The reflection of markedness in prototype category theory on semantic level and its implications for second language acquisition

Zhang Qiang

School of Foreign Languages, Shandong Jiaotong University, Jinan, China

Email address: 170983040@qq.com


Abstract: Markedness is one of the analytical principles of linguistics; it indicates the existence of asymmetric relationship inside the language category, and this concept is widely used in phonology, semantics, syntax analysis, sentence structures, pragmatics and applied linguistics. Therefore, the markedness is quite valuable to the analysis of languages. Prototype category theory is an important theory in cognitive linguistics. It is totally different from the traditional category theory and claims that categories are constituted by the Family Resemblance among the members but not by the essential and enough circumstances. This paper mainly discusses the markedness phenomenon on semantic level and tries to explain it by using the prototype category theory which belongs to the category of cognitive linguistics. With the analysis of different word meanings, this paper tries to explore the reflection of markedness by using prototype category theory in three different areas, that is, antonyms, gender nouns and polysemous words in English. With the research results obtained from the analysis of markedness on semantic level, the paper will discuss the implications of markedness for language transfer and vocabulary teaching and learning in second language acquisition.

Keywords: Markedness, Unmarked Item, Prototype Category, Second Language Acquisition

1. Introduction

1.1. The Prototype Category Theory

Before the concept of prototype category theory was proposed, the concept of traditional category is widely used in the linguistics research. Wittgenstein put forward the limitation of traditional category theory for the first time, he points out: category members hold family resemblance although they have nothing in common. According to the traditional category theory, the status of category members is considered to be equal; while according to the prototype category theory, there are two types of category members: prototype members and the non-prototype members. In addition, the category boundaries are not proposed yet by the prototype category theory. The categories of colors were first to be studied in the research of prototype category, in the 1970s, the famous psychologist Rosh discovered a phenomenon in his experiment that the focus chromatic is easier to be identified, distinguished and memorized by children. Thus Rosh extended his research into other fields, and replaced the concept of focus with the concept of prototype. Based on the study of more than 10 categories, Rosh proposed the theory of prototype.

The main characteristics of the prototype category theory are: 1. The uncertainty of the connotation range and the category attribute. The category varies with people’s cognitive development. 2. The division of the category properties: the critical property and the noncritical property. The characteristics inside the category of critical property are independent; the characteristics inside the noncritical property category and adjacent property category always intermingle with each other. 3. The category members do not share the similarities, but they do share the overlapping properties and family resemblance. 4. The members who share the most similarities are called central members, that is, the prototype members. It is believed that that human’s verbal sign can be classified during the process of human’s cognition of property, thus forming a concept of symbolism. The human’s classification of categories is a very complicated process, and it is not just a simple
classification of the properties.

1.2. The Markedness Theory

The concept of "Markedness" was first proposed by Prague school. At the beginning, the concept referred to two components among the conflicts of phonemes, one of them holds a distinctive character and is called the marked, and the other one is called the unmarked.

Markedness of language units was put forward first by Prague school when they were elaborating on the phonology theory. The main representatives are Truvetzkoy and Jakobson. Prague school holds the opinion that the phoneme is a series of distinctive characteristics of a language unit. When the features of two phonemes could be distinguished, the phoneme which holds distinctive features can be called marked, and the other one is unmarked. Jakobson applied the markedness theory of phonemics to the study of morpheme; he defined the unmarked items as follows: unmarked items contain two kinds of meanings, general meanings and special meanings.

Linguists have pointed out that from the morpheme perspective, the marked items and the unmarked items have the relationship of containing each other; but from the perspective of phonemics, they repel each other. Chomsky and Halle applied the markedness theory to the study of phonology. They adopted the phonological features based on the physiological pronunciation, which was proposed by Truvetzkoy. But the two experts abandoned the concept of distinctiveness features which was put forward by Jakobson. Chomsky introduced the markedness theory into generative grammar in his later research, starting from the studies of core grammar, he began his research around the problems in the following four aspects: (1) the relationship between the markedness concept and core grammar; (2) the current situation of marked and unmarked parameter under the framework of core grammar; (3) the trigger evidence of parameter settings; (4) the confirmation of the marked relationships.

Chomsky's theory of markedness was based on the universal grammar theory and had been further explained in its theoretical framework. He believed that language is a special kind of knowledge which is independent from other knowledge system. The way of acquiring the knowledge of language should be guided and restricted by the mechanism of language acquisition in human's brain. The language acquisition mechanism for common syntax is composed of the "principles "and "parameters". "Principle" could be applied to the highly abstract rules of any language; "parameter", on the other hand, could be applied to the general conditions and rules, and it is the components of "core" grammar. "Parameter" always changes owing to the different languages, and it reflects the differences between the languages. The difference between different languages reflects in different parameters' value. Through the contacts and acquisition of a particular language, human can have the ability to determine the parameter values of the language, learning and mastering the words of a particular language. Children can acquire the "core grammar" of their languages with the help of universal grammatical rules. But not all grammatical rules are core rules, each language contains the components that cannot be restricted by the universal grammatical rules, these elements constitute the marginal grammar (peripheral grammar). Children's native language knowledge is decided by the rules of universal grammar and constituted by the marginal grammatical rules, and the children do not need to learn to use the universal grammar. Core grammatical rules are unmarked, while marginal grammatical rules are marked; they are consistent with the universality of the language. However, marked and unmarked are two opposite extremes of a continuum. The standard of markedness is decided by the level of syntactic restriction in a pair of rules or characteristics. Therefore, the markedness in adjectives such as "big, long and fast" are weaker than "small, short and slow", because the former group of words could be used in the declarative sentences and the interrogative sentences, and the latter group of words can only be used in the declarative sentences, for example, you cannot ask: "How slow can he run?" During the process of acquiring native languages, it is much easier for children to master the unmarked rules from the core grammar than to master the marked rules from the marginal grammar. The acquisition of marked rules needs the help of the positive evidence, that is, the input of the correct rules. In short, unmarked rules are simpler and more common than marked rules. Universal grammar can help children to establish the core grammar system which is composed of unmarked rules, but the universal grammar cannot help the children to form the "marginal grammar" with different degrees of markedness.

After half a century, with the development of linguistic theories research, the application scope of marked and unmarked concept goes beyond the limit of the phonology discipline, and extends to grammar, vocabulary, semantics, language acquisition and other disciplines. In recent years, the markedness theory research has exceeded the preliminary stage of lexical and syntactic research, and has extended to the fields of semantics, pragmatics, applied linguistics, psycholinguistics, sociolinguistics and semiotics, and has achieved important research results.

2. Methodology

When writing this paper, the author used literature analysis method to collect pertinent literature and studied on the relevant theories about markedness and prototype category. Then the author concluded the close relationship between markedness and prototype category from the thesis and monographs through the literature analysis. By using the qualitative analysis methodology, the author tried to explore the reflection of markedness in at least three areas: antonyms, gender nouns and polysemous words in English based on the research achievements of famous linguists.

Another important methodology in this paper is inductive analysis. With the explanation on the reflection of markedness in prototype category, the author finally
induced two kinds of implications for second language acquisition which will have a positive effect on the teaching of English as a foreign language.

3. The Relationship between Prototype Category Theory and Markedness on Semantic Level

Prototype category theory states that human’s cognition and categorization on objective things is a process of constructing the prototype, the members within the same category is not decided by the properties they have in common but decided by its family resemblance. The concept of "Family Similar-Type" was first raised by the British philosopher Wittgenstein, and aroused great responses in the field of philosophy, psychology and linguistics. Linguists Labov and Rosch proved that many natural categories consist "family resemblance" based on their research findings, these natural categories are called "prototype category". Prototype category reveals the semantic category which includes the internal structure of typical and atypical members. Markedness is one of the theories in linguistic analysis. There are complex marking systems for all languages on the semantic level. Language semantics possesses generality, and this kind of generality indicates the markedness of language. The semantics in the vocabulary bear no characteristic of markedness, but when they are used in the specific context, the markedness elements would appear (Huang Huijian 2003).

On the semantic level, the markedness shows great significance to the differentiation and definition between the meanings of words, markedness can make the language meaning more accurate when it is difficult to determine (Wang Lifei 1991).

Prototype category theory is closely related to the problem of markedness in language to a certain extent. Language markedness is the demonstration of the prototype category theory in language category. And markedness is the demonstration of the prototype theory on semantic level in the category of language. From the perspective of language using, the prototype category theory contains mainly two aspects. First, the statuses of the semantic category are not equal and they belong to different levels. Some belong to the basic semantic category, like epistatic category and hypogynous category. We can divide them into 3 parts: basic category words, superordinate and hyponym. For instance, “dog” belongs to the basic category words, “animal” belongs to superordinate, “dog” and “bitch” belongs to hyponym; Secondly, the semantic category has its own prototype, members in the same category are on different positions, they can be divided as prototype or central members and atypical or marginal members. Such as the semantic category of the word “bat”, “bat” (animal) is the central meaning; its marginal meaning is “racket”.

It seems that markedness and categorization are closely related to each other on semantic level. Unmarked terms belong to the basic category or members of the prototype on semantic level, but the marked words belong to the hyponym category on the semantic level (generally it does not include the superordinate category, because unmarked terms can contain marked word items semantically) or atypical members. Most of the characteristics of basic category terms and typical members of the category, therefore, also exist in the unmarked terms. It contains the following several aspects: 1. unmarked words can be mastered, memorized and used by human-beings in the first place, and the use of them are of high frequency and wide range; 2. unmarked words are more concise in form compared with marked words; 3. it is easier for people to acquire and recognize the unmarked words; 4. unmarked words has a stronger ability to construct words and sentences.

In short, in the process of semantic categorization, people often form a habit of regarding the meaning of a word or word pair as a category, in these categories, some category members share more family resemblance, they are in the central position of the category and belong to the typical members; they are the first to be mastered and memorized, the use frequency of them is high and the scope is very broad. They are the unmarked items in semantic category. But some of the category members share less family resemblance, they are in the edge of the category and so they belong to the atypical members; their use frequency is low and the range is relatively narrow, we call them the marked items in the semantic category.

4. The Reflection of Markedness in Prototype Category

4.1. Gender Nouns’ Markedness in the Theory of Prototype Category on Semantic Level

Markedness is most obvious in the representation of people or animal’s sex in a noun phrase. We can take a look at the following items:

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>chairman</td>
<td>chairwoman</td>
<td>lion</td>
<td>lioness</td>
</tr>
<tr>
<td>man</td>
<td>woman</td>
<td>horse</td>
<td>mare</td>
</tr>
</tbody>
</table>

In the list above, on the left row, item (A) is the unmarked word, on the right row, item (B) is the marked word. Their markedness may be reflected on their marked forms, or be reflected on the semantic markedness or distributive markedness. When speaking of the word “actor”, it first reminds us that the word has its meaning of a person who acts in movies or TV plays, and we never care about the actor’s gender. In the recognition activities, the words in row (A) often appear in our recognition and memory first. Moreover, they are often used with a higher frequency and their ability of constructing sentences is much stronger. These items are called prototype members in our recognition categories. Due to these factors, these
items become unmarked words. In row (B), the items are divided as marginal category words in our recognition, these words are used in a low frequency and a narrow range, they might be used only when we must indicate the sex of a noun, so these words are called marked words.

So, we can find the foundation of gender nouns with obvious markedness in people’s recognition categories.

4.2. The Reflection of Antonyms’ Markedness in Prototype Category on the Semantic Level

The markedness of antonyms especially the markedness of adjective antonyms mainly reflects on the unbalanced distribution. When unmarked word items and the marked word items have the opposite meaning, they can also be neutralized. Such as antonyms “long” and “short”, the former is unmarked item, the latter is marked item. We are asked “How long is the stick?” It does not contain the meaning whether a stick is long or short. But when we use the question: “How short is the stick?” This sentence may necessarily be used under the special situation, and this premise may especially mean the stick is short. So unmarked words are general or fuzzy in meaning, and marked terms are more detailed in meaning, with more specialties to convey the special meanings. In cognitive activities, unmarked words can be regarded as category members that indicate their specific meanings. The word “old” can express the meaning of “age”, it is a prototype member in the category. It can appear in the dialogue such as: “How old are you?” “I’m 17 years old.” In such sentences, the word “old” refers to the age in general, no matter whether a person is old or young. On the contrary, the marked words are often seen as marginal category members. Because the unmarked terms are usually the members of the prototype, they can be quickly activated in our brains and are more frequently used; but the marked items correspond to the marginal members in the categories, the acquisition of them are much slower than the acquisition of prototype members. Also, they are activated in a slow pace and there is little chance of using them.

4.3. The Reflection of Markedness of Polysemy Phenomenon in Prototype Category on the Semantic Level

Polysemy is one of the common phenomenons in linguistics. Polysemy phenomenon refers to the phenomenon of interconnected meaning inside a word. Cognitive linguistics think polysemy phenomenon is a process that people extend the basic meaning of a word to other meanings via cognitive means (Zhao Yanfang 2000).

So the different kinds of meanings of a word could constitute a category, the basic meaning of words can be regarded as a typical member of the category or known as the prototype, it contains the basic family resemblance. When mentioning a word, we would first recall the basic meaning of it, which is the unmarked meaning of this word. The other meanings of the word are atypical members inside the category, the less family resemblance they contain, the weaker correlation they will have. Therefore these words are all marked word items.

5. Research Results

The preceding section has analyzed the reflection of markedness on semantic level in three categories: antonyms, gender nouns and polysemous words. For these analyses, the author has chosen the data from text books or dictionaries to explain the reflection of markedness.

In the category of antonyms, the author mainly concentrates on the contrary pairs, for there are markedness patterns only in contrary pairs. The contrary pairs that represent the markedness were analyzed and explained under the perspective of prototype theory. In the latter part of the chapter, we can also see that it is same for pairs of gender nouns indicating animals or human beings. It could be inferred from the fact that markedness also lies in the meanings of polysemies. This coincides with the research findings in cognitive linguistics: the variety of different meanings of a polysem could constitute a prototype category which is composed of the prototype members and marginal (peripheral) members. Therefore, the unmarked word meaning is in accordance with the prototype member, and the marked meaning corresponds to the marginal members to a large extent.

In conclusion, the markedness on semantic level of the three categories is found to be analyzable with regard to the prototype category theory. Exactly speaking, the marked and unmarked semantic meanings constitute the category in which the members do not have the same properties but share the family resemblance. In such a category, the unmarked meanings could be regarded as the prototype members, and the marked meanings or lexemes could be regarded as the marginal (peripheral) members.

Therefore, on the cognitive basis, the particular property of unmarked or marked meanings could be explained. That is, the central and prototypical characteristics of prototype members could arouse the qualities of unmarked lexeme or meaning. Similarly, the particularity of marginal members also gives rise to the features of the marked items.

6. The Implications of Markedness for Second Language Acquisition

The analysis of markedness of prototype category theory on semantic level has certain inspiring function on second language acquisition research. There are two major aspects of the implications.

6.1. Implications for Language Transfer in Second Language Acquisition

In this paper, the author analyzes the markedness of antonyms, gender nouns and polysemies from the aspect of prototype category theory in the expectation of explaining
the markedness better. Therefore, this paper may better explain and promote the language transfer in second language acquisition. Universally speaking, because the unmarked meaning is the prototype member inside a certain category, we could infer that the unmarked items could be transferred much easier and earlier than the marked meanings. Thus, the teachers should guide the second language learners to avoid learning the marked items in the elementary phase of their study.

For instance, Kellerman (1979) has conducted his research on the transferring ability of some kind of structures. In his research, he attempted to show that the learners form a certain perspective of their native language structure and regard some kind of structures as non-transferable. He investigated 81 language learners from Holland who were studying English in their first and third years at college by giving them a paragraph. He asked them to tell which of the seventeen sentences including the Dutch word “breken” they might render using the English word “break”. The result is that 81% students reckoned that “he broke his leg” is translatable, and only 9% of the students could point out that “some workers have broken the strike” is translatable. Furthermore, Kellerman discovered that the ranking of the transferring ability is closely related with the “core/non-core” order. That is to say, the core meaning of the word “break” can be preferably translated than other meanings such as marginal meanings.

From the previous researches, we can infer that the transfer of the unmarked items or features always prior to the marked items. With prototype category theory, we could confirm the marked or unmarked meanings, or conclude the most often used items and the less frequent used items. Thereby, the language learners could make use of the unmarked principles of their native language and direct their own language transfer in a reasonable way.

It should also be noted that markedness is not the immediate and only element that influences the language transfer; it can also be affected by other factors. Ellis (1994) pointed out that markedness patterns can only influence the language transfer indirectly. If we try to master the working process of markedness, we should prove which language elements are of marked meaning. Despite the fact that the concept of markedness is vague and it is hard to distinguish whether the features are marked or unmarked, we can solve these problems to a certain degree using prototype category theory, which indicate that the unmarked meanings or items are the prototype members in the category which is constituted by both the marked and unmarked items. Thus we could distinguish the marked items with the unmarked items from the perspective of category theory.

6.2. Implications for Vocabulary Teaching

Foreign language teachers focus their attention on the vocabulary teaching because it is essential for students in learning a foreign language. The three categories concerned with vocabulary in this paper are important for our learners too. Firstly, antonyms could be made clear with the analysis of markedness from the perspective of prototype theory, so the language learners could acquire these antonyms in an easy way as they know which is the most often adopted and most typical one with the prototype category theory. They can also use the antonyms with accuracy under different circumstances, which is related to the functional angle of vocabulary teaching. Secondly, the gender nouns are closely related to the grammatical usage of vocabulary. As is mention in the preceding chapter, we could infer that the markedness of gender noun pairs could be shown from the aspect of prototype category theory, in classroom teaching, the teachers can tell the students the prototypical and marginal meaning of the words directly, therefore the language learners could easily acquire the gender nouns in a reasonable order. Thirdly, the meanings and usage of polysemy are diverse. And it is difficult to memorize all the meanings of one word. If the teachers know the markedness pattern in semantic category from the perspective of prototype, then they may help the students to acquire the unmarked and prototypical meanings of one word. This enables the language learners to acquire the meaning and usage of a word with more efficiency.

To sum up, we can infer that the analyses in this paper may have some useful effect on the teaching of vocabulary. With the knowledge of prototype category theory, the teachers could guide the language learners to learn vocabulary in a more efficient and reasonable way, that is, learning vocabulary from easy and simple items and then to difficult and complicated items. According to the characteristics of markedness and prototype category, the teachers can teach the students unmarked words which are prototypical in the preliminary stage, and then teach the marked words or the marked meaning of words in an advanced stage, thus the language learners could acquire the vocabulary in a more logical way and have a deepened understanding of the words.

7. Conclusion

To sum up, the prototype category theory is closely linked with the markedness of gender noun pairs, antonyms and polysemy phenomenon on semantic level. Unmarked words often appear in the people’s cognitive category; they can be easily identified by people, therefore they are called the central or typical members. Marked words have more concrete and specific meanings; they belong to the marginal members or atypical members in the category. Each member’s status within the meaning of a word are not equal, in addition, these member status is not permanently fixed. With the development of the society and the advance of history, some central members may also become marginal members, and some atypical members will gradually get close to the central position, even become typical members. Markedness of word terms may also change, unmarked members (typical members) may become marked members, and marked members may change into unmarked item members.
References


