

STRATIGRAPHY OF CULTURAL INTERACTION IN EURASIA BASED ON COMPUTING OF FOLKLORE MOTIFS

Yuri Berezkin

*European University in Saint Petersburg; Museum of Anthropology &
Ethnography (Kunstkamera), Russian Academy of Sciences*

Abstract. The article operates with two categories of units selected from folklore and mythological texts. These are the A-motifs (images and episodes related to cosmology and etiology) and B-motifs (episodes related to adventures and tricks). The areal distribution of the A-motifs reflects the existence of interaction spheres that probably emerged in deep prehistory mostly thanks to the displacement and movement of people themselves and not only as a result of the exchange of narratives between populations. The areal distribution of the B-motifs was mostly due to cultural interaction though the movement of people also played its role. The comparison of the data on the distribution of the A- and B-motifs suggests that a change in the system of intercultural connections took place in Eurasia after ca. A.D. 500. The Caucasus (with the adjacent areas) that was earlier connected with Europe was absorbed into the same interaction sphere as Mongolia and Southern Siberia. A set of motifs shared by southern and northern traditions of Eastern Eurasia seems to be as early as the peopling of the New World.

Keywords: folklore databases, interactions spheres, cultural borders, prehistoric cultural contacts, Eurasian folklore and mythology

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1. Introduction

During the last decades archaeology and population genetics tremendously increased our knowledge about prehistory. However, some problems are beyond the cognitive horizon of these disciplines at all or these problems are so complex that they need the joined efforts of scholars working in as many different fields as possible. The assessment of time of the appearance and spread of particular characteristics of oral traditions and the revealing of the prehistoric interaction spheres, of social units of different scale and complexity, inside which the intensity of information exchange was higher than it was between different units

are among such problems. Social units, prehistoric or modern, are not cells with precise borders but rather fluctuations in a space-field of human relations. There are fluctuations which can be revealed processing the mass material on the mythology and folklore and those which are known thanks to archaeology. The data of different disciplines sometimes overlap and sometimes not. The more disciplines are involved in this research, the more detailed and multi-dimensional picture of the past we get. The electronic catalogue of world mythology and folklore (Berezkin 2015b) was created with the special aim to advance the research on the historic stratigraphy of oral traditions and on the prehistoric migrations and interaction spheres. Reconstruction of prehistoric interaction spheres in Eurasia is the theme of this paper.

2. The A-motifs, the B-motifs and the statistics

Our catalogue of world mythology and folklore contains the description of motifs, every motif being provided with a full set of abstracts of texts in which it was found. The textual catalogue is a source for the digital database that can be processed statistically. Expressed in figures, the database is a binary (consisting of zeros and ones) table with lines for traditions and columns for motifs. In this way every tradition is characterized by long strings of zeroes and ones that contain information on the degree of similarity/dissimilarity between traditions. This information can be extracted in different ways. One of them is based on the principle of factor analysis. Within its framework, features (i.e. the motifs) are represented as sums of a small number of concealed variables (factors). Factor analysis algorithms promote, as far as possible, the preservation of initial correlation between the features (the motifs). As a result of such a presentation, every tradition is characterized by values of a small number of factors (usually two or three), so the number of variables is fundamentally reduced. One of the variants of the factor analysis uses the so-called principle components (PC) as factors. PCs are formally related to a completely different task, which is to find a linear combination of features for which the dispersion is maximal. The number of such maximums coincides with the number of dimensions of a particular task. The biggest maximum corresponds to the 1st PC, the next one to the 2nd PC and so on. With the processing of a big and diverse dataset as in our case, the first three or four components undertake less (sometimes much less) than 20% of total variability. However, it is enough for a convincing differentiation of the traditions according to a huge number of features.¹

¹ The above-mentioned 615 B-motifs were extracted from ca. 15,000 texts of 339 ethnic traditions. Though the 2nd PC, the data which was used to create the picture described in the first lines of this paper was responsible for only 4% of the variance, the corresponding information revealed a meaningful tendency in the areal spread of the Eurasian folklore, because only the first three PC demonstrated a trend in the similarity/dissimilarity of traditions on the trans-continental scale. The 1st PC selected the Nuclear Eurasia as a whole from other parts of the

Every PC has two poles, a positive and a negative one. They correspond to aggregations of computed units (in our case, sets of motifs for particular traditions) which are the most different from each other. If one of the tendencies in the areal distribution of units is much better expressed than any other, the 1st PC exposes only one pole with high absolute indexes for corresponding traditions (let it be the positive one) while the opposite pole (the negative one) is represented by traditions that have very low absolute indexes. Usually such traditions share few common elements and are clustered together mainly because they lack motifs typical for the positive pole.

As was demonstrated in the previous article, folklore traditions of the Nuclear Eurasia include Eastern (“Asiatic”) and Western (“European”) clusters (Berezkin 2015a). The border zone between them lies in Eastern Europe and southern Balkans. The Arab traditions of the North Africa and the Near East are moderately “European” while the Iranian and Turkic ones are moderately “Asiatic”.

This conclusion was based on the statistical processing of the distribution of 615 motifs related to adventures and tricks which I name the B-motifs. They are mostly found in tales that describe actions and conflict situations. Some of my B-motifs correspond to the internationally recognized Aarne-Thompson-Uther (ATU) tale-types (Uther 2004) or to their particular variants and parts. Others (especially those that are recorded outside of Europe) have no ATU correspondences.

The narrative core of the B-motifs (i.e. of the episodes in folktales and in epic texts) is deprived of the ethnic specifics and is easily borrowed across language borders. History and archaeology evidence that the transcontinental information exchange in Eurasia intensified significantly in the Hellenistic/Han epoch. At the same time the degree of similarity between the Chinese and the Western Eurasian (together with Northern African) folklore proved to be lower than between the western traditions themselves (Berezkin 2015a:8). It seems that in Western and Central Eurasia and in Northern Africa the formation of the core of the pool of the B-motifs typical for the “international” folklore could have begun well before the time when the relations with East Asia were firmly established, i.e. before I millennium A.D. However, the relative rarity of the registered motifs of this category in the ancient written sources is an argument in favour of the significant intensification of their transcontinental transference not before A.D. 500 or so.

Now I will present the results of the processing of the A-motifs, i.e. of the cosmological and etiological images and episodes. Unlike the B-motifs, they are not only selected from the narratives but are also known thanks to the anthropological research on the worldview of particular cultures. As the B-motifs, the A-motifs are subject to borrowing but we can be sure that their dissemination was slower. The A-motifs are often used in texts that are regarded as a valuable spiritual heritage received from the ancestors, i.e. as “sacred”. Because of this their

Old World and the 3rd PC selected southern traditions (from Morocco and Spain to India) from traditions of the boreal forest and tundra zones. All the other PC (83% of the variance) reflected but different links on the local level.

transmission across ethnic borders cannot be as easy as the transmission of the tales of magic or animal stories (Berezkin 2005).

Sacredness is a relative notion (Lukes 1973:20–27) but some spheres of culture possess privileged status in this respect. The bearers of folklore traditions usually select from all others some particular categories of texts in which their worldview is expressed in the most direct way. Sure enough, the motifs, unlike the narratives themselves, are deprived of any cultural specifics and, accordingly, it is impossible to apply such notions as the sacred and the profane to them. Any motif can potentially be used in any context. Still the motifs of different categories have unequal probability of being used in the narratives of different kinds. The cosmological and etiological motifs of our category A are more often employed in “sacred” narratives which are only borrowed in special circumstances. Stories of adventure and deceit, whose protagonists are not necessarily the objects of cult, are normally not subject to a severe censorship and can be borrowed more easily.

Though the time and speed of transmission of any particular motif across ethnic borders cannot be predicted, the areal distribution of the whole set of A-motifs must reflect cultural links that emerged slowly and existed in the earlier time in comparison to those links that are revealed thanks to the processing of the whole set of B-motifs.

Moreover, the spread of the A-motifs probably took place mostly not through the long distance intercultural contacts at all but because of the movement of the people themselves. Both the vertical (from parents to children) and the horizontal (between persons who are not genetically related) transmission of stories could take place in any time. However, in societies with low demographic density and simple economy that did not need permanent economic intercommunication with their neighbours, the vertical transmission must predominate while the growth of a social and economic complexity and demographic density stimulated the ever greater role of the horizontal transmission. If the A-motifs are conservative, many of them, though having been recorded recently, almost certainly existed already in deep prehistory i.e. in simple societies with low demographic density.

3. Westward expansion of the Eastern interaction sphere in continental Eurasia

At the moment, our database allows to track the world distribution of 2150 motifs. The A-motifs, i.e. images and episodes related to cosmology and etiology, make about half of this number. Because some motifs are only found in the New World, Australia, Oceania, Southeast Asia and sub-Saharan Africa, the number of the A-motifs processed for the present study which is devoted to the main part of Eurasia (together with North Africa) is 705 and of B-motifs – 793. The number of the folklore traditions that this study draws upon is 293.

As was mentioned above, if one of the tendencies in the areal distribution of units is much better expressed than any other, the 1st PC exposes only one pole

with high absolute indexes while the opposite pole is represented by units that have low absolute indexes. Such a situation is typical for the processing of the folklore motifs in Eurasia, let it be categories B or A (Figs. 1 and 2). However there is a noticeable difference in the location of the areas where A-motifs and where B-motifs are concentrated most densely (1st PC) as well as in the location of the borderline that further divides this area into two parts (2nd PC).

If the greatest diversity and abundance of the B-motifs is characteristic for Europe, the Caucasus and Central Asia (Fig. 1), the corresponding zone for the A-motifs (Fig. 2) encompasses Northern Eurasia from Germany to Chukchi Peninsular with the highest indexes across the territory from the Baltic and the Balkans to Lena Basin (the Yakuts) and Lake Baikal (the Buryats). The Atlantic Europe, North Africa, the Near East and Central Asia are outside of this core zone. It is obvious that such a picture reflects different systems of relations between human groups than the distribution of the B-motifs typical for the fairy-tales and heroic epics. It should be remarked that not only the set of the North Eurasian

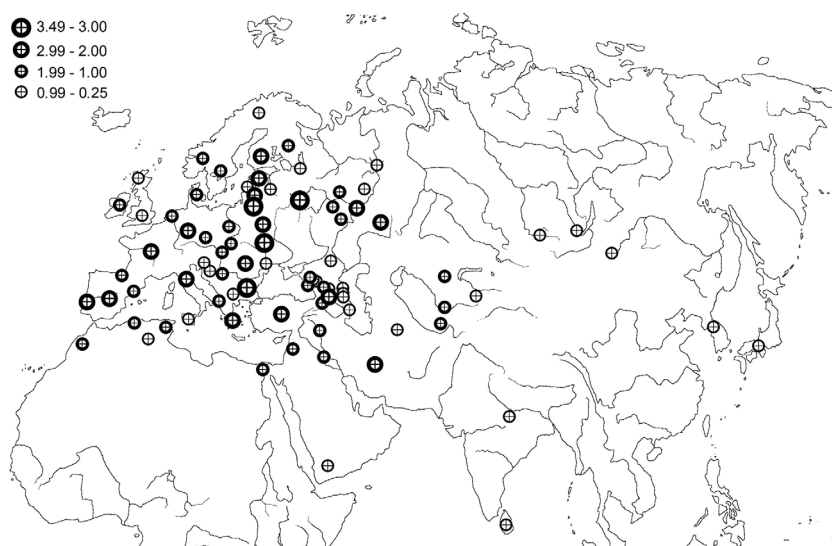


Figure 1. Tendencies of distribution of the B-motifs in Eurasia and North Africa revealed by the 1st PC, 11.2% of variability. Traditions with mathematical indexes below +0.24 are distributed chaotically, have low absolute values and are not on the map. Both the European traditions that are insufficiently represented in the database (e.g. the Bretons or the Bosnians) and some rich African and Asian traditions that have too few Western Eurasian motifs demonstrate such low indexes.²

² The reader can notice differences between this map and the map published earlier (Berezkin 2015, Fig. 1) on which traditions with the typical Nuclear Eurasian sets of motifs were distributed more evenly from Europe to Japan. These modifications are explained by somewhat different selection of traditions to be compared. In the present article the Oceanic, most of the African and part of the southern Asian traditions were excluded from computing. This weakened the contrast between Nuclear Eurasia and the rest of the world and sharpened the contrast between the western and eastern parts of the Nuclear Eurasia itself.



Figure 2. Tendencies of distribution of the A-motifs in Eurasia and North Africa revealed by the 1st PC, 5.3% of variability. Traditions with mathematical indexes below +0.50 are not on the map. 1. Ancient traditions (Greek, Indian and Chinese).

A-motif is rich, but that some of particular motifs are found across this entire zone. Otherwise already the 1st PC (and not the 2nd PC, see Fig. 4) would disintegrate this complex of motifs into two territorial subgroups.

Differences revealed by the 2nd PC in distribution of the A-motifs and B-motifs are not less significant.

The situation for the B-motifs is shown on Fig. 3. Here the set of motifs that are typical for the territory from Albania to Chukchi Peninsula with maximum values in the Caucasus, Kazakhstan, Bashkiria and Southern Siberia are contrasted with the set of motifs that are typical for Western and Central Europe. This tendency was already analysed in the previous paper (Berezkin 2015a, Fig. 2).

For the A-motifs the 2nd PC (Fig. 4) also splits the traditions into western and eastern groups but the border zone between them lies much farther to the east in comparison with its position for the B-motifs. In the case of the A-motifs, Asia Minor, the Caucasus and less prominently the Middle Volga region, Central Asia and Iran are linked with Europe. In the case of the B-motifs (Fig. 3) these regions represented an integral part of the “Asian” complex and were connected with Southern Siberia.

As already mentioned, the spread of the A-motifs must reflect the earlier system of relations between human groups (earlier interaction spheres) than the spread of the B-motifs. It is probable that this earlier system was established not so much by means of intercultural communications but thanks to the intermingling of groups of people themselves during resettlements and migrations. Speaking in a simpler and less precise way, the spread of the mythological traditions goes deeper

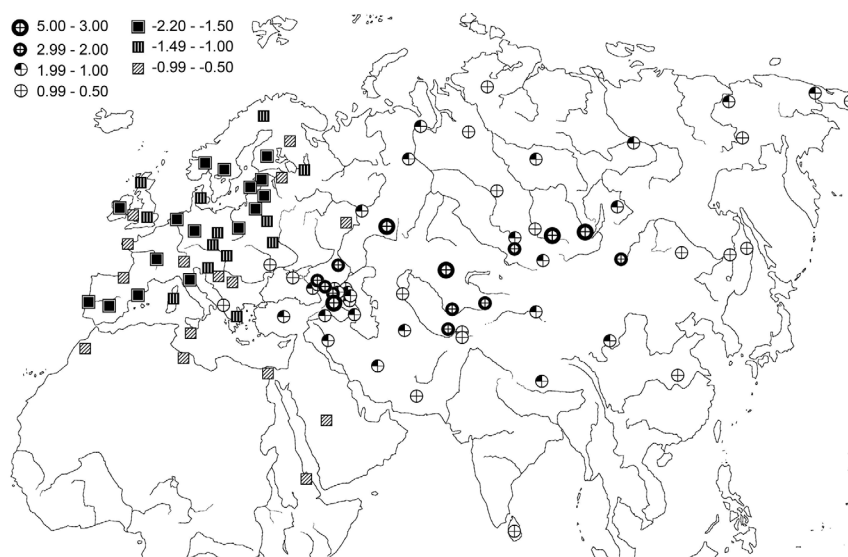


Figure 3. Tendencies of distribution of the B-motifs in Eurasia and North Africa revealed by the 2nd PC, 3.8% of variability. Traditions with mathematical indexes between +0.49 and -0.49 are not on the map.

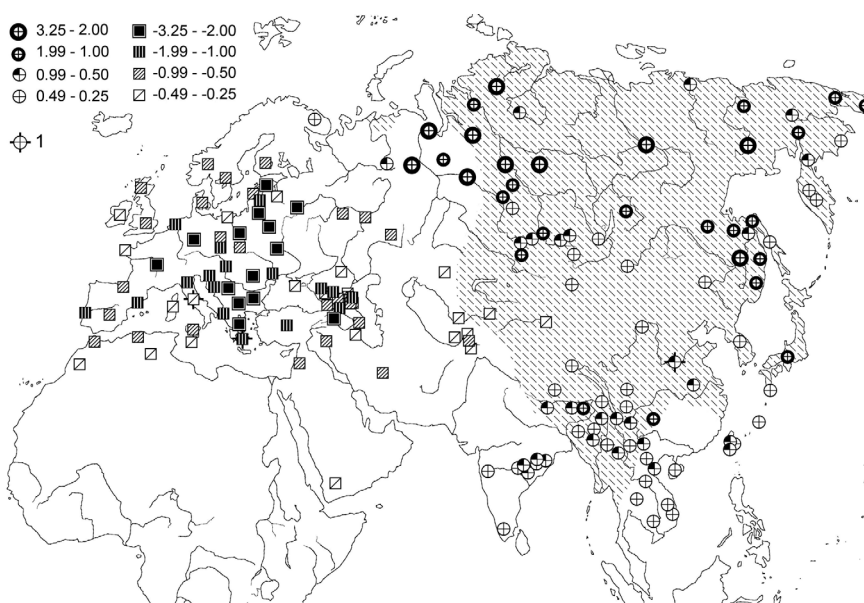


Fig. 4. Tendencies of distribution of the A-motifs in Eurasia and North Africa revealed by the 2nd PC, 3.9% of variability. Traditions with mathematical indexes between +0.49 and -0.49 are not on the map. 1. Ancient traditions (Greek and Chinese). The shaded area marks an approximate spread of the Eastern Eurasian continuum of the Eurasian gene pool (Balanovski 2014, Fig. 18.3).

in time than the spread of plots of international folktales. If the Caucasus and adjacent territories are united with Southern Siberia in one case and with Europe in another case, this means that at a certain period of time a significant reconfiguration of the interaction spheres took place in Eurasia. The most plausible dating of such a reconfiguration is the middle of the I millennium A.D. when the westward movement of the nomadic groups, mostly Turkic- and later Mongolian-speaking, across the Great Steppe began and continued up to the 18th century. As a result the Caucasus that during a long time, according to archaeological data, was part of the Western Eurasian cultural space became involved into the sphere of influence of the eastern cultures (see e.g. Berezkin & Duvakin 2016).

From about mid-III millennium up to the mid-I millennium A.D. the Western Eurasian world reached not only the Caucasus and Central Asia but even Tuva, Western Mongolia and Xinjiang, and it was only in the Hun period that its border shifted far to the west. It seems, however, that in the mythological traditions of Kazakhstan, Tuva and Mongolia this early western component was mostly wiped out.

There is an additional argument in favour of the relation between the steppe nomads and the change in configuration of the interaction spheres in question. The spread of the name of Venus like Cholbon, Sulpan, Tsolbon, etc. (Mándoki 1963: 523–530, Musayev 2006:335, Tsintsius 1975:404) can be taken as a proxy for the spread of the Eastern complex of the B-motifs (Fig. 5). In Turkic languages this



Figure 5. The westward expansion of the borderline between the western and the eastern interaction spheres in continental Eurasia. 1. Approximate border between the Western and Eastern complexes of the A-motifs (cosmology and etiology). 2. Approximate border between the Western and Eastern complexes of the B-motifs (episodes of adventure and tricks). 3–6. Cosmonyms Cholbon, Sulpan, Tsolbon and the like for Venus. 3. In Turkic languages. 4. In Mongolian languages. 5. In Tungus languages. 6. In other languages (the Udmurts).

term is usually interpreted as “the shining one” (Musayev 2006:335) though this etymology can be deceptive. The Tsolbon-like cosmonyms are also widespread in Mongolian and Northern Tungus languages. At the same time they are not registered in the Chuvash and the Gagauz. Among the Turkmen, Uzbeks and Azeris Cholpan/Cholbon was replaced with the Arabic Zukhra, Zohra, etc. while Volga and Siberian Tatars, Bashkirs and Kazakhs know both cosmonyms. At the same time the Udmurts borrowed Čulpon from the Tatars (Mándoki 1963:530). The spread of this cosmonym to the west of Altai correlates not so much with the spread of the Turkic languages or particular folklore motifs but with the compressed statistical data on the distribution of the Eastern complex of the B-motifs.

4. The north – south parallels in the folklore of Eastern Eurasia

Another tendency noticeable on Fig. 4 is related to the southern parallels in Siberian folklore. The Eastern complex of the A-motifs is best represented in the north from West Siberia (the Mansi) to East Siberia and Russian Far East (the Lamuts and Nanai). However, there are dozens of mythological motifs that are found in Siberia, on the one hand, and in Japan, on Taiwan, in continental East and Southeast Asia, as well as among the non-Aryan people of India, on the other hand. In our database such parallels are especially numerous among the Miao of China and among the Tibeto-Burman groups of Arunachal-Pradesh of the Northeast India though the particular position of exactly these traditions can be due to the differences in the degree of research. For example for the Apatani and their neighbours in Arunachal-Pradesh the number of the registered A-motifs is 107 and for the Miao of China it is 83. This is comparable with the data on the Mansi (105 motifs) and the Lamuts (87 motifs) while the corresponding numbers for the Lepcha (Nepal), Northern Naga (near the border between India and Myanmar), Thai (Thailand) and Karens (Myanmar) are 52, 42, 37 and 25.

In the Eurasian East the north – south links cannot be due to the gradual cultural interaction because the Southeast Asia is separated from Siberia by Central Asia where the complex in question is much less developed. The territorial spread of the distant north – south links in the Eastern Eurasia in its large part overlaps the area of the spread of the Eastern genetic continuum in the gene pool of Eurasia based on the total frequencies of the mtDNA haplogroups (Balanovski 2014, Fig. 10.3). And this continuum can be explained by the northward movement of population after the passing through the Late Glacial Maximum ca. 17,000 cal. B.P., when thanks to the global warming vast territories in the south were inundated and vast territories in the north became suitable for habitation.

The peopling of the New World was related to the same process and it is natural that many mythological motifs typical for both Siberia and Southeast Asia are found in America as well. There are also exclusive Siberian – American and Southeast Asian – American parallels. Their spread reflects different entries into the New World by different Asian groups.

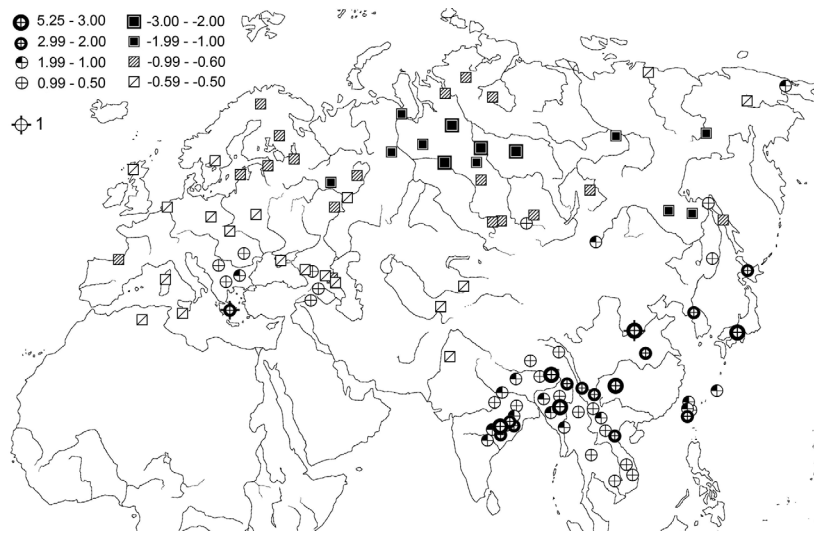


Figure 6. Tendencies of distribution of the A-motifs in Eurasia and North Africa revealed by the 3rd PC, 3.0% of variability. Traditions with mathematical indexes between +0.49 and -0.49 are not on the map. 1. Ancient traditions (Greek and Chinese).

Just as the 2nd PC divides the North Eurasian totality of the A-motifs into western and eastern parts, the 3rd PC divides the vast eastern group into the northern and southern parts. A trace of the southern set of motifs is seen along the Pacific up to Chukotka Peninsula (and further into the New World), which is quite predictable. Another tendency is more enigmatic, namely the parallels between India and the northern Southeast Asia and the circum-Pontic traditions. In Ancient Greek mythology such parallels are more pronounced than in the Balkan and South Caucasian folklore of the 19-20th centuries (Berezkin 2012). These parallels cannot be explained by the Indo-European migrations because in South Asia they are exclusively found among the non-Aryan people.

5. Conclusions

The trans-Eurasian parallels in mythology revealed by the computing of a large and representative amount of motifs related to cosmology and etiology are discovered for the first time. Earlier such a research was impossible due to the lack of an adequate database. Two tendencies seem to be especially important. The first one is the westward expansion of the Eastern interaction sphere in continental Eurasia. Initially the border between the Western and Eastern spheres crossed the continent somewhere in Central Asia while later it shifted to Eastern Europe, probably due to the prolonged and massive westward movement of people along the Great Steppe since about the Hun period. The second tendency is the existence of a set of cosmological and etiological motifs shared by southern and northern

traditions of Eastern Eurasia. These north – south links seem to be as early as the peopling of the New World.

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Address:

Museum of Anthropology & Ethnography (Kunstkamera)
Universitetskaya emb., 3
Saint Petersburg 199034, Russia

E-mail: berezkin1@gmail.com

Tel.: +79218743569

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