

## Analyzing the Cognition of Persian Speakers in Terms of Categorization: Taxonomic or Thematic Categorization?

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Vol. 11, No. 6, Tome 60  
pp. 515-538  
February & March  
2021

### Abstract

Categorization as a form of organization and placing different things, including phenomena, objects, events and the like in different groups, is a kind of cognitive function in human beings that occurs based on the common "taxonomy" of categories or the thematic "relationships" that occur between them. Research shows that Western and East Asian cognitive performance, especially that of the Chinese, is quite different in terms of categorization; Accordingly, Westerners classify things on the basis of "category" (taxonomic categorization) and East Asians do so on the basis of "relationships" (thematic categorization). The present study evaluated and analyzed their cognitive performance by performing two tests in the form of visual and verbal questionnaires on 50 Persian male and female speakers. The visual questionnaire showed that out of 50 Persian participants, 70% carried out the categorization based on "relationships"; the verbal questionnaire also confirmed the result of the former and showed that 76% of Persian speakers, during the process of categorization, have considered the "relationship" criterion and, in fact, have acted on the syntagmatic axis. On this basis, it can be concluded that, firstly, the cognitive function is not the same in all human beings, and secondly, the cognition of Persian speakers in the field of categorization operates on the syntagmatic axis, unlike Westerners who in fact "classify" and act on the paradigmatic axis.

**Keywords:** cognition, taxonomic categorization, thematic categorization, category, relationship

Received: 7 November 2018  
Received in revised form: 13 February 2019  
Accepted: 4 March 2019

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### 1. Introduction

Categorization is a mental function by which the brain classifies and organizes various objects, instances, events, and entities in general. This cognitive operation is based on the structure of human knowledge of the world around and is one of the most fundamental cognitive phenomena. The question is whether all human beings enjoy the same cognitive functions due to having knowledge and living in a single world. Research on categorization shows that, for example, American students primarily classify by category, but categorization among East Asians, especially the Chinese, Koreans, and Japanese, deal with categorization differently and in terms of "relationships". The issue in the present study is to identify which of the two criteria, that is category or relationship, is utilized by Persian speakers for the aim of classification.

### 2. Literature Review

Smiley and Brown (1979) have shown in an article that American students categorize primarily according to taxonomic similarity; in other words, they classify based on categories (Smiley & Brown, 1979: 249-257).

Markman and Hutchinson (1984) believe that the natural way of perceiving, categorizing, and organizing the world is relational and thematic, but that children gradually, as they grow older, direct their attention to categorical relationships (Markman & Hutchinson, 1984: 4).

Numerous researchers have also addressed the issue of distinguishing between the cognitive functions of Westerners (European Americans) and Easterners (East Asia, especially China, Korea, and Japan) and have shown that from different cognitive perspectives, there are fundamental differences between these two groups (Ji et al., 2000; Nisbett et al., 2001; Nisbett, 2003). A portion of the different ways of thinking of humans have cultural origins and affect the judgment of individuals and their decision-makings (Ji et al., 2004; Ji & Yap, 2016).

### 3. Methodology

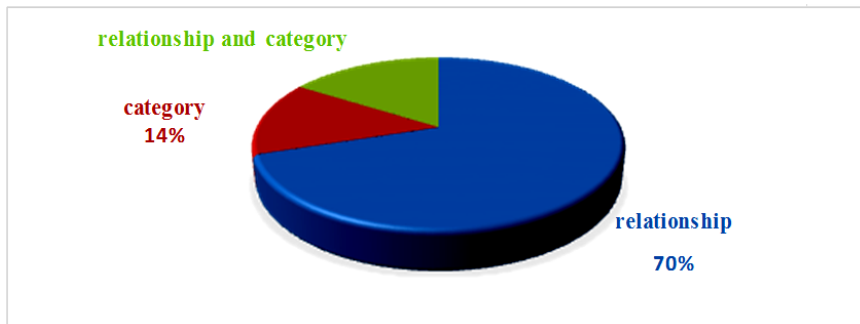
The present research has been conducted in a quantitative and descriptive approach through two visual and verbal questionnaires. This test was previously performed on a number of American and Chinese children by Liang-hwang Chiu, a developmental psychologist, and was later performed on American, Chinese and Taiwanese students at the University of Michigan students by Li-jun Ji, Zhiyong Zhang, and Richard Nisbett. In the present study, 50 Persian-speaking male and female students (25 females and 25 males) in the Master's Program of Linguistics within the age range of 23 to 50 years residing in Tehran participated in the research.

### 4. Results

Examination of the visual questionnaire showed that Persian speakers categorize differently from English speakers. Of the 50 male and female participants, 35 categorized both images 1 and 2 in terms of "relationship." 7 people categorized both images according to the type of "category". In one of the pictures, 8 people considered the relationship component for categorization, and in another, category or taxonomy was their criterion for categorization. In fact, most Persian speakers performed similarly to the Chinese and Korean participants in terms of visual categorization. The answers provided to the verbal questionnaire confirmed the results obtained from the visual questionnaire.

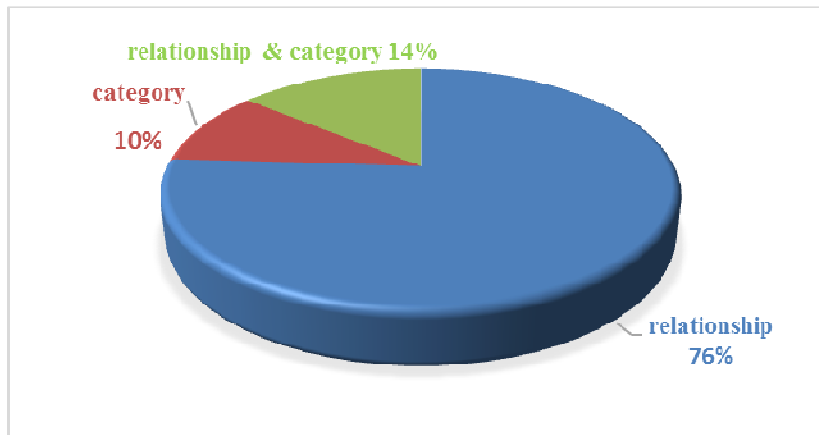
**Figure 1**

*Thematic categorization versus taxonomic categorization of Persian speakers in response to the visual questionnaire*



**Figure 2**

*Thematic categorization versus taxonomic categorization of Persian speakers in response to the verbal questionnaire*



### 5. Discussion

The predominant tendency of Persian speakers to categorize according to "theme" and, in other words, to consider a kind of "relationship" between

phenomena or things; 70% of Persian speakers categorized based on relation, 14% according to category, and 16% by both the relationships and categories. This dominant tendency in thematic categorization can also be seen through the answers given to the verbal questionnaire. Out of a total of 50 participants, 38 people categorized according to "relationship", 5 people according to "category" and 7 people performed with a combination of relationships and categories. Among those who categorized entities with a combination of criteria that is, considering both the relationship and category, there was also a predominant tendency toward the criterion of "relationship"; this means that most participants preferred thematic classification to categorical classification, and, for example, out of ten questions, most participants classified 7 questions based on thematic relevance and only 3 questions according to taxonomic similarity.

### 6. Conclusion

Numerous studies have shown that Westerners categorize according to the similarity of taxonomic features between two things, and East Asians conduct the same action according to thematic categorization and according to the relationship between the two entities. Examining this issue not only shows that cognition is not the same in all human beings, but can also be helpful in studying the cognitive function in language-related issues. Accordingly, people who categorize by theme or relationship actually act on the hypothetical syntagmatic axis, and those who categorize by taxonomy or the similarity of characteristics carry out linguistic classification based on the hypothetical paradigmatic axis. The results of the tests performed in this study show that among Persian speakers, the dominant tendency in categorization is to consider the criterion of "relationships". It seems that Persian speakers pay more attention to the proximity of entities than the similarity and possible paradigm among them