+</sup> approach and the conventional approach. As described above, to create a message in L2, it is necessary to simplify the grammatical coding process. Students in the conventional approach need to follow more complex procedures than those in the L1<sup>+</sup> Approach. Since the conventional approach depends on grammar terms and related concepts, students need to break the message down to the syntactic structure based on the grammatical concept in one language then transfer it into another. On the other hand, L1<sup>+</sup> approach can allow direct conversion from one language into another without the intervention of grammatical terms and concepts, which is less demanding when students produce a message in the target language, compared to conventional conditions.

## 6. Conclusion

This paper attempted to verify the mechanisms and efficacy of the L1<sup>+</sup> approach by discussing the psycholinguistic theories and critically comparing it with the conventional approach utilized in Japan. The previous studies in language transfer and priming studies suggest that one of the key factors to promote the positive transfer of L1 to L2 is the similarity of L1 and L2 structures. Based on those findings, L1<sup>+</sup> Language, the L1 language in word-order of the target language, is assumed to promote sentence productions in the target language. Also, the critical comparison between the L1<sup>+</sup> approach and the conventional approach suggests that the L1<sup>+</sup> approach might have an advantage since the grammatical coding process is simpler, which might better facilitate sentence productions, due to the reduction of the cognitive load for the grammatical coding process. Though the analysis of this paper suggests that the L1<sup>+</sup> approach offers a better possibility for the acquisition of syntax from the target language, it is necessary to wait to draw such a conclusion until future empirical research verifies its efficacy.

## References

- Baddeley, A. D. (1986). *Working memory*. Oxford: Clarendon Press.
- Chen, B., Jia, Y., Wang, Z., Dunlap, S., & Shin, J. A. (2013). Is word-order similarity necessary for cross-linguistic structural priming?. *Second Language Research*, 29(4), 375-389.
- Bock, J. K. (1986). Syntactic persistence in language production. *Cognitive psychology*, 18(3), 355-387.
- Gas, S. (1979). Language transfer and universal grammatical relations. *Language learning*, 29(2), 327-344.
- Hartsuiker, R. J., Pickering, M. J., & Veltkamp, E. (2004). Is syntax separate or shared between languages? Cross-linguistic syntactic priming in Spanish-English bilinguals. *Psychological science*, 15(6), 409-414.
- Hartsuiker, R. J., Beerts, S., Loncke, M., Desmet, T., & Bernolet, S. (2016). Cross-linguistic structural priming in multilinguals: Further evidence for shared syntax. *Journal of Memory and Language*, 90, 14-30.
- Desmet, T., & Declercq, M. (2006). Cross-linguistic priming of syntactic hierarchical configuration information. *Journal of Memory and Language*, 54(4), 610-632.
- Loebell, H., & Bock, K. (2003). Structural priming across languages. *Linguistics*, 41(5), 791-824.
- Nakayama, T. (2020). Does the L1<sup>+</sup> Approach Derived from Syntactic Priming Research Facilitate Sentence Production for Japanese English Learners?, *Jissen Women's University CLEIP Journal*, 6, 23-37.
- Neely, J. H., Keefe, D. E., & Ross, K. L. (1989). Semantic priming in the lexical decision task: Roles of prospective prime-generated expectancies and retrospective semantic matching, *Journal of Experimental Psychology: Learning, Memory, and Cognition* 15(6), 1003-1019.
- Nishino, T., & Watanabe, M. (2008). Communication-oriented policies versus classroom realities in Japan, *TESOL Quarterly* 42(1), 133-138.