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ONE MORE TIME ABOUT THE HEART: NAIVE ANATOMY IN THE KAZAKH LANGUAGE IN COMPARISON WITH RUSSIAN AND ENGLISH

ABSTRACT: The naive anatomy of the Kazakhs, the nomadic Turkic people, has evolved over millennia and is based on knowledge of the anatomy of animals. Various mental properties and emotions are attributed to the internal organs of a person, which is reflected in the metaphorical and metonymic use of their names and idioms. The article examines the somatism *jurek* ('heart') in the Kazakh naive anatomy, which denotes the second-most important internal organ, giving way to the primacy of the liver, the most important organ from the point of view of nomads. The carriers of Russian-speaking and English-speaking cultures consider the heart as the most important internal organ. The complex of meaningful features is determined, showing the universality of the conceptualization of *jurek/ serdtse/ heart*, while a number of descriptors demonstrate the peculiarity of the naive-anatomical views of the Kazakhs.

KEYWORDS: idioms, somatism, naive anatomy, descriptors, *jurek, serdtse, heart*

1. Introduction

The process of man's knowledge of reality is carried out not only at the scientific but also at the everyday level, as a result of which a person forms an ordinary (or profane) consciousness and a complex of ordinary knowledge. Researchers emphasize the relativity of features of everyday consciousness, which are not always the opposite of scientific consciousness. N. I. Shapilova believes that the properties of openness, globality, incompleteness of consciousness of everyday life bring it closer to scientific knowledge (2008, 416). Everyday knowledge is based not only on the logical perception of the world but largely on pagan views, mythological thinking, and mystical beliefs. Naive knowledge precedes scientific knowledge, acting as

its everyday, concrete, practically oriented embodiment. According to researchers, the naive picture of the world is reflected in the language (Yakovleva 1994, 10; Apresyan 1995, 39). Prescientific knowledge is preserved in the naive picture of the world; in it, one can distinguish naive geometry, naive physics of space and time, naive ethics, psychology, etc. (Apresyan 1995, 39).

The article considers a fragment of a naive picture of the world of Kazakhs, including naive-anatomical knowledge of such an internal organ of a person as a heart. The anatomical views of the Kazakhs, like many peoples, have been formed since ancient times based on the observation of animals. G. I. Kabakova wrote about this trend: “[...] since ethnographers everywhere noted extremely limited knowledge in the field of anatomy, it should be assumed that the designations of the insides of animals were transferred to the names of human organs” (2015, 113).

Verbalized ideas about the body and human body comprise naive anatomy, which “differs from the usual ideas about a person in at least two points. This is, firstly, a list of organs, and secondly, their functions” (Uryson 1995, 7). In the semantics of linguistic units (words, idioms), traces of pagan, mythological representations of the ancient Turkic nomads, their traditions, rites and rituals are preserved. A. K. Kiklewicz emphasized that linguistic idioms are “particularly based on archaic world views of speakers” (2007, 182). Using a semantic, etymological, culturological analysis of these units in comparison with the Russian and English languages, the authors have tried to restore the anatomical representations of the Kazakhs, to identify their ethnocultural specificity. The names of body parts (somatisms), structure and internal organs of a person belong to the oldest layer of the lexical universe of world languages, are included in the basic vocabulary of languages, form many stable expressions – idioms and proverbs. Kazakh idioms with a component – the anatomical name of the internal organ – reflect “archaic concepts that have survived to this day as echoes and relics of the distant past of the Kazakh people” (Kozhakhmetova/Zhaysakova et al. 1988, 5).

The concept of *jurek* (heart) has repeatedly become an object of attention in Kazakh linguistics, it was studied as a concept on the basis of works of art (Musabekova/Kul’tursynova 2018), in comparison with the Tuvan (Rakhimzhanov/Akosheva et al. 2020), in comparison with the English concept *heart / soul* (Sultangubiyeva 2011a; 2011b; Koblandina 2012), in the context of teaching the Kazakh language in the Russian audience (Gadzhiyeva 2017) and others. Y. V. Nikolina, in the book “Somatic phraseological units characterizing a person in the Turkic languages of Siberia and Kazakh” (2002), described, along with other somatisms, the use of idioms with the component *jurek* for characterizing a person.

2. Materials and methods

The concept of *jurek* was not considered as part of the naive anatomy of the Kazakhs, formed under the influence of the mythological, pagan consciousness of the ancient Turks and their specific historical, cultural and economic development, in a comparative perspective with the naive anatomy of such unrelated languages as Russian and English. Such an approach made it possible to highlight a number of important signs in understanding the anatomical concept using the universal cognitive mechanism of analogy – metonymisation and metaphorization (Temirgazina/Bakhtikireeva et al. 2017), to identify the commonality and difference in the naive interpretation of the named organ by carriers of different cultures.

Diachronic approaches argue that semantic change involves metonymic and metaphoric operations, which are described as sense transfer and sense transmission or inference process at the pragmatic level, and differ in terms of analogy for metaphor and reanalysis for metonymy” (Weiland-Breckle/Schumacher 2018, 444).

The substantive parameters, or descriptors, on the basis of which a comparison is made between the interpretation of a naive-anatomical concept in different languages, was computed in the course of a linguocultural, semantic, etymological analysis of language units with a metonymic and metaphorical meaning (Zykova 2015). Using a similar method, applying semantic descriptors, the authors analysed other human internal organs in naive anatomy – the liver and lungs, which gave interesting results published in Temirgazina/Nikolayenko/et al. (2020).

Words and idioms with the component *jurek* were selected from the explanatory and phraseological dictionaries of the Kazakh language (Kozhakhmetova/Zhaysakova et al. 1988; Bektayev 1999; Kenesbayev 2007 and others), including electronic sources (Kazaksha-oryssha sozdik 2019); English and Russian versions were extracted from dictionaries, including electronic ones (Tikhonov 2007; Sirotina 2006; Macmillan Dictionary 2020; Dictionary Cambridge 2020; Etymological Dictionary of English 2019).

3. Results and discussion

The heart is the main internal organ in the naive anatomy of most people; it is represented by the personification of the mental, spiritual life of a person. Naturally, this particular organ is most closely associated with the emotional sphere of a person (Vysheslavtsev 1990, 63). Research conducted on material in Russian (Uryson 2003; Kondrat'eva 2004; Napol'nova 2011; Guantsze 2013; Rudova 2015), English

(Podgornaya 2016), German (Zayats 2017), and French are devoted to the relationship between the heart and the emotional-mental sphere of man (Golovanivskaya 1997; Sukhorukova 2017).

The authors carried out a survey of Kazakh (35 participants), Russian (35 participants) and English (34 participants) native speakers. Being irrelevant, age, gender and occupation were not taken into account. The survey was partially conducted with the help of such social media as Instagram and WhatsApp. The respondents were to choose the first and second most important internal organs from the list of suggested organs: lungs, liver, kidneys, heart, stomach, spleen and intestine.

As a result, the heart is the most important internal organ in the naive anatomy of Russian and English speakers, as 100% of respondents selected it. Kazakhs have named the liver as the most important internal organ (94.2% 33 respondents), and only two respondents (5.7%) named the heart to be organ #1. The second most important internal organ, according to the Kazakhs, was the heart (94.2%). As for the second important internal organ, English speakers were inconsistent: lungs – 64.7% (22), stomach – 20.58% (7), kidneys – 8.8% (3), liver – 2.94% (1), spleen – 2.94% (1). The survey results of Russian speakers are the following: lungs – 51.4% (18), liver – 22.8% (8), stomach – 17.14% (6), kidneys – 8.57% (3). The present survey results are presented in Table 1.

Table 1. Research results that show the place of the heart in the hierarchy of internal organs

Respondents' selections	Kazakhs – 35	English – 34	Russian – 35
1 st place	<i>liver</i> 33/ 94.2%	<i>heart</i> 34/ 100%	<i>heart</i> 35/ 100%
2 nd place	<i>heart</i> 33/ 94.2%	<i>lungs</i> 22/ 64.7%	<i>lungs</i> 18/ 51.4%

Therefore, the survey demonstrates that the heart is considered to be the most important internal organ in the picture of the world of English and Russian speakers and the second most important one in the picture of the world of Kazakh speakers.

3.1. Localization of emotions and feelings in the heart

A common pattern in the linguistic conceptualization of the human mental world is the establishment of a strong connection between it and the internal organs of a person (see: Enfield/Wierzbicka 2002; Uryson 2003). In the naive anatomy of different peoples, one or another anatomical organ is characterized as a carrier of various mental states: feelings, desires, psychological states and the constant traits of a person's character.

Studies of emotions and individual emotional concepts, carried out by linguists and linguoculturologists in the framework of different linguistic cultures, allow us to assert that at all times, the human mind strives to connect the experienced feelings and

emotions with any parts of the human body, to establish the place of their “localization” inside a person (Zayats 2017, 4).

The connection established between the internal organ and mental processes is of an idioethnic nature and reflects the culturally specific views of a particular nation. Researchers believe that the localization of mental processes and properties is conveyed in the language by the cognitive mechanism of analogy: metaphorization and metonymisation of anatomical names. Some researchers have proposed the special term “bodily metaphor of the soul” for a semantic description of emotions (Apresyan Y./Apresyan V. 1993, 27).

It is important to note that metaphors that are closely related to the theory of body-mind determine in many respects the parallelism of metaphorical entailments that arise in various points of the globe among various peoples. At the same time, the characteristics of national history and culture determine to the maximum extent the national identity of cultures (Budayev/Chudinov 2013, 9).

In accordance with the universal trend mentioned above, the localization of mental processes in the internal organs of a person, the noun *jurek* was metonymically interpreted by the Kazakhs as a habitat for certain feelings, thoughts, desires:

- excitement, anxiety – *juregi kobalzhu, juregi muzdau* (meaning “to worry”) (Kozhakhmetova/Zhaysakova et al. 1988, 84);
- worries – *juregi syzdau* (lit. ‘to hurt the soul’); desires – *juregimen berilu* (meaning “to surrender to the heart”) (ibidem, 86);
- tranquility – *jurek ornyna tusu* (lit. ‘the heart fell into place’ meaning “to calm down; stop doubting”); *jurek toktatu* (‘to stop heart’ meaning “to calm down”) (ibidem, 86);
- fear – *juregi tas tobesine shykty* (lit. ‘the heart jumped to the soft part of your skull’) (ibidem, 84).

In the Russian and English naive anatomy, the heart appears primarily to be the habitat of love: *lyubit’ vsem serdtsem, love with all my heart*. In addition, other positive and negative emotions are concentrated in the heart: joy – *radovat’sya vsem serdtsem, rejoice with all my heart*; peace, relief – *legko na serdtse, easy on the heart*; sadness – *pechal’ na serdtse, heart sorrow*; anxiety, experience – *tyazhelo na serdtse, tyazhest’ na serdtse, heart hard, heavy heart*; hate – *nenavidet’ vsem serdtsem, hate with all my heart* (Siroтина 2006).

It should be noted that the etymology of the word *serdit’sya* (in the meaning of “being irritated, angry”) in Russian is associated with the word *serdtse* (lit. ‘heart’), according to M. Fasmer (2019).

3.2. Heart as a habitat for human qualities

From the point of view of the naive-anatomical views of the Kazakhs, certain qualities of a person could be contained in the heart, especially courage: *jureginin tugi bar adam* (lit. ‘a man with a fleece on his heart’), meaning “brave, fearless man” (Kozhakhmetova/Zhaysakova et al. 1988, 85); *jurek jutkan* (lit. ‘swallowing a heart’) – courageous, brave (ibidem, 86); *jurekti* (lit. ‘heartly’) – brave; *jurekti bolu* (lit. ‘to be cordial’) – to be courageous; *jurektilik* (lit. ‘cordiality’) – courage, bravery (Bektayev 1999). See also the proverb: *Erlik bilekte emes, jurekte* (lit. ‘Courage is not in the strength of hands, but in the heart’) (Kenesbayev 2007, 47).

Accordingly, a person deprived of a heart was characterized as “cowardly, timid”: *jureksiz* (lit. ‘deprived of a heart, without a heart’) (Bektayev 1999). Note that, in Russian, the word *besserdechnyy* (lit. ‘devoid of heart, without a heart’) means a completely different quality of a person – soullessness, callousness, but not cowardice. The same thing in English: *heartless* – “ruthless, cruel, callous” (Dictionary Cambridge 2019). However, in the English language it is not so simple.

The etymological dictionary says that the meaning “timid” in the word *heartless* appeared earlier, in Middle English, than the meaning “callous, cruel”:

Heartless (adj.) – Old English heortleas “dispirited, dejected;” see heart (n.) + -less. In Middle English with expanded senses, “lacking in courage; foolish; listless; half-hearted; sluggish”. Sense of “callous, cruel, wanting in kindly feeling” is not certainly attested before Shelley used it thus in 1816. Literal meaning “lacking a heart, lifeless” (mid-15c.) is rare. Related: Heartlessly; heartlessness. Similar formation in Dutch harteloos, German herzlos (Etymological Dictionary of English 2019).

In other words, the Kazakh word *jureksiz* and the English word *heartless* originally had a similar meaning. Perhaps this interpretation of the word *heartless* in the naive-anatomical sense is associated with the functioning of an interesting metaphor *half-hearted*, which means “timid, cowardly” (lit. ‘with a half heart’), absent in the Kazakh and Russian languages.

The semantics of the phraseology *jurek jutkan* (lit. ‘swallowing a heart in the meaning of bold, brave, courageous’) goes back to the mythological representations of the ancient Turks – the ancestors of the Kazakhs, who had totem animals. They performed a ritual of sacrificing and eating an animal totem, the purpose of which was to establish order, harmony, and hierarchy in the world around them. The researchers of the mythology of the Turks of Southern Siberia noted:

The deep connection of the symbolism of food and sacrifice makes us remember the myths about the creation of the world, according to which the universe arises as a result of the division into parts of what was previously single. This operation is accompanied by the approval of order, structure, and in the social plan – hierarchy, subordination.

A collective meal with the dismemberment of the carcass of an animal ... maybe dates back to some ancient rituals based on the concept of the first victim (first ancestor), from whose dissected body Cosmos appeared” (Sagalayev/Oktyabr’skaya 1990, 43).

As a researcher of Kazakh culture Z. Naurzbayeva writes: “The dismemberment of sacrificial animals uses an anatomical code to design social structures: a genus is understood as a single body, its members as parts of the body of a sacrificial animal” (2019).

Thus, to eat, to swallow the heart of an animal is an element of an ancient ritual and information of it has been preserved in the form of traditions and customs. Among Kazakhs, there is the concept of *zherik*, “when a pregnant woman wants to try some special food. It was believed that the baby craves this food in the womb; the fulfilment of this desire ensures the fullness of its development, determines the future. In the epic, a future mother of a batyr usually wished to taste the hearts of the leopard, tiger or wolf” (Naurzbayeva 2019).

A batyr is a brave, strong warrior who swallowed the heart of a totem animal, usually a wolf, in the womb, and this gave him courage and strength.

Researchers emphasize this feature in the conceptualization of the heart by Kazakhs: it is associated with such characteristics of a person as “courage”, “bravery”, “pluck”. “[...] In Kazakh linguistic culture, the *liver* was the main focus of feelings. The *heart* was mainly used in a meaning close to the word *masculinity*” (Musabekova/Kultursynova 2018, 16). That is why when using epic chanting of the acts of the batyrs – Kazakh warrior heroes in “Batyrlar zhyry”, a description of their feats in other genres, the expressions with the word *jurek* are frequently used.

Solardyn katarynda kozderinin tirisinde-ak, juregi jolbarystan taisalmagan qylygy ushin jau jurek desetin Amangul batyr Ibeskeuly, ‘Jureginin tugi bar’ atangan Kuttymbet batyrlardyn bolganyn kone tarih syr etedi.” [Ancient history shows that among them were Amangul batyr Ibeskeuly, who had a brave tiger-like heart, ruthless to enemies, Kuttymbet batyr, who was called the brave heart] (Zhalelov 2016, 4; translated by G. Khamitova).

Kazakhs believe that in addition to courage and bravery, kindness and disinterestedness also live in the heart: *Zhaksylyk – jurekten, zhamandyk – bilekten* (lit. ‘Kindness is from the heart, meanness is from strength’); *Auzyn ashsa juregi korinedi* (lit. ‘Open your mouth – you can see the heart’) with the meaning “good, disinterested” (Kenesbayev 2007). It is similarly in the Russian and English languages: *Kindness lives in the heart; Dobrota zhivet v serdtse; kindness in heart, dobrota v serdtse*.

The heart is the carrier of purity, softness and tenderness in the Kazakh and Russian languages; this is indicated by the syntagmatic connections of the noun

serdtse with qualitative adjectives: *taza / zhumsak / nazik jurek; chistoye / myagkoye / nezhnoye serdtse* (Sultangubiyeva 2011b, 197).

In the Russian and English naive anatomy, unlike the Kazakh, the heart is also a carrier of negative human qualities: *zloye / zhestokoye / kovarnoye serdtse; cruel / hard / evil / insidious heart*.

3.3. The heart is a vessel for emotion-fluid

Many researchers have noted this feature in the cognitive mechanism of the metaphorization of emotions when they are described as a liquid, and the internal organ as a vessel for an emotion-liquid (Davitz 1969; Kövecses 1989; Temirgazina 2013; Yablokova 2016; Yergaliyeva/Mel'nik et al. 2018). In other words, the heart is thought of as a vessel that can be filled with various emotions-fluids. There is a different opinion about the universality of this metaphorical projection. So, Kiklewicz writes:

Cognitive linguists are keen on describing different kinds of metaphorical projections (such as a FEELING BEING A LIQUID IN A VESSEL), which are interpreted globally. They are ascribed to the status of a linguistic category as well as that of the algorithm of cognitive information processing. In reality, the descriptions of cognitive linguists are based on the linguistic facts that are restricted in use being stylistically or socially and culturally marked (2015, 169).

Agreeing with this opinion, the authors think that the prevalence of the named projection considers languages in general, but not only some stylistic and social spheres within a language. At least, the metaphorical model exists in the investigated languages. Such a metaphorical model is more characteristic of the Russian and English languages and less characteristic of the Kazakh language. In the Kazakh language, the heart can only be full of resentment: *renishke toly jurek* (Kozhakhmetova/Zhaysakova et al. 1988, 128) and in the English and Russian languages the heart is full of love, joy, happiness, anger, resentment, etc.: *serdtse polno lyubvi / radosti / schast'ya; heart filled with love / joy / happiness; serdtse napolneno zloboy / gnevom / obidoy; heart full of resentment; heart filled with malice / anger/ resentment* (Macmillan dictionary 2020).

Such a difference in the interpretation of the word *heart* is due to the fact that in Kazakh naive anatomy other internal organs are very significant and important in the conceptualization of the emotional sphere of a person. They are carriers of other emotions; for example, a liver is a carrier of kindred love, trust, and empathy, lungs are the carriers of hatred, irritation, and resentment.

From the point of view of the Kazakhs, the most important internal organ of man is *bauyr* – the liver, and not the heart, as in most European languages. A lot of culturally

specific ideas are associated with the liver, reflecting the peculiarity of the worldview of the ancient nomads, affecting not only the mental and emotional sphere, the character of a person, but also the social and tribal way of life (Temirgazina/Nikolayenko/et al. 2020, 7).

For native speakers of Russian and English, the heart is a home for the emotions and psychological qualities of a person, and therefore, speaking of them, native speakers use verbs with the meaning “live, settle, inhabit.” For example: *pechal' zhivet v yego serdtse, radost' zhivet v yego serdtse, skorb' poselilas' v yego serdtse; sadness lives in the heart, joy lives in the heart, sadness settled in the heart.*

3.4. The heart's features according to its colour and movement

The heart may have a colour, according to the bearers of different cultures, and the attribution of a certain colour has a culturally determined character and is not associated with the real colour of the internal organ.

In the naive anatomy of Russian and English, a heart can be black: *chernoye serdtse* (lit. ‘black heart’) meaning “evil, cruel man”, in English a heart can be *black, black-hearted, dark heart* meaning “evil, cruel man; villain” (Dictionary Cambridge 2020). In the naive anatomy of Kazakhs, the heart can be white and black and, accordingly, denote various moral qualities of a person: *ak jurek* (lit. ‘white heart’) in the meaning “kind, kind-hearted, sincere” (Kozhakhmetova/Zhaysakova et al. 1988, 18); *kara jurek* (lit. ‘black heart’) in the meaning of “ruthless, cruel hearted” (ibidem, 181). B. Grezsa, who investigated the symbolism of colour in the Kazakh language, says:

The usage of colour names in a secondary meaning is a widespread phenomenon in the Kazakh language. This can be connected to the symbolic interpretation of the colour names. For example, *aq* (‘white’) typifies ‘good, guiltlessness, innocence’, but in some cases it appears as the sign of mourning. Hence, *aq* can denote ‘fact, truth, reality, milk products.’ The colour black *qara*, apart from ‘sinfulness’, is the symbol of mourning, moreover, it has a secondary meaning ‘shadow, oil’ (2018, 234).

The heart, according to Kazakhs, is able to move in the person's organism, for example, rise to the crown of the head and then return to its place. The direction of movement of the heart with an unexpected fright is described differently in the Kazakh and Russian languages: in Kazakh – up to the crown of the head (*juregi tas tobesine shykty*, lit. ‘the heart jumped to the crown’) (Kozhakhmetova/Zhaysakova et al. 1988, 85), in Russian – down to the heels (*serdtse v pyatki ushlo*, lit. ‘the heart went into the heels’; *serdtse upalo*, lit. ‘the heart fell’) (Tikhonov 2007). It is interesting to note that in the Kazakhs' ideas, the heart can be hidden in the

mouth: *juregi auyzyna tygyly* (lit. ‘The heart is hidden in the mouth’ meaning ‘to feel intense excitement, anxiety’) (Kozhakhmetova/Zhaysakova et al. 1988, 84).

In English, emotions of unexpected fright or joy are described as the movement of the heart up between the lungs: *a heart jumped up amongst one’s lungs*; a strong fright – like a jump of a heart up the throat or in the mouth: *one’s heart leapt into one’s mouth*; *one’s heart leapt into one’s throat*, as well as the movement of the heart down to the feet – to boots or shoes: *one’s heart sank* (lit. ‘the heart fell’); *one’s heart in one’s boots*; *one’s heart sank into one’s boots (shoes)* (Macmillan dictionary 2020).

3.5. The functional substitution of other internal organs

It is important to note such a specific feature of the naive anatomy of the Kazakhs, when the *jurek* – a heart is closer in function to the stomach, and it is capable of experiencing physiological feelings of nausea, vomiting, severe hunger, see, for example, Kazakh idioms: *juregi karayu* (lit. ‘a heart turned black’) – someone is very hungry; get very hungry (Kozhakhmetova/Zhaysakova et al. 1988, 85); *jurek zhalgau* (lit. ‘support the heart’) – to eat, slightly satisfy the hunger (ibidem, 86); *juregi aynu* (lit. ‘heart refuses’) – to feel nauseous, to feel sick (ibidem, 84); *juregi kupti bolu* (lit. ‘have a heart’) – feel nauseous from fatty foods (ibidem, 84); *juregim loblyp tur* (lit. ‘my heart is sick’) – I feel sick (ibidem, 85).

Such specific meaning is not noted in the naive-anatomical representations of native speakers of Russian and English. Nevertheless, it is necessary to note the functioning of the word *heartburn* in English, which means the physiological problem of the stomach – heartburn (Macmillan dictionary). Kabakova writes that “in some traditions, the digestive organs and, above all, the stomach come together and even mix with the heart, in others with the lungs” (2015, 133).

3.6. The human possession of the heart of an animal

A person can possess the heart of an animal and, accordingly, be endowed with its characteristics, which are associated with it in national-cultural symbolic representations. For example: *arystan juregi, l’vinoye serdtse / serdtse l’va, a lion heart* meaning “a brave man”; *koyan juregi, zayach’e serdtse, a hare heart* meaning “a cowardly man” (Sultangubiyeva 2011b, 197). As we can note, in the Kazakh, English and Russian languages, the hare is the standard of cowardice, and the lion is the standard of courage. The corresponding associations are enshrined in the phraseosemantics of comparable languages.

However, it should be noted that the more typical and widespread standard of courage in the Kazakh culture is *jolbarys* (lit. ‘tiger’), this gives rise to the metaphors *jolbarystyn juregi* (lit. ‘heart of a tiger’), *jolbarystay juregi* (lit. ‘heart

like a tiger'). See, for example, the poems of the Kazakh poet Alash Tursunali: "*Tanirtauda tugan kansha or uldar, Jolbarystay juregi bar otty erler*" [How many noble sons were born in Tengri, hot people with the tiger hearts] (Tursunali 2011; translated by G. Khamitova).

In English, the adjective *chicken-hearted* (lit. 'possessing a chicken's heart') in the meaning of "cowardly" also functions; in other words, in addition to a hare, the chicken acts as the standard of cowardice in English.

In Kazakh culture, the idiom *it jurek* (lit. 'dog's heart') has the meaning of "capricious, changeable character", in which the dog appears as a standard of capriciousness, human instability. In the Kazakh language, the physiological state of the heart during excitement, disorder is compared with horse prancing: *jurek attay tulap tur* (lit. 'heart is like a horse prancing') with the meaning "heart trembles" (Kozhakhmetova/Zhaysakova et al. 1988, 85).

3.7. The heart's features according to its material, weight, temperature, softness/hardness

The heart in the naive anatomy of Kazakhs, Russians, English seems to be made of different materials, especially gold: *altyn jurek, zolotoye serdtse, a golden heart*. Gold, in many cultures, is a standard of value, both material (wealth, fertility) and spiritual (divine providence, wisdom, greatness). *Golden heart* means such positive qualities of a person as kindness, generosity, and mercy. The linguocultural axiological seme of value overlaps the physical property of metal hardness and contributes to the formation of positively coloured semantics "kindness, generosity, mercy".

A heart can be made of stone and ice: *tas jurek, kamennoye serdtse, heart of stone*, in the meaning of "stale, merciless, cruel, ruthless"; *muz jurek, ledyanoye serdtse, icy heart* in the meaning of "insensitive, unkind, merciless, cold man."

In Russian and English, the heart can be iron: *zheleznoye serdtse, iron-hearted*. These expressions mean "merciless, cruel, and hard." In the Russian language, this expression has a wide range of meanings: "courageous", "hardened by adversity and experience", "hardy", etc. Native English speakers also believe that a heart can be made of plastic: *a plastic heart* in the sense of "unemotional, unresponsive".

In the naive-anatomical views of the British and Russians, a heart has weight, can be light and heavy. A small weight means a positive mental state, a large one means a negative one: *s legkim serdtsem* (Tikhonov 2007), *light heart* (Macmillan dictionary) means "psychologically light; especially free from sadness or troubles", "calmly; calmed down"; *with a heavy heart, with a heavy heart* – "experiencing, suffering" (Sirotina 2006).

The speakers of Kazakh, English and Russian languages also believe that a heart can have such properties as softness and possess temperature indicators – it can be warm, hot, and cold:

Kazakh Language: *jumsak jurek* ('a soft heart' in the meaning of "affectionate; kind"); *zhyly jurek* ('a warm heart' in the meaning of "benevolent, welcoming, gentle"), *ystyk jurek* ('warm heart' in the meaning of "loving") (Kazaksha-oryssha sozdik 2019);

Russian: *myagkoye serdtse* ('a soft heart' meaning "kind, compliant, compassionate"); *goryacheye serdtse* ('warm heart' meaning "one who is capable of strong feelings, emotions; ardent, passionate"); *kholodnoye serdtse* ('a cold heart' meaning "indifferent, passionless") (Tikhonov 2007);

English: *soft heart*, *soft-hearted* (meaning "kind, compliant, compassionate"); *hot heart* (meaning "emotional, touchy, hot-tempered, loving"), *warm-hearted* (meaning "sympathetic, kind, loving"), *cold-hearted* (meaning "cold-blooded, insensitive, indifferent") (Macmillan dictionary 2020).

In the English and Russian languages, the active metonymic model "internal organ instead of a place" is noted, in which a heart denotes the center of something: *heart* – "the center of something (Her office is in the heart of Tokyo)" (Etymological dictionary of English 2019); *v samom serdtse taygi* ('in the heart of tayga'). Something important in English is also indicated by heart: "the most important or basic part of something: *go/get to the heart of sth.*; *be at the heart of sth.*" (Macmillan dictionary 2020).

3.8. Comparison of the heart concept in Kazakh, Russian, English in accordance with descriptors

Cognitive understanding of a heart in accordance with the descriptor parameters identified above in the analysis of linguistic units is presented below in Table 2.

Table 2. The parameters of cognitive perception of the concept of *jurek/serdtse/heart* in Kazakh, Russian, and English

Descriptors	Kazakh	Russian	English
	<i>jurek</i>	<i>serdtse</i>	<i>heart</i>
The localization of the positive emotions	joy, peace	love, joy, serenity, happiness	love, joy, calmness, happiness
The localization of negative emotions	excitement, anxiety, worries, fear, fright	hatred, anger, sadness, sorrow, malice, fright	anger, sadness, grief, malice, fear
The localization of the positive human qualities	courage, bravery, kindness, tenderness, gentleness, purity	courage, bravery, kindness, responsiveness, tenderness, gentleness, purity	courage, bravery, kindness, tenderness, gentleness, purity
The localization of the negative human qualities		cruelty, callousness, deceit	cruelty, callousness, deceit

cont. Table 2

Descriptors	Kazakh	Russian	English
	<i>jurek</i>	<i>serdtse</i>	<i>heart</i>
The ability to move	up to the crown with an unexpected fright; return to the place	go down in the heels with an unexpected fright; jump out of one's chest with an unexpected fright, joy	up between the lungs with unexpected fright or joy
The possibility of the absence of an organ in a human	possible (jureksiz meaning "cowardly, timid")	possible (besserdechnyy meaning "soulless, cruel, callous")	possible (heartless in the meaning of "soulless, cruel, callous")
The human's ability to have half a heart			A human can have half a heart: half-hearted (lit. "timid, coward")
A vessel for emotions-liquids	vessel for resentment	vessel for love, joy, happiness, sorrow, anger, resentment, hatred	vessel for love, joy, happiness, sorrow, anger, resentment, hatred
The ability to have colour	able to have white and black colour: ak jurek, kara jurek	able to have black colour: chernoye serdtse	able to have black and dark colour: black heart, dark heart
The replacement of the functions of another organ	replaces the function of the stomach		
Belonging to an animal	belongs to a tiger, a lion, a hare, a dog	belongs to a lion, a hare	belongs to a lion, a hare, chicken
The ability to be made of metal, stone and other substances	can be made of gold, stone	can be made of gold, stone, iron, ice	can be made of gold, stone, iron, ice, plastic
The ability to have weight		can be light or heavy	can be light or heavy
The possession of the softness / hardness property	can be soft	can be soft	can be soft
The temperature characteristics	can be warm and hot	can be hot and cold	can be warm, hot and cold
The designation of localization of something in the center		denotes the centre of something	denotes the centre of something
The designation of an important part of something			means something important

4. Conclusion

The significance of the heart in the naive anatomy of native speakers of different cultures is shown in a number of descriptors representing its metaphorical-metonymic conceptualization, as well as in a survey of native speakers of the Kazakh, English and Russian languages. Descriptors provide an opportunity to take a more detailed and accurate look at the commonality and difference in the interpretation of the heart by native speakers of Kazakh, Russian and English cultures. A comparative analysis of naive heart anatomy in three significantly different cultures and unrelated languages with the allocation of semantic descriptors allows us to draw the following conclusions.

Seventeen descriptors of the heart evidence have multifaceted and versatile conceptualization in studied cultures. The number of descriptors in which its cognitive metaphorical-metonymic understanding is expressed is 12 in the Kazakh language, 14 in Russian, and 16 in the English language. Moreover, the latter languages completely coincide with the number and specific embodiment of the descriptors, except for two: “a designation of the most important of something” and “a person’s ability to have half a heart”. Of the 17 descriptors, they lack a general meaning – “the replacement of the functions of another organ”.

Eleven descriptors out of twelve in the Kazakh language are common with Russian and English. There are five mismatched descriptors with the Russian language: “negative human qualities”, “replacement of the functions of another organ”, “designation of the localization of something”, “ability to have weight”, “designation of the most important in something”; there are five mismatched descriptors with the English language, to the above-mentioned descriptors “the ability of a person to have half a heart” is added. Indeed, from the point of view of the Kazakhs, the heart performs some functions of the stomach – conveys hunger, satiety, overeating, nausea; it cannot contain negative human qualities, is not used to indicate the location of something, cannot be light or heavy, and does not indicate the most important part of something and a person cannot possess only half a heart.

Despite such a large number of coincidences of parameters – 11, the peculiarity of the interpretation of the heart in the Kazakh culture is manifested in the implementation of a number of descriptors. Thus, in the descriptor “ability to have colour” in the Kazakh language, the heart can be white and black, i.e. there is a ternary opposition “red – white – black”, and in the Russian and English languages, there is a binary opposition “red – black / dark.” The differences are manifested in the ability to convey certain emotions and contain constant characteristics of a person. The Kazakhs do not believe that such strong negative emotions as hatred, anger, sorrow, sadness can be located in the heart, as it is believed by native speakers of Russian and English.

Negative human qualities do not live in the heart. The implementation of the “vessel for emotions-fluids” descriptor is limited: the heart can be a vessel for only one emotion-fluid – resentment, while in Russian and English – for a large number of emotion-fluids: love, hate, resentment, grief, sadness, happiness, joy, sadness. The descriptor “the possibility of the absence of an organ in a human” is also realized specifically for Kazakh culture speakers: lack of heart is interpreted as cowardice, for native speakers of Russian and English as callousness, cruelty, etc.

The lesser importance of the heart in Kazakh naive anatomy, compared with the liver, is explained by the following reasons: 1) the heart does not mean such an important concept for the socio-economic structure of the Kazakhs as kinship, and 2) accordingly, does not appear to be the equivalent of the most valuable in the Kazakh values system (see about kinship as an essential component of the culture of the Turkic peoples (Taşbaş 2019)). All of these properties are attributed by the Kazakhs to another internal organ – the liver, which is the most important in their naive anatomy (Musabekova/Kul'tursynova 2018).

Thus, linguistic units that arose as a result of the cognitive mechanism of analogy (metaphors and metonyms) in understanding the heart as an internal organ of a person are not based on modern scientific knowledge of the physiology and anatomy of this organ, but on ancient anatomical views, sometimes having a fantastic, unrealistic nature, for example, the presence of a person's half heart or none at all, the person's possession of animal hearts, etc.

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