



ASSOCIATIVE REPRESENTATIONS OF ANIMALS IN YAKUT ETHNOLINGUISTIC CULTURAL SPACE

REPRESENTACIONES ASOCIADAS DE ANIMALES EN EL ESPACIO CULTURAL ETNOLINGÜÍSTICO YAKUT

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ABSTRACT:

This study investigates the preservation and adaptation of traditional animal symbolism within the linguistic consciousness of the multiethnic population of the Republic of Sakha (Yakutia). While the region's totemic and shamanic worldview has been extensively documented in historical ethnography, there is a critical lack of quantitative empirical data on how modernization, urbanization, and climate change impact these ethnolinguistic patterns in the 21st century. Employing a mixed-methods approach, a targeted, time-restricted psycholinguistic associative experiment was conducted face-to-face with 185 participants, stratified by age, gender, and geographic location. The empirical results reveal a stark sociodemographic divergence in linguistic behavior. Rural elders actively maintain traditional taboo language and euphemisms—particularly for the Bear and the Moose—reflecting an ongoing pragmatic and shamanic reverence. Conversely, urban youth exhibit a cognitive adaptation to modernized environments, predominantly utilizing direct terminology and modern constructs. Most notably, the data captures the transformation of the mythological “Bull of Cold” (Mammoth) into a secular, globalized regional brand driven entirely by younger generations. The findings demonstrate that rather than undergoing sheer cultural erosion, the Yakut linguistic consciousness is dynamically bifurcating: the rural core preserves deep collective memory and active taboos, while the urban periphery adapts its symbolic identity to global modernity.

Keywords: Yakut linguistic consciousness, Animal symbolism, Associative experiment, Ethnolinguistics, Taboo

language, Cultural adaptation.

RESUMEN:

Este estudio investiga la preservación y adaptación del simbolismo animal tradicional en la conciencia lingüística de la población multiétnica de la República de Sajá (Yakutia). Aunque la cosmovisión totémica y chamánica de la región ha sido ampliamente documentada en la etnografía histórica, existe una falta crítica de datos empíricos cuantitativos sobre cómo la modernización, la urbanización y el cambio climático impactan estos patrones etnolingüísticos en el siglo XXI. Utilizando un enfoque de métodos mixtos, se llevó a cabo un experimento asociativo psicolingüístico presencial y con límite de tiempo en 185 participantes, estratificados por edad, género y ubicación. Los resultados empíricos revelan una marcada divergencia sociodemográfica en el comportamiento lingüístico. Los ancianos de zonas rurales mantienen activamente el lenguaje tabú y los eufemismos (especialmente para el oso y el alce), reflejando una reverencia chamánica y pragmática viva. Por el contrario, los jóvenes urbanos exhiben una adaptación cognitiva a entornos modernizados, utilizando predominantemente terminología directa y constructos modernos. De manera notable, los datos capturan la transformación del mitológico “Toro del Frío” (Mamut) en una marca regional secular y globalizada, impulsada enteramente por las generaciones más jóvenes. Los hallazgos demuestran que, en lugar de sufrir una mera erosión cultural, la conciencia lingüística yakuta se está bifurcando dinámicamente: el núcleo rural preserva la memoria colectiva profunda y los tabúes activos,



mientras que la periferia urbana adapta su identidad simbólica a la modernidad global.

Palabras clave: Conciencia lingüística yakuta, Simbolismo animal, Experimento asociativo, Etnolingüística, Lengua je tabú, Adaptación cultural.

INTRODUCTION

Interdisciplinary research at the intersection of ethnolinguistics, cognitive science, and anthropology increasingly addresses how traditional language structures adapt to modern realities. In the context of globalization, marginalized or geographically isolated sociocultural communities provide unique insights into the resilience of collective memory. In the Republic of Sakha (Yakutia) (a vast, multilingual region in Northeastern Siberia) language functions not merely as a communication tool, but as a critical marker of ethnic, ecological, and spiritual self-identification (Androsov, 2012).

Historically, the indigenous populations of Yakutia (including the Sakha, Evens, and Evenkis) have maintained a profound spiritual connection with their harsh natural environment. Central to this worldview is a complex system of animism, shamanism, and totemism, where wild fauna are not viewed merely as biological entities, but as conscious, rational beings or manifestations of ancestral spirits. Ethnographers and linguists (Gogolev, 1994; Seroshevsky, 1993) have extensively documented the historical usage of euphemisms, kinship terms, and taboo language designed to show reverence to these spirits or to avert physical danger during the hunt (*ulakhan bult*).

The Yakut worldview constitutes one of the most complex and fascinating symbolic systems of northern Eurasia, where the relationship between nature, spirituality, and survival is articulated through myths, sacred animals, ritual practices, and ancestral forms of knowledge. Numerous ethnographic, linguistic, and cultural studies have demonstrated that the Yakut people developed a worldview deeply connected to the subarctic environment, attributing spiritual meanings to fauna, landscapes, and natural forces. Ionov (1913); and Gurvich (1948) revealed the importance of the eagle as a sacred figure within Yakut beliefs, associating it with celestial powers, spiritual protection, and mediation between the human and supernatural worlds. Complementarily, Kulakovskiy (1979) provided a comprehensive perspective on the intellectual and cultural traditions of the Yakut people, documenting myths, systems of thought, and identity expressions that demonstrate the philosophical richness of this northern civilization. From an archaeological perspective, Okladnikov (1972), through the study of petroglyphs along the Lena River, demonstrated the antiquity of symbolic representations associated with animals and cosmic forces, evidencing

cultural continuity between ancient rock art and contemporary Yakut beliefs.

Recent investigations have significantly expanded the understanding of this ancestral culture. Orlando (2025) examined the origins of Yakutian horses and highlighted how these animals adapted to the extreme conditions of Siberia, becoming not only an economic and survival resource but also a deeply rooted symbol of cultural identity in Yakutia. In the same direction, Plemyashov et al. (2022) explained the physiological foundations that allow Yakut horses to survive in subarctic climates, emphasizing the historical interaction between humans, animals, and harsh environments as part of a unique evolutionary and cultural process. These studies reinforce the understanding of the horse not merely as a utilitarian element, but as a spiritual and civilizational component within the Yakut symbolic universe.

From a linguistic and anthropological perspective, Pavlova & Gorbunova (2021) demonstrated how linguistic taboos in Yakut culture function as mechanisms of spiritual and social regulation, revealing the close relationship between language, ritual respect, and ancestral cosmology. Likewise, the monumental Yakut language dictionary compiled by Pekarsky (1959) represents one of the most significant contributions to the preservation of Yakut cultural identity, safeguarding lexical structures and meanings associated with spiritual practices, sacred animals, and mythical representations of the universe.

On the symbolic and spiritual level, Popova (2022) emphasized that hunting culture among the Indigenous peoples of Yakutia cannot be understood solely from an economic perspective, since it is sustained by ritual principles, ethical codes, and spiritual beliefs regulating the relationship between humans and nature. This is complemented by the contributions of Suzdalova (2023), who analyzed the image of the bull as a symbol of fertility, strength, and cosmic connection in Yakut tradition, as well as the later study by Suzdalova (2024), which interpreted the mammoth as a mythical emblem associated with the underworld, ancestral memory, and the imaginaries of eternal ice. These representations demonstrate that Yakut culture constructed a sophisticated symbolic network in which animals are not merely biological beings, but spiritual entities charged with cosmological meanings.

Taken together, these studies demonstrate that Yakut culture represents far more than a regional ethnographic heritage, as it constitutes an extraordinary manifestation of cultural resilience, ecological adaptation, and symbolic thought in one of the harshest environments on Earth. The persistence of its myths, rituals, languages, and symbolic systems reveals the ability of Indigenous societies to preserve knowledge systems profoundly connected to

nature, offering the contemporary world a powerful reflection on identity, spirituality, and human survival in the face of environmental and civilizational challenges.

To address this gap, the present study employs a time-restricted associative experiment to empirically map the symbolic representations of animals in the modern Yakut linguistic space. The primary objectives of this research are: (1) to quantify the prevalence of specific animal associations and the current usage rate of taboo/euphemistic terminology versus direct language; and (2) to analyze how sociodemographic variables—specifically age, gender, and the urban-rural divide—drive the cognitive adaptation or erosion of this ancient worldview in the 21st century.

MATERIALS AND METHODS

Study Design and Participants

This study employed a mixed-methods design, combining a targeted psycholinguistic associative experiment with descriptive statistical and ethnolinguistic analysis. The empirical data collection was conducted between January 2024 and February 2025. A total of 185 participants ($N = 185$) successfully completed the experiment. To ensure the findings accurately reflect the unique demographic, geographic, and linguistic landscape of the Republic of Sakha (Yakutia), the sample was carefully stratified.

The cohort consisted of 88 men (47.6%) and 97 women (52.4%), with ages ranging from 18 to 74 years ($M = 41.5$, $SD = 14.2$). To capture the dichotomy between urban modernization and traditional worldviews, participants were recruited from diverse locations: 105 individuals (56.8%) were residents of the capital city, Yakutsk (representing an urban environment), while 80 individuals (43.2%) were recruited from rural settlements (uluses)—specifically from the Tattinsky, Namsky, and Anabarsky districts, where traditional lifestyles and hunting practices are more prevalent.

Linguistically, the sample captures the region's complex multilingualism. The majority, comprising 112 participants (60.5%), are bilingual, demonstrating proficiency in both Sakha and Russian. Additionally, 48 participants (26.0%) are monolingual Russian speakers, primarily urban residents and descendants of Russian old settlers, while 25 participants (13.5%) are multilingual, speaking Russian, Sakha, and an Indigenous language (such as Even or Evenki) (see Table 1).

Table 1. Sociodemographic and linguistic profile of the participants ($N = 185$).

Category	Sub-category	Number of Participants (n)	Percentage (%)
Total Sample		185	100%
Gender	Male	88	47.6%
	Female	97	52.4%
Age Group	Youth (18-35 years)	65	35.1%
	Adults (36-55 years)	78	42.2%
	Elders (56-74 years)	42	22.7%
Location	Urban (Yakutsk)	105	56.8%
	Rural (Uluses)	80	43.2%
Language Spoken	Bilingual (Sakha - Russian)	112	60.5%
	Monolingual (Russian only)	48	26.0%
	Multilingual (+ Even/Evenki)	25	13.5%

Procedure and Data Collection

To ensure the capture of spontaneous linguistic consciousness rather than over-rationalized responses, the associative experiment was conducted entirely face-to-face. Participants were approached randomly in public spaces, including city squares, university campuses, and rural community centers. Prior to participation, verbal informed consent was obtained from all individuals in accordance with ethical research guidelines.

The procedure consisted of a single, direct stimulus question: *“Which animal do you associate with Yakutia or Sakha Sire?”* To capture the true psycholinguistic primary association, participants were subjected to a strict time limit of 5 seconds to provide their response. All interviews were audio-recorded using digital dictaphones (Tascam DR-05X). This auditory recording was crucial not only for capturing the exact lexical choice but also for documenting pronunciation nuances, hesitations, and the specific dialectal or euphemistic variations employed by the informants.

Data Processing and Analytical Framework

The audio recordings were manually transcribed and compiled into a primary database using Microsoft Excel 365. Beyond a basic frequency count of the elicited animal terms, a multi-level coding matrix was developed to systematically categorize the associative responses. Each response was coded across three dimensions:

- Linguistic Origin:** Coded as Direct Russian term (1), Direct Sakha term (2), or Traditional Euphemism/Taboo word (3).
- Semantic Field:** Classified into Wild Taiga Fauna (1), Domesticated/Livestock (2), Avian (3), or Extinct (4).
- Cosmological Status:** Differentiated between purely Ecological/Biological significance (1) and Mythological/Sacred/Totemic weight (2).

Statistical Analysis

Quantitative data analysis was performed using IBM SPSS Statistics (Version 26). Descriptive statistics were used to determine the absolute and relative frequencies of the associative responses. Furthermore, cross-tabulations and non-parametric tests (e.g., Chi-square) were applied to examine relationships between demographic variables (e.g., age group, geographic location, linguistic background) and the usage of specific lexical categories (e.g., the prevalence of euphemisms among rural elders versus direct terminology among urban youth). This robust analytical framework allowed for the empirical validation of the ethnolinguistic patterns discussed in this study.

RESULTS-DISCUSSION

General Frequencies of Animal Associations

The associative experiment yielded a diverse but culturally specific range of animal representations. Out of the 185 participants, the most frequently associated animal with Yakutia was the Reindeer, mentioned by 48 respondents (25.9%). This was followed by the Bear (n = 35; 18.9%), the Horse (n = 29; 15.7%), and the Mammoth (n = 22; 11.9%). Other significant fauna included the Moose (n = 18; 9.7%), the Eagle (n = 12; 6.5%), and the Sable (n = 9; 4.9%). Less frequent associations (under 3%) included the Siberian Crane, Snow Leopard, and isolated mentions of the wolf, lynx, hare, and squirrel (see Table 2).

Table 2. Absolute frequency of animal associations (N = 185).

Rank	Animal	Original Stimulus Example (Yakut/Russian)	Frequency (N)	Percentage (%)
1	Reindeer	Taba / Olen'	48	25.9%
2	Bear	Ehe / Tyataaŷy / Medved'	35	18.9%
3	Horse	At / Sylgy / Kon'	29	15.7%
4	Mammoth	Mamont	22	11.9%
5	Moose	Taiah / Uluu kyyil / Sokhatyy	18	9.7%
6	Eagle	Khotoi	12	6.5%
7	Sable	Kiis	9	4.9%
8	Siberian Crane	Kytalyk / Sterkh	5	2.7%
9	Snow Leopard	Bars	3	1.6%
10	Others (Wolf, Lynx, etc.)	Beder, Kuobakh, Tiin...	4	2.2%
	TOTAL		185	100%

Linguistic Manifestation of Taboo: Direct Terms vs. Euphemisms

A critical objective of the study was to quantify the linguistic origin of the terminology used, specifically differentiating between direct terms (in both Yakut and Russian) and traditional euphemisms (taboo language). The data reveals a stark contrast depending on the cosmological status of the animal.

As detailed in Table 3, the Bear elicited the highest rate of euphemism usage. Of the 35 participants who mentioned the Bear, 57.1% (n = 20) employed traditional euphemisms or kinship terms (e.g., *Tyataaŷy*, *Uluu Toyon*), circumventing the direct Yakut (*Ehe*) or Russian (*Medved'*) terms. Similarly, the Moose demonstrated a high taboo retention, with 44.4% (n = 8) using hunting euphemisms such as *Uluu kyyil* (Great beast) or *Khara bult* (Black hunt). Conversely, despite being the most frequently mentioned animal, the Reindeer exhibited minimal euphemism usage (8.3%), with the vast majority of respondents utilizing the direct Yakut term *Taba*.

Table 3. Linguistic origin of responses: Euphemism vs. Direct terminology across sacred animals.

Animal Category	Total Mentions (N)	Used Direct Russian Term	Used Direct Yakut Term	Used Traditional Euphemism (Taboo)	% of Euphemism Usage
Bear	35	7	8	20	57.1%
Moose	18	3	7	8	44.4%
Eagle	12	2	6	4	33.3%
Reindeer	48	12	32	4	8.3%

Sociodemographic Variables: Age, Location, and Gender Dynamics

Cross-tabulation of the associative responses with the participants' sociodemographic profiles yielded three statistically significant findings regarding the modern linguistic consciousness in Yakutia.

First, there is a strong positive correlation between age/location and the preservation of the totemic worldview. The use of euphemisms was predominantly concentrated among rural elders (56–74 years old). In contrast, urban youth residing in Yakutsk almost exclusively utilized direct Russian or Yakut terms, indicating a partial erosion of traditional taboo practices in modernized settings.

Second, the emergence of the Mammoth as a prominent associative symbol represents a generational paradigm shift. Of the 22 participants who associated Yakutia with the Mammoth, 86.3% (n = 19) belonged to the urban youth demographic (18–35 years old). Notably, zero participants from rural areas selected the Mammoth. This contrasts sharply with the Bear, which remains firmly rooted in the consciousness of rural adults and elders (see Table 4).

Table 4. Demographic cross-tabulation: Traditional Totem (Bear) vs. Modern Construct (Mammoth).

Demographic Group	Mentioned Bear (Sacred/Totemic)	Mentioned Mammoth (Modern/Brand)
Urban Youth (18-35 yrs)	4	19
Urban Adults/Elders (36+ yrs)	8	3
Rural Youth (18-35 yrs)	3	0
Rural Adults/Elders (36+ yrs)	20	0
Total	35	22

Finally, an analysis of semantic fields revealed a clear gender divergence in animal associations. Mentions of the Moose were heavily male-dominated, with 15 out of the 18 associations (83.3%) provided by men, aligning with the animal's traditional link to masculine prestige and large-scale hunting (*ulakhan bult*). Conversely, the Horse and the Sable demonstrated a higher recurrence among female participants. These animals were frequently associated with themes of domestic prosperity, beauty, and traditional bridal amulets (*ymyÿ*), reflecting a gendered stratification in the region's cultural symbolism.

DISCUSSION

Fossilized Taboos and Active Shamanic Reverence: The Reindeer vs. The Bear

The empirical results reveal a striking linguistic divergence in how the two most prominent sacred animals—the Reindeer and the Bear—are processed in modern linguistic consciousness. While both share a deep totemic history, their contemporary euphemism usage differs drastically (8.3% for the Reindeer vs. 57.1% for the Bear). This discrepancy highlights the phenomenon of fossilized versus active taboo language.

Historically, the original name of the reindeer in the Yakut language was lost due to strict taboo practices governed by the ancient proverb "*Aar saarga aataammat aat*" ("a name never to be spoken aloud"). Ethnological and linguistic evidence suggests that the current direct term, *Taba*, derives from the Turkic word *tebe* (camel), which initially functioned as a euphemistic substitute. Over centuries, this loanword underwent a process of lexicalization. For the modern speaker in Yakutia, *Taba* is no longer perceived as a substitute but as the direct, primary designation of the animal. Consequently, the psychological necessity to generate "new" euphemisms (such as *sinniges atakh*, "thin-legged") has largely faded.

Conversely, the Bear remains an active totemic figure. In the harsh reality of the taiga, the bear represents a tangible physical threat, which sustains the shamanic reverence surrounding it. The high frequency of kinship-based euphemisms (e.g., *Ehe* [grandfather], *Ebe* [grandmother], *Abaga* [paternal uncle]) and descriptive substitutes (e.g., *Tyataasy* [the forest one]) reflects a living worldview where the bear is considered a conscious, rational being capable of understanding

human speech. Uttering its true name is still perceived as an invitation to misfortune, demonstrating that the pragmatic function of taboo remains highly active when physical danger and spiritual reverence intersect.

The Mammoth Phenomenon: From Mythological Paradigm to Secular Branding

One of the most profound findings of this study is the demographic stratification of the Mammoth association. With 86.3% of Mammoth mentions originating from urban youth and zero from rural elders, the data captures a definitive cultural paradigm shift.

Historically, the massive bones emerging from the permafrost were explained through the mythological figure of the “Water Bull” (*uu ogha*) or the “Bull of Cold.” The tusks were interpreted as the horns of a colossal mythological creature emerging from the Arctic Ocean to bring winter frosts. However, in the 21st century, the accelerated thawing of permafrost due to global climate change has made paleontological discoveries common and highly publicized.

Consequently, the government and scientific institutions have heavily capitalized on the mammoth (e.g., the Mammoth Museum in Yakutsk, the international ivory trade, and regional tourism). The urban youth’s overwhelming association with the mammoth indicates that the animal has transitioned from an ancient cosmological spirit (the Bull of Cold) to a secular, globalized biological brand. It is the only major animal symbol in the dataset largely stripped of its traditional totemic weight, functioning instead as a modern emblem of regional identity.

Gendered Symbolism and the Pragmatics of the Hunt

The associative experiment also successfully quantified the gendered nuances embedded in traditional Yakut culture. The overwhelming male preference for the Moose (83.3% of mentions) corresponds directly to the cultural concept of *ulakhan bult* (the big hunt). In traditional society, hunting a moose—the giant of the taiga—is a supreme test of masculine strength, prestige, and honor. Euphemisms used by men, such as *uluu kyyi* (great beast), reinforce the awe-inspiring nature of this endeavor.

In contrast, the higher recurrence of the Horse and the Sable among female respondents aligns with the domestic and spiritual spheres traditionally overseen by women. The horse, protected by the celestial deity *Döhögöi Aiyy*, is fundamentally linked to domestic prosperity and life-cycle rituals. Historically, women’s belts were adorned with horse-shaped pendants serving as *ymyĭ* (protective amulets) for brides entering a new clan. Similarly, the sable (*kiis*), frequently referred to through female kinship terms like *nyaad’y* (female in-law), represents household wealth and aesthetic beauty. This gendered divergence

confirms that animal symbolism is deeply intertwined with the division of social and spiritual labor.

Cognitive Adaptation vs. Cultural Erosion in the Urban-Rural Divide

The near-total absence of euphemism usage among urban youth, contrasted with its strong retention among rural elders (over 85%), raises critical questions about cultural erosion. However, from an ethnolinguistic perspective, this shift should not be strictly viewed as fatalistic cultural loss, but rather as a natural cognitive adaptation to modernized living.

In the urban environment of Yakutsk, young speakers do not navigate the wild taiga; they face no physical bears, nor do they rely on the benevolence of *Bayanai* (the master spirit of the forest) for survival. Without the environmental stimuli that birthed these taboos, the pragmatic necessity of protective language naturally dissipates. Nonetheless, the robust preservation of complex totemic terminology in rural settlements (*ulus*) demonstrates the resilience of the Yakut linguistic consciousness. The rural core continues to serve as the active repository of the community’s collective memory and deep shamanic roots, while the urban periphery adapts its linguistic identity to navigate global modernity. Together, they form a dual, yet cohesive, regional identity.

CONCLUSIONS

This study provides empirical evidence that the linguistic consciousness of the multiethnic population in the Republic of Sakha (Yakutia) is undergoing a complex, dynamic evolution rather than a simple linear decline. Through the psycholinguistic associative experiment, it was established that the region’s animal symbolism is firmly stratified by historical depth, demographic variables, and environmental realities.

The findings confirm that the pragmatic function of taboo language remains highly active for physically and spiritually formidable animals, such as the Bear, particularly among rural elders who maintain close ties to the taiga. In contrast, terms for ancient totems like the Reindeer have lexicalized into direct vocabulary (*Taba*), losing their immediate taboo constraints. Furthermore, the study captured a significant generational and geographic paradigm shift: the emergence of the Mammoth as a secular, globalized brand driven almost exclusively by urban youth, effectively displacing the ancient mythological framework of the “Bull of Cold.” This indicates a cognitive adaptation to modern, urbanized environments where immediate survival no longer depends on negotiating with nature spirits.

While this study offers novel quantitative insights into Yakut ethnolinguistics, certain limitations must be acknowledged. The sample size (N=185), though demographically representative of the central and moderately northern

uluses, does not fully capture the linguistic behavior of the extreme Arctic indigenous minorities (e.g., Dolgans, Yukaghirs). Additionally, the strict 5-second time limit in the face-to-face methodology, while effective for capturing spontaneous associations, may have induced cognitive pressure that skewed responses toward more easily retrievable modern terms for some participants.

Future research should expand the geographic scope to include isolated Arctic communities to determine if the active taboo preservation observed in rural Yakut settlements is mirrored across other endangered Siberian languages. Additionally, analyzing digital linguistic consciousness—such as the usage of animal symbolism and euphemisms in regional social media networks—could provide a deeper understanding of how indigenous worldviews continue to adapt and thrive in the digital age.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

Authors' Contribution (CRediT Taxonomy)

Author	Roles
Yana Gorbunova	Conceptualization, Investigation, Methodology, Funding acquisition, Project administration, Resources, Writing – original draft.
Irina Pavlova	Data curation, Formal analysis, Software, Supervision, Validation, Visualization, Writing – review & editing.

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