

## A Cognitive Study of Second Language Lexicon Acquisition

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**Abstract:** Second language lexicon acquisition has been an important aspect in second language acquisition study. Different from the traditional researches, this paper tries to study second language lexical acquisition from a cognitive perspective. The application of the cognitive perspectives will help language learners and researchers better understand the second language lexical acquisition process, which will in turn reveal the nature of second language lexicon acquisition.

### 1. Introduction

Due to the great influence of the traditional Grammar-Translation Method, scholars in China have been focusing on the acquisition of grammatical rules in second language acquisition (SLA) research, but little attention has been given to the study of the lexicon acquisition. As a matter of fact, most SLA researchers and learners know clearly that lexicon acquisition constitute one of the most important and indispensable part of language learning. Doubtlessly, without grammar, we express little; but without lexicons, we express nothing. It is obvious that insufficient vocabulary will pose huge threat for language learners in their future learning because it just prevents learners from making progress in such basic language skills as listening, speaking, reading, writing and translation. As a result it will undermine the foundation of the language building.

It was up till the seventies in the last century that second language lexicon acquisition (SLLA) gradually drew the focus of the scholars both at home and abroad. It was then did linguists realize the importance of SLLA. It was commonly accepted that no language skill could improve without the enlargement of the vocabulary. And second language lexicon acquisition must be a life-long cognitive business because up to date no one is known to have acquired all the lexicons of a language. Therefore SLLA has become a challenging task for both language learners and researchers. At present, our SLLA study has taken on some shape both in theoretical exploration and empirical study. Linguists were working very hard on this field. On the one hand, they keep on introducing the latest language acquisition theories from abroad; on the other hand, they try to explore the present second language (L2) acquisition situation of the Chinese students. They try to combine the profound linguistic theories from abroad with the real learning situation of the Chinese L2 learners in the hope of unveiling the mystery of the process of the SLLA. In recent years, the SLLA study mainly involves the following aspects: 1) the incidental lexical acquisition; 2) the learning strategies of L2 learners; 3) the breadth and depth of the target language vocabulary; 4) The L1 transfer in the L2 acquisition process; 5) the contrastive analysis of the native language learner and L2 learner's vocabulary acquisition on the basis of corpus analysis. Among all of these subfields, vocabulary-related research has emerged as the focus.

Rising up in America and Europe in the 1908s, Cognitive Linguistics is actually an interdisciplinary scientific field of cognitive psychology and linguistics. It rejects Chomsky's nativist's linguistic theory, and it tries to explain language acquisition from the perspective of human cognition. In other words, it regards language learning as one of the human cognitive abilities instead of any kind of inherent gift. Fighting against the prevalent Transformational-Generative Grammar, Cognitive Linguistics holds that language learning is a cognitive process. Language learning process is no different from any other learning processes. If there has to be some kind of difference, then it lies in the object content of cognition. With the prosperous development of cognitive science,

vocabulary acquisition study has also taken on a new atmosphere. Taking a particular perspective of cognitive linguistics, researchers have attained tremendous achievements. While most researchers have been focusing on the depth of their SLLA study from a particular cognitive perspective, this paper will discuss the topic more comprehensively, researching it from more cognitive perspectives.

## **2. The prototypical theory and SLLA**

It is estimated that there are more than one million vocabularies in English, most of which are not commonly used. But even the most frequently used words are from 8,000 to 10,000. Besides, there are a lot of polysemies in English, which, in turn, add the difficulty for language learners to master the language. In light of that, the Prototype Theory might be of some help in the lexicon acquisition. According to Prototype Theory, in order to understand the earthly world of various kinds of things, we need to classify the world into different types according to their common features. The process of classifying the world in cognitive linguistics is called categorization. Lakoff (1987:5) pointed out that, "There is nothing more basic than categorization to our thought, perception, action and speech" [1]. After a lot of empirical studies on such categories as BIRD, FRIUT, VEHICLE and VEGETABLE, Eleanor Rosch found the 'prototype effect', and proposed the term 'prototype', which is also called the 'basic level category' [2]. These terms all help the founding of the 'Prototype Theory'. The basic level is where we perceive the most obvious differences between the organisms and the objects of the world. This becomes clearer when we take a look at the lower and higher levels of categorization in our daily life. Usually we begin to know such basic categories as DESK, HOUSE, and DOG, rather than their corresponding superordinate categories (e.g. FURNITURE, BUILDING and ANIMAL) or their subordinate categories (TABLE, FLAT and HOUND). Of course, the basic level categories do not confine to the tangible objects. They also include something that is intangible or some kind of actions. Mostly, in language studies, we begin to learn the simple, mono-morpheme words first. They are thought to be easier to the learners because they all belong to basic level categories. And this is in accordance with the findings in cognitive science, which holds that people begin to know their surroundings from the basic level categories. So it is the same with vocabulary learning. Besides, practically these basic level category words are used much more frequently. It is essential that book compilers always offer the basic level words to beginners. Otherwise, they will either frustrate or exhaust the learners.

## **3. The schemata theory and SLLA**

A schema is a mental structure in psychology and cognitive science. Schemata were initially introduced into psychology and education through the work of the British psychologist Sir Frederic Bartlett. The Schema theory views organized knowledge as an elaborate network of abstract mental structures which represent one's understanding of the world. People use schemata to organize current knowledge and provide a framework for future understanding. Schemata are an effective tool for understanding the world. Through the use of schemata, most everyday situations do not require effortful thought— automatic thought is all that is required. People can quickly organize new perceptions into schemata and act effectively without effort. For example, most people have a stairway schema and can apply it to climb staircases they've never seen before.

However, schemata can influence and hamper the uptake of new information (proactive interference), such as when existing stereotypes, giving rise to limited or biased discourses and expectations (prejudices), may lead an individual to 'see' or 'remember' something that has not happened because it is more believable in terms of his/her schema. For example, if a well-dressed businessman draws a knife on a vagrant, the schemata of onlookers may (and often do) lead them to 'remember' the vagrant pulling the knife. Such distortion of memory has been demonstrated.

A schema is regarded as a set of mutually interacted knowledge structure stored in the long-time memory. There are a lot such schemata in the human mind, which will link the acquired knowledge with the unknown concept or things. Speaking of language learning, the vocabularies are also schemata. It is necessary that language learners master reasonable numbers of new words. Then try

to understand them thoroughly and store them in the long-time memory. This storage process is of course done without the learners' realizing it. Once the vocabulary schemata are encoded in the brain, these words will not be forgotten easily, and the learners seem to be able to memorize new words more quickly. As has been mentioned in the previous paragraph, schemata can influence and hamper the uptake of new information. On the one hand, schemata in the language learners' minds will help them learn new words quickly and these new things will help better the cognitive system of the human mind; on the other hand, however, these schemata will form a kind of interlanguage schemata, and they will either facilitate the second language learning or fossilize the learning.

#### 4. Conceptual metaphor and SLA

Traditionally, metaphor is a figure of speech in which one thing is compared to another by saying that one is the other, as in 'He is a lion'. Or, as the Encyclopedia Britannica puts it, 'metaphor [is a] figure of speech that implies comparison between two unlike entities, as distinguished from simile, an explicit comparison signaled by the words 'like' or 'as.'"

But in cognitive science, metaphors are not just a way of expressing ideas by means of language, but a way of thinking. They act as a 'cognitive instruments'. They challenged the deeply entrenched view of metaphor by claiming that

- (1) metaphor is a property of concepts, and not of words;
- (2) the function of metaphor is to better understand certain concepts, and not just some artistic or esthetic purpose;
- (3) metaphor is often not based on similarity;
- (4) metaphor is used effortlessly in everyday life by ordinary people, not just by special talented people; and
- (5) metaphor, far from being a superfluous though pleasing linguistic ornament, is an inevitable process of human thought and reasoning.

One of the most influential books in this field is Lakoff and Johnson's *Metaphor we live by*, in which Lakoff and his colleagues use evidence from everyday conventional linguistic expressions to infer the existence of metaphorical relations or mappings between conceptual domains. Lakoff and Johnson use a formula TARGET DOMAIN IS SOURCE to describe the metaphorical link between the domains. Source domain is the domain supporting the literal meaning of the expression and the target domain is the one which the expression is actually about. A conventional metaphor is therefore a conceptual mapping between two domains. The mapping is asymmetrical. However, the metaphorical expression profiles a conceptual structure in the target domain, not the source domain.

The mapping and profiling function of metaphors becomes a useful tool in enlarging the lexical meaning. Most English words have both the denotations and connotations. That is where conceptual metaphors play their roles. For instance, in the sentence 'He works for the local branch of the bank.' The knowledge of a tree is mapped to the bank. Just as a tree may have a lot branches and twigs, a bank may also have a lot of smaller sub-departments. Thus the word 'branch' gets its connotation through conceptual metaphor. In both our daily life and second language learning so many words and expressions can be explained through conceptual metaphor. Metaphors are almost ominous in our language and they are so powerful. Some people even say that one third of our utterances must contain some kind of metaphor.

#### 5. Lexicalization and SLA

In cognitive linguistics 'grammaticalization' is closely related to SLA. The term 'grammaticalization' was probably first used by the French linguist Meillet. According to Meillet, the aim of studying grammaticalization is to investigate 'the transition of autonomous words into the role of grammatical elements' [4], or to add a more recent definition, to show "where a lexical unit... assumes a grammatical function, or where a grammatical unit assumes a more grammatical function" (Heine et al. 1991, p.2) [5]. One important aspect of grammaticalization is lexicalization. Merriam-Webster Online dictionary defines 'lexicalization' as: (1) the realization of a meaning in a single

word or morpheme rather than in a grammatical construction; (2) the treatment of a formerly freely composed, grammatically regular, and semantically transparent phrase or inflected form as a formally or semantically idiomatic expression. Simply put, the lexicalization is a process to transmit meaning into morphemes, lexicons or idioms. A lot of compound words in English underwent a transition from the non-lexicon syntactic unit to a pure lexical unit. Cognitive linguists like F. Ungerer and H. J. Schmidt even believe expressions like ‘I think, make believe, hear say, feel like’ have the tendency to become single words [6]. Because of the ‘shift of syntax to lexicon’ assumption in grammaticalization study, it is reasonable to believe the words we use today may be the result of the sentence transmission of the past.

Take ‘jumping - on - a - chair - at - the - sight- of- a – mouse’ in the following sentence for example: A spirited discussion springs up between a young girl who says that women have outgrown the jumping- on - a - chair - at - the - sight- of- a - mouse era and a major who says that they haven’t. Originally, ‘[Someone] jumping on a chair at the sight of a mouse’ is syntactically a complete sentence, but for certain expression needs, it becomes lexicalized. This phenomenon will become more and more popular in the future. Some knowledge of the lexicalization of the compound words will be of great help in Second Language Lexicon Acquisition.

## 6. Conceptual blending and SLLA

Conceptual Blending (also Conceptual Integration) is a general theory of cognition. According to this theory, elements and vital relations from diverse scenarios are “blended” in a subconscious process known as Conceptual Blending, which is assumed to be ubiquitous to everyday thought and language. Insights obtained from these blends constitute the products of creative thinking, though conceptual blending theory is not itself a theory of creativity, inasmuch as it does not illuminate the issue of where the inputs to a blend actually come from. Blending theory does provide a rich terminology for describing the creative products of others, but has little to say on the inspiration that serves as the starting point for each blend. The theory of Conceptual Blending (CBT) was developed by Gilles Fauconnier and Mark Turner [7]. Different from Lakoff and Johnson’s Conceptual Metaphor Theory, in CBT mode, there are four mental spaces, namely, input space one, input space two, generic space and blend space. Conceptual blending proposes that elements from two ‘input spaces’ combine and interact to produce the ‘blended’ interpretation, and this theory has much wider application than metaphor. According to Fauconnier and Turner, blending is the way we think. We take the sentence ‘That surgeon is a butcher’ as an example to show how the elements in the two input spaces combine to produce the blended interpretation. The surgeon is in input space 1, and meanwhile there will be a lot of information about what a surgeon does in input 1. Surgeons are medical doctors who perform operations on patients. They make cuts in the bodies of the patients and do operations. Input 2 would be the butchers and information about what butchers do. Butchers cut up dead animals for meat. However, there are similarities between the two spaces. The generic space would compare the similarities between the two input spaces. Both butchers and surgeons are professionals who use knives to do cuttings on the body. But through the optional mappings of the two input spaces and the emergent structures of the blending space itself, the blending space will produce the blended interpretation of the elements in the input spaces that “the surgeon cuts up his patient rather like a butcher chops a cow”. The blended conceptual network is not mutually irrelevant, but rather they constitute a continuum. In the reality, there might be more than one input spaces, and the blended result of one blending might be the input space of another blending network. Besides, the conceptual blending network is dynamic and it will develop with the human cognition. With the deconstruction and reconstruction, people will form new conceptual blending networks. This is similar to our second language acquisition process. Most SLA researchers agree that the knowledge of a word is actually a continuum. With the two polars “not know at all” and “completely know”, the knowledge continuum represents the learning process of the word. Besides, the language system that a L2 learner constructs out of the linguistic input to which he has been exposed is called the interlanguage. The concept of interlanguage is thought of as a continuum between L 1 and L 2. At any point along the continuum, the learner’s language system is systematic. With each moving along

this continuum, there might be a reconstruction of the input spaces. In this sense, cognitive science provides a reasonable account of the interlanguage process in SLA.

## **7. Conclusion**

It is essential that we acquire a certain amount of vocabulary as soon as possible in our SLA process. Without vocabulary, language processing becomes very slow, or even impossible. Cognitive theory regards second language acquisition as a complex cognition advance. It is a psychological and intellectual process of processing, storage, outputting language material. This article studies Second Language Lexicon Acquisition from the perspective of such cognitive aspects as prototype theory, schema theory, conceptual metaphor, lexicalization and conceptual blending theory, in hope of providing some theoretical references for second language acquisition and teaching. As an indispensable aspect of language acquisition process Second Language Lexicon Acquisition is a complex cognitive process, and more scientific acquisition theories are still in urgent need for future research.

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