GENERAL QUESTIONS RELATING TO BOTH LINGUISTICS AND LITERATURE. PHILOLOGY
(UDC 80)

ВНУТРИ-КУЛЬТУРНАЯ СТАБИЛЬНОСТЬ И ВАРИАТИВНОСТЬ КАТЕГОРИАЛЬНЫХ НОРМ
Научная статья

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Аннотация

Исследование было направлено на изучение внутри-культурной стабильности и региональной специфичности показателей частоты называния русских слов, принадлежащих различным семантическим категориям. Участники исследования из трех различных регионов России выполняли стандартную процедуру называния слов, принадлежащих 45 семантическим категориям. Для каждого экземпляра категории сравнивали общую частоту его называния между тремя регионами. Показатели близости Хеллингера использовались как мера согласованности частоты называния слов между представителями разных регионов. Коэффициенты близости Хеллингера между частотными рядами слов были высокими, а для большинства понятий различия между показателями частоты называния в разных регионах были не значимыми, что является свидетельством географической стабильности этих нормативов в России. Между тем, число понятий, обладающих разной частотой называния, было ниже, а коэффициенты близости Хеллингера были более высокими, если расстояние между городами было меньше. Различия в частоте называния между регионами, полученные для небольшого числа понятий, могут быть объяснены особенностями опыта респондентов, географическими и средовыми факторами.

Ключевые слова: интра-культурные различия, культурная стабильность, категориальные нормативы, частота называния.

INTRA-CULTURAL CONTINUITY AND DIVERSITY OF SEMANTIC CATEGORY NORMS
Research article

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Abstract

This study was aimed to examine intra-cultural continuity and regional specificity of generation frequency norms for semantic categories in the Russian language. Participants from three different regions of Russia carried out a standard procedure for generating exemplars of 45 semantic categories. Overall generation frequency compared between three regions for each concept in order to study the regional specificity of concepts. Hellinger Affinity scores were used as a measure of between-regional accordance of generation frequency norms. Generation frequency for most concepts did not differ significantly between all three regions and Hellinger Affinity coefficients were strong providing evidence for the intra-cultural homogeneity of these norms in Russia. However, the number of concepts with significantly different generation frequency values was lower and the Hellinger Affinity was significantly stronger when a geographical distance between cities was smaller. Significant differences of generation frequencies between regions, elicited in a study for a small number of concepts, can be explained by geographical, environmental and experiential factors.

Keywords: intra-cultural diversity, cultural continuity, category norms, exemplar generation frequency.

Introduction

Culture and conceptual behavior are inseparable [6]. The frequency of concepts generated in specific semantic categories (like "A Toy" or "A Furniture") can differ dramatically between different languages. Thus, a frequency of words can be used as a key indicator of the specific features of cultures [12].

Cultural differences can be caused by many factors, such as differences in social, historical, economic, educational systems and habitat, the degree of familiarity of the population with the category [7]. It has been shown that some categorization phenomena can be quite sensitive not only to language and to culture aspect but to experiential factors as well [5], [13], [11]. Nevertheless, we can't suggest that only environmental factors will explain category representation as thanks to culture and language people can build the representation of things they did not interact with [10]. It can be suggested, the culture, which is dominated in the country, can outweigh environmental factors, which can vary in different regions. However, it has been shown in many studies that there is a crucial intra-cultural diversity, which can be found even inside the country with a homogeneous culture, which can be explained by social and economic factors [8], [2].

Generation frequency database for 45 semantic categories was collected for the Russian language [3]. Category norms collected in Moscow were shown to be reliable [3]. Nevertheless before making inferences and generalizing generation frequency norms collected in Moscow to the Russian language and the whole country, the geographical stability of these results was examined. Moscow, Irkutsk, and Yekaterinburg regions were chosen for this aim. As correlations between the three regions were very strong, the geographical stability of generation frequency norms for the Russian language was suggested [4]. Such result supports the idea that cultural representations maintain their stability while reaching a cultural level of distribution [10].

Nevertheless, previous work was aimed only to prove geographical stability and further analyses needs to be continued in order to study the intra-cultural homogeneity of category norms and regional specificity of concepts with more sensitive statistic methods. Hellinger Affinity, which is used in the current study, as a measure of distance between frequency distributions, is much more sensitive to differences than correlation. Furthermore, a separate comparison of frequency for each concept in a category was conducted with help of Chi-square test with Yates correction in the study.

Thus, the aim of this study was to measure Hellinger Affinity distances in order to evaluate a degree of intra-cultural homogeneity. and to compare differences in generation frequencies between three cities in order to understand the degree of regional specificity of concepts.

The following suggestions can be made. Between-regional accordance of generation frequency norms will be strong showing stability of representations on a cultural level. Nevertheless, the strength of differences can be related to geographical distance. As cities are closer to each other, fewer differences can be observed.

Method

Participants. One hundred sixty-two students of different universities of Moscow aged 18-26 years participated in the study as volunteers (126 females and 36 males, M=19.19, SD=1.52). One hundred sixty-two students from Yekaterinburg aged 18-24 years (126 females and 36 males, M=19.56, SD=1.18) and one hundred sixty-two students from Irkutsk aged 18-28 years (132 females and 30 males, M=19.31, SD=1.82) participated in this study as well. There was no significant difference in proportion of male and female participants in samples taken from three different regions (Pearson Chi-square=0.685, *df*=1, *ps*=0.408, Pearson Chi-square=0.000, df=1, *p*=1). Participants involved in this study in each region represented the same generation and the same social group. All of the participants were native Russian speakers.

Procedure. The procedure used to gather the Russian category norms was similar to the procedure of Battig and Montague (1969). Participants were asked to write down in the notebook as many items included in each category as they can in 30 sec. For example, if they were given category "birds" they were supposed to write names of different birds like a *sparrow*, a *nightingale* etc. The full version of the instruction can be found in the paper by Battig and Montague of 1969 [1]. Overall generation frequency was calculated for each word. The category set for this study consisted of 45 different semantic categories [4]. For each word, overall generation frequencies were compared between regions with help of two-tailed Pearson Chi-square with Yates` continuity correction. The number of significant differences was compared between regions using Chi-square-test as well. Hellinger Affinity coefficients as a measure of distance between two frequency distributions from different regions were measured for each category. The value of Hellinger Affinity coefficients ranges from 0 to 1 and the 1 means that two distributions are identical. Data were analyzed with help of Microsoft Office Excel and IBM SPSS Statistics 23.

Results and Discussion

Hellinger Affinity coefficients were measured between frequency distributions of three regions (table 1). The level of Hellinger Affinity was strong proving the intra-cultural stability of such kind of data. The similar level of intra-cultural affinity was received in other studies [14], [9].

Table 1 – Hellinger Affinity coefficients as a measure of distance between frequency distributions

Category	Moscow-Yekaterinburg	Moscow-Irkutsk	Yekaterinburg-Irkutsk	Category	Moscow-Yekaterinburg	Moscow-Irkutsk	Yekaterinburg-Irkutsk
An Alcoholic Beverage	0.97	0.95	0.96	A Crime	0.91	0.90	0.91
A Nonalcoholic Beverage	0.95	0.95	0.96	An Insect	0.96	0.96	0.96
A Disease	0.91	0.91	0.91	A Science	0.90	0.92	0.89
A Domestic Appliance	0.96	0.94	0.95	A Vegetable	0.98	0.97	0.98
A Tree	0.96	0.95	0.97	An Article of Clothing	0.96	0.95	0.96
A Wild Animal	0.96	0.94	0.94	An Organ of the Human Body	0.97	0.96	0.95
A Domestic Animal	0.96	0.95	0.97	A Weapon	0.92	0.92	0.92
A Precious Stone	0.96	0.95	0.96	A Reptile	0.97	0.96	0.97
A Kind of Food	0.89	0.89	0.89	A Profession	0.87	0.87	0.88

The end of Table 1

Category	Moscow-Yekaterinburg	Moscow-Irkutsk	Yekaterinburg-Irkutsk	Category	Moscow-Yekaterinburg	Moscow-Irkutsk	Yekaterinburg-Irkutsk
A Unit of Time	0.98	0.97	0.97	A Bird	0.96	0.95	0.97
A Unit of Distance	0.97	0.97	0.96	A Plant	0.87	0.94	0.87
A Type of Music	0.92	0.92	0.94	A Family Member	0.98	0.98	0.98
A Girl`s first name	0.91	0.93	0.91	A Fish	0.91	0.84	0.87
An Amphibian	0.93	0.91	0.92	A Sport	0.93	0.93	0.94
A Toy	0.89	0.88	0.91	A Country	0.95	0.95	0.95
A Carpenter`s Tool	0.92	0.92	0.92	A Type of Vehicle	0.96	0.93	0.95
A Kitchen Utensil	0.94	0.91	0.94	A Farm Animal	0.98	0.98	0.98
A Type of Fabric	0.94	0.94	0.93	A Fruit	0.98	0.97	0.97
An Article of Furniture	0.96	0.96	0.96	A Color	0.98	0.98	0.98
A Mammal	0.95	0.95	0.94	A Flower	0.95	0.91	0.92
A Male`s First Name	0.93	0.93	0.92	A Part of the Human Body	0.96	0.96	0.96
A Musical Instrument	0.97	0.96	0.96	A Four-footed Animal	0.96	0.96	0.96
A Metal	0.94	0.98	0.94				

Hellinger Affinity scores between frequency distributions of Moscow and Yekaterinburg samples were stronger than the Hellinger Affinity scores between frequency distributions of Moscow and Irkutsk samples (Z=-2.261, p=0.024). The presence of significant differences in levels of Hellinger Affinity shows some degree of slight regional diversity. Differences in the strength of Hellinger Affinity between other two pairs of regions were insignificant (p>1).

Chi-square comparison with Yates` correction showed that there were no significant differences between three cities for the most concepts. Differences in generation frequencies were significant (p<0.05) only for 3.98 -5.24 % of concepts (table 2). Just a small number of concepts showed very significant differences with p<0.01 (1.27-2.41%). This finding once again supports the suggestion that norms of generation frequency for the Russian language are geographically homogeneous.

Table 2 – The number of words with significantly different frequencies between regions

	The number of concepts which differed significantly (p<0.01)	The number of concepts which did not differ significantly	The percent of concepts which differed significantly
M - I	129	5067	2.41
M - Y	70	5304	1.27
I-Y	84	5141	1.57

M: Moscow, I: Irkutsk, Y: Yekaterinburg

Such small percent of differences can be explained by random factors and ignored. Nonetheless, some regional specificity can be revealed in such limited number of concepts. That is why the number of concepts with significantly different generation frequency in samples of three regions (two-tailed p<0.01) compared using Chi-square without Yates` correction.

There were significantly more concepts, which differed in generation frequency between Moscow and Irkutsk than between Moscow and Yekaterinburg (Pearson Chi-square=19.835, df=1, two-tailed p<0.0001). There were no significant differences in the number of concepts between Moscow-Yekaterinburg and Irkutsk-Yekaterinburg (Pearson Chi-square=1.722, df=1, one-tailed p=0.1894). There were more concepts, which had significantly different frequencies between Moscow and Irkutsk than between Yekaterinburg and Irkutsk (Pearson Chi-square=9.963, df=1, one-tailed p<0.01).

Thus, it can be suggested that strength of similarities related to geographical distance. Stronger similarities are

observed between Moscow and Yekaterinburg, which are closer to each other than between Moscow and Irkutsk.

Analyses of words with strongest significant differences in frequency between regions showed that in some cases intra-cultural diversity could be explained by ecological, environmental and experiential factors. For example in Irkutsk sample word *omul* (fish with lives in Baikal lake which is close to Irkutsk) was named 90 times while in other samples it was named twice (Pearson Chi-square with Yates` correction= 114.897, *df*=1, two-tailed *p*<0.0001 in comparison to Moscow and Yekaterinburg). In Moscow sample in category "vehicles" *metro* was the frequent answer, while in Irkutsk it was not as there is no subway (Pearson Chi-square with Yates` correction = 67.258, *df*=1, two-tailed

p<0.0001). The frequency of word *metro* was significantly lower in Yekaterinburg sample as this type of vehicle is not such popular in this city as it is in Moscow (Pearson Chi-square with Yates` correction =25.372 *df*=1, two-tailed *p*<0.0001).

The intra-cultural affinity for data is shown to be strong. Most of the concepts (more than 97.5%) did not differ in frequency between regions. Even though such rare significant differences in frequency can be explained by random factors, some cross-regional diversity for a few concepts was revealed and should be taken into account. Such differences can be explained by geographical, socio-economical, environmental and experiential factors.

Конфликт интересов

Не указан.

Conflict of Interest

None declared.

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