

## Regional Factors for the Formation of Prototype

HAO Yu<sup>[a],\*</sup>; CHI Ren<sup>[a]</sup>

<sup>[a]</sup>Changchun University of Science and Technology, Changchun, China.

\*Corresponding author.

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### Abstract

The study of prototype has been an interesting subject for the scholars in psycholinguistics, for the prototype affects the way people talk in different situations and the social differences play a significant role in the formation of prototype. These social factors are the deep social structure that ultimately influences our linguistic behaviors. Using the theories related to categorization to analyze these social differences we can find out the reasons for the differences, which mainly contain culture, living environment, scientific development, living experience and age. This paper is intended to probe into the categorization of the fruits in China, and the researchers hope to get the factors which may in some degree influence their idea of typicality. The researchers believe that the regions where a person grows up may affect his idea of prototype in a category.

**Key words:** Prototype; Categorization; Prototype theory

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### INTRODUCTION

Categorization is one of the fields in psychology that has been unrelentingly studied by psycholinguists. People are greatly fascinated with the concepts of words in different languages. For Example, what kind of image do we have in mind when a category word that conveys some meaning

is mentioned? Do we collect the common attribute of this category, or do we have a ready picture of one of the instances in the category (Rosch, 1975). Categorization has long been dominated by Aristotle's theory which argues that category entities can be categorized according to a series of clear-cut attributes shared by all the members within the category. However, Wittgenstein (1945) revealed the issue efficiency of the classical theory in categorizing a category like GAME. He pointed out that members in the category GAME did not share common attributes like expected by Aristotle theory (as cited in Schwanenflugel, 1991). Therefore, the problem of how to categorize entities with no clear cut attributes appeared. There are so many different things in the boundless universe and they have different characteristics. But how do human beings distinguish and perceive them, it is a topic which is relevant to the issue of categorization. People can take the features of these objective things as the start point, then analyze it further and classify them; later, they will get the perceptual knowledge of these things. This process is called categorization. Concepts are based on this process, so do the languages make sense of themselves. The most important theory of categorization is the Prototype Theory was proposed by Rosch (1978), which is an alternative to the former view that concepts come from sets of clear-cut features which necessarily and sufficiently shared by all the members within the category. She suggests that some category members are learned as a kind of prototype. By the prototype of a category, she means the clear examples of a category which has the goodness and typicality as the representative judged by people. To confirm this, Rosch and Mervis (1975) did research and concluded that the meaning of a word could be represented by a prototype, and other instances within a category can be categorized according to their similarity to the ideal example. For example, the word "bird" is not best represented by a set of features like wings, feathers or flying characteristics, but by the best examples, so

the prototype in category of bird is something more like robin rather than penguin or ostrich. This paper is concerned with this particular problem in the field of prototype theory, i. e., what factors may have an influence on prototype formation. Do the culture differences play a role here as proposed by Schwanenflugel (1991)? If there are real culture prototypes, is it possible to have regional prototypes? Regional prototypes, here means the formation of various prototypes because of the difference of places where people live for a long time and which, to some extent has an influence on their perception of the world and hence affects cognition with respect to categories. Strictly speaking, regional differences belong to the cross-cultural factors as stated by Schwanenflugel (1991) who argues that possible some cross-cultural factors may explain the formation of prototype. They did research and found that prototypes within a category were different in different countries. Consequently the problem came out: is it possible to say that the different prototypes are formed because of regional differences?

## 1. RESEARCH METHOD

In order to assess the influence of regional differences on prototypes, the present small scale research was designed and conducted which was similar to the one used by Rosch (1975). The subjects were 30 college students who came from Lilin province and Guangdong provinces of China. The subjects were given a list of 7 instances in the category fruit or close to the category and they were required to rate the members of the category on a 7-point scale. A 1 meant the most typical example of the category; a 7 meant the most atypical example of the category. (The fruit list in the next page table). The order of the instances on the list was random. Some instances were specific to the south, and some were find indigenous to the north.

It can be clearly seen from the table that there are really some differences between the prototypes in the north and in the south of China, dragon eye and jackfruit are the special fruits grown in the south of China, and therefore, their position as the prototype of the category fruits is relatively high in the eyes of the southerners. However, grape, plum and pomegranate are grown in more northern areas, and consequence they have a higher position in the typical ratings of the northerners. Therefore, a possible conclusion can be drawn, i. e., regional differences, to some extent play a certain role in the formation of what is considered to be prototypes. It is also important to be prototypes. It is also important to discern factors that might explain the regional variations in the ratings of these instances of fruits.

## 2. REASONS OF THE RESULT

The reasons for this result might be very complicated. Four possible factors may have triggered this result:

### 2.1 Familiarity with the Fruits

One of the possible explanations for the result is the familiarity with the instances of the category by people. From the table, we may have noticed that most of the subjects have chosen the examples that are common and specific to their resident regions. Most southerners are familiar with fruits such as star fruits and jackfruit that are the specialty of the south. As a result, they have developed a conception that these fruits are the most typical examples of the category. However for northerner these fruits are not so common, people may have never even heard of these fruits, not to mention tasting them. Therefore, how can these fruits be perceived as typical? Consequently, familiarity to a certain extent may be responsible for what is rated as more typical than others.

Another name of pineapple

Much evidence suggests that familiarity of instances within a category plays a significant role in explaining subculture variation of prototypes in categories. For example, Kempton (1981) suggested, after an investigation of Mexican concepts of vessels and vessel subtypes, that most of the differences in extension and prototypes could be explained by the relative familiarity with vessels (Kempton, 1981).

Much evidence shows that entitles within a category are considered more prototypical in that people have frequent access to them. Consequently, the formation of prototypes can partly be accounted for by people. So does familiarity within the instances.

**Table 1**  
**Typicality of Fruits Within the Category Fruit**

Members	Southerner		Northerner	
	Rank order	Mean score	Rank order	Mean score
Apple	1	1	1	1
Pear	2	1.04	4	3.03
Plum	3	1.5	7	3.9
Banana	4	2	2	2.05
Pineapple	5	3	3	2.38
Jackfruit	6	4.05	8	3.1
Dragon eye	7	4.06	6	3.6
Tomato	8	4.4	5	3.3

### 2.2 Commonality of the Fruits

The high frequency of meeting the items, i.e., the common of the items may also have a latent influence on people. So does cognition of categories. From the above table, we can also see that there are many overlaps between what is conceived to be the most typical example of fruits by the subjects. It is clear that the agreement between subjects for the instances rated as typical examples of fruits was particularly high for some item. For example, both groups of subjects agreed to give the item apple with the same score. 1. One explanation for this is probably that these

fruits are seen and eaten all over China, and they are the commonest in people's daily life. In the table, both apple and pear are rated the best examples of the category of fruit. Strictly speaking, they are the fruits grown in the north of China. Then why did subjects in the south choose them as the most typical? The reason is simple: people can come by these fruits very easily and they are not special. They are present in people's life most of the time. As a result people perceive them to be the most typical and they show a tendency to rate what appears less as less typical.

### 2.3 Knowledge of People About the Fruits

People's background knowledge about the examples may also explain these regional differences in prototypes. During the process of rating, some subjects complained that they have never eaten or seen a certain member of the category. Therefore, it was likely for them to give a low rating when they were required to guess a score for the instance. For example, some northerners might have never heard of jackfruit which is quite common in the south, so they tend to consider it most atypical. However, there were several subjects from the north who had heard of it and knew that it was the Queen of fruits. As a result they rated it as very typical although they might have never tasted it or even seen it therefore, the background knowledge of the instances may also affect a person. So does judge of the typical of fruits. Another interesting thing that should be mentioned was that some subjects gave quite different ratings to the same kind of examples with different names in the list. For example, fengli and boluo refer to the same fruit in Chinese. They are just different names used in different places. However, what is interesting is that some subjects rated fengli as a better example than boluo. They may not know that they are the same. Therefore, fengli was rated as more typical because the subjects might have thought it was a kind of pear.

From the above evidence, it could be concluded that the knowledge of the instances might affect the formation of prototypes.

### 2.4 The Way the Fruits Are Dealt With

This reason may sound quite ambiguous and intriguing. By the way the examples are dealt with, I mean the way the items of the category are eaten. Usually people in China have a potential conception in their mind, i.e., the prerequisite for an item to be considered a kind of fruit is that they are usually eaten without being cooked. From the above table, it is clear that subjects from the south gave a higher rating to tomato than people from the north. One possible reason is that in the south, people like eating tomatoes without cooking, but in the north, people like cooking them with eggs or cut them into small pieces and serving them with refined sugar. As a result tomato is considered more of a kind of vegetable instead of an example of fruits in the north. Also, so people who eat the

already-made tomato will never find it a complete gestalt until he sees the uncut tomato.

### 2.5 Culture and Custom

The cultural reason may also account for the regional difference. Language as part of culture may more or less be influenced by the cultural differences. As the Soviet semiologist Urie Lotman (1990, p.12) once said: "No language can exist unless it is steeped in the context of culture; and no culture can exist which does not have at its corner the structure of natural language." Prototype is the basic element in the perception of language. So when studying the formation of prototype, the cultural differences that lying behind it should be considered first. Cultural differences includes the complex causes of geography, history, religion and many other things, it contains both the cultural similarities and different national characters. Probing into the cultural differences, we can gain a better understanding about the cognitive differences and the reasons for the differences. First, there exists difference in thinking pattern, the differences in thinking pattern leads to the difference in cognitive model, cognitive concepts, textual structure, communicative behavior and coding mode. Second, differences in value orientation can make people think and behave differently. Third, religion as a kind of social ideologies, has a great impact on society, especially in some countries, it can be decisive. When the same category member is combined with different national faith, customs, concept of value, different prototypes were produced. Dragon is the Chinese traditional legendary or mythological creature. In the dynastic times in China, dragon was the traditional symbol of royalty. The dragon stood for the king or emperor. There were few negative connotations, and even today, these mythological creatures occasionally appear in traditional Chinese designs. To the Westerners, however, dragon is often a symbol of evil, a fierce monster that is dangerous and must be destroyed. There are several legends of heroes deal with struggles against the dragons, which in most cases are slain in the end. So difference in prototypes was formed in different cultures. Also different prototypes shows different customs, take meat as an example, meats almost appears on the dining tables in every countries, pork, beef, chicken, mutton and fish are all different prototypes for meat. Because of different customs, meat in China mostly refers to pork; pork dishes on menus were all named with meat. It will be a special remark if it was beef or other kind of meat. Some prototypes like pork, is a taboo for the people who believe in Islam, for their prototype for meat is mutton, they never eat pork. We should pay attention to it in cross-cultural communications.

### 2.6 Scientific Development

With the development of science, especially the transportation, the regional difference is less obvious than

before. People from the north can often see fruits from the south and people from the south can eat north fruits, too. The modern technology progresses with each passing day, especially when we entered this new century, the new scientific discoveries and new technological breakthrough all change our lives. So it will certainly influence the human cognition, just for the semantic category, the development of technology adds many new members to the same category. Before automobiles were invented, humans can only take carriages or other uncultured transport as the prototype for the category of transport, for there was no cars. The advance in technology has brought obvious changes to vehicles. In the 1980s, the main vehicles are bicycles, and China is called “the kingdom of bikes”, certainly the bicycle is the prototype for vehicles. However when more and more cars filled the roadway, bicycles lost its position as the prototype, and cars replaced them as the prototype for vehicle. It does not mean that the prototype changes with time. The development of technology offers the possibility. All these difference in prototypes can be best explained by the development of technology.

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## CONCLUSION

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The reasons for the formation of prototypes are very complicated, and the regional difference is on one of them. The influence of regional difference on prototype form anon is apparent in China in that China covers a large area, and the things grown in the south and in the north are quite different.

Before concluding, two precautions should be taken. First although subjects came from different places, many of them had traveled in different parts of China Second, some of the ratings may be more or less influenced by personal preferences.

Beside these two aspects the number of the subjects was rather small. However, this small-scale research to

some extent was important for the light it may shed on the future study of the researchers on the cognition of the prototypes of categories.

Rosch (1975), argues that for a limited number of categories typical of prototypes is very plausibly a consequence of inherent properties of human perception (in Taylor 1989, p.52). This small scale study supports the idea that regional differences may be partly a factor that accounts for people’s judgment of prototypicality of members of a category. Language cognition and society are an indispensable community. They coexist and reflect each other. Prototype as the core of language cognition is inevitably affected by the social background. It changes with the change of social factors. For prototypes influences way the we use language, the analysis of the social factors that affect the formation will be of great importance for the interpretation of why different language are used in different situations. The analysis of the social factors that explain the formation of prototype would be helpful for foreign language education, cross-cultural communication, dialect investigation and many other studies.

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## REFERENCES

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- Geeraerts, D. (2006). *Cognitive linguistics: Basic readings* (pp.141-166).
- Kempton, W. (1981). The folk classification of ceramics. *A study of cognitive prototypes*. New York: Academic Press.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago: The University of Chicago Press.
- Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: the embodied mind and its challenge to western thought*. New York: Basic Books.
- Rosh, E. (1975). Cognitive representations of semantic categories. *Journal of Experimental Psychology*, 104, 192-233.
- Schwaneflugel, P. (Ed.). (1991). *The psychology of word meaning*. Hillsdale, New Jersey: Lawrence Erlbaum.
- Taylor, J. R. (1989). Linguistic categorization. *Prototypes in linguistic theory*. Oxford: Oxford University Press.