

USING PHYLOGENETIC ANALYSIS FOR TALE TYPE IDENTIFICATION (OB UGRIC NARRATIVES)

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Abstract: *The study aims to identify the fairy tale types associated with Imi Khily, an important figure in Ob Ugric folklore. This tale character is associated with a deity from the highest pantheon of the Khanty people, which researchers link to Iranian influence on Ob Ugric mythology. We examined 21 texts in the Khanty language, including both myths and fairy tales. By applying phylogenetic analysis and the principle of maximum parsimony to a corpus of texts, four primary tale types were identified within the narrative cycle studied: Myth of the Celestial Hunt, Tereshechka, The Hero Wins a Bride, and Death of the Father Avenged. Subsequent analysis revealed that these four narrative types can be divided into two main branches: religious and fairy tales, with narratives dealing with the theme of defeating giants being classified under the ancestral evolutionary lines of the "fairy tale" branch.*

Keywords: *Ob Ugric Folklore; Khanty Language; Phylogeny; Maximum Parsimony; Tale Type.*

Introduction

The production of folklore texts could be described as an evolutionary process. A main characteristic of folklore is its variability, ranging from micro-elements within texts to comprehensive national systems (Putilov, 1990: p. 190). Variation covers the content, form, and functional aspects of folklore, essentially shaping and defining process of text generation. Sustainability is the flip side of variation. "Variability is not only about change but also about repetition, with repetition being more important than change. The reproducibility factor for a variant is the most important, while the accuracy of reproduction is secondary. The essence of variability lies in the dynamic correlation of these two aspects of a phenomenon" (Zemtsovskiy, 1980: p. 43). Oral texts consist of recurring elements, formulae, motifs, and other loci communes that help to remember long and tightly structured narratives (Lord, 1971). These components may be subject to contamination, change, accumulation of errors, or loss of original function over time.

Various approaches have been used to find patterns in the reproduction of folktales. In order to categorise similar folktales from different oral traditions, folklorists have looked at common themes, plots and characters to derive the 'international types' of folktale. The most comprehensive and up-to-date index of folktale types is the Aarne-Thompson-Uther Index (Uther, 2004). It catalogues over two thousand global story types found in three hundred different cultures around the world. According to this approach texts are the

representatives of types and classes. The challenge is to combine these types through scholarly analysis. Such analysis was initially undertaken within the historic-geographic method, which aimed to reconstruct the original "archetypal" story by collecting all documented variations of the international type and organising them according to geographical location and historical timeline. According to this approach, irregular or infrequent versions were presumed to be recent, while widespread forms were considered potentially ancient, especially if they matched the earliest recorded renditions of the tale. The method of determining the prototype (germ. *Uhrform*) was largely subjective and limited to a degree of immersion in the folk tradition (Krohn, 1910), (Krohn, 1926). This approach has been criticised for these assumptions (Frog, 2013), (Goldberg, 1984).

Tehrani J. has shown that the phylogenetic approach has advantages over traditional historic-geographic approach commonly used to identify tale types in the study of cross-cultural relationships among folktales. First, it allows for the consideration of all potentially relevant features in tale classification, rather than relying on a few selected motifs. Second, phylogenetic reconstruction avoids the assumption that the most common form of a feature is ancestral, thus reducing the susceptibility to bias present in traditional methods. Thirdly, it provides tools for quantifying the role of descent, convergence and contamination in generating similarities between stories, allowing the assessment of coherence and overlap between identified story types. (Tehrani, 2013).

Here we apply the phylogenetic approach to the folk tales of one of the most fascinating and complicated figures in Ob-Ugric folklore, known to the Khanty as *Imi Hily* or to the Mansi as *Ekwa Pygriś* (literally 'grandmother's grandson'). This figure is surrounded by a cycle of narratives whose parallels extend to the most distant cultures in North America, Central Asia, Europe, the Far East and even South Africa. This makes him a good subject for comparative research.

Our study deals with tale variants about *Imi Hily* in Khanty folklore and aims to describe the main tale types and narrative plots associated with this character. Our method is based on the principle of parsimony and involves minimal assumptions, since for this study we assumed that the creation of oral texts is governed by a particularly stochastic process. The aim is to identify the tree that minimises the number of character state changes required to explain the distribution of character states among the taxa, which is referred to as the 'shortest length tree' or 'most parsimonious tree' (Hennig, 1979). The branches of this tree indicate the fairy tale types derived from the analysis of the stories (taxa) about the Grandmother's Grandson.

Methodology

The study is based on a corpus of 21 texts in the Khanty language, including both published works and manuscripts (a full list of sources is provided with the article). These texts were collected from performers who speak different dialects of the Khanty language, including Kazym, Sunya, Shuryshkar, Vakh, Nizyam, Tormegan and Sherkal. The period covered by the collection is from 1898 to 2006. In order to see the distribution of the texts

on the geographical map, a visual representation has been made where the locations are indicated by their latitude and longitude coordinates (Figure 1). The map shows the ubiquitous distribution of tales about Grandmother's Grandson, which includes all the major Khanty ethnic groups that settled along the Ob River and its confluences.

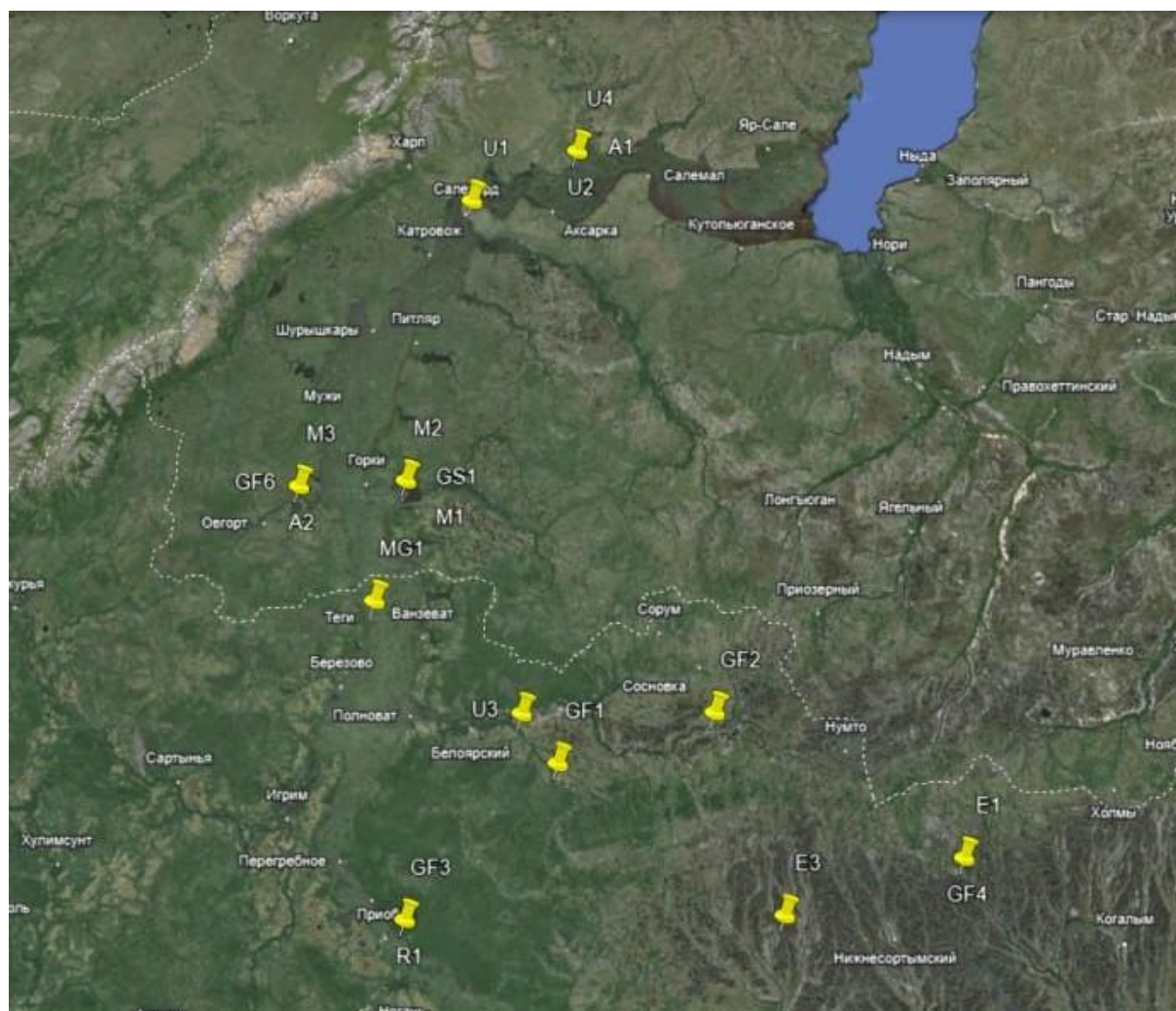


Figure 1. Distribution of tales about Grandmother's Grandson

In this study, we used folktale motifs as phylogenetic characters. We adopted the maximum parsimony approach and used the Mesquite program (version 3.81) (Maddison & Maddison, 2019). The resulting tree represents the most compact system that, combined with the fewest possible changes in characters, provides a coherent picture of the origin of the clade (group of organisms, in our case group of texts), including a common ancestor and all its direct descendants. This approach is based on the methodological principle of Occam's razor, which suggests avoiding unnecessary assumptions about diversity, known as the principle of maximum economy or parsimony. The resulting consensus tree is the result of summing data from 1000 trees generated by a heuristic search using the subtree pruning and regrafting (SPR) method, a deterministic algorithm for finding the optimal tree structure. Strict consensus was used in the analysis, providing a resulting tree that contains only those topology elements that are present in all summed trees. The resulting tree is unrooted.

The branches of the tree represent the types of tales, the core motifs of which have been correlated with a map of myths compiled by Yu.E. Berezkin¹. This map contains information on the distribution of about 3000 motifs in more than 900 oral traditions around the world. The full description of the motifs can be found in (Berezkin & Duvakin, n. d.). This approach implies "the study of folklore and mythology as a relatively autonomous sphere of culture, weakly linked to the sphere of life support. It makes it possible to trace the exchange of information between people, the formation and distribution of spheres of interaction, and thus the channels of the exchange of ideas". (Berezkin, 2021: p. 35).

A total of 100 features were identified to characterise the narratives in the corpus. These features were categorised into groups, each of which was used to describe different aspects of the texts. One group of features focused on narrative genre, recognising the diverse nature of the texts, which included fairy tales and myths. Another group of features described the characteristics of the main characters in the stories. The most substantial group of features consisted of motifs that characterised the plots of the narratives. We followed V. Propp's approach to identifying motifs. He used the term function, which is "an action of the character, defined in terms of its significance to the narrative as a whole" (Propp, 2009: p. 30). Of the 31 functions identified by Propp, 27 were used in our analysis, demonstrating the significant similarity between the texts studied and the fairy tales.

Results

Phylogenetic analysis allowed for a systematic study of Khanty folk tales about Grandmother's Grandson, and facilitated the identification of distinct narrative types within our corpus of texts. The analysis revealed four main tale types. Two branches of the consensus tree (A and B) show the division of the tales into two main categories: ritual folklore (myths) and fairy tale folklore (figure 2).

The numbers next to the nodes represent bootstrap support values for each clade. Each branch and node on the tree indicate inferred relationships between different narrative variants. Abbreviations mark each text, highlighting the main motif of the tale: GF - giant fight, M - marriage, E - elk hunt, U - unloved son, A - anecdote, MG - magic gifts, GS - giant saviour.

¹ Maps of Myths, Available at: <http://mapsofmyths.com/> (last view: 05-08-2024).

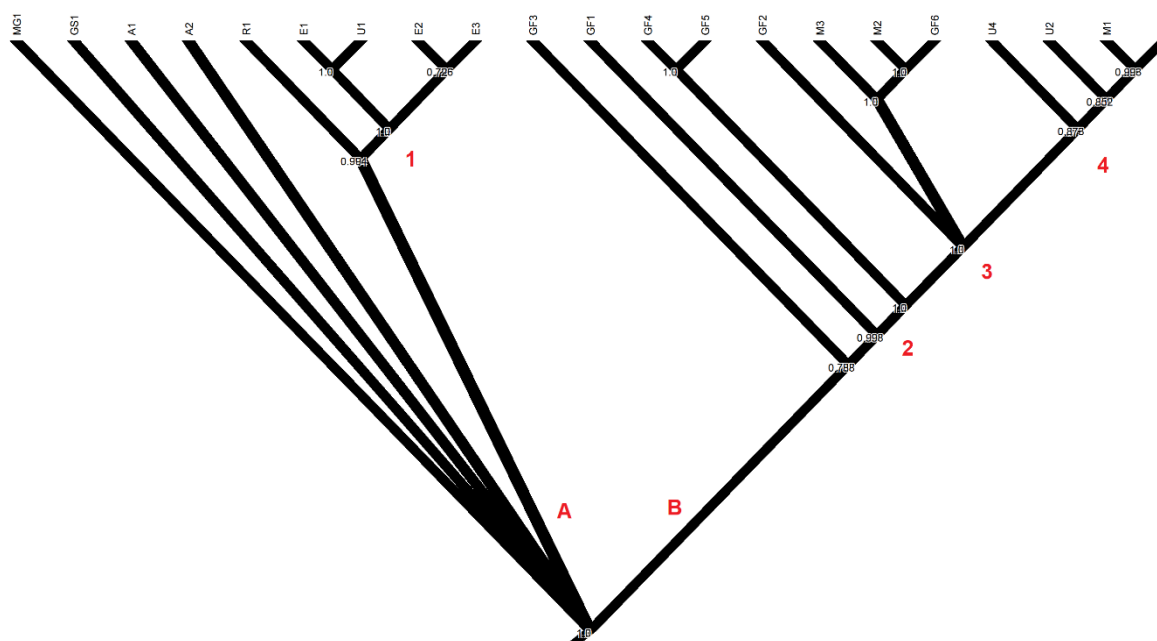


Figure 2. The majority rule consensus of the most parsimonious trees returned by cladistic analyses of the tales of Grandmother's Grandson in Khanty folklore.

1 Tale type: Myth of the Celestial Hunt

Texts belonging to this type of fairy tale are considered to be myths, as opposed to other texts which are classified as folk tales. The hero, acting as a deity, hunts a celestial six-legged moose. He cuts off its hind legs so that it can be hunted by humans and leaves a trace of his skis in the sky, the Milky Way (or other celestial bodies). This motif is central to a narrative common to northern and central Eurasia and North America (Berezkin, 2005). The depiction of the moose was widespread across a wide cultural and chronological spectrum in the taiga and forest zones of northern Eurasia during the Mesolithic, Neolithic and Early Metal Age (Gurina, 1956), (Okladnikov, 1950: p. 280-284). The oldest moose figure was discovered in the territory of Transbaikalia (at the settlement Studenoe-2) and dates back to 18-17 thousand years ago (Konstantinov et al., 2003: p. 18).

2 Tale type: Tereshechka

A boy is captured by a giant, defeats him by climbing a tree (may also include such motifs as killing the antagonist's children and feeding them to their father, or the protagonist being pursued by the giant's children). We have named this type of tale after the Russian folk tale "Tereshechka" recorded by Afanas'ev, which has the same plot (Afanas'ev, 1958: pp. 183-184). This type of fairy tale belongs to the tales of the stupid ogre (giant, devil) 1000-1029 (Uther, 2004).

This tale type is accepted as a basal or ancestral taxon according to our most parsimonious tree, representing early members of the evolutionary lineage for the "fairy tale" branch. This is an interesting inference because the story of the victory over the giant, who symbolically represents the forces of the Middle World (an Earth) that are harmful to a

human being, echoes the stories of the dragon slayer that are widespread throughout Eurasia.

3 Tale type: The hero wins a bride

The hero wins a bride or rescues her from an abductor. In these stories, the hero finds a wife not only for himself but also for his relatives, with whom he lives (a brother and sister, or two other brothers). The wives (or husband) are often representatives of the antagonist - either the daughters of a forest giant, or the three forest sisters *pornø*, the women of the *por* fraternity, who in Ob-ugric folklore are the evil antagonists of the *mos* fraternity (Veres, 1990). This tale type is more common in the Mansi-speaking area.

4 Tale type: Death of the Father Avenged

The orphaned hero discovers his origins and seeks revenge for his murdered father, usually against giants. This type overlaps with the plot of the unloved son (the hero lives with a stepfather who dislikes him and tries to get rid of him). The hero's extraordinary qualities set him apart from others. The narrative of "revenge for the death of the father" intersects with another motif in our corpus, which we've called the "unloved son". The phylogenetic analysis has shown that the categorisation of the stories based on this narrative is not entirely accurate. Specifically, taxon U1, which embodies the narrative of the unloved son of the supreme god, shows a paraphyletic relationship with taxon E1, which depicts the celestial hunt for an elk and the protagonist's life with a divine father-in-law who seeks to eliminate his son-in-law. Variant U4 similarly depicts the hero as the son of a heavenly father. This connection aligns U4 with U1. In order to better define the category of "revenge for the father" tales, it is necessary to consider a wider range of source material. This motif is very common in the folklore of North and South America.

Conclusions

In our study we examine one of the approaches to culture, which consists of elements that do not arise spontaneously but are reproduced on the basis of existing patterns. In this approach, culture is separated from its bearers, with individuals seen merely as 'vehicles' for non-biological replicators, which Richard Dawkins, drawing an analogy with genes, has termed 'memes'. The evolution of cultural patterns could thus be described as "cultural mutations" (Dawkins, 1976: pp. 254-261). Cavalli-Sforza L. also accepted cultural transmission as the analogue of reproduction and mutation in biological entities, and offered methods for measuring the adaptability of cultural traits (Cavalli-Sforza & Feldman, 1981).

The evolution of oral narrative is a dynamic process characterised by the interplay between variability and stability, transmission and transformation, adaptation and incorporation of change. Phylogenetic methods thus open up avenues for the study of cultural and linguistic entities and help to trace their evolution. In much the same way that geneticists use haplogroup analysis to trace the evolutionary history of populations,

folklorists can use a phylogenetic approach to study the evolutionary relationships and transmission of cultural patterns within the linguistic heritage of different traditions.

The applied analysis helped us to structure narratives about the Grandmother's Grandson in the Khanty oral tradition. Defined fairy tale types will facilitate the comparative study of this personage. The obtained results show a coherence with the archaeological and historical evidence about the Ob-Ugric peoples, which confirms the robustness and reliability of the applied analytical methods.

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ИЗПОЛЗВАНЕ НА ФИЛОГЕНЕТИЧЕН АНАЛИЗ ЗА ИДЕНТИФИКАЦИЯ НА ТИПА ПРИКАЗКИ(ОБ-УГЪРСКИ РАЗКАЗИ)

Резюме: Целта на изследването е да се идентифицират типовете приказки, свързани с Ими Хили, важна фигура в угрофинския фолклор. Този приказен герой се свързва с божество от най-висшия пантеон на народа ханти, което изследователите свързват с иранското влияние върху об-угровската митология. Разгледахме 21 текста на езика на хантите, включващи както митове, така и приказки. Чрез прилагане на филогенетичен анализ и принципа на максималната паримония към корпуса от текстове бяха идентифицирани четири основни типа приказки в рамките на изследвания наративен цикъл: Митът за небесния лов, Терешечка, Героят печели невеста и Смъртта на бащата отмъщава. Последващият анализ показва, че тези четири типа разкази могат да бъдат разделени на два основни клона: религиозни и приказки, като разказите, свързани с темата за победата над великаните, са класифицирани по предхождащите ги еволюционни линии на клона „приказки“.

Ключови думи: Об Угърски фолклор; Хантйски език; Филогения; Максимална парсимония; Тип приказка.

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