



# The Role of First Language in Second Language Acquisition

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**Abstract.** The first language (L1) plays a significant role in people's second language (L2) acquisition. The impact of L1 in L2 acquisition differs in various aspects, not only in different types of languages but also in different components of language such as phonology, morphology, and syntax. Over the past few decades, many researchers have investigated the influence of their mother language, as well as making comparisons of two languages in acquisition of, for example, English. Some have also researched in the specific impact of L1, such as causing errors in L2 acquisition. This paper is aimed to look at some general ideas on how the first language affects second language acquisition, as well as experiments, were made to investigate the role played by different specific mother languages through different linguistic aspects and especially look deeper into the child stage of second language acquisition.

**Keywords:** L1 transfer · L2 acquisition (SLA) · English second language speaker (ESL)

## 1 Introduction

Among numerous factors affecting the acquisition of a second language, it is inevitable to be concerned about the first language. Overall, the research in this field is mature, and numerous papers have been written. However, this is still a valuable topic as the understanding of the influence of L1 is significant for education, especially children's second language education. Moreover, it would be helpful for adults tackling their second language for professional necessities, as well as for people who are interested in learning a third or fourth language. The progression is beneficial for finding efficient strategies to acquire new languages, both for the individual learner and for the whole educational system.

## 2 L1 Transfer

### 2.1 Definition of Transfer

When learning a second language, the mode of thinking and acquiring L2 must be highly affected by rules and habits in L1. Whenever processing the information and output using

L2, the information was firstly deposited by L1, and the way of deposition in the L1 has a strong impact of the result coming out in L2. This process is called transfer, which was firstly introduced by Whitney in the last century [1]. Whenever a Chinese writing an English essay, the expression and arrangement of sentences are first constructed using Chinese and then transferred into English. Through this process, the habits used in Chinese would be duplicated in English expressions. Due to some differences in the way of processing between L1 and L2, the essay written in English by a native Chinese could make a native English speaker feel awkward, also called a negative transfer. On the other hand, the similarity in syntax between Chinese and English would make Chinese students easily understand the structure of English sentences, which is an example of positive transfer.

## 2.2 Types of Transfer

Transfer can occur in several aspects (s) from L1, such as pronunciation, grammar, word, syntax, and even culture. Below are some examples of different types of transfer.

*Pronunciation.* The pronunciation in L1 would primarily affect the L2 learners pronouncing the words in L2. In the experiment done by Liu in 2011, she set three phases, a pre-test, an intervention, and a post-test, in the entire process. In the pre-test, the underlined target sound, which may be mispronounced in 10 words, was shown to the participants. The intervention includes training and monitoring strategies of the target sounds. In the post-test, participants must complete tasks such as vocabulary reading, sentence reading and simultaneous speech, in which the target sounds are contained mainly in these samples. From Liu's experiment, several Chinese experimenters pronounced specific phonemes in English to what is similar in Chinese, such as /θ/ would be pronounced as /s/, as the former does not exist in Chinese consonants, which leads to mispronunciation as a result of negative transfer [2]. However, the designer of this experiment might ignore the influence of Chinese dialects, and all attributed the reason for mispronunciation to mandarin. There is no clarification that the experimenters all speak standard mandarin. Moreover, Liu did not state the educational background of the experimenters, as some of them might have the basics of English while others might not.

*Syntax.* The syntax, or how the sentences are arranged in L1, can also significantly influence second language acquisition (SLA). From the results of Kristian's experiment done in 2009, an experiment aiming to test the effects of L1 syntax, in this case, Danish on L2 English translation, where the 16 professional Danish translators were asked to translate two Danish passages into English and their gaze time on the translated segments was monitored, translators gazed longer on the Verb-Subject (V-S) segments than Subject-Verb segments. This experiment suggests the difference in syntax between the two languages as V-S segments do not exist in English and proves that the L2 processing is strongly impacted by the L1, especially in syntax [3]. The results are highly reliable as all the experimenters have the same background and level of depositing English information. The passages translated were guaranteed to be general and did not contain any obscure terminology, which reduces the error in the length of gaze time. The experiment can be seen as a negative transfer, as the difference in syntax in Danish and English prolonged the information processing time.

*Word.* Similarly, the L1 transfer happens in words. An example of positive transfer is the convenience that the words in L1 and L2 are similar, which is a significant benefit to the learning of L2 [1]. This transfer frequently happens when L1 and L2 are written with identical orthographies, such as in some Germanic and Romance languages. Within these languages, some share similar spelling of certain words, or the words are borrowed from other languages, which is the relationship between French, Spanish, and English. The positive transfer would occur as there are inherent advantages within these three languages in the form of words. On the other hand, there are some differences in processing the components of words between native speakers and non-native speakers. According to R. Silva 2008, their experiment was to investigate the use of morphological structure when decoding the inflected and derived word forms among native English speakers and L2 English speakers. In total, four experiments were included: Experiment 1 was to examine the processing of past-tense forms in L2 learners from China and Germany in comparison with the native speakers, with the stimulus onset asynchrony (SOA) of 60 ms; Experiment 2 was done with the same material as in Experiment 1 but with SOA of 30 ms; Experiment 3 and 4 examined the priming effect of words derived with suffixes -ness and -ity. The result shows that when both processing the regular inflexion, native speakers showed stem-priming effects on roots like the past-tense forms, while non-native speakers did not but stored the forms as unanalyzed [4].

### 3 Comparing Examples of Chinese and Korean in English Acquisition

#### 3.1 Process and Results

In Wang's and Koda's experiment done in 2002 [5], two different L1s were tested with the effects on English words from the aspect of orthography and phonology. Participants were required to first judge whether the two given words belonged to the same category, for example, to examine whether "row" was under the category of "flower". The second part of the experiment aims to investigate the capacity to manipulate of English sub-lexical phonological structure, in this case, the phoneme. Participants needed to read out the original words initially, then say aloud the modified word with a phoneme deleted and write the word down. The results prove their hypothesis that these two languages express different emphases in processing the L2. Chinese English second language speakers (ESL) pay more attention to the orthographic information than Korean ESL. At the same time, Korean ESL highly focuses on phonological information, showing significant influence from the two first languages. This result can be, more specifically, related to the errors made among two groups of participants. Korean ESL made more errors in recognizing the homophones, while Chinese ESL had more confusion in distinguishing orthographic similarities. Overall, the experiment demonstrates that Chinese ESL focus less on the phonological components and more on the orthographic spelling in the L2 acquisition, opposite to Korean ESL [5].

### 3.2 Reference of Van Orden (1987)'s Idea

The experiment used Van Orden (1987)'s experiment as a reference, in which he pointed out that homophonic foils would result in errors in word categorization [6]. In his experiment, 30 undergraduate students made more false positive errors when given homophonic foils than spelling foils [7]. When the participants were asked, whether “rows” is a “flower”. The answer should be no, due to the spelling distinguishment. However, if the participant says “yes”, then the phonological information is activated and misleads the participant to think about the actual true exemplar “rose”. The experiment highlights the row of phonological information and the misleading of homophony in visual word information. While in Wang's and Koda's experiment, the core idea in Van Orden's experiment was reused to test the different abilities to process and distinguish phonological information within the two groups of ESL.

### 3.3 Evaluation of Wang's and Koda's Experiment

*Choice of languages.* Chinese and Korean classically represent the nonalphabetic and alphabetic mother languages, respectively. Although the two languages share similar spatial arrangements in orthography, both contain a left-right structure, an up-down structure, and a compound structure that includes both, and the characters in the two languages appear similar as a block. The information delivered in Chinese characters compared to what in Hangul has a prominent distinctiveness.

In Chinese, mostly semantic information is conveyed. Even though the semantic information may be different in ancient Chinese and modern Mandarin, each component allows the reader to guess the rough meaning of the characters. The phonological information does not exist in all the characters. In contrast, in the examples where the phonological information is conveyed, the information is not carried by alphabets but mostly a specific word that shares its reading to the whole component. For example, ‘火’ (fire) itself is a character that can be a component of the compound character. In the character ‘燃’ (burn), the component ‘火’ conveys the semantic information, showing that this character contains the meaning of “fire”. In this case, it means “to burn”. However, ‘火’ does exist in the character ‘伙’ (friend). However, this time it is responsible for delivering the phonemic component, while the component on the left conveys morphemic information so that this word is related to “people”, not “fire”. In other words, the Chinese character presents the characteristics of a logosyllabary, in which a component can be a phonemic or morphemic component in different characters.

Moreover, Chinese learners do not rely highly on the alphabetic system to learn the Chinese character itself. A system such as Pin Yin is an auxiliary tool for acquiring pronunciation more familiarly. It is not a compulsory way to learn Chinese, as some people learnt from the word itself or from other systems such as Zhu Yin Fu Hao (See Fig. 1) [8]. There is no one-to-one mapping between Pin Yin and the character itself, as there is no indication that a specific component stands for /p/ in Chinese character, which distinguishes itself from Hangul and gives strong evidence that Chinese is a nonalphabetic language.

On the other hand, the Hangul word only conveys phonological information, and the semantic information is processed after the phonology. In other words, Korean is processed through the order of Orthography—Phonology—Semantics (O—P—S) [9]. The

Initials						
ㄅ b [p]	ㄆ p [pʰ]	ㄇ m [m]	ㄈ f [f]	ㄉ d [t]	ㄊ t [tʰ]	ㄋ n [n]
ㄌ l [l]	ㄍ g [k]	ㄎ k [kʰ]	ㄏ h [x]	ㄐ j [tɕ]	ㄑ q [tɕʰ]	ㄒ x [ç]
ㄗ zh [tʂ]	ㄘ ch [tʂʰ]	ㄙ sh [ʂ]	ㄚ r [ʐ]	ㄛ z [ts]	ㄜ c [tsʰ]	ㄝ s [s]
Finals						
ㄚ a [a]	ㄛ o [ɔ]	ㄜ e [uax]	ㄝ ê [e]	ㄞ ai [ai]	ㄟ ei [ei]	ㄠ ao [au]
ㄨ ou [vu]	ㄨㄢ an [an]	ㄨㄣ en [ən]	ㄨㄥ ang [aŋ]	ㄨㄥ eng [eŋ]	ㄨㄥ er [er]	ㄨㄥ i [i]
ㄨㄩ u/ü [u]	ㄨㄩ ü/ü/ü [y]	ㄨㄩ ia/ya [ia]	ㄨㄩ ie/ye [ie]	ㄨㄩ iao/iao [iau]	ㄨㄩ iui/you [iui]	ㄨㄩ ian/yan [ian]
ㄨㄩ i/yin [in]	ㄨㄩ iang/yang [ian]	ㄨㄩ ing/ying [iŋ]	ㄨㄩ ua/wa [ua]	ㄨㄩ uo/wo [uo]	ㄨㄩ uai/wai [uai]	ㄨㄩ ui/wui [uei]
ㄨㄩ uan/wan [uan]	ㄨㄩ uan/wen [uan]	ㄨㄩ uang/wang [uaŋ]	ㄨㄩ weng [uəŋ]	ㄨㄩ üei/yue [yœ]	ㄨㄩ üan/yüan [yœn]	ㄨㄩ ün/yün [yn]
ㄨㄩ iong/yong [iuŋ]	ㄨㄩ ong [oŋ]					

Fig. 1. Zhu Yin Fu Hao [8]. Source: Bing.com.

correlation with Korean semantics was lately established within certain sense groups. Without that, the character is just a component of consonants and vowels. This explains why people can read Hangul words aloud after acquiring Hangul pronunciation, even without comprehending the words. Korean has a linear relationship between the phonological components and the orthography, which means that there are clear signs to express each consonant and vowel. Written Korean is a simply different arrangement of those consonants and vowels. An example to emphasize this point with the comparison of Chinese: Korean people can convert every English word into Hangul’s character and pronounce it with “Korean English pronunciation”. This process happens so frequently and commonly that it is commented that there is “English fever” in Korea, and English is booming everywhere and gradually taking a significant role in Korean conversation [10]. However, Truitt and Susan’s study in 1995 pointed out that Korean people had less confidence in learning English than Chinese [11]. Moreover, Korean is good at using homophones in their daily talk without awkwardness. At the same time, Chinese people feel awkward because they would spontaneously link the homophonic words with their original meaning, so that rearranged words to be homophonic would contain weird semantic information. Overall, Korean is an excellent example of an alphabetic system and experiences strong influence from English, forming an enormous distinction from Chinese.

*Participants of Wang's and Koda's experiment.* The experiment uses a similar number of Chinese ESL and Korean ESL, as well as similar ages and educational backgrounds (Most of the participants came from the same university) [5]. The participants completed a pre-test of English proficiency, which guarantees excellent knowledge to the participant and makes the variability in different levels of English control. However, among the Chinese participant, there are some from the mainland and others from Taiwan. The educational backgrounds in the two places can be very different as most students on the mainland learnt Chinese pronunciation through Pin Yin while students in Taiwan acquired it through Zhu Yin Fu Hao. Which may lead to a different extent of familiarity and the habit of using the alphabetic system and could affect the result. It is suggested that all Chinese participants come from the mainland or Taiwan.

## 4 Acquisition of Second Language in Children

### 4.1 Basic Information About Children SLA

People have been studying the order for child acquiring study. One famous study in the past few decades was the L1 = L2 Hypothesis by Dulay and Burt in 1974, which suggested that children acquired their second language in a similar way to their L1 acquisition. In addition, Dulay and Burt also mentioned the existence of universal child language learning strategies from their Chinese and Spanish ESL experiment on children from different countries [12]. Meisel pointed out the “silent period idea”: some children did not speak a second language but interacted with others and well comprehended what others were saying. She also mentioned that many children relied on standard formulae to communicate more efficiently [13].

### 4.2 Articles in Children SLA

Several learners show misuse or overusing of articles, not in the acquisition of English but nearly every second language. This phenomenon seems to happen frequently in children. Zdorenko and Paradis discovered a sequence in which children tend to omit articles at the initial learning stage and are more unskilled when using the indefinite article “a” than the definite “the”. The sequence can also be written as null > the > a [14]. The frequency of using “the” in English highly outweighs the frequency of using “a” due to its less complexity in semantics and its flexibility to be applied in front of any noun, while the usage of “a” has the limitation of noun’s countability and number. Zdorenko and Paradis also mentioned that the impact of L1 mainly exists at the early learning stage, such as the L1 transfer causing errors in using articles. At the same time, it does not influence SLA much at the final learning state. This idea correlates with the hypothesis of universal grammar among children learners and weakens the role of the L1 background [15].

However, this sequence might not be universal and may have a significant relationship with the vocabulary table. In English, the vocabulary would not contain an article but simply the word itself. It is rare to see that the words in the glossary are “an apple” and “the banana”, but only “apple” and “banana”, which means that English words in the

glossary are atelic [15]. While in other languages, such as Spanish, there are usually definite articles to indicate the gender of verbs, such as “el sol” and “la mesa”, which is a lack in English. Therefore, if a child learns Spanish as a second language, he might initially highly overuse the definite articles in sentences, then acquire to omit the definite articles or use indefinite articles. This example suggests that the sequence in acquiring the articles may vary through languages because the orthography of glossaries in a different language may or may not contain articles. At the same time, these are the tools that are initially provided to children learners.

## 5 Conclusion

Although several mature research has been done in this field, it is worth continuing with the investigation as the environment of language usage is consistently changing. The blending of multi-languages and neology frequently happens in our daily life, under the highly developed internet and rapid communication. It is possible that there would be a renovation in the mother language once after decades, resulting in different influences on second language acquisition. In addition, due to the trend of globalization, the demand for acquiring a second language keeps rising. Therefore, it is inadequate to stop the research at this stage, and new research on the role of the first language should come out frequently.

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