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Dialogue of Cultures - Culture of Dialogue: from Conflicting to Understanding

USING GOOGLE TOOLS FOR CROSS-CULTURAL COMPARISON OF GENDER BINOMS IN ENGLISH AND RUSSIAN

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Abstract

Gender binoms provide information on cultural value as they reflect typical of perception of reality in different societies. The object of this research is gender binoms such as *a man and a woman, a daughter and a son*. This paper aims to study the structure of gender binoms of family kinship as a semiotic means of gender-related cultural concepts. The article presents the results of the linguistic experiment of a cross-cultural comparison of gender binoms. In this experiment, the corpus-driven approach to Google search was used to collect the empirical data. This technique was shown to be an effective way of determining the dominating elements of gender binoms in two cultures. A mechanism of comparing these dominating elements is proposed, based on observations from this experiment. The study proves that the change in the structure of a gender binom shows the difference in the cultural perceptions of the male and female nominations. The issue highlighted in this study may be applicable to cognitive grammar and semantics research, to sociolinguistics and cultural studies.

Keywords: Gender binoms, cross cultural studies.

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1. Introduction

Gender is a social construct, a set of characteristics defined by the culture of a society that identifies the social behavior of men and women and the relationship between them. Swedish researcher Yvonne Hirdman (1991) considers the gender system a set of relations between men and women, including representations, informal and formal rules and norms defined by the place, goals, and perception of the sexes in society. She describes the gender system as a set of gender contracts (Hirdman, 1991, p. 190).

Linguists have tackled almost all areas of language from a gender perspective. This research area proposes cognitive-pragmatic and stylistic models of gender description and investigates the gender asymmetries in language (Kamenskaya, 2002; Kiesling, 2019; Goroshko, 2003; Meyerhoff & Holmes, 2003; Talbot, 2019).

The motivations for this research and its importance stem from several existing studies.

First, there are cognitive studies of various mechanisms for implementing gender procedures, for example, the child's awareness of gender differences (Martin, 2012), the theories of gender development (Bussey & Bandura, 1999; Martin, 2012). According to cognitive theorists, individuals are active information processors and prior expectations and cognitions play an important role in how incoming information stimuli available to the senses is arranged and processed. The information available to a recipient is not constrained by the abilities to process and deal with information from that world. Cognitive theorists often gain insights into information processing by assessing misperceptions, inaccurate memories, use of heuristics, and selective attention and memory, because in those instances there may be incongruence between the environmental input and one's concepts (Bussey & Bandura, 1999; Kirschner et al., 2017; Martin, 2012; Resnick, 2017; Schunk & Usher, 2019).

Second, cognitive linguistics studies of gender cover various aspects, such as language construction of knowledge about gender, the conceptualization of speech behavior, metaphor and gender in the processes of categorization and conceptualization (Gritsenko, 2011; 2016; Shatunova, 2018; Chernykh, 2018). Many gender cognitive studies focused on these processes using the nominative resources of the language, however, the role of semiotic means and deep (structural) mechanisms of language and discourse still requires comprehensive investigation. Therefore, it is important to fill this gap in the literature by researching gender binoms from the perspective of the language sign.

2. Problem Statement

Scientists in cognitive semantics Popova and Sternin (2005) offered a set of postulates to use while researching the relationship of language semantics with the concept sphere of people and semantic processes. Here are some of them: the term "concept" belongs to human consciousness, it is a global unit of thought activity, a quantum of structured knowledge. Human thinking is nonverbal, it is carried out by using a universal object code. People think in concepts encoded by units of this code. An ordered set of concepts in the human mind forms its concept sphere (Popova & Sternin, 2005, p. 7).

As stated by the studies of gender conceptualization, the gender propositions are not semantically proxy in the conceptualizing gender relationships, they correlate with a single center that corresponds with the concepts of femininity (masculinity) specific to a culture. This method of categorization represents

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radial models comprising a central term and variants. The relationship between the central terminal and variants is conventional, and an individual assimilates it in the process of socialization. Specifics of masculinity and femininity as radial conceptual categories is that their central members do not exist outside of their manifestations (variants) (Gritsenko, 2011, 2016). Therefore, gender nominations perform not only a nominative function, but they translate the conceptual meaning in the binary opposition **male-female** in the frame of culture.

Gender binoms act as syntactic units related to cognitive modeling of reality. This is due to the following provisions: Norman (2013) treats syntactic models as a tool of cognition. The basic premise is that grammatical unit of a language "store in a concentrated form the cognitive experience of previous generations" and "allow the native speaker to organize, bring into the system new, just received information" (Norman, 2013, p. 34). Analyzing the principles of syntactic model identification in the cognitive paradigm, he emphasizes that we can consider the syntactic model a component of the cognition process only if this model and its components are "endowed with some generalized meaning" (Norman, 2013, p. 38). According to the author, the syntactic model naturally reflects reality, fixing a certain typical situation, which is the plan of its content. By fixing an event, the syntactic model imposes several quantitative and qualitative restrictions on it. Quantitative restrictions mean the choice of a certain small number of "participants" (people, objects, places or events, etc.), and qualitative restrictions mean a certain content with a set of participants (Norman, 2013).

In this paper, we consider a syntactic structure of gender binoms from the perspective of iconicity (Fischer, 1997; Haiman, 1983; 1985), which shows a relationship between the two sides of the sign. A language sign constructed on an iconic principle reflects the speaker's choice of a language sign isomorphic to the mental representation of the object in the speaker's mind. The structure of an iconic sign implemented through a gender binom is the relator structure. Van Langendonck (2007) defines a relator as a free or bound morpheme that has two syntagmatic slots (p. 410). In the relator structure, the relator defines a specific semantic-syntactic relationship between the two relata. In gender binoms, the relata are represented by two elements: *a male nomination* (1) and *a female nomination* (2), and the relator is represented by conjunction *and*. Previous studies have indicated that we can associate the syntactic structure of gender binoms with the relator structure. Since the relator structure refers to the iconic principle of interpretation of a language sign, it implements such factors of this principle as the iconicity of word order and distance (for more information, see Fischer, 1997; Givón, 1991; Haiman, 1983; 1985; Langacker, 2009; Van Langendonck, 2007). In conformity with the principles of iconicity of distance and word order, the first element in the structure carries the dominating information slot.

3. Research Questions

The research questions of the study are:

(1) what is the difference in the implementation of gender cultural concepts through binominal structures in Russian and English?

(2) can Google search provide relevant results in the context of the gender binominal structures studies?

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4. Purpose of the Study

This paper aims to study the binomial gender structures as a semiotic means of realization of gender concepts of culture. The object of this research is nominative phrases such as *man and woman, daughter and son* which we consider as gender binomial units or gender binoms.

The article presents the results of a cross-cultural comparison of gender binominal phrases using the resources provided by modern technologies, in particular the Google search engine. The present study compares these units in two languages to determine the dominating elements of the binoms in two cultures.

We argue that gender binoms are the language implementation of cultural concepts associated with gender. They are language sign structures built on the principle of a schematic iconicity of distance, which means that the first element occupies a dominant position in the concept sphere of the speaker, while the second one is less significant. The positional change in gender binoms such as *man and woman* (1) vs *woman and man* (2) reveals the change in the cognitive focus of the speaker: in the phrase (1) the focus is on the element *man*, and in the phrase (2), the focus is on the element *woman*. Data on the usage of these phrases in texts will show which of the options is more often used and therefore dominates in the conceptual structure of gender stereotypes of a culture.

This study sought to:

1. establish the status of gender binoms in the translation of cultural concepts;

2. develop a method for researching into cross-cultural comparison of gender binoms based on the corpus approach using Google tools;

3. compare relevant gender binoms in English and Russian.

5. Research Methods

To collect the empirical data of the study, we conducted a linguistic experiment based on the corpus approach with the use of Google. This method was not previously applied in cognitive studies of gender binoms, however, it has already been used in several modern cognitive research (Petrova, 2019; Suleimanova, 2019; Suleimanova & Petrova, 2020).

In this experiment, we studied 16 Russian and English gender binoms. 8 binoms had the structure: ***male and female***; we identified them as Phrase1; 8 gender binoms had the structure: ***female and male*** – Phrase 2. The analyzed binoms were the terms of family kinship as representing the basic Russian and English cultural concepts. We used some limitations for Google search and retrieved only singular forms of conceptual meanings and nouns with an indefinite article in English. Besides, the Advanced search limited the query with filters: the “X”- operator-fixing the word order and file type in pdf format. This filter allows getting micro-texts of 1-2 sentences with the incorporated relator structure of a gender binom. The number of occurrences of the binom phrase in Google showed the number of its use in the text.

The protocol of the experiment had three stages:

Stage 1. Google search for gender binoms as Phrase 1 and Phrase 2.

Stage 2. Analysis of the number of occurrences in Google of Phrase 1 and Phrase 2.

Stage 3. Calculation of the percentage of Phrase 2 to Phrase 1.

The reasoning for the calculation was:

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- Phrase 1 is the original word combination with 100% stabile structure.
- Phrase 2 is a changed version of the stable structure.
- the percentage of occurrences of Phrase 2 against Phrase 1 determines the proportion of the changed phrase regarding the original one. To calculate the percentage, we use the formula: Phrase 2 x% = n2: n1 x100,

where n1 is the number of occurrences of Phrase 1 in Google search and n2 is the number of occurrences of Phrase 2.

We can visualize this results in the diagram of percentage ratio of Phrase 1 and Phrase 2 (Figure 1).

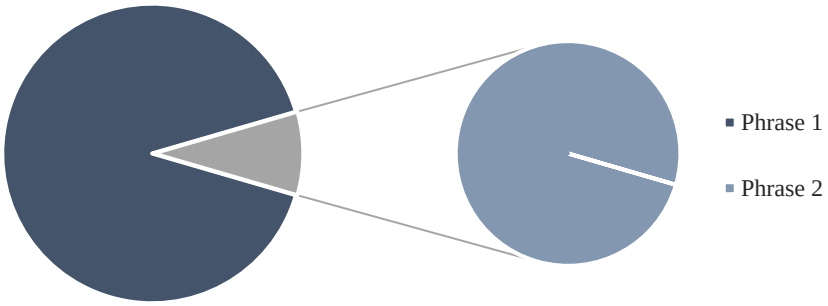

Figure 01. Percentage ratio of Phrase 1 and Phrase 2

The percentage of Phase 1 and Phrase 2 shows the ratio of the variability of the structure.

The comparison of the ratio of the structural variability in the two languages displays which element of the cultural concepts is more stable and, which tends to changeability in the English- and Russian-speaking segments of the Internet. The data accumulated with the help of Google can be analyzed according to the described scheme. The analysis allows for concluding the stability of the relator structure in two languages, which indicates the changeability of the cultural concepts ***male-female*** vs ***female-male*** expressed in gender binoms of kinship terms. The subtraction of the percentage of Phrases 1 and 2 in Russian and English shows the difference in the changeability of the gender binoms in the languages.

6. Findings

Table 1 shows the number of occurrences of a gender binom in Google in two forms (Phrase 1 and Phrase 2), percentage correlation of Phrase 2 to Phrase 1 and the remainder of the subtraction of the percentage of Phrase 1 and Phrase 2.

Table 01. The number of occurrences of keywords in Google and the percentage of gender binoms

	Phrase 1	Number of occurrences in Google	Phrase 2	Number of occurrences in Google	Percentage ratio of Phrases 1 and 2	The reminder of the percentage of Phrases 1 and 2 in Russian and English
1	*muzhchina i zhenshchina*	48,600	*zhenshchina i muzhchina*	12,600	25,9%	7,9
	a man and a woman	8,230,000	*a woman and a man*	2,770,000	33,8%	
2	*muzh i zhena*	52,500	*zhena i muzh*	16,100	30,7%	62,1

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	a husband and a wife	232,000	*a wife and a husband*	213,000	92,8%	
3	*syn i doch'*	26,400	*doch' i syn*	19,600	72,2%	15,7
	a son and a daughter	386,000	*a daughter and a son*	218,000	56,5%	
4	*brat i sestra*	38,600	*sestra i brat*	10,100	26,1%	39,7
	a brother and a sister	144,000	*a sister and a brother*	94,800	65,8%	
5	*zhenih i nevesta*	14,400	*nevesta i zhenih*	2,010	19,9%	32,8
	a bride and a groom	7,580	*a groom and a bride*	4,000	52,7%	
6	*mal'chik i devochka*	22,100	*devochka i mal'chik*	8,260	37,4%	13,1
	a boy and a girl	479,000	*a girl and a boy*	242,000	50,5%	
7	*dyadya i tetya*	2,810	*tetya i dyadya*	1,530	54,4%	40
	an uncle and an aunt	6,710	*an aunt and an uncle*	6,340	94,4%	
8	*babushka i dedushka*	502, 00	*dedushka i babushka*	12,400	2,8%	97,2
	a grandfather and a grandmother	2,420	*a grandmother and a grandfather*	2,420	100%	

The percentage of gender binom variation shows how flexible the concepts ***male-female*** vs ***female-male*** are in the analyzed languages. The data show that the average variability of gender binoms in English is higher than in Russian: 68,3% in English against 36,4% in Russian. To analyze the retrieved results, we take into account the percentage ratio of Phrases 1 and 2 and the difference between the number of occurrences in these languages.

The difference in the variation of the binom *man and woman* in Russian and English is 7.9, which means that both concepts in these languages have a relatively close percentage of the ratio of phrases 1 and 2 – 25.9% and 33.8 %. This percentage shows that the concept of ***male*** dominates in both cases.

The percentage of Phrases 1 and 2 of the binom *husband and wife* differs 30.7% in Russian and 92.8% in English. This can imply higher changeability of concepts in the English-speaking culture than in the Russian-speaking one and may indicate that the Russian language and culture traditionally favors masculine domination, while in the English-speaking segment there is a relative parity ***of male and female*** in implementing this binom.

The binom *son and daughter* shows that there is a fairly high difference between ***male and female***: in Russian, it is 72.2% and in English-it is 56.5%. The data suggest that though the concept of the ***female*** is important in both languages, the higher occurrence in English can be attributed to the fact that *sons* are considered being desirable successors of private ownership. And in the Russian-speaking segment, the issues of inheritance of private property lost their relevance during the Soviet period. This can explain the difference between results in English and Russian.

In the binom *brother and sister*, we observe a significant structural variation in English 65.8% against 26,1% in Russian. This means that in Russian variant *brother and sister* is more preferable than *sister and brother*. This displays the higher significance of the concept ***female*** in this binom in English than in Russian. We can assume that the role of the sister in English-speaking society is higher than in Russian-speaking society.

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In Russian the binom *bride and groom* demonstrates the priority positioning of the *groom* relatum (which corresponds to the male gender) while in English this position belongs to the *bride* relatum, i.e. the ***female*** gender is the leading one in this binom. We can suggest that the role of the bride in the English-language frame scenario of the wedding celebration is higher than in the Russian one.

The comparison of the binom *boy and girl* shows that in English, the variability of components is observed in half of the results – 50.5%, while in Russian – only 37.4%. This indicates masculine domination in the Russian-speaking culture and a parity ratio of ***male-female*** and ***female-male*** in the English-speaking segment of the Internet.

The dynamics of the variability of concepts in the binom *uncle and aunt* shows that although the variation in Russian is quite high (54.4%), in English it is higher - 90.4%. This may also be due to the concept of ***female*** being generally more powerful in this culture.

An interesting observation can be made while studying the binom *a grandfather and a grandmother*. The Russian data show that the concept of ***female*** takes the leading position compared to the English, which has the same number of occurrences with the modified version. This fact can be related to the culturally determined feature of Russian life, namely, the role of the *grandmother* in the family when raising grandchildren.

7. Conclusion

The results presented in this paper provide several findings that enhance our understanding of the role of the structure of gender binoms and its correlation with the culture.

First, gender binoms reflecting the cultural concepts of ***male-female*** can be markers of a cultural dimension in terms of masculine/feminine.

Second, due to the iconic nature of the language sign, the arrangement of the gender binom elements (or relata) can accentuate the dominating element of the opposition.

Third, changing the position of elements and analyzing the empirical data, we can establish the changeability of gender binoms in different languages.

Fourth, the Russian-speaking culture tends more towards masculine forms in gender binoms, in the English-speaking culture there is a relative parity. However, the use of the conceptual structure ***female-male*** prevails in many binoms in English, it reflects the historical development of the culture.

The results of the experiment and the research methods of the study, however, require further expansion and clarification because of the limitations of the specified search query of binoms in pdf format provided by Google. These limitations relate to the methodology which can further elaborated in research perspective. But the model of the experiment proved to be effective for conducting cross-cultural research providing relevant data. With the currently available data, we presented results that are in line with the study's hypothesis: the positional change in gender binoms such as man and woman (1) vs woman and man (2) reveals the change in the cognitive focus of the speaker. Further discoveries in the text realizations of the variability of gender binom structure may clarify the differentiation in the results of this experiment.

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