## I. HISTORICAL AND TECHNOLOGICAL DIMENSIONS

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# Genes and Myths: Which Genes and Myths did the Different Waves of the Peopling of Americas Bring to the New World?<sup>\*</sup>

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#### Abstract

The spatial distribution of folklore-mythological motifs is shown to correlate rather tightly with the distribution of mitochondrial DNA (mtDNA) and Y-chromosome (NRY) haplogroups. The analysis of spatial distribution of folklore-mythological motifs confirms earlier findings of geneticists which identified South Siberia as the Old World homeland of the main wave of the peopling of the New World (the diffusion of the respective populations in the New World turns out to be associated with the spread of Clovis and para-Clovis archaeological cultures). Indeed, this is just South Siberia where the highest concentration of the Amerindian folklore-mythological motifs in Eurasia is observed. On the other hand, it turns out to be possible to connect the penetration of mtDNA HG C and NRY HG Q > Q3 to the New World with this migration wave. The spatial distribution of the 'Circumgobi-Amerindian' folklore-mythological motifs follows rather closely the distribution of mtDNA HG C in the New World. This makes it possible to re-construct up to a considerable detail the mythology brought to the New World from South Siberia by this migration wave. Another migration wave turns out to be associated with the distribution of mtDNA HG B and motifs of 'Melazonian' mythological complex whose highest concentration is observed in Melanesia, on the one hand, and Amazonia, on the other. These motifs form a few connected sets, which suggest certain possibilities for the

*History & Mathematics: Economy, Demography, Culture, and Cosmic Civilizations 2017 9–77* 

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<sup>\*</sup> This research has been supported by the Russian Foundation for Basic Research (Project No 17-06-00464).

reconstruction of some features of 'proto-Melazonian' mythology brought to the New World by the bearers of mtDNA HG B. MtDNA HG A frequencies in Siberian and American populations display a rather strong and statistically significant correlation with the number of the 'Raven Cycle' motifs in respect of folklore-mythological traditions. There are certain grounds to believe that both these motifs and the respective genetic marker ('Arctic A') were brought to the extreme American North-West and extreme North-East Asia ('Transberingia') later than both maternal lines B+C and Circumgobi-Amerindian, Melazonian and Ural-Amerindian motifs had been brought to the New World. The presence of a relatively homogenous Transberingian 'genetic-mythological' zone characterized by high frequencies of both mtDNA HG A and the Transberingian motifs seems to be accounted for, first of all, by the fact that they were brought to this zone relatively later with the migrations apparently corresponding to the movement to this area of Dene, Esko-Aleut and Chukotko-Kamchatkan language speakers and replaced to a considerable extent earlier genetic markers and folklore-mythological motifs. But, on the other hand, the same fact seems to be additionally accounted for by the functioning up to the Modern Age of the Transberingian communicative network, as in the Holocene the communication through the Bering straits does not appear to have ever interrupted, and led to additional homogenization of the zone. And the movement through the Bering straits definitely went in both directions, in the framework of which their way to the Old World appears to have been found by both some New World genetic markers (e.g., NRY HG Q3), and apparently some folklore-mythological motifs which were developed already in the New World (the possibility of the migration of some Transberingian motifs from the *New World to the NE Asia [suggested {in a bit exaggerated way} already by* the members of the Jesup Expedition] seems to be supported by a higher concentration of these motifs in the New World part of this zone). The analyzed evidence suggests that the Ural-Amerindian mythological complex was brought to the New World by a wave of migration which took place between 10,000 and 13,000, i.e. not long after the main wave of the peopling of Americas.

**Keywords**: Deep History, mythology, folklore, genetics, mitochondrial DNA, *Y-chromosome*, peopling of Americas, migration, paleolithic.

#### Introduction.

## Statistical Analysis of Folklore-Mythological Databases as a Source for Deep History Reconstruction: Problems and Perspectives

Archaeology, population genetics, comparative linguistics, physical anthropology provide data for reconstruction of movements of people and cultural links in the past. The study of folklore and mythology is another potential source of this kind of data. For this, the analysis of distribution of motifs across different areas, ethnic traditions, language groups, *etc.* is applied.

We use terms 'folklore' and 'mythology' as synonyms though they can be just as well understood as antonyms. Our position will be explained shortly below.

Two potential approaches to the study of folklore are deduced from different definitions of culture. Culture is a system of meanings that need knowledge and understanding, but it is also a non-genetic way to preserve and transmit information, which is basically similar to Tylor's understanding of culture, which is 'acquired by man as a member of the society' (Tylor 1871: 1). From the latter point of view, it is possible to study not only the content of information but also the ways of its transmission from people to people, the configuration of areas where it circulates, the causes of its preservation, transformation, or distortion.

Emile Durkheim was probably the first who had revealed this double nature of object of anthropological research, though the lack of the very word 'culture' in his vocabulary somewhat restricted the influence of his ideas on cultural anthropologists. Durkheim distinguished 'social facts' (*i.e.*, elements of culture) from value judgements (*i.e.*, meanings which those elements acquire for bearers of a particular culture). Among social facts, he cited beliefs, customs, habits, preferences, traditions, *etc.* typical for a certain group of people and transmitted from one person to another. Being acquired unconsciously as a given reality, shared by many persons, social facts are 'compulsory' and can be named 'things'. To know the origin of a particular social fact, we should address other facts that existed before, whereas we should not study sets of ideas peculiar for a particular culture, not to say to a particular person. As 'value judgements', *i.e.* people's opinions, ideals, *etc.*, are incorporated in 'things', the things themselves are often erroneously viewed as the source of corresponding values (Durkheim 1995: 31–40, 51, 126, 284–304).

The interpretation of culture as the system of acquired, borrowed patterns was elaborated after the mid-20<sup>th</sup> century by scholars whose prime aim was to study not the origin of these patterns but their meaning. 'Culture consists of patterns, explicit and implicit, of and for behavior acquired and transmitted by symbols', had been deduced by Alfred Kroeber and Clyde Kluckhohn (1952: 181). Though 'symbols' seems to be a key word of this definition, it is equally important that patterns of behavior are acquired, not invented. According to Clifford Geertze (1973: 92–94), patterns of culture function in a way fairly similar to the one in which DNA forms coded programs for the synthesis of proteins. Cultural patterns are 'extrinsic sources of information' that provide blueprints, templates, or, more to the point, models for relations 'among entities, processes or what-have-you in physical, organic, social, or psychological systems', but every time such a pattern is reproduced from some earlier sample.

Models can be *of* reality and *for* reality, and the former is more or less parallel with a 'pre-established nonsymbolic system'. The predominant trend in the 20<sup>th</sup> century anthropology was to study cultural elements as 'models for', as sets of symbols, but their study as 'models of' which are copied unconscious, is also possible.

Addressing traditional narratives, we can treat them either as entities which are meaningful for bearers of a particular culture, understood by them as inherited from some distant past and considered to express unique values of corresponding culture, or as combinations of plots and images which are borrowed from earlier generations and from the neighboring groups and have mostly cross-cultural distribution. From the latter point of view, the motifs are capable of replication and, being integrated into tales retold by people, 'reproduce themselves' in Dawkins' (1976: 203–215) sense.

If narratives are abound in etiological, especially cosmological motifs, they are usually named 'myths', and if they lack such motifs, they are labeled just folktales. As far as we study the area distribution of all kinds of motifs, this difference between 'myths' and 'tales' is irrelevant, therefore we use here the term 'folklore-mythological motifs'. As far as we address the meaning of the narratives in context of particular culture, we speak about mythology, and as far as we address the texts themselves (irrespective of their context and its interpretation) we speak about folklore. Malinowski (1926) studied exclusively mythology, whereas Boas (1895, 1940: 331–355, 397–524) analyzed folklore. For both of them difference between myths and tales was not stemming from the intrinsic nature of texts under study, and in this respect both 'minimized the distinction between folktale and myth' (Thompson 1951: 389).

Both approaches to the study of traditional narratives are justified, but we follow here Boas. More than a hundred years ago, he demonstrated that tales are relatively ephemeral and composed of elements which were subject to easy dissemination and therefore were not culturally specific. Boas obviously proceeded from the supposition that historical reconstructions based on the study of folklore are possible due to unconscious reproduction of motifs by people who retell texts (Boas 1891: 20 [repr. 1940: 437-445]; 1896: 9 [repr. in Boas 1940: 425-36]; 1916: 878; 1928: 149-150; 1940: 290-294, 312-315, 331-343, 437-490; see also Mathé and Miller 2001: 111; Reichard 1921). He believed that motifs preserved their form during very long periods of time, while the mythological texts which are composed of them changed their meanings more rapidly. When motifs show any correlation with territorial distribution of other cultural traits at all, it is more with big culture areas than with language families. Seeing in area distribution of motifs a key to reconstruction of past cultural contacts and being eager to attain a reasonable degree of certainty about 'monophyletic' origin of every motif under his study, Boas rejected as doubtful any cases when a distribution was not continuous (Boas 1940 [1914]: 461). This restriction does not seem to us necessary. First, even in case of continuous distribution the complete certainty of non-multiple origin is not attainable; it is always a matter of greater or lesser probability. Second, the distribution is not usually continuous, from one neighboring group to another. More often, the similar elements are recorded at some points with no information in between, and to consider such a distribution as continuous or discontinuous, is largely a question of the scale of the research.

Though folktales are retold in particular languages, motifs which they contain are not specifically connected with any language. Not only stories of adventures and tricks but even cosmologies are usually shared by neighboring native groups who speak unrelated languages, one or both of them arrived at the contact zone only recently. The Earth-diver myths of Teton and Arapaho or of Tungus and Yakut can serve good examples. No language family undisputably recognized by the linguists can be followed deeper than 10,000 years at the very best but the pattern of area distribution of some folklore-mythological motifs makes their paleolithic 'age' very plausible (*e.g.*, Rejuvenation by changing skin, or Battle between dwarfs and cranes).

Boas was writing about the folklore 'elements', but now such elements are usually named 'motifs'. We define the motif as any image, compositional structure, episode or chain of episodes found in more than one text.

The standard system for classification of motifs is that of Stith Thompson (1955). However, its application for our study has some problems.

For Thompson, 'the main purpose of classification of traditional narratives, whether by type or motif', was 'to furnish an exact style of reference, whether it be for analytical study or for the making of accurate inventories of large bodies of material' (Thompson 1951: 427). Thompson's Index was created mostly in the late 1920s using mostly the data on European and West Asian folklore. It includes about 30,000 motifs and is able to accumulate a much greater number of them. The problem is not in that potential number of motifs is unlimited but that we do not need all of them for analytical purposes. What is indispensable for description is not always necessary for 'analytical study' and vice versa. Thompson created his Index deductively to fit just the description of any text. The selection of motifs for analytical purposes is inductive: we first understand what motifs are promising for the search of the cultural links between folklore traditions and then include them into the catalogue. Motifs meaningful for historical reconstruction (possibly borrowed or inherited from a common source) should answer several demands. They must be shared by many folklore traditions, not be unique or extremely rare, not be clearly influenced by specific ecological or social conditions, not known universally or distributed chaotically across the regions under study. Therefore, for purposes of our research (early movements of people in general and Old World origins of American natives, in particular), electronic Analytical Catalogue of Folklore Motifs has been created. At the moment, it contains 30,000 abstracts of texts<sup>1</sup>. About 3,000 publications in eight European languages have been consulted. Most data on Amerindian and Inuit mythologies are available in English. Most data on Eurasian groups are in Russian only.

The majority of our motifs find some equivalents in Thompson's index, and such cross-references are included into our database. Very often, however, Thompson's motifs either contain additional specific details not relevant within a given context or lack just those details which are crucial for understanding specific cultural links. As Thompson Index does not contain abstracts of texts (as this was just impossible in the pre-computer age), its users have to address the original publications to be sure that the parallel they are in search really exists in corresponding text. In many cases only something distantly similar is found.

For purposes of comparative analysis, motifs, both elementary and complex, must be strictly defined. Elements of the texts, which do not correspond precisely to definition elaborated by the researcher, are not included into the database. Distantly similar cases should be either ignored or a new motif which would lack too specific details should be defined. A practice of searching for the nearest similar motif of Thompson's Index and supplying it with a plus (+) in case of the lack of direct analogy (*e.g.*, Wilbert and Simoneau 1992: 50–51) for our purposes is unacceptable. The definitions of motifs are instrumental, the list of motifs is open. It increases as long as we process more texts and find previously unnoticed links. The greater and more diverse the collection of texts is, the greater the number of motifs that can be potentially selected. The list of motifs is subject to change as long as new texts attract attention of a researcher. With only one text in hand, we are unable to select any motif.

For American anthropologists of the early 20<sup>th</sup> century, the motif was a 'ready made unit which [the narrator] can insert in his composition when appropriate' (Wissler 1929: 252). Even a complex plot or a set of images could be considered as a 'motif' if such a unit is copied and repeated from text to text. However, the understanding of folklore motifs as replicators raises the same problem that emerges if we try to discover units of replication in archaeology (Lyman and O'Brien 1998: 619): not only how simple and indivisible should such units (in our case, motifs) be but also is indiscriminate use of these elements acceptable?

Stith Thompson defined the motif as 'the smallest element in a tale having a power to persist in tradition' (Thompson 1951: 415). Alan Dundes (1962: 95– 98) objected that this restriction ('the smallest') is unnecessary because any minimal unit can be ultimately subdivided. But the cardinal fault of Thompson's approach, according to Dundes, was that the motifs, represented by 'ac-

<sup>&</sup>lt;sup>1</sup> URL: http://www.ruthenia.ru/folklore/berezkin/index.htm.

tors, items, and incidents', were 'not measures of single quantity' and their classes 'not even mutually exclusive'. 'Can an actor be compared with an item?' Dundes wrote ironically.

We think that Dundes was not correct here because we do not compare 'actors with items' but different units of folklore texts with each other. We have a right to select both more and less complex or simple motifs as units of comparison, and our choice depends on the scale of the comparison itself. The longer the chain of episodes encompassed by the same motif, the less stable it is, and the more significant it is for reconstruction of historical links. However, localization of these longer links in space and time is usually restricted. When statistical program is applied, the simpler motifs usually reveal more distant links and the complex ones demonstrate parallels inside smaller and culturally more homogeneous territories, but if distributional patterns of two motifs, one of which is a chain of incidents and another a simple image, are similar, there is nothing mythodologically wrong or historically unexplainable in such a correlation. Actually, there is another base for categorization of motifs, more important than the degree of complexity or the 'nature' (actors, items, etc.). It is their relation to more and to less sacred or profane spheres of culture. Though the strict differentiation of such spheres is impossible even inside a particular culture, not to say universally, there is a difference in preservation and area distribution of cosmological and etiological motifs, form one side, and of motifs which are mostly linked with adventures and tricks. Though this difference is not crucial, the separate treatment of these rather provisionally selected groups of motifs proved to be useful and we will address this topic later.

It is impossible to observe the birth of a new motif, and any claim concerning typological *vs.* genetic reasons for the existence of identical motifs in different traditions would be speculative. We should not study the origins of individual motifs but the degree of similarity/dissimilarity between entire traditions. If mythology A contains 20 % of its motifs in common with mythology B and only 2 % in common with C, a hypothesis that A is closer to B than to C is at least based on facts subject to verification. If the parallels discovered in myths correlate with external factors (social, economic, or environmental), then typological explanations should be considered. If there are no such correlations, then a common origin of A and B, or diffusion and borrowing seem plausible. Differences between spatial mythological complexes become visible using comparison of statistical measures that signal a mutual correlation between some motifs and the lack between others. Motifs with the largest but sharply bounded areas of distribution influence the picture more than others.

Boas first used (1895) and then rejected statistics as an appropriate instrument to analyze mythology (*Idem* 1940: 309). Certainly his application of statistical methods to mythology of the restricted area of the Northwest Coast was not very successful. The reason is obvious. Cultures in contact constantly exchange their elements and the resulting pattern of distribution is chance and chaotic. On the other hand, there are examples where the patterning of mythological complexes clearly reflects recent migrations which are independently known on linguistic or other grounds. For example, for the North American trickster tales, parallels in Eurasia are found in Western Siberia and across Chukotka – Kamchatka, but are not found in Eastern Siberia, which was recently occupied by the Tungus and Turkic-speaking Yakut who arrived from the south. To look back in history, we should mentally undo that migration. Some motifs typical for Navajo and Apache are certainly brought by them from their northern Athabaskan homeland (Berezkin 2003; Tyhurst 1975).

Statistics is effective if it is applied to the areas whose inhabitants lived in isolation from each other at the time of the European contact and could not borrow culture elements from each other. If such distant groups share common motifs, it could be for the same reason as in case of the neighboring groups, *i.e.*, because of the dissemination of motifs from one group to another. However, in case of groups isolated from each other the corresponding contacts must be projected into the past when the ancestors of those people either occupied adjoining territories or were integrated into a wider cultural continuum, later broken. Of course, the study of spatial distribution of motifs alone is unable to say how distant is the past, to which the supposed contacts should be attributed. No methodology to measure inner chronology of folklore materials (a sort of 'mythochronology' comparable to glottochronology) has been developed yet. But if the chronological frame built on archaeological, linguistic and other data exists, conclusions of a folklorist are able to enrich the historical reconstruction.

The work of one of us (Yuri Berezkin) began about fifteen years ago with initial purpose to understand distribution patterns of motifs inside South and Central America. Later the North American and then the Old World materials were added. The purpose of the research was to select patterns in distribution of motifs which would help to identify the Old World homelands of the Amerindians and Inuit. Area distribution of about motifs across North and South America, Australia and New Guinea, Central, Northern and Eastern Eurasia have been checked up to the moment.

Factor (Principal Component) Analysis statistical program is applied to select different tendencies in area distribution of motifs. The following procedure was used to create and modify the database. The abstract of each text is copied into the Analytical Catalogue as many times as necessary, once for each motif which the text contains. The table of occurrences is constructed with rows for motifs and columns for areas. 1200 motifs have been selected so far and their distribution is examined across c. 200 areas. With more data processed, these numbers gradually increase (there were only 64 areas in the initial version). In the dataset '1' stands for the presence of the particular motif and '0' for its absence.

## Old World Roots of New World Mythologies: History of Problem

The comparative study of American mythologies and the mythologies of other parts of the Globe hardly ever was a special direction of anthropological thought, but rather reflected changes in predominant paradigms shared by European and American anthropologists. First it was 'mental unity of men', represented on American ground by Daniel Brinton (1882), then the 'Diffusionism'. The first important and later often cited diffusionist study of American mythology was by Paul Ehrenreich (1905), one of a few scholars who knew well all the data on South America available at his time. Ehrenreich was explaining cases of identical motifs in America and beyond as resulted from early migrations. Some of his statements seemed naïve but ultimately proved to be justified. For example, being among those few anthropologists really well familiar with Adolf Bastian's works, he found in them a report on Tai legend very similar to the Kechua one recorded in Central Peru in the early 17<sup>th</sup> century and known to Ehrenreich thanks to English translation by Clement Markham published in 1873. Though a direct comparison of two texts had little sense, both are, as we know it now, links in a chain of similar tales widely known both in South and North America and down along the Pacific Rim of Asia. At the same time. Ehrenreich combined his historical approach with ideas of German 'meteorological' school, according to which 'the mythology, so far as it is primitive, is the product of the childlike apperception of nature' (Lowie 1908: 99).

The major figure in the 'Americanistics' at the turn of the centuries was, of course, Franz Boas. His research on comparative mythology based on his own field work among the Indians of the North American Northwest Coast and the Inuit Eskimo as well as on the works of his colleagues, especially those whom he had recruited to participate in the Jesup North Pacific Expedition (JNPE) has been itself an object of intensive study in recent years (Krupnik and Fitshugh 2001; Kendall and Krupnik 2003; Lewis 2001). His paper *The Limitations of the Comparative Method of Anthropology* (1896) as well as many others up to *The Methods of Ethnology* (1920) and *The Evolution or Diffusion* (1924) clearly express his ideas on the importance of cultural borrowing in mythology and the dissemination of the folklore motifs (Boas 1940).

For Boas (or more precisely, for 'early Boas' during the first three decades of his career), as for the 19<sup>th</sup> century evolutionists, the ultimate aim of anthropology was to reconstruct the past, but unlike the evolutionists, Boas believed that such a reconstruction had to be based not on any universal law that ruled the history but on our knowledge of unique processes and events which took place in the past. Like most of anthropologists of his time, Boas believed, however, that the study of living cultures not only is important for the reconstruction of the past (it certainly is) but that such a reconstruction could be realized on the basis of ethnographic data alone. People involved into the JNPE had hardly understood complexity of the processes which they attempted to study. Time units with which Jesup team operated in their reconstructions were completely provisional. For example, Bogoras (1924: 237) was writing about the Eskimo living in north Bering region in the early Quaternary. Not only the archaeological material available to the JNPE members was meager but future heuristic potential of archaeology was hardly anticipated by them at all. Members of the Jesup team had also worked before the linguists learned how to use their materials for dating and stratification of prehistoric connections. A hundred years ago, physical anthropology also was unable to provide the researchers with tools adequate for the study of long time interaction between several different populations. Population genetics simply did not exist.

Against such a background, the attempts of Boas, Bogoras and Jochelson to apply the folklore data for the purpose of historical reconstructions were not, perhaps, too far below the level of more recent studies.

Already in his important early monograph (Boas 1895), 'Boas succeeded in establishing the diffusion of complex tales and characteristic episodes over wide areas. The mythology of each tribe was shown to be a product of historical development, its original form having been modified by assimilation and accretions from various sources' (Lowie 1908: 97). However, filling enormous gaps in our knowledge of native mythologies, Boas and his co-workers were not still realizing that the degree to which separate traditions had been studied remained too uneven and the geographical dimensions of the research too narrow in relation to problems to be resolved. The particular aim of the JNPE research was reconstruction of historical processes that ultimately created the cultural and linguistic situation in the Northern Pacific region known at the time of the first European contacts. But a large part of data on the Athabaskan, Yupik, Inupiaq, Salish, Even (Lamut), Ainu, Nivx (Gilyak) and Lower Amur folklore that became available during the 20<sup>th</sup> century was either recorded after major JNPE participants had already passed away, or the data which had been gathered by others remained unknown to them. The materials on Western and Southern Siberia were completely beyond the scope of the Jesup research, though they contain extensive parallels with American mythologies. In the early 20<sup>th</sup> century the rich Japanese and Ryukyuan folklore, besides 'Kojiki', remained also inaccessible for those who did not command Japanese, and the basic sources on the Ainu folklore had not yet appeared. Most of the Central and South American Indian folklore was published between 1925 and 1995. Therefore the Circum-Pacific mythologies to the south of the line between Hokkaido and California, indispensable for understanding the position of North Pacific traditions in a wider context, were largely unavailable for the Jesup team.

The Jesup team suffered the same disadvantage as all researchers who worked in the pre-computer epoch. Boas, Jochelson, and Bogoras could apply only the most elementary statistical methods and could not operate really big databases. This shortcoming was especially damaging for physical anthropology (see Krupnik and Fitshugh 2001) but it also blocked the progress of folklore studies.

During the first decades of the 20<sup>th</sup> century several American anthropologists followed Boas' advice to study the area spread of the motifs and to do it as far as the corresponding areas were continuous. The amount of data accumulated this way was impressive and the surveys themselves certainly useful (e.g., Demetracopoulou 1913; Gayton 1935a, 1935b; Reichard 1921; Schmerler 1931; Waterman 1914) but the analytical results were modest in comparison with the efforts. A late (and example) case of such a research is Stith Thompson's paper on the spread of the Star-husband myth in North America (Thompson 1965). Thompson tried to reveal how particular motifs were borrowed or inherited. Not suggesting any precise assessments of absolute time for such events, he clearly thought about hundreds, even dozens of years, not about millennia, hence you observe his attention to exact dates when this or that text was first recorded by the Europeans. As Claude Lévi-Strauss (1968: 191) noticed, bringing into consideration South American parallels (certainly known to Thompson) made shaky many conclusions received on the basis of study of the North American materials alone, but the drawing of such parallels into the study would undermine the very foundation of the research because any cultural links of this kind between North America and Brazil could hardly be later than the epoch of the peopling of the New World. We cannot reconstruct so distant events of prehistory, we deal there only with the processes.

Neither structural (Lévi-Strauss and his direct followers, *e.g.*, Désveaux 1984) nor Freudian (Dundes 1962, 1988) or Jungian (Radin 1956) explanations for the existence of similar motifs in different Amerindian and non-Amerindian traditions have been ever really popular among the Americanists themselves and do not concern us now. Gerardo Reichel-Dolmatoff (1971, 1975) with his pan-sexualist interpretation of North Andean and Amazonian cultures was influential but he was a Boasian in his comparative studies revealing Mesoamerican parallels in mythology of the Kogi of Sierra Nevada (1985). It is more interesting that Lévi-Strauss himself was far from being sterile in this respect. A large series of structures and images shared by geographically distant traditions that he had found in native American mythology is a valuable result of his study, let its aim be completely alien for the cause of historical reconstructions. Moreover, Lévi-Strauss (*e.g.*, 1966: 326, 376) recognized, in contradiction with his general approach, that similar elements in different mythologies did evidence the historic connections between the traditions.

Much more direct connection to the topic of present research had the work of the scholars, mainly the Europeans, who addressed the American mythologies in search of parallels for the Old World materials known to them, considering such parallels being produced by the common and early origin of corresponding traditions without much pondering on how could the mythological motifs survive during such an immense period of time. The patterns of distribution of common elements across the Old and the New Worlds dictated the direction of the studies themselves. One direction was (and remains to be) connected first of all with the comparison of Eurasian and American versions of the Earth-diver myth, usually ignoring the South Asian and Southeast Asian versions (Count 1952; Napolskikh 1991). A particular branch of the 'Central Eurasian - American' studies was the cross-cultural research on the ethnoastronomy. Besides two papers of William B. Gibbon (1964, 1972), largely based in its Eurasian part on the pioneer comparative research of Grigori Potanin (1883), some little known works of V. Nikonov (1980) are of interest. Another group of scholars, mostly specialists on Chinese, Japanese, and Oceanic cultures, tried to reveal the spread of motifs across the Circum-Pacific region (Erkes 1926; Lessa 1961; Mänehen-Helfen 1936; Matsumoto 1928). The extensive publications of Gudmund Hatt (1949, 1951) and Katharine Luomala (1940) with a detailed comparison of a series of motifs common to the Americas and to the Old World (mostly the Southeast Asia and Oceania) preserve their value till now.

Many other European and Latin American comparative works on the mythology of American natives, written in the 20<sup>th</sup> century, especially in its early decades, can still be used as sources of information on the area distribution of motifs (*e.g.*, Lehmann-Nitsche 1930, 1935, 1936, 1939; Metraux 1932, 1944, 1946a, 1946b, 1948a, 1948b, Tello 1923), though the ultimate aim of such a research was not, perhaps, totally clear for their authors themselves. In German Americanistics this direction of studies, deeply rooted just in German tradition (Dänhardt 1907–1909), survived for a long time (Zeller 1983; Zerries 1954, 1969, 1984), and in Latin America it even had a new impulse in the 1990s (*e.g.*, Blixen 1990, 1992, 1994; Margery Peña 1994, 1995). It should be remarked, of course, that for most of the linguists and ethnographers, the mapping of motifs was more like a passtime along with their main scientific activity.

In the mid-20<sup>th</sup> century the hypothesis of the cross-Pacific voyages was especially popular. Two famous Americanists, both Swedish, used it to explain similarities between geographically very distant, but quite specific and complex, sets of similar motifs. Anna Birgitta Rooth was the first to discover extended parallels between South Californian and Classical Japanese cosmologies (Rooth 1957: 500–502) while Henry Wassen (1940) considered the black slaves as probable transmitters of agricultural myths between Tropical America and Micronesia. None of them could suggest a convincing mechanism of re-

placement of traditional mythology with the new one in result of the chance and superficial contacts (if such contacts had place at all).

The major shortcoming of the comparative research up to the 1980s or so, was the same as during the Jesup times, *i.e.*, the lack of the adequate data on all the territories of potential interest, first of all on the mythology and folklore of most of the Latin American Indians. Many anthropologists happened to find parallels in the images and narratives recorded in the different corners of the New World which, because of the enormous distance between them, seemed enigmatic. Without complete and adequate database it was impossible to explain seemingly unique links between Mesoamerica and Central Andes (Krickeberg 1928), Eastern Arctic and Orinoco Delta (Zerries 1954: 346, 376), the Southeast and Lower Central America (Rands 1954: 79–81), Plains and Eastern Ecuador (Lowie 1940: 422).

In the late decades of the 20<sup>th</sup> century two large-scale projects were realized. John Bierhorst, the Canadian specialist on Mesoamerican and Algonquian cultures, created an extremely successful guidebook on the mythologies of the New World which in compact form gives a simplified but not a distorted view of area distribution of tales (Bierhorst 1985, 1988, 1990). However, the chance remarks of the author about the local American or Asian origin of particular tales (Idem 1985: 7-14; 1988: 15-16, 65) are rather irresponsible and not based on a profound research. Another and much more academic project was realized in the late 1970s - early 1990s by Johannes Wilbert (in collaboration with Karin Simoneau), a Californian anthropologist of German origin who had been doing himself an important research in Venezuela. 4,259 narratives in English translation which represent the complete available corpora of texts recorded among three dozen groups of South American Indians, supplied with the motifs indexes, is one of the greatest collection of published folklore materials ever made available for the students (Wilbert 1970-1992). Wilbert's publication made much more convenient the cross-cultural study of South American mythology. However, the collection included only the data on the so-called marginal tribes while rich Amazonian and Andean folklore remained not so easily accessible for those who do not study South American cultures professionally.

A persistent though not always visible tendency in the development of the study of Amerindian mythology and folklore in their relation to other cultural regions was a change in the balance of power between functional and historical approaches. As it was told above, Malinowski's (1926) ideas about what the primitive mythology was and why it could be interesting for the researcher were not a denial of Boas' views but rather an attempt to divide the labor. If we are eager to understand the function of myth in the context of a given culture, we should address Malinowski. If we want to know the long-distance (in time and space) cultural interaction, to use folklore data for reconstruction of the past, we sympathize to Boas. In both cases we can study the same set of data

but in different aspects and with a different purpose. However, Malinowski's (1948: 63–64) denial to see the myths as 'survivals' is sometimes ambiguous. It is not clear if he speaks about the interpretation of texts by the audience and retellers, or about emergence of texts on the basis of something else than other texts, borrowed from earlier generations or from the neighbors. Malinowski, as well as his followers, had no difficulty in revealing connection of myths with practical needs, social and ecological environments, but neither he nor most of the later researchers never tried to understand to what a degree such a connection had causal nature. The advocates of psychoanalytic approach to myth were correct considering that functional interpretations of the origin of these or that sets of motifs are justified as far as the peculiarities of a particular myth correlate with the unique traits of a given culture which are not found in other cultures (Dundes 1962: 1035).

Three decades ago, Francis Utley (1974) concluded that 'the problem of migration in folktale need no longer be diffusionist or evolutionist reductionism. It should be careful study of tale clusters...'. To finish the phrase we would suggest the following wording: 1) on a transregional, ultimately global scale; 2) using statistical methods; 3) correlating results with the data on archaeology and population genetics.

Much more direct connection to the topic of present research had the work of the scholars, mainly the Europeans, who addressed the American mythologies in search of parallels for the Old World materials known to them, considering such parallels being produced by the common and early origin of corresponding traditions without much pondering on how could the mythological motifs survive during such an immense period of time. The patterns of distribution of common elements across the Old and the New Worlds dictated the direction of the studies themselves. One direction was (and remains to be) connected with the comparison of North Eurasian and North American materials, first of all the different versions of the Earth-diver myth (Count 1952; Napolskikh 1991). The data on the spread of the same motif in South and Southeast Asia have been usually ignored. Much less attention was acquired by the 'Battle of dwarfs and cranes', a specific and complex motif containing in itself an entire cosmology in a compressed form. The corresponding research of Y. H. Toivonen (1937) is known almost exclusively to the 'uralists'. Though in its American part Toivonen's paper was based not on original publications but on an earlier review of Richard Dangel while the South American and Chinese folklore remained outside of its scope at all, Toivonen discovered an impressive series of distant mythological links using Finnish, Swedish, Russian and other publications mostly unavailable for the Americans because of the language barrier. A particular branch of the 'Central Eurasian - American' studies was the cross-cultural research on the ethnoastronomy. Besides two papers of William B. Gibbon (1964, 1972), largely based in its Eurasian part on the pioneer comparative research of Grigori Potanin (1883), some little known works of V. Nikonov (1980) are of interest.

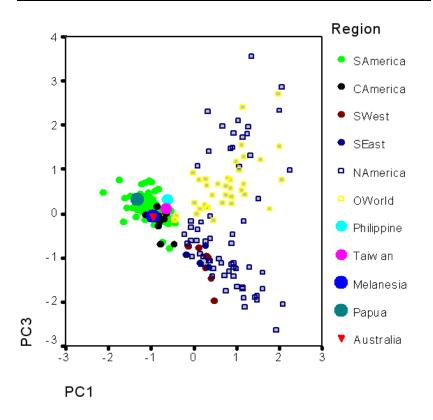
Another group of scholars, mostly specialists on Chinese, Japanese, and Oceanic cultures, tried to reveal the spread of motifs across Asian and American parts of the Circum-Pacific region (see, *e.g.*, Erkes 1926). The extensive publications of Gudmund Hatt (1949, 1951) and Katharine Luomala (1940, 1963) which contained a detailed comparison of a series of motifs common to the Americas and to the Old World (mostly the Southeast Asia and Oceania) preserve their value till now.

A principal component factor analysis of our folklore-mythological database has yielded the following results.<sup>2</sup>

## 'Melazonian' Folklore-Mythological Complex

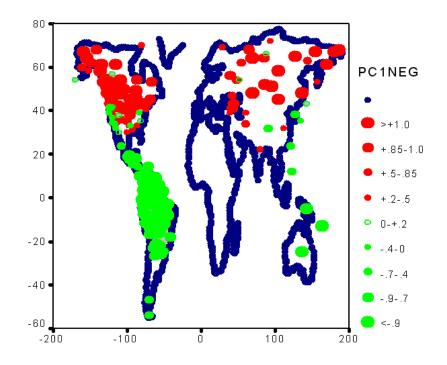
First of all, the distribution of Principal Component 1 factor scores indicate the presence of a significant set of common motifs in the mythologies of South and Central America and South Pacific (especially, among the ones of Melanesia and Amazonia). Note that the presence of very considerable common cultural traits in the societies of Melanesia and Amazonia was noted long ago, and their number and salience are so great that a neologism 'Melazonia' has been coined to designate this phenomenon (see below). As can be seen in Fig. 1 folklore-mythological traditions of South Pacific fall squarely in one cluster with the ones of South and Central America. Note also the closeness of the Southwestern mythologies to this cluster.

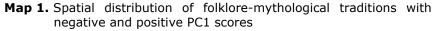
<sup>&</sup>lt;sup>2</sup> Only those motifs which occur both in the Old and the New World were left in the database for this analysis.



**Fig. 1.** Folklore-mythological traditions of the New and Old World *Note:* PC1 – Principal Component 1 Scores; PC3 Principal Component 3 Scores. *Source:* Principal Component analysis of the above described folklore-mythological motif database.

The spatial distribution of folklore-mythological traditions with the highest negative PC1 scores looks as follows (see Map 1):





Note: PC1 - Principal Component 1 Scores.

*Source:* Principal Component analysis of the above described folklore-mythological motif database.

The motifs with top PC1 negative loadings form a few connected sets, which suggest certain possibilities for the reconstruction of some features of 'proto-Melazonian' mythology brought to the New World.

One such set of interconnected motifs belongs to the 'Paradise Lost' group: first of all,

H4. Death: Shed Skin	(D1889.6): Those who have shed their skins be-
come immortal (young). <sup>3</sup>	Cf. Thompson A1335.4. Origin of death when

<sup>3</sup> In the New World and the part of the Old World adjacent to it this motif is found in Melanesia (<u>Trobrian</u> [Malinowski 1926: 81–83; 1948: 104]; <u>Oba</u> [New Hebrides], [Suas 1912.5: 44]), Australia (<u>Unidentified</u> [Bates in Waterman 1987: 86]; <u>Karajeri</u> [Waterman 1987: 86]), Taiwan (<u>Atayal</u> [Norbeck 1950, no 19: 31]), among the <u>Ainu</u> (Batchelor 1927: 146, not in the 'Paradise Lost' context), in Arctic (<u>Baffin Land</u> [Boas 1901: 226, not in the 'Paradise Lost' context]), in Coast-Plateau Area (<u>Klamath</u> [Gatschet 1893: 103–104, repr. Judson 1997: 38–39]), Northern early people put on new skins. Child fails to recognize mother, who puts old skin back on. D1889.6

H5A. Snakes mortal, men not: Snakes <u>etc.</u> are counterposed to men (*cf.* serpent given immortality instead of man). Cf. Thompson A1335.5.

Origin of death: serpent given immortality instead of man. Renews his skin; A1319.12.1. Why man does not change the skin: ancient contest lost by toad, representing man, won by lizard.

H30. The Wrong Choice: Meeting two women who come together or in succession, man has to choose one. Cf. Thompson A1335.3.

Origin of death from unwise choice. Choice between two bundles, one containing tempting articles, the other everlasting life. People choose the large bundle and lose everlasting life.

Another group includes a number of motifs centered around F38. Women Lose their High Position: in the beginning of times or during a certain period in the past, women's social and/or ritual position was higher than that of the men; women played the role of intermediaries between men and spirits. Cf. Thompson A1372.9. Why are women subservient to men?

F44. Women and Men Separate: Women and men quarrel and separate.

F39. Women are Punished: Men deprive women of their leading position in the ancestral community; suppress their attempt to acquire the leading status or to break the ritual rules.

F43. The First Women Disappear: The women of the ancestral community kill or abandon the men.

F40. Male Leader of Women. An anthropomorphic male or an androgen leads away the primeval women.

Andes (Embera [Wassen 1933: 107, 110]; Yupa [Villamañan 1982, no. 1: 19]), Southern Venezuela. Sanema Wilbert 1963: 232–233; Orinoco Delta. Warao Wilbert 1970, no. 145: 308–309, Guiana (Domenica Caribs Taylor 1951: 274; Tamanac Goeje 1943, no. d29: 117; Roth 1915: 150–151; Locono Roth 1915: 150; Kariña Brett 1880: 107–108; Kaliña Goeje 1943, no. b1, d29: 26, 117; Hixkaryāna, Derbyshire 1965: 27; Aparai (Rauschert 1967, no. 5: 180; Arikena Kruse 1955, no. 15: 409, Western Amazonia Secoya Cipolletti 1988, no. 9: 73–75; Shuar: Pelizzaro 1993: 53, 170–171. NW Amazonia. Karijona: Schindler 1979, no. 3: 61–62; Vaupes area (group not specified) Brüzzi 1994: 71; Ufaina Hildebrand 1975, no. XXIX: 360–361; Letuama Palma 1984: 167–168; Barasana S.Hugh-Jones 1979, no. 1B, 1C: 185, 264, 265; 1982: 196–197; Tucano Fulop 1954: 113–114, 125; Tucuna: Nimuendaju 1952: 135, 136; Yagua: Powlison 1993, no. 13: 47. Central Amazonia. Maué Pereira 1954: 126; 1980(2): 733; Katawishi (Teffé Iake) Tastevin 1925: 190.

Eastern Amazonia. <u>Urubu</u> Huxley 1956: 92–93 in Weiss 1975: 486–487. Montaña. <u>Asháninca</u> (River Campa) Weiss 1975: 407–408; <u>Machiguenga</u> Baer 1984: 154, 228; Córdova-Ríos and Lamb 1971: 122–123; <u>Cashinahua</u> d'Abreu in Koch-Grünberg 1921: 232; in Métraux 1948a: 29–30. Southern Amazonia. <u>Kayabi</u> Grünberg 1970: 163; <u>Trumai</u> Monod Becquelin 1975, no. 9: 65–66; <u>Kamaiura</u> Münzel 1973: 148–149. Araguaia. Aytai 1979: 10–11. Eastern Brazil. <u>Cayapo</u> (Shikrin) Wilbert and Simoneau 1984, no. 176: 514–515. Chaco. <u>Ayoreo</u> Wilbert and Simoneau 1989, no. 69, 72: 118–121; <u>Mataco</u> Wilbert and Simoneau 1982, no. 122: 231; <u>Nivaklé</u> Wilbert and Simoneau 1987, no. 238: 560.

F41. Men Kill the Women. The men of primeval community kill the women
because of the latter's unsocial behavior.
F45. The Amazons. There are (or were) women who live(d) apart from men
in their own village(s). <sup>4</sup> Cf. Thompson F565.1. Amazons. Women warriors.
F566.2. Land where women live separately from men.
F42. Men Abandon the Women. Men feel themselves offended by women,
abandon their wives or sisters.
F43A. The First Women Disappear. A. They kill or transform the men. <sup>5</sup>
The women of the ancestral community kill or transform the men.
F16. Men and Women. Change of Biology: In the beginning, men possess
women's biological traits and vice versa. Cf. Thompson A1355.3. Previously
men menstruated.
women's biological traits and vice versa. Cf. Thompson A1355.3. Previously

A group of solar and lunar motifs<sup>6</sup> is strongly connected with all the sets above as in 'Melazonia', they systematically occur in the same texts with the motifs from the groups above forming certain logical unity within those texts. Melazonia is also characterized with a rather specific cosmogony whereby there is no need to explain how the earth or people were created, as they are implied to have always existed, and the mythological history starts with people appearing on the earth surface from another layer of the universe, typically from beneath the earth.<sup>7</sup>

On the second stage, the factor analysis was performed for only those motifs which had positive PC1 loadings in the first factor analysis.<sup>8</sup> Only those motifs which occur not less than in one Siberian tradition and in not less than 3 New World traditions were left. The analysis was aimed at the separation of motifs brought by different migration waves (accomplished by bearers of different genetic markers).<sup>9</sup>

<sup>&</sup>lt;sup>4</sup> Note that the Melazonian version of this motif is very different from its West Eurasian version. In the latter the main emphasis is made on the warrior qualities of the Amazons (note also that the Greek Amazon tales just reflect to a considerable extent the historically and archaeologically attested Scythian institution of female warriors). In the former the emphasis is on the fact of women living separately from men. Hence, here we are in fact dealing with two different motifs showing just some superfluous resemblance.

<sup>&</sup>lt;sup>5</sup> The women of the ancestral community kill or abandon the men.

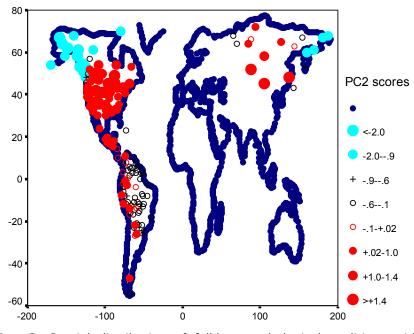
<sup>&</sup>lt;sup>6</sup> A35. Dirty Moon; A31. The Incestuous Moon; A22. To the Sky from the Bonfire; A8. Sun and Moon Fight.

 <sup>&</sup>lt;sup>7</sup> E5A. People from Other Cosmic Levels. A. From the Underworld; E5B B. From Small Enclosure.
 <sup>8</sup> This was necessary to eliminate (at least partly) the 'B-factor' influence.

<sup>&</sup>lt;sup>9</sup> We have not included in the analysis either the 'Ural-Amerindian' motifs which have been shown to be brought to Northern America by a separate migration wave around 10,000 BP, and whose highest concentration is observed among the Uralic populations, on the one hand, and in mid North America, on the other (they are not found either in Beringia, or south from Rio Grande).

## Circumgobi-Amerindian Folklore-Mythological Complex

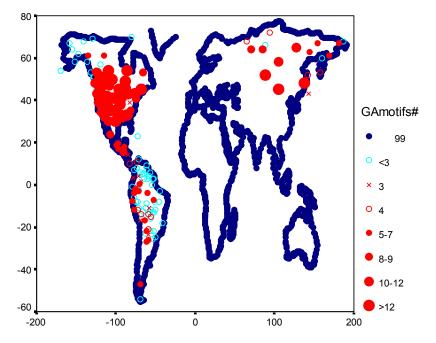
The factor scores for the PC2 have the following geographic distribution (see Map 2):



**Map 2.** Spatial distribution of folklore-mythological traditions with negative and positive PC2 scores

*Source:* Principal Component analysis of the above described folklore-mythological motif database.

As one can see, this factor analysis detects the presence in the part of the world under consideration of two 'competing' complexes of folklore-mythological motifs. Motifs of one of them have positive factor loadings (see Map 3).



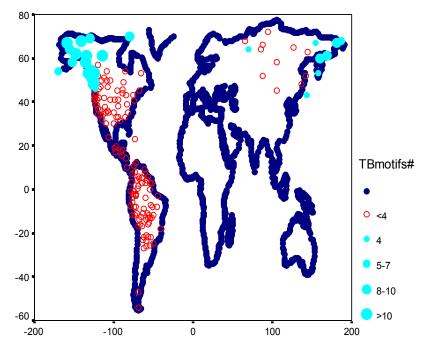
**Map 3.** Spatial distribution of motifs with top highest PC2 positive loadings ('Circumgobi-Amerindian motifs') *Note:* see Appendix 2 for details.

In addition to the Amerindian folklore-mythological traditions they tend to be found in especially high numbers in South Siberia and North-East part of Central Asia around the Gobi Desert. That is why we decided to denote the respective motif complex as 'Circumgobi-Amerindian'. In the New World they are found in especially high numbers in the middle part of North America, but they are also found in substantial numbers in Central America and in such parts of South America as the Andes, Gran Chaco and Patagonia. These motifs are very rarely found in the extreme North-East Asia, and the extreme North and North-West America (in Arctic, Subarctic and along the North-East Coast).<sup>10</sup>

<sup>&</sup>lt;sup>10</sup> These were already the members of the Jesup Expedition who discovered the so-called 'Esko-Aleut wedge' in the transcontinental distribution of some folklore-mythological motifs. As we can see, it appears to observe an even wider wedge (comprising also the Chukotko-Kamchatkan and language speakers, as well as most Northern Na-Dene and the inhabitants of the North-East Coast) in the spatial distribution of another group of folklore-mythological motifs.

## **Transberingian Folklore-Mythological Complex**

On the other hand, just in this zone we find high numbers of motifs with negative PC2 loadings (see Map 4):

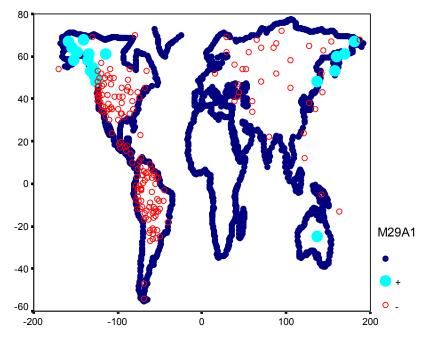


**Map 4.** Spatial distribution of motifs with top highest PC2 negative loadings ('Transberingian motifs')<sup>11</sup>

*Source:* Principal Component analysis of the above described folklore-mythological motif database.

As one can see, these motifs are found in high numbers on the both shores of the Bering Sea and the adjacent coasts, but are very rarely recorded elsewhere; hence, we denote the respective mythological complex as 'Transberingian'. This complex was already discovered in the late  $19^{th}$  – early  $20^{th}$  century by the members of the American-Russian Jesup Expedition. Its core is constituted by the so-called 'Raven Cycle', and it is not surprising to see that the highest negative PC2 score in our factor analysis belongs to 'Raven as a Trickster' motifs, which have the following overall distribution (see Map 5).

<sup>&</sup>lt;sup>11</sup> For the list of 20 'Transberingian' motifs with the top highest negative PC2 loadings see Appendix 1.



Map 5. Folklore-mythological traditions with raven as a typical trickster

Source: the above described folklore-mythological motif database.

Note also that this is through the raven as a trickster that, for example, the following motifs (with high negative PC2 loadings) are integrated in the respective complex:

C19D. Acquisition of Sun. D. Child: The primeval ancestors acquire with difficulty the hidden or stolen sun. Person (Raven, besides Quileut) Child asks and receives celestial bodies to play with.

B38. Painting is Ruined: Someone paints birds or animals or they paint each other. It is done against the original plan or participants' expectations. Cf. Thompson A2217.1. Birds painted their present colors.

A26. Pretended Baby Gets Valuables: Trickster turns into a small object, a creature, or a baby boy. A woman either adopts the boy or is impregnated getting in touch with the object or creature and gives birth to a boy. The boy acquires his real shape, takes away valuables.

M18C. Trickster's Jaw Injured: Person steals bait or fish from fishhooks; his bill or jaw gets broken off or otherwise injured. Besides the Koryak: people keep it in their lodge, person gets it back. Cf. Thompson J2138.

F65C. The False Burial. C. Trickster Greedily Eats Alone: Man or woman pretends to die, is abandoned on a burial place, realizes his/her hidden desire. Man pretends to die because he does not want to share food with the others and eats it alone at his burial place. Cf. Thompson K1867. Trickster shams death to get food.

In general 14 out of 20 motifs with the highest PC2 negative loadings appear to belong to the Raven Cycle, or to be connected with it (see Appendix 1).

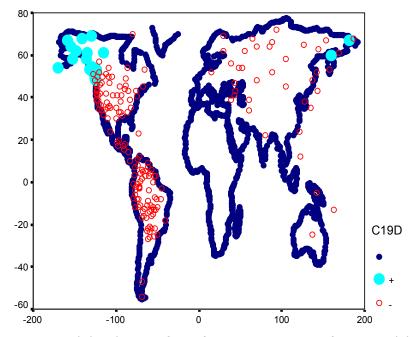
Indeed, the role of a trickster is played in these motifs mostly by the Raven<sup>12</sup>, whereas these motifs are mostly concentrated in the Transberingian zone (see Map 6 and footnote below).<sup>13</sup>

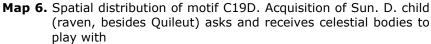
<sup>&</sup>lt;sup>12</sup> E.g., motif A26. Pretended Baby Gets Valuables motif has the following concrete realization. The Central Yupic: hunters do not give meat to old woman; she hides the light, is beaten, dies; Raven is sent to get light; Milky Way is his tracks; light owner's daughter comes to get water, Raven turns into wooden splinter, falls into her pail; she brings it home, it turns into little boy; asks a ball of light to play with, turns back into Raven, carries it away; at home breaks it, light fills the air (Krenov 1951: 193–195).

<sup>&</sup>lt;sup>13</sup> At least in the part of the world under consideration:

B38. Painting is Ruined: Yukaghir: Jochelson in Slobodin and Slobodina 1998: 105; Jochelson 1926: 275; Jochelson 1900 [1926]: 327; Nikolayeva et al.: 27-31; Koryak: Zhukova 1988 no. 49: 173; Asian Eskimos: Menovschikov 1972: 53-54; 1985, no 6: 32-33; Kodiak: Golder 1903, no. 10: 98-104; Chugach: Birket-Smith 1953: 64; North Alaska Inupiaq: Lucier 1958, no. 4 (Noatagmiut): 92-93; Gubser 1965: 250 in Kleivan 1971 (Nunamiut): 19-20; Mackenzie Eskimo: Jenness 1924, no. 20: 47; Ostermann 1942: 106-107; Copper: Jenness 1924, no. 44, 45: 71; Rasmussen 1932: 223; Caribou: Rasmussen 1930b: 87-88; Netsilik: Rasmussen 1931: 399; Iglulik: Boas 1901, no. 19 (west coast of Hudson Bay): 320; Rasmussen 1930a: 277; 1930c: 39-40; Koksoagmiut: Hawkes 1916: 160: 15; Turner 1894: 262-263; Baffin Land (Cumberland Sound): Boas 1888: 641; 1901–1907, no. 39: 220–221; Polar Eskimo: Kroeber 1899: 174; West Greenland: Kleivan 1971: 13; SE Greenland: Kleivan 1971: 12-13; East Greenland: Kleivan 1971: 11-12; Thalbitzer 1923, no. 279: 529-530; Kutchin: McKennan 1965: 92; Schmitter 1910: 26; Upper Tanana: Rooth 1971: 310; Athna: Smelcer 1997: 23-24; Tahltan: Teit 1919-1921, no. 10: 208-209; Slavey: MacNeish 1955: 37; Chipewyan: Birket-Smith 1930: 89; Boas 1916: 665; Lowie 1912: 184-185. Eyak: Smelcer 1993: 69-70; Haida (Skidegate): Swanton 1905: 128; Bella Coola: Boas 1895, no. 1: 241; 1916: 665; Mcliwrath 1948(1): 386; Kwakiutl: Boas 1910, no. 18, 21: 233, 287-297; Nootka (Newettee): Boas 1916: 665. Comox [Transformer paints all the birds; Raven wants to be made very beautiful; finally he makes the deity tired, who paints him black]: Boas 1916: 665.

A26. Pretended Baby Gets Valuables: <u>Kodiak</u>: Golder 1903, no. 6: 85–87; Central <u>Yupic</u>: Krenov 1951: 193–195; Nelson 1899 (Unaligmiut): 460–462; <u>Aleut</u>: Veniaminov 1840(III): 47 in Lyapunova 1984: 26–27; North Alaskan <u>Inupiaq</u>: Gubser 1965: 35–39; Hall 1975, no. EH6 (Noatak): 83–85; Lucier 1958, no. 3: 92; Rainey 1947 (Point Hope): 269; Spencer 1959 (Tareumiut): 385; <u>Mackenzie</u> Delta Eskimo: Ostermann 1942: 70–73. <u>Kutchin</u>: McKennan 1965: 90–91; Schmitter 1910: 26; Jetté 1908–1909: 304–305; <u>Ingalik</u>: Chapman 1914, no. 5: 22–26; <u>Tanaina</u>: Osgood 1937: 183–184; Smelcer 1993: 111; Vaudrin 1969: 43–44; Upper <u>Tanana</u>: Brean 1975: 37–41; McKennan 1959: 190–191; Smelcer 1993: 111; <u>Tanana</u>: Smelcer 1992: 31; <u>Ahtna</u>: Smelcer 1997: 19–21; <u>Tagish</u>, Inner <u>Tlingit</u>: Cruickshank 1992: 42–43; <u>Tagish</u>: McClelland 1987: 255–257; <u>Kaska</u>: Honigmann 1949: 215; <u>Tahltan</u>: Teit 1919–1921, no. 5: 204–205; <u>Chipewyan</u>: Bell 1903, no. 2: 79. <u>Eyak</u>: Birket-Smith, Laguna 1938: 251, 259–260; <u>Tlingit</u>: Golder 1907c: 292–293; De Laguna 1972: 853–856, 860–862; Smelcer 1993: 31–32; Swanton 1909, no. 1, 31: 3–4, 81–82,





Source: the above described folklore-mythological motif database.

F65C. The False Burial. Trickster Greedily Eats Alone: <u>Chukchi</u>: Bogoras 1902, no. 10: 648; Baboshina 1958, no 35: 93–95; <u>Koryak</u> (Karaga group): Zhukova 1988, no. 38: 143–145; Maritime <u>Koryak</u>: Jochelson 1908, no. 65: 224; <u>Alyutortsy</u>: Kibrik *et al.* 2000, no. 2: 21–24; <u>Kamchadal</u>: Menovschikov 1974, no. 167, 168 [=Jochelson], 169: 508–512; Jochelson 1961, no. 21: 153–154; <u>Yukaghir</u>: Bogoras 1918, no. 4: 48–49. <u>Asiatic</u> Eskimo: Kozlov 1956 (Chaplino): 190; Menovschikov 1985, no. 33, 34, 101: 76–78, 244–245. <u>Koyukon</u>: De Laguna 1995, no. 37: 266 (distant variation); Jetté 1908–1909: 363–364; <u>Tanaina</u>: Rooth 1971: 189, 208, 235; <u>Tlingit</u>: Boas 1895, no. XXV/1: 315; <u>Tsimshian</u>: Boas 1916, no. 17: 72–73; <u>Kwakiutl</u>: Boas 1910, no. 12: 135–141; 1916, no. 40: 707; <u>Comox</u>: Boas 1895, no. 4: 73–74.

p. 374; <u>Haida</u>: Barbeau 1961: 83–85; Swanton 1905: 116–118, 142; <u>Tsimshian</u>: Barbeau 1961: 75–82; Boas 1902: 10–16, 21–23; <u>Bella Coola</u>: Boas 1895, no. 1: 242; McIlwraith 1948(1): 298, 301; <u>Bellabella</u>: Boas 1916, no. 1: 883; <u>Kwakiutl</u>: Boas 1910, no. 17: 233–235; <u>Nootka</u>: Boas 1895, no. XVIII/1 (Tlatlasikoala Newetee): 173–174; 1916, no. 1: 888–892; <u>Chilcotin</u>: Farrand 1900, no. 2: 14–15.

M18C. Trickster's Jaw Injured: <u>Koryak</u>: Bogoras 1902: 679; <u>Kutchin</u>: McKennan 1965: 95; <u>Upper Tanana</u>: McKennan 1959: 193–194; <u>Tahltan</u>: Teit 1919–1921, no. 33: 224–225. <u>Tlingit</u>: Boas 1895, no. XXV/1: 314–315; De Laguna 1972: 871–872; Swanton 1909, no. 1, 31 [few details]: 8, 84–85; <u>Haida</u> (Skidegate): Swanton 1905 in Boas 1916: 685; <u>Tsimshian</u>: Boas 1916, no. 19: 74–75; <u>Nootka</u> (Tlatlasikoala Newetee): Boas 1895, no. XVIII/1: 172.

The spatial distribution of Transberingian motifs suggests that they appeared in the New World after the penetration to the Western Hemisphere of the Circum-gobi-Amerindian and Ural-Amerindian motifs.<sup>14</sup>

#### **Correlation between Genes and Myths: Tests**

What were our theoretical grounds to expect significant correlations between the spatial distribution of genetic markers and the one of folklore-mythological motifs, as well as that these correlations would be stronger than the ones between the former and the affiliation to language families?

In fact, the point that the distribution of genetic haplogroups may correlate with the distribution of folklore-mythological motifs much stronger than with the one of the languages does not appear to be inexplicable. Indeed, in traditional cultures the role of vertical (from parents to children) transmission of culturally important information (including mythologems) is much more important than in modern societies.<sup>15</sup> Hence, in traditional cultures children would tend to get from their parents not only their genes, but also culturgens/memes/ semes (including mythologems). This would, of course, be frequently almost as relevant for languages children acquire. Note, however, that both genes and myths could quite easily penetrate linguistic borders (and they would tend to do this simultaneously). The mythologems in traditional cultures would tend to diffuse together with genes, but not necessarily with languages.

The most evident channel here are interethnic marriages. If a woman inmarries into a community belonging to another ethnic group, her children (when they become adults) are most likely to speak the language of their father. However, they will not only get from their mother her mtDNA. Their mother will almost inevitably tell them an enormous amount of fascinating stories containing many mythologems of her ethnic group.

On the other hand, a large number of populations of Eurasia underwent language change in the last few thousand years, and, almost by definition, this change was not accompanied by radical replacements of populations. The numbers of language recipients very often far exceeded the numbers of language donors, as happened, for example, with the switch from Gaelic to English in Ireland and Scotland, from Etruscian or Sardinian to Latin, with the Arabization of Egypt, Turkization of Greek-speaking populations of Anatolia (and earlier with the Hellenization of the pre-Greek populations of the same region), Turkization of Finno-Ugric populations of the Volga region, Slavinization of Finno-Ugric populations in many parts of Northern Russia, *etc*.

If the change of language in a certain territory was accompanied by radical replacement of the old population, we have all grounds to expect that within

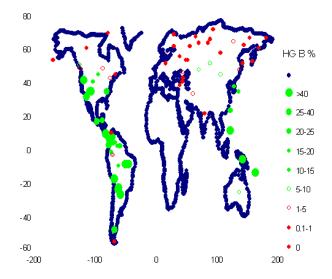
<sup>&</sup>lt;sup>14</sup> The latter are likely to have penetrated to the New World around 10,000 BP.

<sup>&</sup>lt;sup>15</sup> And even if the former children get such information from adults not identical with parents, these adults are by orders of magnitude more likely to be their parents' close relatives (and, hence, to share with them the main bulk of their specific genes) than in modern cultures.

this territory we would be able to detect not only the replacement of the language of the indigenous population, but also the replacement of their genes and their mythologies. However, if the switch to a new language was not accompanied by such a replacement, we have all grounds to expect to find within the given territories both the genes of the indigenous populations and their mythologems (as parents, even after their switch to a new language would tend to try to share with their children the wisdom of their ancestors [including, naturally, sets of mythologems]).<sup>16</sup>

## **Melazonian Complex**

The spatial distribution of folklore-mythological traditions with high PC1 negative scores turns out to be strikingly similar to the one of populations with high frequencies of mitochondrial DNA haplogroup (mtDNA HG) B<sup>17</sup> (see Map 7).



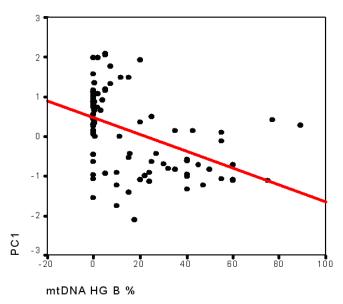
Map 7. Spatial distribution of populations with high frequencies of mtDNA HG B

Sources: see note 17 above.

<sup>&</sup>lt;sup>16</sup> For more details on the correlation between the spatial distribution of genetic and cultural markers see Jones 2003.

<sup>&</sup>lt;sup>17</sup> The data on the frequencies of mitochondrial DNA and Y-chromosome haplogroups in the populations of Eurasia, Oceania and the New World were supplied by the Center for Molecular and Mitochondrial Medicine and Genetics (MAMMAG), University of California, Irvine. We would like to express our deepest gratitude to its Director, Professor Douglas R. Wallace, his colleague, Olga Derbeneva, as well as to the Director of the Ufa Biocenter, Professor Elza Khusnutdinova, for the supplied information.

Against this background it is not surprising to find a significant correlation between mtDNA HG B frequencies in populations and negative PC 1 scores for respective folklore-mythological traditions (see Fig. 2).

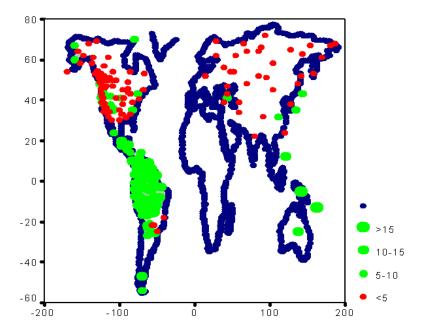


**Fig. 2.** Correlation between mtDNA HG B frequencies and PC1 scores *Note:* Rho = -.51, p < .001.

Sources: see note 17 above.

Quite predictably the spatial distribution of folklore-mythological traditions with high numbers of motifs having high negative PC1 loadings also follows quite closely the spatial distribution of populations with high mtDNA HG B frequencies (see Map 8).

Naturally, we also observe a significant correlation between numbers of 'Melazonian' motifs in local folklore-mythological traditions and mtDNA HG B frequencies in respective populations (see Table 1).



Map 8. Spatial distribution of folklore-mythological motifs with top 40 PC1 negative loadings *Sources:* see note 17.

		N	Number of 'Melazonian' Motifs				
		<5	5-10	10-15	>15		
mt	<5	34	6	1	1	42	
DNA		81.0 %	14.3 %	2.4 %	2.4 %	100.0 %	
HG B	5-10	6	1	1	2	10	
%		60.0 %	10.0 %	10.0 %	20.0 %	100.0 %	
	11-15	1	3		1	5	
		20.0 %	60.0 %		20.0 %	100.0 %	
	>15	6	11	13	3	33	
		18.2 %	33.3 %	39.4 %	9.1 %	100.0 %	
Total		47	21	15	7	90	
		52.2 %	23.3 %	16.7 %	7.8 %	100.0 %	

Table 1. mtDNA HG B % \* Number of 'Melazonian' Motifs (grouped)

*Note:* Rho = .58, p < .001; Gamma = .69, p < .001. *Sources:* see note 17.

The value of Gamma grows especially high with dichotomization (see Table 2).

			Total	
		0-5	>5	Total
mtDNA HG	0-10	42	10	52
В%		80.8 %	19.2 %	100.0 %
	>10	11	27	38
		28.9 %	71.1 %	100.0 %
Total		53	37	90
		58.9 %	41.1 %	100.0 %

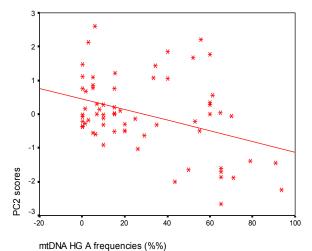
 Table 2. mtDNA HG B % \* number of `Melazonian' motifs (dichotomized)

*Note*: p < .001 (by Fisher's exact test); Phi = .52; Gamma = .82. *Sources:* see note 17.

The motifs with top PC1 negative loadings form a few connected sets, which suggest a certain mythological complex denoted below as 'Transberingian'.

## **Transberingian Complex**

The PC2 scores negatively correlate in a statistically significant way with the frequencies of mtDNA HG A (see Fig. 3).

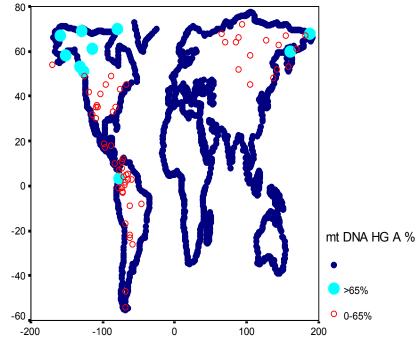


r = -.533, p = .000001.

**Fig. 3.** Correlation between mtDNA HG A frequencies in the sample populations and PC2 factor scores of the respective folklore-mythological traditions

Sources: see note 17.

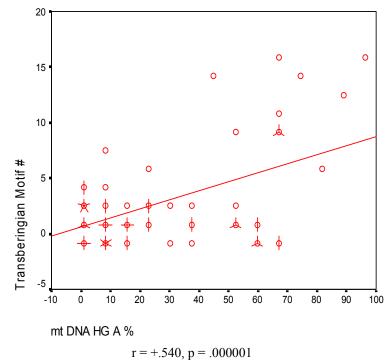
This, of course, implies that the mtDNA HG A frequencies should correlate positively with the presence of 'Transberingian' mythological motifs. Indeed, the spatial distribution of both variables in Siberia and the New World show more or less similar patterns with the highest values just in the Transberingian zone (see Maps 6 above with and Map 9 below).

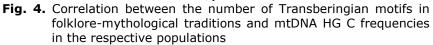


Map 9. Spatial distributions of populations with high frequencies of maternal ancestral lines A (mtDNA HG A), version 1 Sources: see note 17 above.

Indeed, the mtDNA HG A frequency shows a significant correlation with the presence of the 'Transberingian' motifs in folklore-mythological traditions of

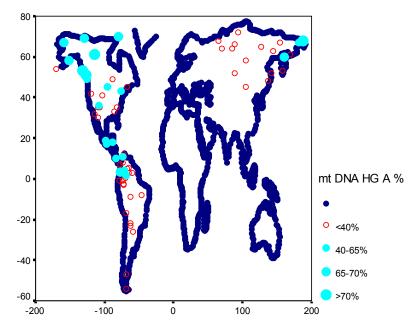
respective populations (see Fig. 4).





Sources: see note 17.

As one can see, though the correlation is significant beyond any doubt, it is not particularly strong. The reason for this becomes quite clear, as soon as we look at a map with a more detailed picture of the distribution of mtDNA HG A frequencies in Siberia and the New World (see Map 10).



**Map 10.** Spatial distributions of populations with high frequencies of maternal ancestral lines A (mtDNA HG A), version 2 *Sources:* see note 17.

As one can see, Central America and the Northern part of South America contain a large number of populations with relatively high mtDNA HG A frequencies. However, their spatial distribution suggests that this genetic marker was brought here by the main ('Clovis') wave of peopling of the Americas (together with mtDNA HG C and 'Circumgobi-Amerindian' folklore-mythological motifs),<sup>18</sup> and, hence, there do not seem to be any grounds to expect that the mtDNA HG A frequencies here would show any significant correlation with the presence of the 'Transberingian' motifs. Consequently, the presence of these populations is bound to bring powerfully down the strength of the correlation in question. On the other hand, the same reasons lead one to expect that the mtDNA HG A sublineages in this population could turn out to be closer to the ones in South Siberia rather than to the mtDNA A sublineages of Beringia. Hence, there are grounds to expect that when the data on mtDNA HG A sublineages become available, a much stronger correlations could be detected.

<sup>&</sup>lt;sup>18</sup> Though, of course, the possibility of its bringing to these areas together with the mtDNA HG B bearers (and, hence, together with 'Melazonian' motifs) cannot be totally excluded.

On the other hand, a much stronger correlation is obtained with the dichotomization of both variables in question (see Table 3).

 
 Table 3. MtDNA HG A % (dichotomized) \* Transberingian motif # (dichotomized) crosstabulation

		Transberingian Motif # (dichotomized)		Total
		1–5	>5	
mtDNA HG A % (dichoto-	0-65 %	55	3	58
mized)	>65 %	1	9	10
Total		56	12	68

*Note:* p = .00000004 (by Fisher's Exact Test, 2-tailed); Phi = r = Rho = + .788; Gamma = +.988, p = .0002

Sources: see note 17.

Thus, as one can see, for Siberia and the New World a very high mtDNA HG A frequency (>65 %) turns out to be a really strong predictor of the presence of a substantial (>5) number of 'Transberingian' motifs in folklore-mythological traditions of respective populations.

\* \* \*

The spatial distribution of Transberingian motifs suggests that they appeared in the New World after the penetration to the Western Hemisphere of the Circumgobi-Amerindian and Ural-Amerindian motifs.<sup>19</sup>

It has been already suggested by geneticists that the 'Arctic' mtDNA HG A was brought to the New World later than the other New World mtDNA HGs. Our analyses seem to support both suppositions. On the other hand, they make it possible to identify what kind of folklore-mythological motifs the bearers of the Arctic mtDNA HG A brought with them.

What is more, not only the mtDNA HG of the newcomers replaced to a considerable extent the mtDNA HGs of earlier populations;<sup>20</sup> the folklore-mythological motifs which they brought with them appear to have replaced as substantially the ones of the previous populations.

Indeed, not only the very high frequency (>65 %) of mtDNA HG A predicts strongly the presence of substantial numbers (>5) of 'Transberingian' folklore-mythological motifs in traditions of respective populations. It predicts almost as strongly the absence of substantial numbers of both Circumgobi-Amerindian and Ural-Amerindian motifs (see Tables 4 and 5).

<sup>&</sup>lt;sup>19</sup> The latter are likely to have penetrated to the New World around 10,000 BP.

<sup>&</sup>lt;sup>20</sup> For the independent evidence for the replacement of the earlier HGs by the 'Arctic A' see, *e.g.*, Hayes, Coltrain, and Rourke 2002.

		Circu	Total	
			(dichotomized) >4	
mtDNA HG A %	0-65 %	26	32	58
(dichotomized)	>65 %	9	1	10
Total		35	33	68

**Table 4.** MtDNA HG A % (dichotomized) \* Circumgobi-Amerindian motifs # (dichotomized) crosstabulation

*Note:* p = .01 (by Fisher's Exact Test, 2-tailed); Gamma = -.834, p = .004*Sources:* see note 17.

# **Table 5.** MtDNA HG A % (dichotomized) \* Ural-Amerindian Motifs N (dichotomized) Crosstabulation (for Siberia and the New World North from Rio Grande)<sup>21</sup>

		Ural-Amerina (dichota		Total
		0–3	>3	
mtDNA HG A % (dichoto-	0-65 %	12	19	31
mized)	>65 %	8	1	9
Total		20	20	40

*Note:* p = .02 (by Fisher's Exact Test, 2-tailed); Gamma = -.854, p = .004*Sources:* see note 17.

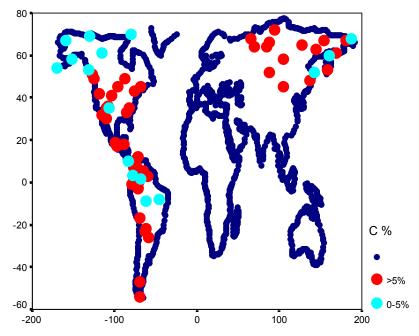
The presence of a relatively homogenous Transberingian 'genetic-mythological' zone characterized by high frequencies of both mtDNA HG A and the Transberingian motifs seems to be accounted for first of all by the fact that they were brought to this zone relatively later with the migrations apparently corresponding to the movement to this area of Dene, Esko-Aleut and Chukotko-Kamchatkan language speakers and replaced to a considerable extent earlier genetic markers and folklore-mythological motifs. But on the other hand, the same fact seems to be additionally accounted for by the functioning up to the Modern Age of the Transberingian communicative network, as in the Holocene the communication through the Bering straits does not appear to have ever interrupted (*e.g.*, Burton *et al.* 1996), and led to additional homogenization of the zone. And the movement through the Bering straits definitely went in both directions, in the framework of which their way to the Old World appears to have been found by both some New World genetic markers (*e.g.*, NRY HG Q3), and apparently some folklore-mythological motifs which were developed

<sup>&</sup>lt;sup>21</sup> It did not appear reasonable to include in the analysis data on cultures of Central and Southern America, as the Ural-Amerindian motifs do not appear to have ever penetrated south from Rio-Grande.

already in the New World (the possibility of the migration of some Transberingian motifs from the New World to the NE Asia [suggested {in a bit exaggerated way} already by the members of the Jesup Expedition] seems to be supported by a higher concentration of these motifs in the New World part of this zone).

### **Circumgobi-Amerindian Complex**

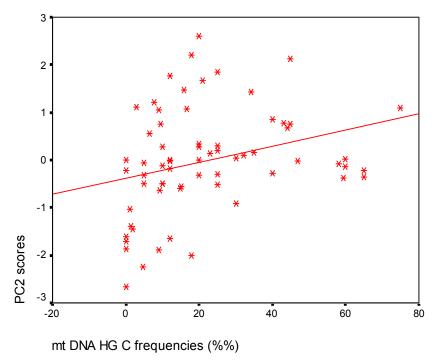
The spatial distribution of mtDNA HG C frequencies (see Map 11 below) follows a pattern showing a significant similarity with the ones of both the positive PC2 loadings (see Map 1 above) and the Circumgobi-Amerindian mythological motifs (see Map 2 above).



Map 11. Spatial distributions of populations with high frequencies of maternal ancestral lines C (mtDNA HG C)

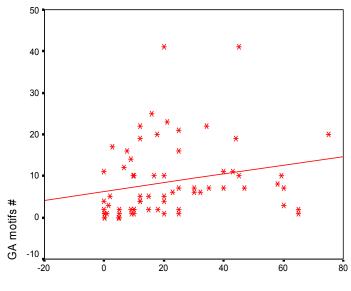
Sources: see note 17.

Hence, it is not surprising that we find significant correlations between mtDNA HG C frequencies, the positive values of PC2 scores and the numbers of 'Circumgobi-Amerindian' motifs in respective folklore-mythological traditions (see Figs 5 and 6).



**Fig. 5.** Correlation between PC2 scores and mtDNA HG C scores in the respective populations *Note:* r = +.32, p = .008; Rho = +.38, p = .002.

Sources: see note 17.



mt DNA HG C frequencies (%%)

- **Fig. 6.** Correlation between the number of Circumgobi-Amerindian motifs in folklore-mythological traditions and mtDNA HG C frequencies in the respective populations
- *Note:* r = +.23, p = .03 (1-tailed); Rho = +.4, p = .001 (1-tailed) *Sources:* see note 17

Sources: see note 17.

The last correlation becomes considerably stronger with dichotomization (see Table 6).

**Table 6.** Correlation between the number of Circumgobi-Amerindian<br/>motifs in folklore-mythological traditions and mtDNA HG C<br/>frequencies in the respective populations (dichotomized<br/>version)

		Number of Circumgobi- Amerindian Motifs		Total
		0–4	>4	
mtDNA HG C %	0–5 %	13	3	16
(dichotomized)	>5 %	16	36	52
Total		29	39	68

*Note:* p = .0005 (by Fisher's Exact Test, 2-tailed); Phi = r = Rho = + .43; Gamma = +.81, p = .0002.

Sources: see note 17.

Note an especially high value of Gamma-coefficient, which reflects the point that though substantial frequency of mtDNA HG C is not a particularly strong predictor of a substantial number of Circumgobi-Amerindian motifs in respective folklore-mythological traditions, the low frequency of this haplogroup predicts low number of these motifs much better, whereas a substantial number of Circumgobi-Amerindian motifs turns out to be a really strong predictor of substantial frequency of mtDNA HG C (in other words, substantial frequency of mtDNA HG C looks as a necessary, but not sufficient condition of the presence of substantial number of Circumgobi-Amerindian motifs in respective folklore-mythological traditions).

The spatial distribution of mtDNA HG C suggests that it has been brought to the New World with the main wave of the peopling of Americas, corresponding to the spread of Clovis and para-Clovis archaeological cultures in the New World. Note that it has been already suggested by Berezkin (2000, 2002, 2005) that a number of Circumgobi-Amerindian motifs were brought and diffused in Americas in the same way (which is also supported by Berezkin with archaeological evidence). Hence, both mtDNA HG C and Circumgobi-Amerindian motifs are likely to have been brought to the New World with the main wave of the peopling of Americas, which makes it possible to reconstruct in some detail the respective mythological system (not less than 11,000 years old).

For the list of 60 motifs with the highest positive PC2 loadings which could be tentatively identified as Circumgobi-Amerindian (see Appendix 2).

#### **Melazonia: Myths and Institutions**

A persistent though not always visible tendency in the development of the study of Amerindian mythology and folklore in their relation to other cultural regions was a change in the balance of power between functional and historical approaches. As it was told above, Malinowski's (1926) ideas about what the primitive mythology was and why it could be interesting for the researcher were not a denial of Boas' views but rather an attempt to divide the labor. If we are eager to understand the function of myth in the context of a given culture, we should address Malinowski. If we want to know the long-distance (in time and space) cultural interaction, to use folklore data for reconstruction of the past, we sympathize to Boas. In both cases we can study the same set of data but in different aspects and with a different purpose. However, Malinowski's (1948: 63–64) denial to see the myths as 'survivals' are sometimes ambiguous. It is not clear if he speaks about the interpretation of texts by the audience and retellers, or about emergence of texts on the basis of something else than other texts that had existed before. Malinowski, as well as his followers, had no difficulty in revealing connection of myths with practical needs, social and ecological environments, but neither he nor most of the later researchers never tried to understand to what a degree such a connection had causal nature. The advocates of psychoanalytic approach to myth were correct considering that functional interpretations of the origin of these or those sets of motifs are justified as far as the peculiarities of a particular myth correlate with the unique traits of a given culture which are not found in other cultures (Dundes 1962: 1035).

The necessity to make a substantiated choice between functional vs. historical approaches to mythology has become a matter of current interest after the publication of the collection of fourteen articles (Gender in Amazonia and Melanesia) edited by a specialist on New Guinea and a specialist on Amazonia (Gregor and Tuzin 2001). Gender in Amazonia and Melanesia is the first book to systematically compare the cultures of Melanesia and Eastern South America. Both Amazonia and Melanesia are rewarding fields of research but they become an enigma when taken together. 'A world apart and separated by forty thousand or more years of human history', they demonstrate so many cultural parallels that a neologism 'Melazonia' has been coined to designate them. These parallels become even more remarkable if we consider that Tropical Africa does not share with 'Melazonia' some of its typical traits. In particular, both Melanesia and South America lack conical clans so important for African social systems. Any explanations of the Amazonian-Melanesian similarity based on migrationist-diffusionist paradigms cannot be taken seriously. The authors are very inventive to suggest other hypotheses. Sometimes their approach reminds Lévi-Straussian mediation which allows step by step to make an insoluble problem less acute. However, the problem itself does not disappear completely.

The contributors to this volume (Gregor and Tuzin 2001) seem to agree that at least some cultures of Melanesia and Amazonia are remarkably similar and that at the same time, Melanesia is a 'cultural template' that 'offers only a partly realization' in Amazonia (Gregor and Tuzin 2001: 91–92). A lot of data are presented in support of this view but the reasons of it still 'remain to be properly understood'.

Gregor and Tuzin believe that the corresponding rituals and myths function in the societies with egalitarian ethos whose political organization is on the level of autonomous communities where 'the unity of groups of men and groups of women is not blurred by competing models of role allocation such as derive from political hierarchy or kinship' (*Ibid.*). In more complex societies the differentiation by age and sex is supplanted by social stratifications and in less complex ones the total number of persons is insufficient for emergence of 'recognized sex and age cohorts' (*Ibid.*: 340). In the societies based on gardening, on one side, and hunting, on another, girls work with their mothers from the early age while boys, incapable to be effective partners of their fathers, spend most of their time by themselves. This facilitates their consolidation into an autonomous part of community with its own subculture. These arguments would make us expect that the societies with the male cults should emerge and persist everywhere where the corresponding economic organization prevails. However, the authors have demonstrated rather the opposite, *i.e.*, that in both Amazonia and Melanesia the system of ritual opposition of sexes and men's monopoly for conventional secret knowledge is not shared by many groups and that it is extremely unstable and after the contacts with cultures of other types disappears even if the traditional forms of economy and everyday life persist.

The circumstances of the abandonment of the male cults and the social consequences of such a process are well studied, for example, by the same Tuzin among the Arapesh. The system is unstable because of the intrinsic contradiction between the institutionalized hostility of genders and personal emotions, of amazing for the outer observer mixture of 'cruelty, inhumanity, oppression, and error, as well as cultural creativity' (Gregor and Tuzin 2001: 330). The society is able to preserve its basic features without preserving the 'fragile flowers' of the male cults. In societies which have rejected the corresponding rituals, 'sexual antagonism has not diminished but has become more individualized' and profane *(Ibid.*: 194). During the millenaristic movements, there were attempts of inversion of the gender relations with women acquiring social leadership or at least the feeling of their moral dominance but all these attempts had but a short-timed success. No reasons for the more cardinal changes of social organization seem to exist in such cases.

The data reviewed in the book help to understand why the last 'typically Melazonian' societies are quickly disappearing before our eyes. It would be appropriate, however, to take into consideration that this process did not begin a couple of decades ago. The modern Amazonian societies, acculturated to a different degree, are not the direct survivals of the pre-contact past. The drawing of ethno-historical data would help to ascertain, how secure and essential is correlation between the male cults and rituals with particular economic activities and forms of social organization. For the authors, such a correlation is of crucial importance. All the inter-regional parallels are explained, after all, thanks to it. Here we abandon, of course, Boas and join Steward with his multilinear evolution based on ecology and economic system as factors which determine social organization and - in a long run and to a different extent - cultural 'superstructure'. Accordingly, many critical remarks which in the late 60s - early 80s were addressed to Steward and to 'cultural materialism' paradigm in anthropology in general would be appropriate in our case too. The most serious is the lack of differentiation between the selective and the generative factors of evolution (Adams 1981; Vayda and Rappoport 1968). The first ones define conditions responsible for promotion of the replication of certain trait (which does not mean by itself that the same replication is impossible under different conditions). The generative factors are responsible for the initial

emergence of the trait, but unfortunately such factors are rarely – and in case of the distant past practically never – known.

There are serious doubts concerning the lack of the corresponding ritual patterns in more complex societies than the Arapesh or the Mehinaku of Upper Xingu. Jonathan Hill writes (Gregor and Tuzin 2001: 46) that in Amazonia and Melanesia hierarchy is explicitly manifested in male-controlled ritual cults that to a large degree oppose and contradict the egalitarian quality of secular social relations. But is not this social egalitarianism of post-Columbian origin? Silvia Vidal (1999, 2000) demonstrated that in the Northwest Amazonia, which is the choice area of the male cults in South America, political systems of confederacy type existed as late as the 17<sup>th</sup> century. Later the local Indians had not only lost political links above the community level but were also influenced by the missionaries for whom the male rituals were one of the favorite targets to be attacked. It does not seem justified to disregard such an early source as Henri Coudreau (1887: 187) who in the 19<sup>th</sup> century described some elements of the male cults which later have disappeared. The Colonial data on Saliva, Achagua and other groups allows us to suggest that the male ritual complex similar to the Eastern Tucanoan existed in the Llanos and on the Middle Orinoco. Abundant archaeological and ethno-historical evidence on these areas proves the existence of the developed social stratification there. Similar information on the Llanos de Mojo in Eastern Bolivia is also well known (Denevan 1966). Though almost all the elements of traditional ideology of the Mojo cultural area had been exterminated by Jesuits in the 17-18<sup>th</sup> centuries, we possess information on the secret male unions and on the use of the giant flutes of the same kind as the sacred musical instruments of the Vaupes area or of the Xinguano and Paresi. This evidence suggests that in Eastern Bolivia the complex societies and the typical Amazonian male cults coexisted. Though for other areas the early ethno-historic information is too fragmentary, it would not be surprising if the male rituals were practiced by, for example, the Tapajo. Even for the Central Andes the topic deserves discussion. There is no information on Amazonianlike male rituals in the late Andean civilizations but, considering the data of iconography, for the Early Horizon and Initial Period (and even for the Early Intermediate Period) such a hypothesis can find arguments in its support.

More objections provoke, however, the thesis about if not total lack but at least rarity of the male rituals in small bands of the hunters-gatherers. Gregor and Tuzin consider the Fuegians and Australian aborigines to be anomalous in this respect and the Bushmen a norm, but the opposite view is hardly less justified. It is known that both Yamana and Alakaluf claimed to adopt many particular forms of their ritual behavior from Selknam (Gusinde 1923–1924: 542; 1926: 287–288; Lothrop 1928: 165) and that the latter were but an across the Magellan strait fragment of extended cultural and linguistic Patagonian unity. The early 20<sup>th</sup> century ethnographic map can be applied to pre-Columbian Pat-

agonia even less than Sioux culture of Black Elk's memoirs to the 15<sup>th</sup> century Plains. Our lack of data on male rituals among Tehuelche and Puelche is easily explainable by the scarcity of any ethnographical information on pre-20th century culture of this area and practical absence of any data at all on the period preceding the adoption of the horse. What we have, however, is the myth about primeval matriarchy and revolt against women's dominance recorded by several authors in the second quarter of the 20<sup>th</sup> century somewhere at the Mapuche-Tehuelche frontier (Downing Desmadryl 1971: 125-126; Keller 1962: 528; Kössler-Ilg 1982: 136). Such myths were intimately related to the male cults in Selknam, Alakaluf and Yamana cultures, so these data provide an argument in favor of the existence of the Fuegian-type male cults also among the Tehuelche. The same is in Chaco. The Chamacoco rituals and myths could be but the last remnant of the practice widely known in the area in the pre-horse period (Wilbert and Simoneau 1987). But even without South American South Cone, Australian data on male cults at the small band level societies is by itself overwhelming.

Considering all this, two corrective remarks seem to be necessary. First, the corresponding ritual complex neither was peculiar to the people who practiced swidden cultivation and lived in autonomous communities nor, speaking about South America, was it known exclusively in Amazonia. Second, at the time of Columbus this complex was known to many societies to the East of the Andes. The  $17-19^{\text{th}}$  century sources do not usually describe rituals, not to say myths, in detail. Many of them report, however, that the women were prohibited to enter ritual structures, to participate in the ceremonies and to know the names of the 'idols'. But to some groups (*e.g.*, Tupinamba) the complex in question almost certainly was unknown.

For Gregor and Tuzin the economy of the tropical forest societies is one crucial factor. Another is the endemic warfare which promotes male solidarity. Here Jivaro (as well as Waorani, Tupinamba, Taiwanese, and many others) again spoil the picture – had not they been no less warlike than Mundurucu or Kiwai?

The authors of *Gender in Amazonia and Melanesia* put much attention to traits and features common to both areas. Most of parallels in mythology and ritual concern the ideas about human body, male and female characteristics and gender relations. Here are: 1) the bull-roarers and big wind-instruments (in Melanesia, also slit-gongs) as abodes of spirits dangerous for the women; using of such instruments as well as costumes and masks in male rituals; 2) myths about the acquisition of sacred objects from under the water and of their emergence from the remains of a slain demon; 3) myths about the matriarchy which ended with the transfer of the power from women to men, stories about the Amazons; 4) myths in which male and female genitals act as separate creatures and are endowed with supernatural properties (this motif is also wide-

spread in North America); 5) the ideas about special role of blood, semen and milk in formation of the child's body, the endowment of these liquids with fantastic properties and providing of one substance with the properties of another. The last feature is characteristic for Melanesia only but the corresponding Amazonian lore could be lost. For example, it is difficult to decide now if Panare (Southern Venezuela) homosexuality as described by Dumont had in past more ritual nature or had it mythological justification.

Because features in question are interlinked and form a complex, further multiplication of common elements inside such a complex hardly strengthens the general cause. However, the Amazonian-Melanesian parallels are not restricted to the 'gender-infected universe' and 'procreative imagery' but include other themes as well. Many mythological motifs are exclusively specific for Melanesia and Eastern South America or at least very typical just for these areas. Chain of arrows or darts leading to the sky, shedding of skin as condition of immortality, survival of flood in a tree with fruits throwing down to know how deep is the water, non-figurative spots on the moon (as a trace of its burning, beating or smearing with a paint), demonic woman who sticks to a man and cannot be torn off, fish emerging from leaves or fruits of a giant tree, rainbow as a serpent, – every one of them and a dozen of others deserve special study. Not less important is the negative evidence: many of mythological motifs which are among the most widespread in Eurasia and North America are not known in Melanesia and rare in South America.

The reliable reconstruction of non-material aspects of culture on archaeological data alone is impossible, and it is difficult to recognize the existence or lack of the male cults in pre-historic societies. We can only affirm that the Europeans have not found any 'typical Melazonian' culture in direct contact neither with Andean and Mesoamerican civilizations nor with complex societies of Indonesia and Philippines. The reason cannot be the level of social complexity itself because, as it has been told above, complex societies with male cults did exist in more distant areas of South America while the autonomous communities of horticulturers which however lacked Amazonian-type male cults and corresponding mythology flourished at the borderlands of the early states (Jivaro and Jicaque may serve as examples). The lack of the corresponding cults and myths among the Jivaro and the development of such a complex among the Eastern Tucano and Arawaks of the Vaupes basin would be difficult to explain addressing slight ecological and economic differences between Indian societies of Ecuadorian Oriente and Southeastern Colombia. The existence of cultures with male cults and specific forms of discrimination of women in the most inaccessible areas of the globe can be due to the fact that in other areas such cultures had been simply replaced by the others. Though we speak of inaccessibility from European point of view, the same position shared all populations who

penetrated South America from Panama Isthmus and the Austronesian world from the Asian mainland.

To sum up, the idea that the common traits in Melanesian and Amazonian cultures could emerge independently thanks to the similar ecology and economy would be probably welcomed by Marwin Harris and looks attractive from the point of a common sense, but has strong arguments against it. Too many horticulturers of the wet tropics do not have the corresponding rituals, myths and ideas and too many hunter-gatherers outside Amazonia and Melanesia have them. Addressing ecology, economy and the spread of warfare only, it is impossible to understand why Melanesians of Vanuatu and Polynesians of Samoa possessed so different institutions and mythologies. The major dilemma which the authors of the book stand before is their surprise concerning the degree of similarity between the cultures under their study (which volens nolens makes think about diffusion) and their natural reluctance to take such an absurd idea into serious consideration. Is any other reasonable hypothesis imaginable at all? We think, yes. Certain cultural forms created by Late Paleolithic foragers and widespread in Asia were less stable in evolutionary sense than some others. Because of this, they have disappeared in Asia but survived in Melanesia, Australia, Eastern and Southern South America thanks to the relative isolation of these regions. People of Amazonia and Melanesia have never been in contact, the similarities between them cannot be explained by diffusion of ideas from one area to another, but the corresponding elements of their cultures are archaic survivals, the relics of the earlier pattern probably common to all circum-Pacific region. Because of continuous coming of new groups from North America (and ultimately from Asia), Amazonia, as we know it ethnographically, has become a mixture of cultures with and without male cults, and because of greater isolation of Melanesia the archaic 'template' has been preserved there in more pure forms. Recent studies in craneology and odonthology (Lahr 1995; Lovvorn et al. 1999; Neves, Blum, and Kozameh 2000; Neves, Powell, and Ozolons 1999; Neves and Pucciarelli 1998) support the hypothesis of the gradual replacement of early protomorphic groups by the more typical Amerinds, and it would not be surprising if the latter brought with them new cultural forms.

# Scenarios of Old World Motifs' Penetration into the New World

Here we expose our understanding of how and when folklore motifs of Old World origin probably penetrated into the New World.

African – Southeast Asian, Australian, Melanesian – South American parallels (Shed Skins, Rainbow Serpent, *etc.*) can be interpreted as the relics of the early out-of-Africa migration to the East (Australia reached at 40,000 BP) and possibly at the same time as a particular early 'stage' in development of my-thology.

Almost up to the end of Upper Paleolithic (about 12,000 BP not calibrated), the Asian Pacific Belt was occupied by the people with protomorphic physical traits related to Australian aborigens and Papuans as well as to the Pleistocene people which skulls have been found in Brazil, Colombia, Florida, possibly Patagonia. The relics of these people's mythology survived in Australia – Melanesia, in Eastern South America and to a lesser degree in Tierra del Fuego. In North America, some motifs (at least the Loon-woman myth of the NE California) find spectacular parallels in South America and can be interpreted as isolated survivals of the same complex. The typically Melanesian mythologies are found across the New Guinea and Bismark Archipelago while Fiji largely reminds Polynesia. Australian mythology also demonstrates the New World parallels which look 'archaic', but it lacks others, known both in South America and New Guinea.

Our reconstruction depends to a large extent on the data of archaeology and physical anthropology. How early the South Alaskan coastal route could be really used? Here the solid archaeological evidence is late but all potential areas inhabited by the early migrants are now under the water. Another important question is what was the physical type of the creators of Alaskan Nenana industry, of Clovis and of other Paleoindian cultures, post-Clovis or contemporary with at least later part of Clovis? No cranial materials are still found in clear association with all these industries. If the South Alaskan coastal route was open 12,000 BP or earlier, people who first reached South America probably moved along the coast. Perhaps just they created in Eastern Brazil the Itaparica tradition, though it should be warned that no particular traits link Itaparika with any Eurasian or other American stone industry. If the coastal route was still unaccessible, the Clovis people themselves are the main candidates for the bearers of the earliest for America complex of physical and mental traits. Fluted points (possibly as late as the Pleistocene/Holocene transition but ultimately related to Clovis) are found in northern South America (Colombia, Venezuela, and adjacent parts of Brazilian Amazonia) and of another type from Chiapas to North Coastal Peru and across Southern Cone though not in Brazilian Highlands

After the initial discovery of any route from Alaska to the North American mainland, many small groups of people, some of them closely related to each other, some more different, were probably moving into the New World more like a continuous stream than like separate 'waves'. The protomorphs were most probably followed by the proto-Mongoloid people as distant from classical Mongoloids as are Ainu, South Chinese, Polynesians, Malaya Semangs, as well as the Amerinds themselves, especially in South America (cf. also the renown Olmec stone heads). Motifs probably brought by these people are known

across North and South America (though not in Mesoamerica whose peculiarity probably reflects not so much the heritage of its original settlers but more the Bottle Neck effects of Tehuantepec Isthmus and Lower Central America). In the Old World, the same motifs are found in Assam – Southeast Asia. So the people in question were Pacific, not Inner Eurasian. Archaeological cultures associated with this 'stage' could well be still Paleoindian (Agate Basin, Meza, *etc.*). Denali with its Dyuktai parallels seems to be possible ancestors of NaDene who stand nearer to Classical Mongoloids than the typical Amerida.

South Siberian - Central Asian spring-board for entradas into the New World was active during a long period of time, the earliest episode connected with Terminal Pleistocene or Early Holocene time. The corresponding people brought to North America the Light and Darkness Discussed by Animals set of motifs and the figure of Coyote/Fox as a Trickster. In South America, these mythologemes are known across Southern Cone (though not at Tierra del Fuego) in a relatively good correlation with the spread of Ayampitin and other leafshaped projectile points. The bearers of the earlier Fish-tailed (mostly fluted) Paleoindian points also could be responsible. The South Siberian Turks (Altai and Khakas) demonstrate undoubtful parallels with North America as about the Light and Darkness Discussed by Animals story, and this was probably the beginning of a series of migrations from the Central Asian - South Siberian area. There are non-folklore data that demonstrate that it was not just one group of people responsible for South Siberian - American folklore parallels. Inside the South Siberian area the Tuvins possess the mtDNA that is the nearest to the combined North American Indian cluster while cranioscopic data reveal the Amerindian substratum slightly father to the North and West, among the Bronze Age skulls of Sopka II and Yelovka II burial grounds and of Okunevo culture (Kozintsev, Gromov, and Moiseev 1999, 2003). Major Okunevo sites are to the north of Savan Mountains though Okunevo materials are found also in Tuva. No significant pre-Bronze Age craniological material is available for South Siberia. The later episodes of this stream never reached South America and 90 % of analogies for South Siberian folklore that we discovered in the New World, are concentrated in North America to the east of the Rockies, especially in the Plains.

There are different motif complexes which link Western and Eastern Siberia with Alaska and other areas of North America. We think these parallels are the latest. Usually, the motifs in question are not found around the Bering Strait. Late as they are, they still had spread before the present language map appeared. The origin of Inuit mythology is impossible to connect with a particular migration. Arctic folklore complex has very mixed Asian origins, some late and some early.

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# **APPENDIX 1**

### List of 20 'Transberingian' motifs with the top highest negative PC2 loadings

MOTIFS	PC2 LOADINGS
M29A1. Raven as a Typical Trickster. Cf. Thompson J1117.	649
<b>C19.</b> Acquisition of Sun. D. Kid (Raven, besides Quileut) asks and receives celestial bodies to play with.	647
M29A. Raven as a Possible Trickster. Cf. Thompson J1117.	642
<b>B18.</b> <i>Daylight in a Pot or Bag</i> : The daylight, sun or moon is preserved under or inside the receptacle, under a cover, <i>etc.</i> <sup>22</sup> Cf. Thompson A1411.1.	572
<b>D09.</b> <i>Vultures and Fire</i> : First fire (Sun, daylight) is acquired from vultures or thanks to a vulture. <sup>23</sup>	550
<b>E10.</b> <i>Pets Turn into Children</i> : A lonely woman or married couple surprises birds or animals who live in the house and take their skins off when nobody looks at them; they become children. <sup>24</sup>	514
<b>M17.</b> <i>Woman Lies that Man Missed</i> : Man or youth kills an ani- mal; his wife or (grand)mother lies that he has missed, eats meat herself. <sup>25</sup>	486
<b>B38.</b> <i>Painting is Ruined</i> : Someone paints birds or animals or they paint each other. It is done against the original plan or participants' expectations. <sup>26</sup> Cf. Thompson A2217.1.	480
<b>A26.</b> <i>Pretended Baby Gets Valuables</i> : Trickster turns into a small object, a creature, or a baby boy. A woman either adopts the boy or is impregnated getting in touch with the object or creature and gives birth to a boy. The boy acquires his real shape, takes away valuables. <sup>27</sup>	463

<sup>&</sup>lt;sup>22</sup> In Transberingia the daylight is typically hidden or taken out by the Raven.
<sup>23</sup> In Transberingia this is typically the Raven.
<sup>24</sup> No strong connection with the Raven Cycle.
<sup>25</sup> No strong connection with the Raven Cycle.
<sup>26</sup> Strong connection with the Raven Cycle.
<sup>27</sup> Strong connection with the Raven Cycle.

MOTIFS	PC2 LOADINGS
<b>123.</b> <i>Snapping Door</i> : The door of a house is opening and closing by itself crashing persons who attempt to come in or out. <sup>28</sup> Cf. Thompson K736.	456
<b>B07.</b> <i>The Origin of Water.</i> <b>A</b> . Person keeps all fresh water; another swallows it and then spits out making rivers and lakes. If not otherwise: Raven swallows water, flies over the earth, spits water out.	455
<b>M16.</b> Ugly or Sick Becomes Healthy and Handsome: The wife, bride or mother of a sick or ugly boy or man does not care for him. He becomes healthy and handsome; punishes and/or abandons her. <sup>29</sup> Cf. Thompson L112.	443
<b>K47A.</b> <i>Dog Husband: Woman marries a dog.</i> <b>A.</b> <i>Origin of People</i> : (Some of) her relatives despise her but her children get a (relatively) prestigious position. Certain groups of people descend from them. <sup>30</sup> Cf. Thompson B601.2.	441
<b>M18C.</b> <i>Trickster's Jaw Injured</i> : Trickster steals bait or fish from fishhooks; his bill or jaw gets broken off or otherwise injured. Besides the Koryak: people keep it in their lodge, the trickster gets it back. <sup>31</sup> Cf. Thompson J2138.	437
<b>E30C.</b> <i>The Make-Believe Spouse of Wood.</i> <b>C.</b> <i>Pygmalion</i> : Man makes believe that the woman's figure he has made is alive. <sup>32</sup>	420
<b>F65.</b> <i>The False Burial.</i> <b>C.</b> <i>Trickster Greedily Eats Alone:</i> Trickster pretends to die, is abandoned on a burial place, realizes his/her hidden desire. C. Trickster pretends to die because he does not want to share food with the others and eats it alone at his burial place. <sup>33</sup> Cf. Thompson K1867.	417
<b>F65.</b> <i>False Burial.</i> <b>A.</b> <i>Death Feigned to Meet Paramour</i> : Person pretends to die; his/her wife/husband abandons him/her on a burial place; s/he marries his/her paramour. <sup>34</sup> Cf. Thompson K1539.	405

<sup>&</sup>lt;sup>28</sup> No strong connection with the Raven Cycle.
<sup>29</sup> No strong connection with the Raven Cycle, but a strong connection in Transberingia with M17.
<sup>30</sup> No strong connection with the Raven Cycle, but a strong connection in Transberingia with E10.
<sup>31</sup> In Transberingia this trickster is typically the Raven.
<sup>32</sup> No strong connection with the Raven Cycle. Some connection with E01.
<sup>33</sup> In Transberingia this trickster is typically the Raven.
<sup>34</sup> Some connection with the Raven Cycle through F65C.

MOTIFS	PC2 LOADINGS
<b>E01.</b> Unstable Materials: Persons or objects made of unstable materials inadequate for the purpose collapse after contact with natural agents (water, fire, <i>etc.</i> ). <sup>35</sup> Cf. Thompson A1226; A1226.1.	396
<b>M18A.</b> <i>Stolen Fishing Tool</i> : For fun or to steal hunting or fishing tool or device person transforms himself into an object of hunting or fishing and provokes hunter of fisher to catch him. Arrows, darts, harpoon stick in his body and he carries them away; he bites off and carries away fishing hook. When the trick is repeated by him of by his companion, the trickster is often killed but revived. <sup>36</sup> Cf. Thompson D657.1.	377
<b>K51.</b> <i>The Deceived Wife.</i> <b>A.</b> <i>Pushes her Rival into Boiling Water:</i> Man disappears or goes away from the house for long. His wife comes to a house where his new wife lives or she first sends her son. A. First wife kills the new one pushing her into boiling water or pouring boiling water or hot grease into her ear. <sup>37</sup>	365

## **APPENDIX 2**

# List of 60 'Circumcobi-Amerindian' motifs with the top highest positive PC2 loadings

MOTIFS	PC2 LOADINGS
<b>J27.</b> <i>Lodge-boy and Thrown-away</i> : One of two small boys lives in a lodge with his father or mother. Another has been thrown away, grows up by himself, comes to play with his brother. Father or mother catches him and domesticates with much difficulty. If not otherwise: when husband has left home to hunt, an evil spirit comes to his wife and kills her; father finds the boys. Cf. Thompson Z210.1.	.450
<b>19.</b> Colors of the Cardinal Directions: Four cardinal directions and/or some objects associated with them are associated with different colors. Cf. Thompson Z140.2. Colors corresponding to the four world quarters.	.444
<b>I13.</b> <i>Horned and Hairy Serpent</i> : Serpent has traits of a mammal. Cf. Thompson B91.3.	.437

 <sup>&</sup>lt;sup>35</sup> Some connection with the Raven Cycle in Transberingia.
 <sup>36</sup> Some connection with the Raven Cycle in Transberingia.
 <sup>37</sup> No connection with the Raven Cycle.

MOTIFS	PC2 LOADINGS
<b>K37.</b> <i>Recognition of Wife or Son</i> : To return or to get his wife or his son, man must recognize her or him among several identical persons or animals. Wife, son or other person tells beforehand how to do it. Cf. Thompson H324.	.433
<b>K66.</b> Companions with Different Virtues: Every one of companions is endowed with a particular gift (strength, swiftness, good sight, <i>etc.</i> ). Cf. Thompson F601.	.431
<b>J25.</b> <i>Babies Escape and Return</i> : One boy or two brothers, usually babies or embryos, escape into the water, are carried away into the wilderness or thrown into the water. They are caught (sometimes with difficulty) by persons who later bring them up or who are their antagonist or they come to them by their own will. Cf. Thompson S301.	.425
<b>B02A</b> : <b>B02.</b> <i>The Biomorphic World</i> . <b>A</b> . <i>The Earth-woman</i> : The earth or the world as a whole is a body of a female anthropomorphic person. Cf. Thompson A401; A625; A1234.1.	.418
<b>B46.</b> <i>Ursa major as Seven Men</i> : Every star of Ursa mayor is a separate person. Usually the constellation represents seven men.	.402
<b>J25A.</b> <i>Wild Son of Injured Mother</i> : Mother is killed or injured. Her son or placenta turned into boy, newborn or extracted from her womb, is thrown into the water, tree hollow, bush; he regularly comes out from there to play. Tries to free himself being caught but after all agrees to live in a house. Cf. Thompson S301.	.381
<b>M29B.</b> <i>Identification of Trickster with Coyote / Fox</i> in more than one motif. Cf. Thompson J1117.2.	.376
<b>157.</b> <i>Thunder Pursues his Enemy</i> : Thunder's enemies are evil spirits, reptiles, animals living in burrows. They hide from him in different objects. Thunder destroys these objects. Cf. Thompson A162.3.2.	.369
<b>C26.</b> <i>Guardian of Monsters</i> : Monsters or ghosts try to enter our world; powerful person or creature is on guard and prevents the intrusion.	.364
<b>K38.</b> <i>Snake Threatens Nestlings</i> : Serpent regularly devours nestlings of giant bird. The bird has no power over the serpent but a man kills the monster. Cf. Thompson B364.4.	.364
<b>K64.</b> <i>Escape from Polyphemos' Cave</i> : Person gets into dwelling of master of animals or monstrous shepard; the host can kill him; he escapes sticking to hair of one of the animals who are going out. Cf. Thompson K603.	.354

MOTIFS	PC2 LOADINGS
<b>L93.</b> <i>Axe Thrown into the Water</i> : Hero escapes to the top of a tree or a rock; demon or ogre tries to cut it down with an axe; while he takes a rest, an animal throws his axe into the water.	.354
<b>111.</b> <i>Cosmic Turtle or Toad:</i> Turtle or toad supports the earth or is an incarnation of the chtonic deity. Cf. Thompson A844.4; A844.6.	.353
<b>J26.</b> Babies Come out of the Water: Baby hero(es) or its embryo is (are) discovered in a river or lake or come(s) to people from a river. Cf. Thompson S350.	.344
<b>L92.</b> Animal Shams Being Helpful to Ogre: Hero escapes to the top of a tree or rock. Ogre tries to cut it down. An animal person suggests to help him and to cut while he has a rest, throws his axe into water.	.340
<b>L37.</b> The Harmful Toad Removed: Man hears animals speaking, gets to know that a toad hides in a certain house producing sickness. Removes the toad, people become well. Cf. Thompson H963.	.334
<b>B44.</b> <i>Time periods discussed</i> : Ancestors (usually animal persons) discuss how long should be year, winter, night or other periods of time, should some periods exist at all. <b>C</b> . <i>Should Light Exist</i> ?: It is discussed if darkness or light, cold or warm periods should exist at all. Cf. Thompson A1150; A1172.	.333
<b>A02C: A02.</b> <i>Several Suns</i> [Synchronous Multiple Suns]: Several suns existed in the past or exist now simultaneously. <b>C.</b> Person puts out or kills the extra suns and/or moons. Cf. Thompson A716.1.	.332
<b>K33.</b> Drowned woman remains alive: Young woman's own mother, mother-in-law, co-wife or other rival throws her into water and takes her place. The woman is not dead under the water, answers call, comes out to nurse her baby; eventually returns back to earth. Cf. Thompson E323.1.1.	.329
<b>K27W.</b> Dangerous Beast Kills Father-in-law: Dangerous Beast Kills Father-in-law Cf. Thompson.	.321
<b>J62</b> . <i>Enchanted Trees</i> : Antagonist transforms his victims into trees of flowers. Son of one of the victims overcomes the antagonist, revives his father and other people. Cf. Thompson.	.309
<b>L15B.</b> Invulnerability Except in One Spot: Unique Deadly Weapon. Z312. Cf. Thompson.	.308

MOTIFS	PC2 LOADINGS
<b>L15E.</b> Invulnerability Except in One Spot: Unique External Soul. Cf. Thompson.	.306
<b>I46.</b> Rainbow clothes: Rainbow is colorful decoration of personal attire. Cf. Thompson F829.1 Rainbow as loincloth.	.305
<b>I52.</b> Cosmic Fish: World is supported by fish or fish-like monster or the earth itself is such a monster. Cf. Thompson A844.3 Earth supported by fish.	.301
<b>L19B.</b> Creature with Two or More Heads: The two-headed man or quadruped is described or represented. Cf. Thompson.	.301
<b>L65A.</b> The Cannibal Sister: Baby daughter is a monster or becomes a monster, devours people. Her elder brother escapes, returns to her, she pursues him. AaTh 315A Cf. Thompson.	.301
<b>J18.</b> Woman Falls from the Sky: Woman who is pregnant or has a small son falls from the sky; she or the daughter she bears dies. Her (grand)child(ren) is (are) grown up. Cf. Thompson.	.297
<b>A02A: A02.</b> Several Suns [Synchronous Multiple Suns]: Several suns existed in the past or exist now simultaneously. A. The world was (almost) burned when several suns had (will) appear(ed) simultaneously. [Texts with Moon was equal to Sun are not mentioned]. Cf. Thompson A720.1 Formerly seven suns; A1052 End of world when four (seven) suns appear in sky.	.293
<b>M62.</b> Unnoticed Person Puts Others to Fight: Unnoticed by others, person makes them quarrel or fight with one another. Cf. Thompson K1082 Ogres (large animals, sharp-elbowed women) duped into fighting each other. Trickster strikes one so that he thinks the other has done it.	.288
<b>H18.</b> Animals Disperse in the World: Game animals were concentrated in one single place. Certain person lets them disperse in the world. Cf. Thompson.	.284
<b>M57A.</b> Beads Discharged from the Body: Person or supernatural discharges beads, precious shells or metals from his or her body. Cf. Thompson D1001, 1002, 1004. Magic spittle, excrements, urine, tears; D1454 Parts of human body furnish treasure.	.283
<b>A0.</b> Multiple Suns: The existing Sun is not the only one. Other suns existed in the past, exist now ( <i>e.g.</i> , illuminating other levels of the universe), or will appear in future. Cf. Thompson A719.2. After world catastrophe, new sun reappears and starts new epoch; A681 Sun in the underworld.	.281

MOTIFS	PC2 LOADINGS
<b>E32.</b> Ancestors Born by Trees: First people were born by trees. Cf. Thompson A1251. Creation of man from tree; A1236 Mankind emerges from tree.	.281
<b>112.</b> <i>Axis mundi:</i> Tree or post grows through levels of universe. Cf. Thompson A652. World-tree. Tree extending from lowest to highest world.	.281
K27Z. Difficult task: Gambling. Cf. Thompson.	.277
<b>B69.</b> Chipmunk's Back Scratched: hence his Stripes. Cf. Thompson A2217.2. Chipmunk's back scratched: hence his stripes. As he is trying to escape, bear catches him with his claws and marks him permanently.	.273
<b>B05A.</b> Male and Female Creators: In the beginning of times a female and a male supernaturals meet one another. A. Have a dialogue.	.272
<b>K49</b> . Dead Mother Returns to Nurse her Baby (E323.1): Dead or driven away woman returns to the human world her baby that needs mother's care. Cf. Thompson.	.271
<b>C05A: C05.</b> Bird or Animal Scouts: During or after the world catastroph or in the beginning of time, birds, animals or humans later changed to birds move from the center of the world to its periphery and/or back in search of (bringing) information or trying to overcome the disaster. A. When the world flood is near to its end or over [rare: during the creation of earth; after the world fire], different birds are successively sent to explore the earth (is it dry, are any survivals, to bring a small amount of dry soil, <i>etc.</i> ). Cf. Thompson A1021.2. Bird scout sent out from ark; A2221.7. Dove returns to ark in obedience to Noah: rewarded; A2234.1.1. Raven does not return to ark in obedience to Noah: punished.	.267
<b>K75.</b> The Youngest of Sons-in-law: Two (in America) or three (in Eurasia) daughters of a chief/king are ready to marry. The youngest sister marries poor, sick, dirty, old, too young, <i>etc.</i> boy but feels that he has supernatural power. Cf. Thompson.	.265
<b>E09D</b> : <b>E09.</b> <i>Mysterious Housekeeper</i> (M831): A man (rare: a woman) lives alone. In his (her) absence, somebody prepares his (her) meals or (specially marked) eats them up. He discovers that a woman (or two women) live(s) in/near his house under the bird's or animal's disguise or come(s) during his absence. <b>D.</b> <i>Housekeeper is a Dog.</i> Cf. Thompson N831.1. Mysterious housekeeper. Men find their house mysteriously put in order. Discover that it is done by a girl (frequently an animal transformed into a girl); B651.4. Marriage to dog in human form.	.264

MOTIFS	PC2 LOADINGS
<b>B02D: B02.</b> The Biomorphic World. D. Sky and Earth Marry: The Sky-man marries the Earth-woman. Cf. Thompson A625. World parents: sky-father and earth-mother as parents of the universe. The sky father descends upon the earth mother and begets the world.	.263
<b>141.</b> Rainbow Serpent: Rainbow is a snake (rare: a fish, scorpion's tail, <i>etc.</i> ). Cf. Thompson A791.2. Rainbow as snake.	.263
<b>A37.</b> Sun is Attacked: 1) Sun walks across the sky or temporally descends to earth; person (makes an attempt to) kill(s) him; 2) many suns shine simultaneously or in succession, some are killed. Cf. Thompson A716.1. Four suns at first: culture hero shoots three down.	.260
<b>I67.</b> Rhea is Milky Way: Milky Way is a giant rhea.	.248
<b>M52.</b> Butchers of Meat. A small not-predative animal kills a big animal; asks another person to skin or butcher the corpse; this person gives his knife or skins the corpse but takes or tries to take all meat for himself. Cf. Thompson.	.248
<b>K58.</b> Building is (Partly) Ruined. Person builds waterway, bridge, or dam but the project was ruined or not realized just as it had been planned. See motif K57. Cf. Thompson.	.244
<b>J5.</b> <i>Brothers as Victims</i> : Two or several brothers or friends play the Victim's role; one of them can be the Hero's father or all of them are his uncles. Cf. Thompson.	.243
<b>M40.</b> Distorted Instructions: A weaker (animal) person comes to the wife of a stronger one and tells her that her husband has ordered her to copulate with the guest, to give him food, <i>etc.</i> Cf. Thompson K1354. Seduction by bearing false order from husband or father.	.241
<b>F02.</b> <i>Pregnant Limb</i> : A tumor or swelling appears on a body (usually a limb) of a person; a child is born from it; first people got pregnant in their limbs. Cf. Thompson.	.239
<b>J45.</b> The Stretched out Leg: A person stretches his leg or neck as a bridge across waterbody. The fugitives or those who walk ahead cross the bridge; the persecutor or those who are behind usually fall into the water because the person takes his bridge off. Cf. Thompson.	.236
<b>K35.</b> False Husband: Imposter takes appearance of the hero to marry or to violate a woman. Cf. Thompson.	.232
<b>H36</b> . <i>Falsified Message</i> : Person is sent to bring instructions or cer- tain objects. For some reason, s/he distorts the instructions, forgets about them, brings the wrong object. This has significant conse- quences for him/her and/or for humanity. Cf. Thompson.	.231

MOTIFS	PC2 LOADINGS
<b>K27M.</b> Difficult task: To Kill an Animal of a Rare Color. Cf. Thompson.	.229
<b>M29B1.</b> Identification of Trickster with Coyote / Fox in one motif. Cf. Thompson J1117.2. Coyote as trickster.	.229
<b>B69A: B69.</b> Chipmunk's Back Scratched: hence his Stripes: A big animal scratches chipmunk with his paw producing stripes on his back. A. Bear against Chipmunk – time periods discussed: Bear (Puma) and Chipmunk quarrel discussing the warm or cold, how long should be certain time periods. Bear tears Chipmunk questions of should it be with his claws. Cf. Thompson A2217.2. Chipmunk's back scratched: hence his stripes. As he is trying to escape, bear catches him with his claws and marks him permanently.	.228