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Sound Symbolism in the Proto-Turkic Language

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ABSTRACT

Studies on the Turkic languages have shown that the difference between related terms concerning male and female, including back and front vowels, is a "separate case" (a special case). In this article, such a phenomenon was studied in more depth and detail, and for the first time, it was associated with sound symbolism. This work aims to show the role of sound symbolism in the classification of kinship terms related to man and woman in the Proto-Turkic language. To achieve this goal, we conducted experimental work with four babies. Our experiment was based on the bouba/kiki effect, which is used in modern linguistics. Besides, in the research work, an associative experiment was conducted with students studying at Karaganda University. Thirty-five students took part in the experiment. The study results showed that infants associated the image of a man, large objects with back vowels, and the image of a woman, small objects with front vowels. According to the results obtained using the associative method, the participants associated the front vowels with the stimulus "female", and the back vowels were not associated with "male". However, the participants showed an advantage in associating men with the uvular consonant [q], which is only combined with back vowels. In the Turkic languages, we also found that terms associated with back (thick) vowels have meanings associated with males, and terms associated with front (thin) vowels have meanings associated with females.

Keywords: sound symbolism; Proto-Turkic language; Turkic languages; Proto-language; male and female categories; vowels

INTRODUCTION

Traditional linguistics considers the irrationality of the relationship between word form and meaning (Saussure, 1999) as one of the "design features" of a language (Hockett, 1960). However, recent research (Perniss, Thompson, Vigliocco, 2010; Lockwood & Dingemanse, 2015; Blasi et al., 2016; Sidhu & Pexman, 2018; Nielsen & Dingemanse, 2020) has shown that in many languages, the interconnection between word form and meaning is not always arbitrary. In linguistics, marking, and labelling, which represents a natural, dependent relationship between form and meaning, is understood as sound symbolism. The experimental study of this phenomenon in foreign science origins with the works of Sapir (1929) and Köhler (1929). In recent years, linguists and psychologists have shown great interest in sound symbolism; and new methods of studying this phenomenon have emerged (Lockwood & Dingemanse, 2015; Motamedi et al., 2019). There are very few studies of the Turkic languages. The works of Kornilov (1978) on the Chuvash language and Khusainov (1988) on the Kazakh language can be moted. Many languages of the world (for example, languages of South-East Asia (Kita, 1997), several African languages (Childs, 1994; Samarin, 1971), Australian Aboriginal languages (Alpher, 1994), etc. (see: Imai & Kita; 2014; Blasi et al., 2016; Johansson, Anikin, Aseyev, 2019)) have many sound-symbolic words in the Turkic languages (Kornilov, 1978; Khusainov, 1988). Therefore, we believe that sound symbolism is one of the most important and exciting topics for modern Turkology.

The Turkic languages are part of the Altaic language family. In addition to the Turkic languages, the Altaic language family also includes Mongolian, Tungus-Manchu, Korean and Japanese languages. Today, about thirty natural languages are belonging to the Turkic language. The Turkic languages are divided into subbranch, such as Oguz (Turkish, Azerbaijani, Turkmen, etc.), Kipchak (Kazakh, Nogai, Tatar, Bashkir, etc.), Bulgar (Chuvash),

Karluk (Uzbek, Uyghur), Siberian (Tuvan, Khakass, Yakut, etc.). One of the features of these languages is vowel harmony. In Turkic languages, the front vowels are called “thin”, and back vowels are called “thick” (hard). The root of a word is either evenly thick or evenly soft.

TABLE 1. Vowel system in Turkic languages. The table shows short vowels with transcription. By way of short vowels, some Turkic languages (Turkmen, Yakut) have long vowels

“thin” or front vowels	“thick” or back vowels
i [i]	ы [ɯ]
ü [y]	y [u]
e [e]	
ö [ɵ]	o [o]
ä [æ] [ə]	a [a]

According to Sagyndykuly (2009), the Ural-Altaic language family's languages were initially not agglutinative but polysynthetic or amorphous languages. As a result of the language's disintegration, the law of vowel harmony arose among the Altaic languages to preserve the general meaning of the word only in the Turkic languages, and it is still well preserved. Sartkozhauly (2007) connects the appearance of this law of vowel harmony with the concept of “two foundations” in the Turkic worldview. According to this fact, the Turkic worldview consists of ‘fatherhood’ (atalyq) and ‘motherhood’ (analyq). According to this worldview, male sounds are “thick” (juan), and female sounds are “thin” (jinishke). In general, since ancient times, oppositional men and women have been significant for human knowledge. Based on this pair of opposition, other binary categories arose (Ivanov, 1978).

Furthermore, we think that the difference between the names of these categories was due to the sound symbolism. Likewise, the law of vowel harmony (that is, whether the root word is “thick” or “thin”) can be formed to distinguish between concepts of male and female categories. Over time, it seemed that the words disappeared. Studies of sound symbolism have shown that a man, names and related concepts are associated with the sounds of the back of the tongue, while a woman, names and concepts associated with her are associated with the sounds of the front of the tongue (Slater, Feinman, 1985; Cutler et al., 1990; Pitcher, Mesoudi, McElligott, 2013; Sidhu & Pexman, 2015; Kawahara, Noto, Kumagai, 2018; Sidhu & Pexman, 2019). According to the etymological dictionaries collected by us (Sevortyan, 1974; Starostin, 1998-2005), vowel sounds in some Proto-Turkic relative pronouns for men and women are distinguished with related terms for men and women. Sevortyan (1974) considered this phenomenon as a special case. Our research results reveal that the essence of such a phenomenon is profound and is closely related to sound symbolism. In this work, we will consider the association of children, father and mother's role in their worldview, sound symbolism and analyse materials in the Turkic languages (some linguistic data are also taken from other languages).

METHODOLOGY

Archaeological, anthropological, mythological, ethnographic, and linguistic data can confirm that in ancient times, male and female couples' category was the main binary confrontation (Leroi-Gourhan, 1993; Ivanov, 2009). Male and female binarism plays a unique role in ontogenesis. We noticed this fact when we were observing 4 Kazakh-speaking children. Two of the babies in our care (Asylay, Kamila) live in cities, and two (Amir, Adil) live in the countryside. We recorded and monitored the speech of two babies in the city from the moment they were born, and we observed babies in the countryside every two weeks. Their words and pictures were used as data in the research.

It is known that experimental studies of sound symbolism origin in the works of Sapir (1929), Köhler (1929). In an experiment called *maluma/takete*, proposed by Köhler (1929), the participants had to show a circle and an angular shape. It was found that the word *maluma* corresponds to a round shape, while the word *takete* corresponds to a pointed shape (angular). This was later called the *bouba/kiki effect* (Ramachandran & Hubbard, 2001). According to some studies, strong consonants [p], [t], [k], vowels [i] with sharp objects, consonants [l], [m], [n], [b], vowels [o], [u] sounds are associated with circular objects (Nielsen & Rendall, 2011; D'Onofrio, 2013; Styles & Gawne, 2017; Fort et al., 2018). The infant babies were also experimented based on the *bouba/kiki effect* (Ozturk et al., 2013; Fort, Martin & Peperkamp, 2015; Pejovic & Molnar, 2017; Imai & Kita, 2014). A study by Auracher in 2017 found that pseudo-words containing back vowels were associated with pictures depicting big animals, and pseudo-words containing front vowels were associated with pictures depicting small animals (Auracher, 2017).

Researchers who study sound symbolism in infant language say that the process of infant language development shows how proto-language began and how it evolved throughout history (Imai & Kita, 2014; Kantartzis et al., 2019). Since our research work's primary goal is to show the role of sound symbolism in the development of the Proto-Turkic language, we involved babies aged four years (average age 3-5) for the experiment. In our opinion, the experiment based on the *bouba/kiki effect* effectively determines the associations of infants. To do this, four Kazakh-speaking babies took part in the experiment. Two babies live in the city (Asylay, Kamila), two in the country (Amir, Adil). Two babies living in the city are fluent in Kazakh and Russian. Babies living in rural areas only speak the Kazakh language. The babies are familiar to the experimenter. Because of the current situation with the pandemic, we were not allowed to work in kindergartens. We experimented with the children of people we know. We presented the children with pictures in the form of a man and a woman. *Bobo* and *bibi* were used as pseudo-words.

In the second experiment, Kazakh-speaking students studying at the Karaganda State University were tested as per the associative method. Thirty-five students (29 girls, six boys) were involved. Their average age is 19 years (17-21 years). Students were asked to write down which sounds were associated with "male" and "female" stimuli.

A comparative-historical method of analysing linguistic facts was used in the study. Related terms for men and women were taken from the dictionary of Sevortyan (1974), an etymological database of Starostin (1998-2005).

We all know from history that the Russian language had a strong influence on the Turkic languages since the vast majority of Turkic peoples were part of the Russian Empire and then the Government of the Soviet Union. The linguistic concepts specific to the Russian language were forcibly introduced into the Turkic language's grammar textbooks. The derivative relation between the form and meaning of words is one of such misconception. This is considered one of the "design features" of traditional linguistics (of the language). We believe that the methods used in this work, and our results will further serve as an excuse for Turkologists to abandon the phenomenon that is alien to the Turkic language and direct the course for new research. Furthermore, we hope that our research work's language data will be of interest to linguists in the field of phonosemantics, phonology, and phonetics.

RESULTS AND DISCUSSION

Scientists who have studied early communal art and social construction confirm that man and woman's origin is the main pairing confrontation (Ivanov, 1978; Leroi-Gourhan, 1993). Mythological, archaeological, linguistic, ethnographic data can confirm this hypothesis (Podosinov, 1999; Ivanov, 2009).

In ancient times, the right and left opposition in the symbolics of male and female categories was unique. Archaeological and anthropological studies have shown that the left hand symbolises female origin (Leroi-Gourhan, 1993). In the 1930s, human bones were found in a cave in Elmentain, Kenya. They were buried according to the rules 'right – man', 'left – woman'. Such an ancient law of burial was confirmed by archaeological research (Ivanov, 1978).

Right and left opposition in some African peoples' language corresponds to the ideas about man and woman. For example, in Gogo in Central Tanzania, *muwoko woku-lume* (right hand), *mu-lumo* (husband) are derived from *lume*, which means "masculine", and *muwoko woku-seculu*, from *seculu*, which means "feminine" (Ivanov, 2009).

Plano Carpini describes Batu Khan's horde, where men were on the right, and women were left (Podosinov, 1999). Gabysheva (1988) stated that in Yakut folklore (olonkho), the right symbolises the *high, good, light*, man, and the left - *low, evil, dark, woman*.

In ancient Chinese philosophy, the preconditions for world creation are represented by such concepts as *yin* and *yang*. The first ancestors of humankind were Fusi and Nueva, who symbolised the East, and the other - the West (Podosinov, 1999).

Dividing men to the right and women to the left depends not only on their role in society and their economy (Ivanov, 1978) but on psychophysiological factors (Podosinov, 1999). The body's right side is stronger and more active than the left one (the right eye is the better-seeing eye; the right hand is more flexible than the left one, etc.). In ancient times, such simple analogies were expressed in traditions, language and myths. The right side symbolises something "strong", "big", "masculine", while the left one symbolises something "weak", "small", "feminine". The babies we observed were also associated with the man with the idea that he was "strong" and "big", while a woman - with the idea that he was "weak" and "small".

As far as consciousness begins to develop, a baby begins to divide the people around him into male and female categories. This is seen in the language of the child. One of the babies under our control (Amir) originally called his father and uncle *papa* (father). Adults began to teach the child to call his father's brother *aga* (uncle). However, the baby combined the words *papa* and *aga* and created the word *papmaga* (papa + aga, i.e. father+uncle). All four children under our supervision (Asylay, Amir, Adil, Kamila) called their mother a woman. At first, in the child's mind, the masculine principle was perceived as a father, and the feminine – as a mother, and over time, as people found out, they began to name each person. Brain development is directly related to the fact that the baby gradually begins to recognise the people around him and distinguish them from each other. According to V.V.Ivanov (1990), based on the data of anthropological reconstruction of the vocal apparatus development from Neanderthals to Nomo sapiens and paleoneurological reconstruction of the left brain hemisphere development as in ancient humans have, the modern humans have, first of all, developed right hemisphere, and then the back of the left half of the brain (crown, occiput; occipital-lower part) which is responsible for the individual recognition and name of objects, and the forehead, temporal (temporomandibular) part - for understanding syntactically complex structures. For example, when a child starts holding a pen and pencil, he first draws a line. Gradually, as the baby's brain develops, the pictures become more detailed. After scribble, they began to draw images in the shape of a circle, and over time he drew various images within a circle (Kellogg, 1969).

It is known that writing, reflecting the stage of development of the human mind and consciousness, was formed gradually. Over the years, it developed, moving from pictographic to writing. The baby's brain and speech are formed in the same way; that is, child development mainly occurs alone. *Papa* (father) is a common word for men and *mama* (mother) for women. Before consciousness formation, the name is used individually. In studies on the Turkic languages, it is assumed that the ancestors of the Turks, who lived in ancient times, perceived concepts related to various phenomena of their environment in a general, generalised meaning, and the acquisition of semantic concreteness by each of its variants are the result of their subsequent development. For example, the word *apa* [apa] in the Turkic language has several specific meanings (father, uncle, etc.), but archisema, i.e. the general meaning of this word, means "the eldest person in the house" (Kaidar, 2005: 165: Eskeeva, 2003; Khassenov et al., 2021). Considering the idea that ontogeny briefly repeats phylogeny (Pinker, 2003), we can assume that ancient people, such as infants, were the first to name the general concept. According to ontogenetic and phylogenetic data, the main binary opposition is male and female categories. How were these categories named and divided?

Based on the data in the infant's language, we can say that sound symbolism played an important role in distinguishing between terms related to the male and female categories of ancient people. We have already mentioned that the child associates the concept of strength with his father and his mother's concept of weakness. For example, a child (Asylay, three years old) living in a city enlarges the father's image. Looking at his father's photograph, the Russian words for *papa bolshoy* (i.e. father is big) are pronounced as *basaya*, and looking at the photograph of his mother, the words *mama malenkaya* (i.e. mother is small) is pronounced as *məjenkii*.

FIGURE 1. 'Mother and Father'. Picture of a child

Since two babies (Amir, Adil; both are four years old) were in the countryside, we conducted the following experiment: when the children were shown a cow and a calf and asked which one was 'mo' and which one was 'mœ', two children said 'mo' was a cow, and 'mœ' was a calf. Similarly, a sheep is called 'ma' and a lamb as 'mæ'. According to the Turkic languages, in the Turkmen language, the word 'mo' is used to imitate a cow, and the word 'mœ' is used to imitate a calf; in the Uzbek language, the word 'par' is used to describe the wings of large birds, and the word 'pir' is used to describe wings of small birds (Khusainov, 1988).

Individually, we showed each child a picture of an animal or bird in a large or small picture and asked them to name the animal or bird in the picture using the words *bobo* and *bibi*. All babies showed the same results.

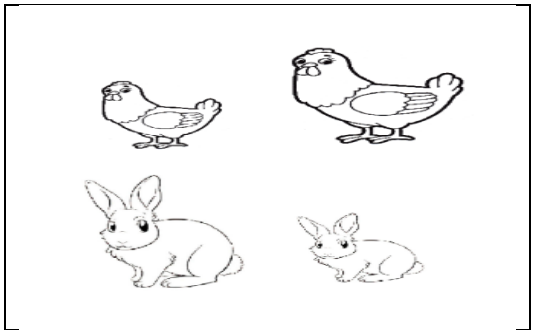

FIGURE 2. Child association

According to the experiment results on adults (Auracher, 2017), pseudo-words containing back vowels were associated with images depicting large animals or dominant behaviour. The pseudo-words containing front vowels were associated with images depicting small animals and submissive behaviour. The same result was repeated in the experiment of Hoshi, H., Kwon, Akita and Auraher (2019) (of course, these studies' results are different). In Miron's experiment (1961), Americans and Japanese evaluated both vowels and consonants in English and Japanese. Back vowels – *weak, small, pleasant*; front vowels – *strong, large, negatively related*.

We did another experiment. We showed the babies pictures that resembled a man and a woman's image and asked them to call them pseudo-words (bobo/bibi). The study results showed that a pseudo-word with front vowel was associated with a female pictures, and a pseudo-word with a back vowel with a male.

FIGURE 3. Baby participating in the experiment

The second experiment results, in which the students participated, are presented in the tables (Table 2 and 3).

TABLE 2. Reaction to male stimuli

Sound (IPA)	Description	Number of Reaction
[q]	Uvular	11
[b]	Bilabial	10
[t]	Dental	6
[ʒ]	Postalveolar	6
[r]	Postalveolar trill	6

[e]	Close-mid front unrounded vowel	5
[ɑ]	Open back unrounded vowel	4
[m]	Bilabial	3
[s]	Dental	3
[k]	Velar	3
[d]	Dental	2
[l]	Alveolar	2
[ɔ]	Open-mid back rounded vowel	2
[x]	Velar	2
[æ]	Near-open front unrounded vowel	1
[œ]	Open-mid front compressed vowel	1
[u]	Close back rounded vowel	1
[n]	Alveolar	1

TABLE 3. Reaction to female stimuli

Sound (IPA)	Description	Number of Reaction
[æ]	Near-open front unrounded vowel	21
[ɑ]	Open back unrounded vowel	7
[ɪ]	Near-close front unrounded vowel	6
[e]	Close-mid front unrounded vowel	6
[j]	Palatal	5
[m]	Bilabial	4
[n]	Alveolar	4
[l]	Alveolar	3
[ʏ]	Near-close front rounded vowel	2
[œ]	Open-mid front compressed vowel	2
[q]	Uvular	1
[k]	Velar	1
[ŋ]	Velar	1

According to the experiment results, the predominance of front vowels and sonorous consonants can be observed in response to the stimulus “female”. And the stimulus “male” is dominated by deaf (for example, [k], [t]) and voiced consonants (for example, [b]). According to the vowels, we can see that the woman's associations completely coincide and the man-not. However, if we pay attention to the male stimulus's responses, we can see that voiceless consonants predominate. Especially, we can see the association of the uvular consonant [q]. It should be noted that in the Turkic languages, this sound is combined only with the back vowels [a], [o], [u], [ɯ].

Since ancient times, sound symbolism has been used to describe objects, qualities, actions, and so on. There is reason to say that the product used to distinguish between them is a linguistic phenomenon. Imai & Kita (2014) hypothesised that “sound symbolism is a vestige of a proto-language that was mostly sound symbolic. Sound symbolism may have helped our ancestors develop their lexicon and combinatorics nature of language”. Because a child associates a man with concepts such as “large”, “strong”, and a woman with concepts such as “small”, “weak” (with back/front sounds), it can be assumed that the formation and classification of terms related to kinship in the proto-language were connected with sound symbolism. This hypothesis is confirmed with the data in the Turkic language.

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CLASSIFICATION OF RELATED NAMES AND SOUND SYMBOLISM OF THE PROTO-TURKIC LANGUAGE

Analysing the composition of words that mean some related names in the Turkic language, we found that front vowels, i.e. "thin" vowel sounds refer to the female, and back vowels ("thick" vowels) refer to a male. Such a "separate case" also exists in Mongolian languages: guttural (hard) vowel sounds mean names for men, and palatal (thin) – names for women (Vladimirtsov, 1989; Sevortyan, 1974). For example, *aha* means "senior brother", "senior man in general", and *eke* means "senior sister", "senior woman"; *abay* means "father", and *ebey* means "mother", "an older woman in general" (Vladimirtsov, 1989). The open sound here describes [a] man and the semi-open sound – [e] woman. It is also observed that in some Turkic names related to kinship, "thick" and "thin" vowels were used in ancient times to distinguish between men and women. According to data in other languages, male names contain back vowels (e.g., [ɔ]), and female names contain front vowels (e.g., [i]) (Sidhu & Pexman, 2015). Thus, there is a reason to call this phenomenon universal.

Some relative names in the Turkic languages correspond to babies' words: *ata, apa, baba, ama, mama, aba* etc. There was a similar ancient Turkic word as *aba*. This word and its derivatives (for example, *apa, abu, aba*, etc.) have the following meanings: (1) *father;* (2) *uncle, the eldest among the brothers/address to the older adult;* (3) *grandfather, ancestors;* (4) *ayu* (tabu). The second sequence of the word is related to the relative meanings of *mother, elder sister, aunt* (usually a paternal relative) (Sevortian, 1974). The word and its derivatives are used to refer to older people in a family. In modern Turkic languages, the meaning of man has disappeared. Only the meanings for women (mother, elder sister) are preserved in Kazakh, Kyrgyz, Karakalpak, Turkmen and Uzbek dialects, i.e. *aba, apa, abu*, etc. In Turkic languages, words with the same meaning are also available – *aba* [aba] in Mongolian, *abu* [abu] (father, grandfather), *ama* [ama] in Tungus-Manchurian, *apa* [apa] (father, mother's father), *aboni* in Korean (father), **eppĕ* [ieppe] in Proto-Chukchee-Kamchatkan (grandfather, senior relative) etc. (Sevortian, 1974; Starostin, 1998-2005). A phonetic modification of this word is a subtle analogy of the word *ebe* [ebe]. The meanings in the Turkic languages are as follows: (1) *grandmother, great-grandmother, old woman;* (2) *midwife;* (3) *mother, mother-in-law;* (4) *wife;* (5) *aunt;* (6) *elder sister;* (7) *female* (Sevortian, 1974: 220-221). Like the word *aba* [aba], this word and its derivatives have an extensive distribution range. In Mongolian *eme* [eme] (woman, wife), *emege* [emege] (grandmother); in Finno-Ugric languages *eme* [eme] (mother) etc. Thus, we can see that words with subtle vowel sounds are more feminine. Names related to the breast of a woman are also made with subtle sounds: Proto-Turkic - **mēme* [me: me], Proto-Mongolic - **bēme* [be: me]; Tungus-Manchu - **mömü* [mɵmy], **mömü* [mɵmy] with the meaning: female breast; foster-mother (Starostin, 1998-2005).

In the Turkic languages, the word *acha* [atʃa], which means kinship, is used equally for both men and women. According to the etymological database of Starostin (1998-2005), in the Proto-Altaic language - *ačV* [atʃu] means an elder relative, ancestor. The form in Proto-Turkic languages is **ačaj/*ečej* [atʃay/etʃey]with the following, meaning: (1) *old man or woman;* (2) *mother;* (3) *grandmother;* (4) *sister (of a woman);* (5) *mother (if the grandmother is still alive);* (5) *mother (addr. to an elderly woman);* (6) *aunt, sister to father;* (7) *elder brother;* (8) *uncle;* (9*) ancestor;* (10) *Father! (to the God);* (11) *old man, elder man;* (12) *husband;* (13) *younger brother of father's father;* (14) *grandfather;* (15) *father.* As to other Altaic languages: in Proto-Tungus-Manchu, the form (of a word) **asī* [asɯ:] means (1) *wife of elder brother;* (2) *woman;* (3) *wife.* And in the Proto-Korean form **àčă* [atʃa] means (1) *aunt;* (2) *uncle*. In other languages, the forms and meanings of the word are similar, i.e. in the Proto-Uralic languages, the form **äćä* [ətʃə], means *father*; in Proto-Dravidian, the form **ážž* [adʒdʒ], means *grandparent(s);* in Proto-Yupik the form **acaɣ* [atʃah], means *paternal aunt*.

The form *ecü* [etʃy] is found in the ancient Turkic written heritage and is used in the sense of "ancestors" in relation to men (Sartkojauly, 2012), while the Kashgari's (1998) dictionary gives the word *achy* [atʃɯ] with the meaning related to women only. The word *eʒe* is a subtle analogy of the word *acha* [atʃa]. Etymological dictionary (Sevortyan, 1974) gives 17 meanings of the word *eʒe* [eʒe]. Although this word has a masculine meaning, it can be noted that it has a more feminine meaning. Although the words *acha* [atʃa] ~ *aja* [aʒa], *eche* [etʃe] ~ *eje* [eʒe] have mixed meanings for men and women, thick and thin sounds of related terms seem different. In the opinion of scientists, the all-Turkic word *ata* [ata]appeared after the word *acha* [atʃa], *echu* [atʃu]. Their main argument is that the meaning of the word *ata* is preserved only in relation to men. However, this word has a vast range of applications, and all apply to men (Starostin, 1998-2005). Räsänen (1955) linked the origin of the word *ata* [ata] with the babbling. Researchers have shown that the development of baby language takes place in the same way in all nations (Oller & Eilers, 1982). According to Robb and Bleile (1994), between 8 and 12 months of age, infants have the highest number of oral [p], [b], [t], [d] and nasal [m], [n] consonants. Many babbling made with these sounds represents related names (*apa, ama, amma, ata, baba, mama, ana, nana*, etc.) (Khassenov, Nefedova, Adilova, 2020). Moreover, affricate sounds appear later in the baby language (Beltyukov, 1964). Low front [æ] / [a] and centre [ə] are the most common sounds in a baby's voice. De Boisson-Bardi et al. (1989) performed a spectral analysis of the vocal cords of 10-month-old infants in a four-language environment and found that front to-low [æ] and mid-centre [ə] sounds predominated numerically. Therefore, it is possible to assume that the word *ata* [ata] appeared in the proto-language earlier, and the words *acha* [atʃa]., *eʒe* [eʒe] with an affricate appeared later. The word *aʒe* [aʒe] used in the modern Kazakh language to denote an adult woman initially cannot be pronounced singularly. The word *aʒe* is pronounced only after ontogenetic stages, such as *ad ʲe ~ adze ~ aʒe* [ad ʲe ~ adʒe ~ aʒe]. The ontogenetic development of the word *jok* [ʒoq] in the Kazakh language looks like *dok = d ʲok ~ dzoq ~ zoq ~ ʒoq* [dok = d ʲok ~ dzoq ~ zoq ~ ʒoq]. Infants pronounce the sounds [t] and [d] earlier than the sounds [s], [z], [ʒ], [ʃ] and the affricate [tʃ] [dʒ] (about 6 months). That is, it clarifies our opinion that the word *ata* appeared earlier than *acha* [atʃa]. According to our observations, sound changes are repeated in ontogenesis (this will be described in detail in our other special study).

It should be additionally noted that in the Mongolian language, which belongs to the Altaic language family, the word acha retained a proto-linguistic peculiarity. In Mongolian, *adʒaa* [adʒa:] with back vowels means 'father', *edʒej* [edʒej] with front vowels means 'mother' (Vladimirtsov, 1989).

The sounds in the Turkic words *akka/aka/aga* [aqqa/aqa/aGa] and *ege/eke* [ege/eke] are the basis for the classification of male and female. The meaning of the word *akka* [akka] in the Turkic language is (1) *father*; (2) *elder brother*; (3) *elder relative (senior relative)*; (4) *uncle* (Sevortyan, 1974). The thin sound of *eke, ege* versions of this word is used in the Turkish dialects in the meaning of *older*. In Proto-Altaic form - **ĕk`à (~ -o)* [eka]*;* in the Old Turkic language, the word *eke* means *elder sister*; in Proto-Mongolic, **eke* [eke], **egeče* [egetʃe] has the meaning of (1) *mother*; (2) *elder sister*; in Proto-Tungus-Manchu the words **eKe/*keKe* [eke/keke] have meaning: (1) *woman, wife*; (2) *elder sister*; in Proto-Japanese, the word **kaka* [kaka], means: *mother*; in Proto-Eskimo the word **aka* [aka], means: *elder sister*, *mother* (Starostin, 1998-2005). The word *egech* [egetʃ] is used in several Turkic dialects (e.g., Turkish) to mean *elder sister, father's sister, smart girl, girl* (Sevortyan, 1974).

In the proto-language and gender categories, the oppositions, such as large and small, also seem to be separated by sound symbolism. For example, in modern Kazakh the word *agaly-inili* [agalɯ-inili] (brothers) is used. The second word, *ini* [ini], means a "younger man". Most Turkic languages have a masculine meaning. Only in Turkish dialects, the word *ini* means a "younger sister" (Sevortyan, 1974). Other Altaic languages have the following forms and

meanings: in the Proto-Tungus-Manchu language, the word **īnan* [ɯ:nan], means: (1) *husband's younger brother;* (2) *(younger) brother/sister-in-law*; (3) *sister's children;* (4) *son-in-law;* (5) *husband's younger sister*; in Korean, the word **àńǎ* [ana], means: *younger brother or sister*; in Japanese, the word **ànî* [ani], means: *elder brother* (Starostin, 1998-2005). In general, in Altaic languages, this word has the same meaning for men and women, and it means "younger". This is because, in many languages, the words related to the concept of "younger", "small" consist of the [i] sound (Blasi et al., 2016). The word *ana* [ana] (mother), which is similar to the word *ini* (brother), retains its meaning only for women. The meanings of *ana* [ana] and its derivatives (for example, *ene*) are as follows: (1) *mother;* (2) *honorary woman;* (3) *grandmother;* (4) *aunt;* (5) *nanny;* (6) *fairy-tale woman;* (7) *mother (in animals), female;* 8) *main part of a thing, main, basic* (Sevortyan, 1974). The meaning of the word *ana* (mother) is associated with adulthood (senior), an adult in the family. However, we consider that such a classification is the result of further language development because if we remember the materials in the knowledge of the child, then the child first classifies people into men and women, and with time the members of the family are divided into the old and the young, the strong and the weak and so on. The ancient language was also the first that distinguished the categories of male and female, based on what they called and were called other opposition. We believe that sound symbolism played a crucial role in shaping these names.

CONCLUSION

The male and female categories were the main paired opposites in ancient art. This is seen from ontogenetic data. Big and small, strong and weak, etc. In the mind of a child, the simple oppositional representations are formed based on the father and mother's images. This is also reflected in a child's association: names with back vowel sounds, artificial words (pseudo-words) are associated with the concepts *father, big, strong*, and names with front vowel sounds, artificial words (pseudo-words) are associated with the concepts *mother, small, weak*. As a result of our experiments based on the *bouba/kiki effect*, the pseudo-word *bobo* was associated with a man's pictures, with a large object, and the pseudo-word *bibi* was associated with the pictures of a woman, with a small object. The students who participated in the association experiment also associated the front vowels with the stimulus "female". However, there is no association with the stimulus "male" of back vowels. However, it must be said that the deaf consonant [q], combined only with the back vowels, caused an association with a "male".

In etymological dictionaries, we have collected data that confirms that "thick" vowels (back vowels) denote related terms in relation to a "male", and "thin" vowels (front vowels) denote related terms in relation to a "female". For example, the "thick" word *aba* has a predominant meaning in relation to a man; in comparison with the "thin" word *ebe*, or vice versa, the "thin" word *ebe* has a predominant meaning in relation to a woman.

Summarizing all this, we assume that sound symbolism played an important role in the differentiation and formation of related terms in the Proto-Turkic language.

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