ARTICLE

Lexico-Semantic Aspect of Ancient Turkic Toponyms of Kazakhstan

Saule Imanberdiyeva [1] , **Bibaisha Nurdauletova** [2] , **Bibatpa Koshimova** [2*] , **Ziba Kulamanova** [3] , **Aigul Alimkhan** [4]

[1] *Department of Kazakh and Russian Languages, S. Seifullin Kazakh Agrotechnical University, Astana 010011, Kazakhstan*

[2] *Department of Kazakh Language and Literature, Yessenov University, Aktau 130000, Kazakhstan*

[3] *Department of Journalism and Philology, M.Kh. Dulaty Taraz University, Taraz 080000, Kazakhstan*

[4] *Department of Kazakh, Russian Philology and Journalism, S. Amanzholov East Kazakhstan University, Ust-Kamenogorsk 070000, Kazakhstan*

ABSTRACT

This study investigates the lexico-semantic characteristics of ancient Turkic toponyms in Kazakhstan and emphasizes their linguistic, historical, and cultural significance. The research examines how these geographical names reflect human cognition, social organization, and environmental interactions within the framework of the anthropocentric approach. The analysis explores the structure, meaning, and contextual usage of ancient Turkic toponyms, demonstrating their function as linguistic markers of cultural heritage and collective memory. This study applies a multidisciplinary methodology that combines elements of historical linguistics, onomastics, and ethnolinguistics. The research classifies toponyms according to their semantic categories, identifies patterns in naming principles, and traces the etymological roots of selected geographical names. The findings reveal that ancient Turkic toponyms contain valuable information about Kazakhstan's historical realities, including social hierarchies, economic activities, and ecological conditions. This research enhances the understanding of Kazakhstan's toponymic system and contributes to broader discussions on language preservation in the context of globalization. The study highlights the role of toponyms as carriers of cultural memory and emphasizes their significance in maintaining regional identity and linguistic diversity. The practical implications of this study extend to

*CORRESPONDING AUTHOR:

Koshimova Bibatpa, Department of Kazakh Language and Literature, Yessenov University, Aktau 130000, Kazakhstan;
Email: bibatpa.koshimova@yu.edu.kz

various fields such as linguistics, cultural studies, and ethnography. The insights obtained from this research can support initiatives in cultural preservation, cartography, and educational materials designed to raise awareness of Kazakhstan's rich linguistic landscape.

Keywords: Onomastics; Toponymy; Lexical Semantics; Turkic Languages; Ethnolinguistics; Cultural Heritage

1. Introduction

Toponyms serve as linguistic artifacts that encode rich layers of historical, cultural, and social information. As linguistic markers deeply embedded in cultural narratives, they provide valuable insights into how societies perceive, interact with, and organize their physical environments. The study of toponyms not only reveals the linguistic evolution of a region but also uncovers traces of historical migration, trade routes, and social structures.

Kazakhstan's geographical nomenclature reflects a dynamic interplay of linguistic influences shaped by prolonged contact between Turkic, Persian, Slavic, and other cultural groups. This extensive exchange has produced a diverse collection of place names that reveal important insights into regional histories, settlement patterns, and cultural identities. The study of toponyms offers unique insights into the ways in which language evolves to reflect human interaction with the environment, social structures, and belief systems. Toponyms are thus an invaluable resource for understanding how cultural narratives are transmitted through generations and how societies embed meaning into their physical surroundings.

Research on Turkic toponyms began in the 1930s, when linguists, historians, ethnographers, and geographers in Kazakhstan initiated systematic studies. Some of the earliest and most influential publications on Kazakh toponymy include works by S. Amanzholov, T. Zhanuzakov, and Y. Koyshybayev[1–3]. More than 30 monographs and theoretical studies were published between 1971 and 1981. These works addressed topics such as semantic classification, structural types, lexical and grammatical methods of toponym formation, language composition, phonetic processes, the relationship between toponymy and ethnography, and the transcription and spelling of local geographical names.

Research on Kazakhstan's toponymic system has drawn considerable attention from both domestic and international scholars. Early Soviet researchers such as V. Zhuchke-vich and E. Koichubaev contributed significantly to the classification and analysis of Kazakhstani place names[4,5]. Subsequent investigations conducted by B. Bektasov[6], T. Zhanuzakov[7], and Sh. Kamollidin have expanded this foundation by combining fieldwork, systematic mapping, and regional case studies[8]. Recent studies such as M. Musukov's patterns in naming principles and word-formation mechanisms[9]. These findings have shown that Kazakhstan's ancient Turkic toponyms frequently reference natural landmarks, flora and fauna, and social constructs, emphasizing their complex semantic structure.

Modern linguistic research increasingly emphasizes the study of toponyms, particularly within the framework of the anthropocentric approach. This perspective views toponyms not only as linguistic markers but also as reflections of collective memory, cultural narratives, and social practices. Researchers such as Z. Otsomieva have demonstrated that toponyms often encode anthropological and social characteristics, reflecting human behavior, worldview, and value systems[10]. D. Urazmetova has similarly highlighted the axiological dimension of toponyms, showing that geographical names frequently convey positive or negative cultural connotations[11]. These findings align with patterns observed in Kazakhstan's toponymic landscape, where ancient Turkic place names often reflect symbolic meanings related to spiritual beliefs, social hierarchies, and territorial identity. Additionally, these symbolic references reinforce the way communities perceive and structure their environment, highlighting the interconnectedness between language, culture, and landscape.

Several aspects of Kazakhstan's toponymic landscape remain insufficiently explored despite these advancements. Previous research has primarily focused on major settlements and prominent landmarks, leaving smaller settlements, natural features, and culturally significant sites underrepresented in scholarly discourse. Urbanization and environmental change have further contributed to the transformation – and in some cases, loss – of traditional place names. As L.

Komaraa et al. have observed, global cultural shifts pose a growing threat to indigenous naming traditions, highlighting the urgent need for focused research on toponymic preservation[12].

This study aims to expand upon existing research by examining the lexico-semantic features of ancient Turkic toponyms in Kazakhstan. The research seeks to analyze the lexical components, semantic patterns, and cultural implications embedded in these place names. The study also aims to uncover the historical narratives, social structures, and environmental contexts that have shaped Kazakhstan's toponymic system. The findings are expected to contribute to broader discussions on language preservation, cultural identity, and the role of toponyms as carriers of collective memory in Kazakhstan's evolving social landscape.

Hypothesis 1. *The lexico-semantic features of ancient Turkic toponyms in Kazakhstan reflect enduring cultural and social values, including spiritual beliefs, social hierarchy, and territorial identity.*

Hypothesis 2. *The semantic structures of ancient Turkic toponyms exhibit a strong correlation with natural landscapes and environmental conditions, demonstrating the adaptation of language to the nomadic lifestyle and ecological awareness of Turkic-speaking communities.*

By exploring these linguistic and cultural dimensions, this study aims to contribute to broader discussions on language preservation, cultural identity, and the role of toponyms as carriers of collective memory in Kazakhstan's evolving social landscape.

2. Materials and Methods

2.1. Theoretical Framework and Historical Context

This study adopts a comprehensive methodological framework that integrates linguistic, historical, and cultural approaches to investigate the lexico-semantic characteristics of Kazakhstan's ancient Turkic toponyms. The study effectively addresses both theoretical questions about language development and practical concerns related to the preservation of cultural heritage by combining multiple research techniques.

The foundation of this study is based on established research traditions in onomastics, particularly those introduced by prominent Kazakh scholars such as G. Konkashpaev, E. Koichubaev, and T. Zhanuzakov. Their works remain central to the classification, analysis, and interpretation of Kazakh toponyms. Early studies on Kazakhstan's toponymy, initiated between the 1930s and 1950s, provided valuable insights into the phonetic evolution of Kazakh place names, dialectal variations, and etymological roots. Researchers like G. Konkashpaevand E. Koichubaev emphasized the complex interplay between language and social practices, demonstrating that toponyms encode information about territorial organization, migration patterns, and cultural symbolism. E. Konkashpaev introduced a systematic framework for categorizing toponyms based on their structural and semantic properties[13]. Similarly, E. Koichubaev enriched the field by providing extensive empirical material drawn from diverse regions of Kazakhstan[14].

To deepen the methodological basis, the current research also integrates internationally recognized theoretical frameworks. Notably, G.R. Stewart's classification of American place names introduces a typological model that includes categories such as descriptive names, associative names, commemorative names, incident names, and shift names[15]. These categories are adapted in this study to analyze Kazakh toponyms through an expanded semantic lens. Additionally, I.A. Martynenko'sglossary of toponymic terminology offers a bilingual classification system that enables a more precise comparison across linguistic traditions[16]. Moreover, recent hydronomastic harmonization efforts such as those proposed by J. Hladký help standardize core naming principles across Eurasia[17], facilitating comparative analysis of Kazakh hydronyms with other regional systems.

This study examines how ancient Turkic toponyms reflect broader socio-cultural trends, including the influence of nomadic lifestyles, spiritual beliefs, and environmental adaptation. Historical sources such as archival records, maps, and etymological dictionaries are extensively utilized to reconstruct the original meanings of place names and identify linguistic shifts resulting from historical events such as migrations, trade expansions, and political transitions.
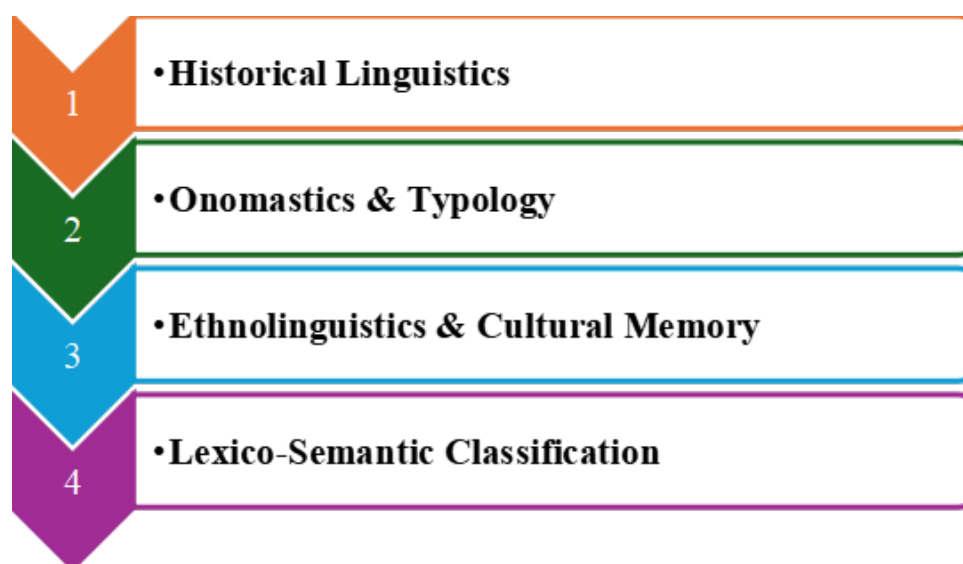
This theoretical framework allows the study to interpret toponyms not only as linguistic units but also as carriers of cultural memory and regional identity. The research seeks

to provide a deeper understanding of the role of toponyms in shaping Kazakhstan's historical and social landscape by connecting linguistic data with historical evidence.

The corpus under analysis includes 412 toponyms, selected from national cartographic archives, historical atlases, and online registries. The selection process was based on four main criteria: 1) semantic transparency; 2) relevance to ancient Turkic lexicon; 3) geographic diversity; 4) presence of symbolic or culturally embedded meanings. This ensured a balanced dataset of hydronyms, oronyms, settlement names, and hybrid forms.

Figure 1 illustrates the methodological structure applied in this study, combining linguistic, cultural, and geographic dimensions:

- Historical Linguistics
- Onomastics & Typology
- Ethnolinguistics & Cultural Memory
- Lexico-Semantic Classification

Figure 1. Multidisciplinary Approach to Toponymic Analysis.

This integrated theoretical structure allows the study not only to classify and interpret toponyms, but also to reconstruct their cultural functions and transformations across time. By aligning Kazakh toponymy with international models, this research helps situate local naming practices within global onomastic discourse.

2.2. Lexico-Semantic and Onomastic Analysis

A core methodological approach in this study is lexico-semantic analysis, which examines the internal structure and semantic characteristics of selected toponyms. This method is particularly valuable for uncovering linguistic patterns that reveal social, cultural, and environmental influences embedded in place names.

The analysis involves detailed examination of word roots, affixes, and compound structures to identify recurring naming principles. Special emphasis is placed on symbolic meanings, metaphorical references, and descriptive elements that reflect traditional Turkic worldviews. For instance, toponyms containing elements such as *"tau"* (mountain), *"kol"* (lake), or *"dala"* (steppe) often reference geographical features, while those incorporating terms like *"bek"* (chief), *"bai"* (wealthy individual), or *"ata"* (ancestor) signify social and cultural hierarchies.

To provide a more structured and internationally aligned classification, this study incorporates the semantic typology proposed by G.R. Stewart (1970), mentioned before, adapted for the Kazakh cultural context. **Table 1** is an adapted table of Stewart's categories with examples from Kazakh toponymy:

In addition to semantic categories, the study also explores the **morphological structure** of toponyms. Ancient Turkic place names in Kazakhstan frequently exhibit **composite structures**, typically combining an **adjective + noun**, or **noun + noun** pattern. **Table 2** summarizes typical morphological models:

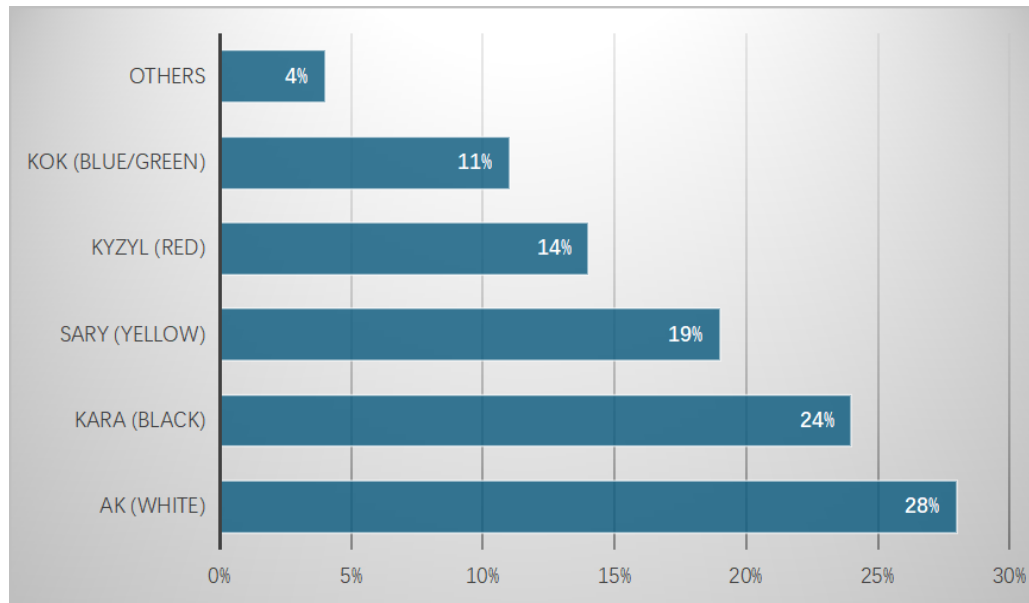**Table 1.** Semantic Classification of Ancient Turkic Toponyms in Kazakhstan.

No.	Category	Description	Kazakh Examples
1.	Descriptive Names	Describe physical characteristics	*Kokshetau* (Blue Mountain), *Zhalanashkol* (Bare Lake)
2.	Associative Names	Associated with a feature, animal, or condition	*Kargaly* (Place of Crows), *Shubar* (Thicket)
3.	Commemorative Names	Named after ancestors or sacred figures	*Aulie-Ata* (Holy Ancestor), *Bektau-Ata*
4.	Incident Names	Refer to a historical or mythological event	*Shyngystau* (Chinggis Khan's Mountain)
5.	Shift Names	Transferred from one place to another	*Sarysu* (Yellow Water – river and village)
6.	Hagiotoponyms	Refer to sacred/religious figures or saints	*Shalkar-Ata, Aulie-Kol*
7.	Hybrid Names	Include elements from multiple languages	*Akmolinsk* (Turkic + Russian), *Nurbergen* (Arabic + Turkic)

Source: Adapted from the work of Stewart, 1970 [15].

Table 2. Morphological Types of Turkic Toponyms.

No.	Structure Type	Pattern	Example	Meaning
1.	Adjective + Noun	Color + Geographical Term	*Saryarka*	Yellow ridge
2.	Noun + Noun	Clan/Title + Feature	*Bektau-Ata*	Chief's Mountain
3.	Reduplicated Structure	Repetition or variation	*Karakol, Kyzyl-Kiya*	Emphasis through repetition
4.	Descriptive Compound	Quality + Object	*Ak-Kuduk, Betpak-Dala*	White well, infertile steppe
5.	Hybrid Compound	Turkic + non-Turkic element	*Akmolinsk, Alma-Ata*	Multilingual structure

A large proportion of these toponyms belong to **color-based descriptive categories**, which not only aid in visual orientation but also convey symbolic and spiritual meanings in the nomadic worldview. This is consistent with *ethnographic observation* that colors in Turkic culture often imply moral, ritual, or clan associations (*kara* = strength/protection, *ak* = purity/blessing, *sary* = fertility/desertness) (**Figure 2**).

Figure 2. Frequency of Color-Related Toponyms in Corpus (n = 412).

The systematic classification of these toponyms allows for tracing semantic fields – clusters of meanings centered on ecological, spiritual, or territorial ideas. For instance, the hydronymic field (e.g., Sarysu, Akbulak) strongly correlates with nomadic mobility and sacred water cults, while the oronymic field (e.g., Karkaraly, Zhambyltau) reflects visual elevation, spiritual landmarks, and clan borders.

To standardize the description of toponyms, the study uses internationally recognized terminology based on the bilingual glossary by Martynenko [16], allowing the classification to be comparable with global toponymic research. Each example is annotated according to type, structure, ety-

mology, and function.

To further enhance the linguistic analysis, the study employs onomastic classification, which groups toponyms into thematic categories based on their meanings and functions. These categories include references to: 1) Geographical features (e.g., mountains, rivers, valleys); 2) Flora and fauna (e.g., trees, animals, or plants commonly found in the region); 3) Social or historical markers (e.g., references to tribal groups, leaders, or spiritual sites).

This classification framework enables the identification of semantic trends that reflect Kazakhstan's environmental conditions, nomadic traditions, and spiritual beliefs. Additionally, the study investigates morphological patterns such as reduplication (e.g., *Karakol*) and descriptive combinations (e.g., *Ak-Kuduk*), which were commonly used in ancient Turkic naming practices.

2.3. Comparative and Descriptive Methods

To identify linguistic parallels and trace cultural interactions, the study applies a comparative analysis method. This approach examines similarities between Kazakhstan's ancient Turkic toponyms and place names found in other Turkic-speaking regions such as Kyrgyzstan, Uzbekistan, and western China. The study reveals evidence of historical migration processes, trade routes, and intercultural exchange that influenced place-naming traditions by analyzing shared linguistic patterns.

The research also incorporates a historical-etymological method to trace the origins and transformations of selected toponyms. The study reconstructs the meanings of place names that have evolved due to language contact, colonization, or sociopolitical changes by consulting archival records, historical maps, and etymological dictionaries.

Finally, a descriptive method is employed to document and preserve endangered or lesser-known toponyms. This aspect of the research is particularly important given the rapid pace of urbanization, environmental change, and cultural shifts that threaten the survival of traditional place names. Fieldwork conducted in rural and remote areas aims to record oral histories, collect local narratives, and identify toponyms that may otherwise be lost.

This combined methodological approach ensures a robust analysis that integrates linguistic theory, historical inquiry, and cultural interpretation. This study aims to provide a comprehensive understanding of Kazakhstan's rich toponymic heritage by addressing both the structural and symbolic aspects of ancient Turkic toponyms.

3. Results and Discussion

3.1. Syntagmatic Features of Turkic Toponyms in Kazakhstan

The etymological analysis of ancient Turkic toponyms in Kazakhstan, particularly those formed through integrating lexemes, holds considerable significance not only for linguists but also for researchers in related fields such as history, ethnography, and geography. The strategic location of Kazakhstan, positioned along key caravan routes that linked diverse areas, played a crucial role in shaping its geographical names. Studies on the historical and contemporary toponymy of Kazakhstan employ historical-linguistic and historical-geographical methods to trace the origin and development of the modern system of geographical names. These methods allow researchers to explore the structure of toponyms, their etymology, connections with appellative vocabulary, the frequency and regional distribution of terms, their semantic variations, and their role in the local lexicon.

Examples of Kazakh toponyms formed using the lexeme *ala* include *Alakol*, a lake in the Almaty region meaning "variegated lake" or "multicolored lake"; *Alabas*, a mountain or hill name where bas means "head" or "peak," collectively implying "striped peak" or "variegated summit"; *Alabulak*, a spring or stream name where "bulak" means "spring," suggesting "colorful spring"; *Alashatyr*, a place name where "shatyr" refers to a tent or shelter, possibly indicating a landmark with distinct visual features; and *Alakayin*, a forested area or grove where "kayin" means "birch," indicating a "mixed birch forest" or "diverse woodland." These examples demonstrate how the lexeme "ala" is commonly used to describe visual diversity or distinctive landscape features. Toponyms that incorporate the lexeme "ala" play a crucial role in conveying information about the physical and geographical characteristics of the named objects. Such names are often the most informative when they consist of both a descriptive and a defined component.

The lexeme *ala*, common across Turkic languages, operates as a visual-semantic marker that reflects both ecological variation and aesthetic perception in traditional nomadic

cultures. In addition to Kazakh, similar usage is found in *Aladaglar* (Turkey), *Alabash* (Kyrgyzstan), and *Alay* (Tajikistan), suggesting a **pan-Turkic conceptual motif** linking color variation to land memory.

These names can be semantically analyzed using **componential decomposition**, where each morpheme is assigned meaning, and structural combinations yield either transparent or idiomatic interpretations (**Table 3**).

Table 3. Lexical Components of Selected Toponyms with "Ala".

No.	Toponym	Component 1 (ala)	Component 2	Gloss	Interpretation
1.	Alakol	ala (variegated)	kol (lake)	colorful lake	lake with changing colors
2.	Alashatyr	ala (multicolor)	shatyr (tent)	multicolored tent-like hill	visual reference to terrain
3.	Alakayin	ala	kayin (birch)	variegated birch	mixed birch grove

This compositional analysis confirms that most ancient Turkic toponyms are **two-component constructs**, with patterns such as **Adjective + Toponymic Noun** (e.g., *Sarysu*, *Karakol*) forming the core morphological structure. These constructions are not only grammatically productive but also culturally motivated (**Table 4**).

Table 4. Typical Word-Formation Patterns in Ancient Turkic Toponyms.

No.	Pattern	Example	Morphological Function
1.	Adjective + Noun	*Kyzylsu*	Descriptive (color + water)
2.	Noun + Noun	*Bektau-Ata*	Commemorative (leader + ancestor)
3.	Reduplication	*Karakol*	Emphasis, intensification
4.	Hybrid + Suffixation	*Akmolinsk*	Colonial or political influence
5.	Derivation	*Shubarlyk*	Indicates abundance (thicketed area)

In many cases, **metonymic transfer** can be observed, where a name originally referring to a river is transferred to a nearby mountain or vice versa (**Figure 3**). This phenomenon is common in both ancient and modern Kazakh toponymy, reflecting **spatial contiguity and functional association**.
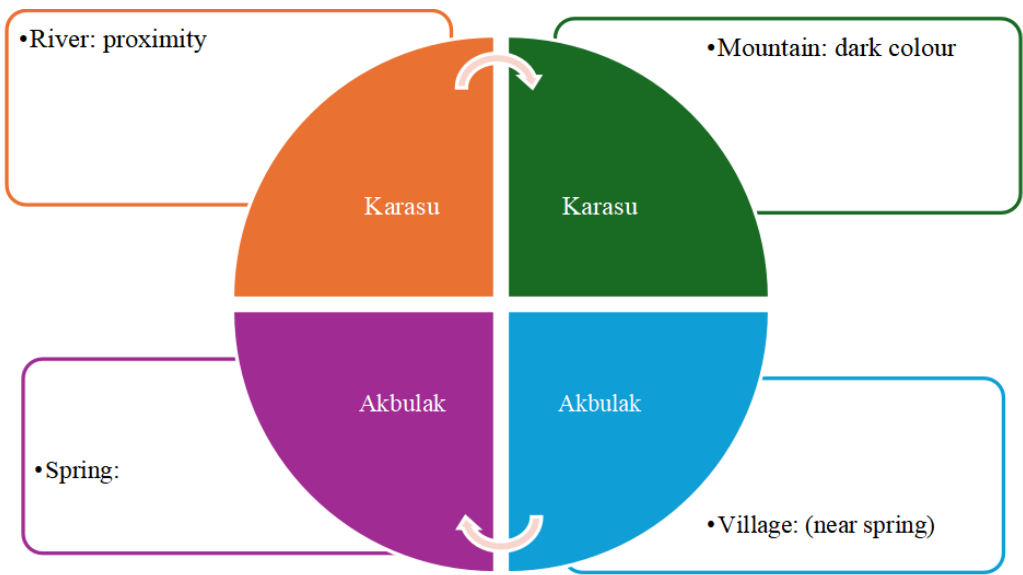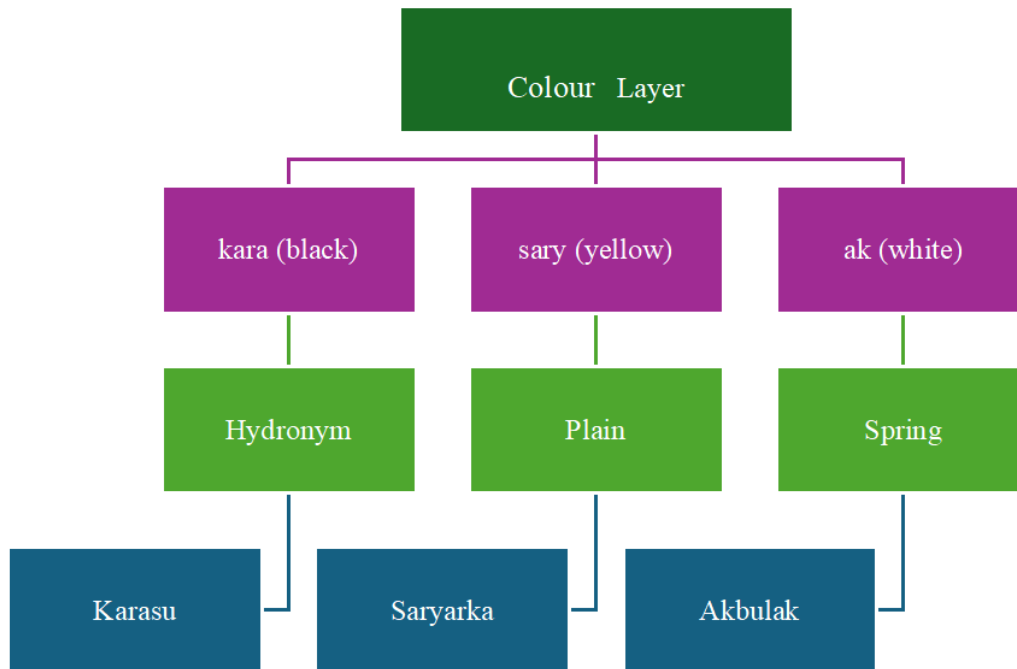

Figure 3. Metonymic Naming Processes in Kazakh Toponymy.

This type of **semantic shift** demonstrates the **dynamic interaction** between environment and naming practice. As noted by V. Sapozhnikov[18], among the Altai and Kazakh populations, it was common for river names to migrate "uphill" into oronyms and vice versa, especially when both features served the same community or caravan path.

In this regard, metonymic and metaphorical naming form a **continuum**, where practical geography blends with symbolic geography. For instance, *Betpak-Dala* ("infertile steppe") is not only a descriptor but a **cultural codename** for hardship, desolation, and vastness.

To visualize this naming logic, the following conceptual model illustrates the **semantic layering** found in selected toponyms (**Figure 4**):

Figure 4. Lexical-Semantic Fields in Ancient Turkic Toponyms.

This semantic system forms a **network of encoded meanings**, allowing even non-literate nomads to navigate and remember vast territories based on visual, ecological, and spiritual cues.

Notably, Turkic toponyms are commonly characterized by a two-part structure, resulting from the combination of two lexical elements. The first component of such toponyms is usually an adjective, while the second is a common geographical term that often appears in other place names. These terms typically describe orographic and hydrographic features and come from appellatives such as "*kol*" (lake), "*tau*" (mountain), "*tash*" (stone), "*suu*" (water), etc. For instance, names such as *Alatau*, *Kokshetau*, and *Karkaraly* illustrate a strong connection to mountainous terrain. The term *tau* (meaning "mountain") commonly appears in the names of mountain ranges and peaks, signifying their importance in local cultural narratives. *Kokshetau* combines "*kok*" (meaning "blue" or "green") and "*tau*", evoking imagery of the region's distinctive, blue-tinged mountains. The origin of these geographical names in Kazakhstan can be explained by studying the meaning of the base appellative, which usually consists of an adjective and a noun.

Turkic toponyms from different regions, even those separated by distance, often follow similar patterns of use. They act as integrated units in both semantic and morphological aspects, despite differences in spelling rules. Another common feature of Turkic toponymy is the close connection between the names of different geographical objects, such as mountains and rivers or rivers and passes[19]. The most common in terms of structure are "paired names." These names may be written as one word, shifting the stress from the first component to the second, or separately, sometimes with a hyphen and sometimes without one, shifting the stress from the second component to the first. There are also three-

and even four-part toponyms, which do not follow consistent spelling rules. The process of writing such names with or without a hyphen depends on the "nature of the name"or the meaning of the toponym[20]. The meaning is clear and linked to the original appellative, in some cases, while it remains unclear in others.

Such connected toponyms are frequently found in Kazakhstan. It is common for a hydronym to be transferred to an oronym, especially when a river originates from or flows near a mountain. Among the Altai people, there is a long-standing tradition of naming mountains after rivers that begin in their vicinity[18]. For example, in southeastern Kazakhstan, the name *Kokbulak*, which means "blue spring," is used both for a stream and a nearby mountain slope. This reflects a broader pattern where geographic names are extended from one physical feature to another based on proximity or association. This process, where a name shifts from one landscape element to a neighboring one due to semantic or spatial connection, is known as metonymy.

The formation of hydronyms based on orographic features represents a reverse yet equally significant process in the study of toponymy. It is common to encounter identical names used for both hydronyms and oronyms, highlighting the intricate interrelations among different types of place names in Kazakh geographical nomenclature. This pattern reflects a broader territorial interconnectedness, wherein shared names are applied to multiple elements of the natural landscape. For instance, the name *Karasu* – meaning "black water" in Kazakh – is frequently used for both water bodies and inhabited localities. Across Kazakhstan, numerous rivers and over twenty settlements share this name, suggesting a strong cultural pattern of naming that connects various parts of the landscape. Another example is *Aksu*, meaning "white water," which is also widely used for both rivers and populated places. This name appears across several regions of the country, both in reference to flowing water and human habitation. The repetition of such hydronyms and toponyms emphasizes the territorial interconnectedness characteristic of Kazakh naming traditions, where a single term may extend across natural and cultural geography alike.

In some cases, the opposite process can also occur, where river names originate from nearby orographic features. In Kazakh toponymy, identical names are frequently used for both hydronyms and oronyms, reflecting the complex interplay between different types of geographical names. This pattern illustrates territorial interconnectivity, where names are shared across various landscape features. Kazakhs and Mongols often give the same name to rivers flowing from the same pass or peak like the Altai people[18].Geographical names formed from different types of appellatives have remained in use not only in toponymic vocabulary but also in literary language. The meanings of these names depend on the grammatical category of their components. These components usually describe objects or their qualities. When a new name enters the language, it can appear as a free phrase, a repeated pair of words, or a compound word with a new element. In such cases, the meaning may shift from one grammatical and lexical category to another[21].

Kazakh toponymy often reflects the physical features of the land, particularly the absence of vegetation. The place name *Tazbas* in the Almaty Region, for example, means "bold" or "naked," and describes a bare, treeless area. Another example, *Betpak-Dala*, translates as "infertile steppe" and highlights the dry and challenging conditions of the region. These names describe the visual and ecological characteristics of the landscape and show how the local environment influences naming practices.

The naming of orographic features in Kazakhstan is often influenced by the presence of local animals and birds. Some toponyms refer to areas associated with specific species or traditional grazing patterns. For example, *Kargaly* means "place of crows" and is connected to the frequent presence of these birds in the region. Another example is *Zhainak*, which refers to a location associated with wild goats that roam the surrounding hills. These names highlight the close relationship between the natural habitat and the cultural practices of naming geographical features in Kazakhstan.

In the toponymy of Kazakhstan, names that include color terms and their shades are commonly used, especially in mountainous regions with rich and varied vegetation. Mountain landscapes are vertically zoned, and in the southern areas, these natural "layers" often create a vibrant palette. The terrain reveals yellow sands, countless shades of green, brown and black rock formations, red clay, crimson granite, and the white glow of eternal snow. What the eye can see from afar is often difficult to reach due to the rugged relief. In such areas, place names are frequently inspired by visual impressions, particularly color. For example, *Kokshetau*, meaning "blue

mountain," refers to a peak that appears bluish from a distance. Another example is the *Boguty* Mountains, also known as the "Red Mountains," named for their slopes, which range from soft pink to deep red tones. These examples show how color-based toponyms describe the distinctive visual features of Kazakhstan's diverse landscapes.

Hydronyms play an important role in the toponymic landscape of Kazakhstan, reflecting both natural features and historical context. For example, the name Sarysu is derived from the Kazakh words *sary* ("yellow") and *su* ("water" or "river"), possibly referring to the color of the water or the surrounding landscape. Another example is the *Zhayyk* River, also known as the Ural. One interpretation of its name links it to an ancient Turkic word meaning "to spread" or "to overflow," which may describe the river's flowing nature. These examples illustrate how hydronyms in Kazakhstan are closely tied to the region's environmental and cultural characteristics.

A structural and semantic analysis of Turkic-origin toponyms in Kazakhstan demonstrates that this layer of vocabulary, which plays a significant role in the formation of geographical names, is organized around distinct lexico-semantic fields. These fields are revealed through the examination of individual lexemes and syntactic constructions that make up toponymic units. The selection of appellative bases, classified by typological characteristics, reflects a linguistic conceptualization of the natural environment and encodes the collective cultural and cognitive experience of Turkic-speaking communities. Importantly, lexico-semantic fields are not intrinsic to the semantics of the toponyms themselves, but rather to the appellative elements embedded within them. A key theoretical objective in the study of toponymic word formation – where toponyms function as secondary nominative units with segmented onomasiological structures – is to examine the semantic relationship between the appellative base and the resultant toponym.

3.2. Socio-Cultural and Historical Transformations

This study emphasizes several key aspects of the lexico-semantic characteristics of Ancient Turkic toponyms in Kazakhstan. The findings show that these place names function not only as geographical references but also as reflections of complex linguistic, historical, and cultural dynamics. Many of the toponyms originate from the nomadic traditions of Turkic-speaking communities and are closely linked to natural features such as rivers, mountains, and steppes. This connection highlights the critical role of environmental awareness in shaping spatial orientation and patterns of mobility among early Turkic populations. Furthermore, the presence of symbolic and descriptive elements within the toponymic lexicon indicates the existence of an advanced naming system. This system goes beyond mere physical identification and incorporates references to social organization, spiritual worldviews, and mythological motifs.

Many ancient Turkic toponyms represent not just territorial markers, but encapsulated **cosmological concepts** that reflect the worldview of nomadic communities. The recurrence of terms like *Aulie* (holy), *Ata* (ancestor), and *Bek* (chieftain) suggests a **sacralization of space**, where landscape elements are embedded with symbolic authority and historical reverence.

Numerous place names carry sacral references tied to **ancestral spirits** (*ata*), holy persons (*aulie*), or ritual spaces (*mazar*, *tobe*). These units link physical geography to metaphysical concepts, representing what some scholars identify as **"hagiotoponyms"** (**Table 5**)[15,16,22].

Table 5. Toponyms Reflecting Social Hierarchies and Spiritual Meaning.

No.	Toponym	Lexical Elements	Meaning	Cultural Function
1.	Aulie-Ata	aulie (holy) + ata	Holy Ancestor	Sacred pilgrimage or burial site
2.	Bektau-Ata	bek (chief) + tau (mountain) + ata	Mountain of the revered leader	Territorial and clan-based reverence
3.	Shalkar-Ata	shalkar (vast lake) + ata	Great water of ancestor	Water cult, regional myth
4.	Zhambyl-Tau	personal name + mountain	Mountain named after hero	Commemorative, identity-marking

The recurrence of these names across different regions suggests the presence of a **shared cultural matrix** within the broader Turkic-speaking world. This is especially visible when comparing Kazakh toponyms with those from:

- **Kyrgyzstan** (*Sary-Tash*, *Karakol*, *Tash-Kumyr*);

- **Uyghur Xinjiang** (*Kizilsu*, *Kumtag*, *Akqi*);
- **Crimean Tatars** (*Ak-Mesjit*, *Karasu*, *Qurman*);
- **Turkmenistan** (*Gara-Gum*, *Gekdepe*, *Bamy*).

Despite regional variation in phonology and orthography, the **semantic fields** remain remarkably consistent: elevation, color, water, ancestry, and sacredness (**Table 6**).

Table 6. Cross-Regional Semantic Motifs in Turkic Toponyms.

No.	Motif	KZ (%)	KG (%)	CN-XJ (%)	CR-TR (%)
1.	Color	32	28	25	27
2.	Water	24	30	35	29
3.	Sacred	18	22	20	25
4.	Ancestor	14	10	8	15
5.	Animal	12	14	12	10

(Chart: % recurrence of motif in Kazakh, Kyrgyz, Uyghur, and Tatar corpora).

These patterns indicate that **lexical parallelism** in toponymy corresponds to broader **ethnolinguistic identity formation** across Central Eurasia. The names serve as *ethnosymbolic anchors*, reaffirming belonging, collective memory, and continuity between land and lineage (**Table 7**).

These toponyms also reflect shifts in **social memory** and **language policy**. Many names were replaced, translated, or hybridized during periods of Russian colonization, Soviet standardization, or modern renaming campaigns. Some examples (*Akmolinsk → Astana*, *Alma-Ata → Almaty*) show how spiritual and nature-based names were transformed into administrative constructs. Others, such as *Aulie-Kol*, retained their mythological semantics but had orthographic modifications.

Table 7. Spiritual Toponyms and Their Functional Zones.

No.	Region	Toponym	Function	Status
1.	Southern KZ	Aulie-Ata	Sacred burial site	Pilgrimage site
2.	Central KZ	Bektau-Ata	Ancestral clan reference	Natural reserve
3.	Western KZ	Karamola	Site of religious disputes	Lost village
4.	Eastern KZ	Zhambyl-Tau	Mythic warrior association	National symbol
5.	Kyrgyzstan	Arslanbob	Forest of lions, spiritual	Shrine & legend
6.	Crimea	Eski-Kermen	"Old fortress" with sanctuaries	Archaeological

The study further reveals that many ancient Turkic toponyms have experienced phonetic evolution and semantic transformation because of prolonged contact with Persian, Slavic, and Mongolic language groups. These linguistic changes often correspond to broader historical processes, including patterns of migration, the development of trade networks, and shifts in sociopolitical structures. For example, certain Kazakh toponyms underwent phonological adaptation during the period of Russian colonization, while others preserved their original forms despite external influence. In addition, Turkic place names exhibit distinctive morphological structures that reflect long-standing naming conventions and linguistic continuity.

In recent decades, Kazakhstan's **language revitalization programs** have begun to reassert traditional Turkic names, supporting cultural heritage preservation. This reflects a global trend in postcolonial societies toward the **decolonization of space through toponymy**.

Nomadic traditions have played a significant role in shaping the principles of toponymic formation. Place names such as *Shubar*, meaning "dense thicket," indicate locations traditionally used by nomadic groups for grazing or shelter. Similarly, the name *Oral*, which translates as "floodplain" or "river valley," reflects the importance of fertile lowlands for agricultural activities and livestock herding. Structural features such as reduplication and descriptive combinations further highlight the expressive capacity of ancient Turkic toponyms. Examples like *Kara-Kol* ("Black Lake") and *Ak-Kuduk* ("White Well") demonstrate how such linguistic structures contribute to the clarity, memorability, and symbolic depth of place names.

The analysis further highlights that toponyms often

preserve traces of historical realities, such as social hierarchies, cultural integration, and environmental adaptation. As demonstrated in different studies[23], hydronyms and oronyms in regions like *Saryarka* illustrate extensive interactions between Turkic and Mongolic groups. This observation aligns with findings, which emphasize that Turkic inscriptions, such as the Orkhon-Yenisei texts, encode important references to power, territorial claims, and cultural identity[24].

The findings of this study demonstrate that ancient Turkic toponyms in Kazakhstan possess a complex lexico-semantic structure that encapsulates the region's historical, cultural, and ecological dimensions. The analysis reveals consistent semantic patterns, including references to geographical features, social organization, and symbolic or spiritual concepts. These recurring elements underscore the deep interrelation between language and the cultural worldview of the Turkic-speaking populations that have historically inhabited the territory of Kazakhstan.

Many ancient Turkic toponyms in Kazakhstan closely correspond to the region's physical geography. Place names such as *Alatau*, *Kokshetau*, and *Karkaraly* reflect a strong association with mountainous landscapes. The lexical element *tau*, meaning "mountain" in Turkic languages, is frequently used in the naming of ranges, peaks, and elevations. The name *Alatau* combines *ala* ("motley" or "multicolored") with tau, referring to snow-covered peaks that display shifting hues depending on light and weather conditions. Similarly, *Kokshetau* merges *kok* ("blue" or "green") with tau, evoking the bluish tones of the mountain ridges that define this area's topography.

Numerous hydronyms in Kazakhstan reflect deep-rooted Turkic linguistic traditions and underscore the importance of water bodies in shaping territorial identity. For instance, the hydronym *Ili* is believed to originate from the Turkic root *il*, meaning "country" or "land," which may indicate the river's historical significance in supporting settlement development and trade routes. Similarly, the name *Karatal* combines *kara* ("black" or "large") and *tal* ("willow"), possibly referencing the willow groves that once lined the river's banks. These examples illustrate how linguistic elements in hydronyms encode both environmental features and sociocultural associations.

Kazakhstan's steppe environment is prominently represented in its toponymy through names such as *Betpak-Dala*, *Saryarka*, and *Zhetysu*. The name *Betpak-Dala* combines *betpak* ("barren" or "lifeless") and *dala* ("steppe" or "plain"), emphasizing the severe climatic conditions of this arid region. *Saryarka*, meaning "yellow ridge," refers to the golden grasslands that dominate the landscape in the autumn season. *Zhetysu*, translating as "Seven Rivers," denotes the fertile valleys shaped by multiple rivers in southeastern Kazakhstan, highlighting the ecological richness of the region.

In addition to environmental references, numerous Turkic toponyms encode cultural and social meanings rooted in the nomadic heritage of the region. The name *Shubar* ("dense thicket") historically referred to areas where nomadic tribes gathered for shelter or grazing. Similarly, *Oral*, derived from the word meaning "floodplain" or "river valley," underscores the strategic significance of fertile lowlands for settlement and pastoral activities.

Many Turkic toponyms also demonstrate consistent structural patterns, including reduplication and descriptive composition. Examples such as *Kara-Kol* ("Black Lake") and *Ak-Kuduk* ("White Well") illustrate the use of paired lexical elements, while names like *Sary-Oba* ("Yellow Valley") emphasize visual attributes of the landscape. These linguistic formations contribute to the clarity, memorability, and cultural significance of place names, reinforcing both environmental perception and collective identity.

3.3. Mythopoetic and Cultural Continuity in Turkic Toponyms

Ancient Turkic toponyms in Kazakhstan display semantic and structural features that are consistently mirrored across other Turkic-speaking regions, reflecting a shared cultural and linguistic heritage. Common lexical elements – including color adjectives such as *kara* ("black"), *ak* ("white"), and *sary* ("yellow"), along with geographical nouns like *tau* ("mountain"), *su* ("water"), and *kol* ("lake") – frequently appear in the toponymic systems of various Turkic populations.

In Kyrgyzstan, place names such as *Karakol* and *Sary-Tash* directly parallel Kazakh examples like *Karakol* and *Saryarka*, demonstrating analogous interpretations of landscape features and the symbolic use of color. Among Crimean Tatars, toponyms such as *Ak-Mesjit* ("White Mosque") and *Karasu* ("Black Water") reflect similar semantic structures

found in Kazakh names like *Ak-Tobe* and *Karatal*. In the Uyghur-speaking regions of Xinjiang, China, names like *Kumtag* ("Sand Mountain") and *Kizilsu* ("Red Water") closely resemble Kazakh forms such as *Kyzyl-Su*, pointing to parallel naming conventions based on environmental perception and symbolic expression.

These cross-regional similarities indicate the presence of deeply rooted typological patterns in Turkic toponymy, shaped by a common nomadic worldview, shared ecological orientation, and enduring historical interconnections across the Central Eurasian steppe.

Moreover, many of these toponyms encode **mythopoetic structures** that reflect ancient cosmological models and

spiritual frameworks. The prevalence of directional elements (e.g., *Kyzylorda* – "Red Center" or *Batys Kazakhstan* – "Western Kazakhstan") aligns with the traditional **Turkic cosmogram**, where the cardinal directions hold sacred value.

The use of color not only reflects landscape features but also ancient symbolism:

- *Kara* (black) may connote the underworld or north;
- *Ak* (white) – purity, sky, or divine blessing;
- *Sary* (yellow) – fertility and the middle world.

Such layers constitute what can be termed the **mythopoetic semantics** of toponyms, bridging natural observation with worldview narration (**Table 8**).

Table 8. Recurring Mythopoetic Elements in Turkic Toponyms.

No.	Element Type	Examples (Kazakhstan)	Semantic Role	Comparative Region
1.	Ancestral Names	Bektau-Ata, Aulie-Ata	Veneration of sacred figures	Kyrgyzstan, Uzbekistan
2.	Sacred Numbers	Zhetysu (Seven Rivers)	Cosmological symbolism	Altai, Tuva
3.	Colours	Kyzylorda, Karatal	Direction, status, spiritual duality	Xinjiang, Crimea
4.	Topographic Terms	Shyngystau, Ak-Tobe	Connection to sky, mountain cults	Turkmenistan, Tatarstan

A comparative analysis across Turkic-speaking regions indicates that several consistent patterns shape the formation of toponyms. Lexical motifs in place naming often arise from shared observations of the natural environment, including elements such as color, terrain, and vegetation. Morphological structures – such as compound formations and reduplication – frequently follow uniform syntactic patterns. In addition, cultural concepts such as ancestry, sacredness, and cardinal directions recur as central semantic themes. This interregional coherence highlights the significance of Kazakh toponyms as integral components of the broader Turkic linguistic and cultural heritage. These toponyms offer valuable insight into premodern worldviews and contribute to understanding the development of ethnolinguistic identity across Central Eurasia.

In summary, this section demonstrates that toponyms in Kazakhstan are not isolated linguistic items but narrative vessels that preserve **ancestral memory, cosmological logic**, and **shared mythic archetypes** across the Turkic world.
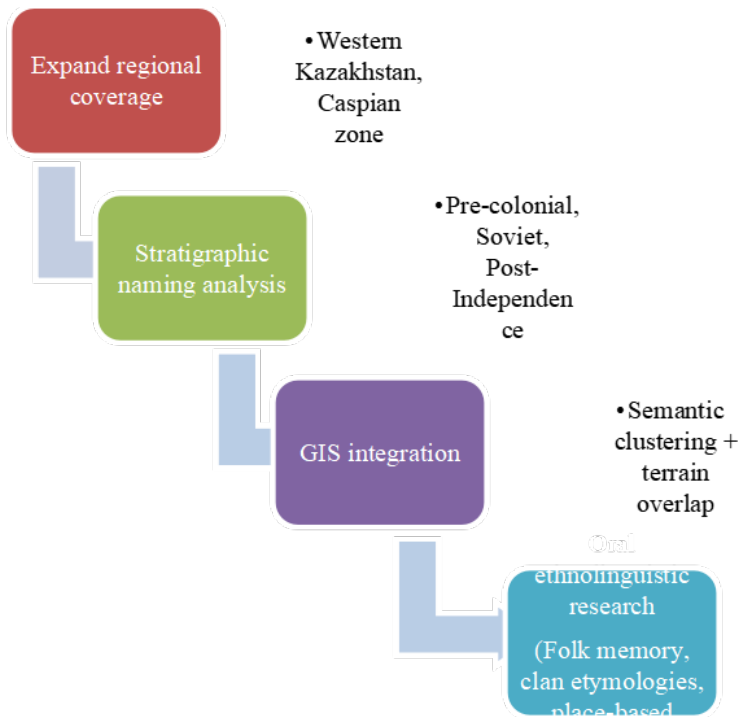
These cross-regional similarities indicate the presence of deeply rooted typological patterns in Turkic toponymy, shaped by a common nomadic worldview, shared ecological orientation, and enduring historical interconnections across the Central Eurasian steppe.

It is obvious that it is impossible to create a unified classification of place names, which would reflect the entire multidimensional nature of the toponymic vocabulary [25]. A comparative analysis across Turkic-speaking regions indicates that several consistent patterns shape the formation of toponyms. Lexical motifs in place naming often arise from shared observations of the natural environment, including elements such as color, terrain, and vegetation. Morphological structures – such as compound formations and reduplication – frequently follow uniform syntactic patterns. In addition, cultural concepts such as ancestry, sacredness, and cardinal directions recur as central semantic themes. This interregional coherence highlights the significance of Kazakh toponyms as integral components of the broader Turkic linguistic and cultural heritage. These toponyms offer valuable insight into premodern worldviews and contribute to understanding the development of ethnolinguistic identity across Central Eurasia.

Moving forward, integrating computational linguistics and semantic mapping technologies could greatly enhance the scope and precision of toponymic research. Comparative linguistic studies involving Mongolic, Uralic, and Indo-Iranian languages may also shed light on shared naming systems and cross-cultural influences. While this article provides a

foundational framework, further research is required to:

- Expand the **toponymic corpus**, especially from under-explored regions like Western Kazakhstan and cross-border zones;
- Deepen the analysis of **onomastic stratigraphy** (layers of renaming), especially in post-colonial contexts;
- Integrate **GIS technologies** for spatial visualization and clustering of toponymic patterns;
- Conduct **ethnolinguistic fieldwork** to record oral narratives, clan memories, and indigenous interpretations tied to ancient place names (**Figure 5**).

Figure 5. Future Research Roadmap.

These next steps will support the creation of a more dynamic, interdisciplinary, and publicly accessible understanding of Kazakhstan's toponymic heritage.

This study has explored the lexico-semantic, morphological, and onomastic dimensions of ancient Turkic toponyms in the territory of Kazakhstan. By combining linguistic analysis with cultural, historical, and comparative perspectives, the article has demonstrated the semantic richness and cultural complexity encoded in geographical names.

The analysis has revealed several important findings that highlight the scientific novelty and contribution of this study (**Table 9**):

Table 9. Key Findings Summary.

No.	Contribution Area	Description
1.	Lexico-semantic classification	Developed taxonomy using domestic and international frameworks (e.g., Stewart, Martynenko)
2.	Corpus Visualization	Introduced diagrams and typology tables for structural patterns
3.	Hybrid Toponyms	Highlighted underexplored bilingual and contact-origin names
4.	Comparative Analysis	Positioned Kazakh toponyms within broader Turkic traditions

In doing so, the research fills a gap in current scholarship, which has so far offered either fragmentary analyses or overly generalized ethnolinguistic commentaries. The present article expands upon these by offering structured classification models and corpus-based visualizations (**Figure 6**).
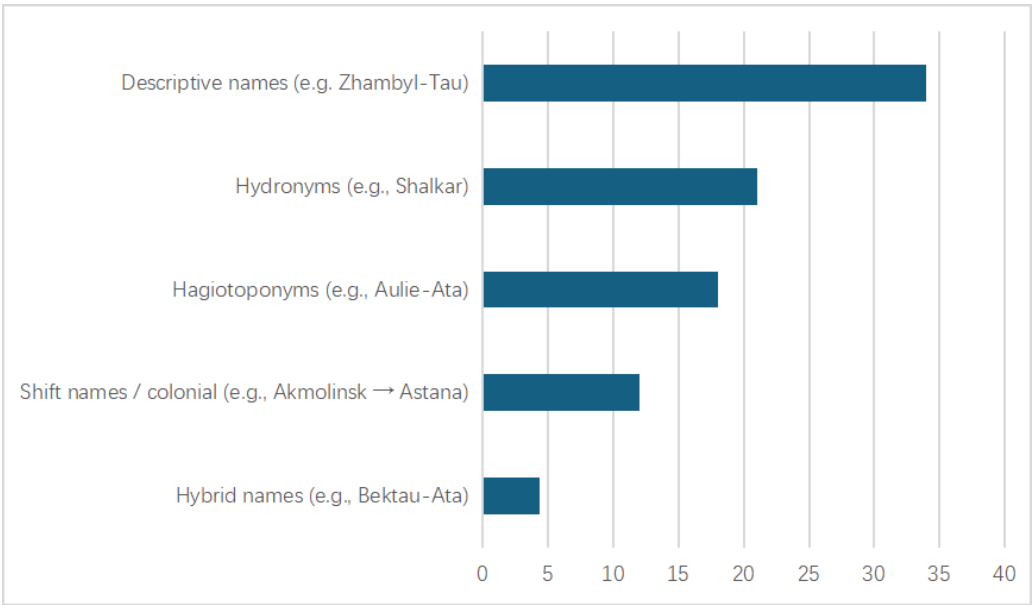
Figure 6. Distribution of Toponym Types by Frequency in Corpus.

(Bar chart format description, %).

The outcomes of this study may be applied in a number of practical domains (**Table 10**):

Table 10. Visual Framework: Application Domains.

No.	Domain	Application Example
1.	Digital Atlas	Interactive web-based toponymic map with metadata
2.	Education	Toponym-based modules in Turkology and cultural linguistics
3.	Tourism & Identity Branding	Mythopoetic toponym tours (e.g., sacred lakes, ancestral mountains)
4.	Language Policy	Support for restoration and preservation of historical naming systems

In conclusion, the lexico-semantic analysis of ancient Turkic toponyms in Kazakhstan provides critical insight into the worldview of early Turkic societies. These names encapsulate centuries of interaction between people, language, and landscape. As tools of cultural memory and linguistic continuity, they continue to shape Kazakhstan's national identity and scholarly understanding of its historical geography.

4. Conclusions

This study confirms that the lexico-semantic features of ancient Turkic toponyms in Kazakhstan offer a profound reflection of the region's historical, cultural, and ecological realities. The findings support both initial hypotheses.

First, the analysis validates Hypothesis 1, demonstrating that ancient Turkic place names encode enduring cultural and social values, including notions of spirituality, reverence for ancestors, social hierarchy, and territorial belonging. Toponyms such as *Aulie-Ata* ("Holy Ancestor") and *Bektau-Ata* exemplify the spiritual and symbolic dimensions embedded in Kazakh naming traditions. These names function as cultural artifacts that preserve belief systems, social organization, and ritual practices.

Second, the study affirms Hypothesis 2 by identifying a consistent correlation between semantic structures and the natural environment. Place names such as *Zhalanashkol* ("bare lake"), *Saryarka* ("yellow ridge"), and *Betpak-Dala* ("barren steppe") reflect a deep ecological awareness and demonstrate how language adapts to landscape features. The prevalence of environmental terms – color adjectives, topographic nouns, and hydrological references – underscores the nomadic worldview of early Turkic-speaking communities and their reliance on environmental cues for orientation, survival, and identity.

The analysis has revealed several important findings that highlight the **scientific novelty** and contribution of this

study:

- It has developed a **systematic lexico-semantic classification** of ancient Turkic toponyms based on both domestic and international frameworks [15,16,22], incorporating *color motifs*, *hydronymic systems*, *sacralized oronyms*, and *ethno-social markers*.

- It has introduced a **visual typology** of morphological patterns and naming models, supported by tables and diagrams, which may serve as a methodological tool in further research on Central Eurasian toponymy.

- The study has drawn attention to **hybrid toponyms**, which reflect cultural contact zones, colonial layering, and the ongoing transformation of linguistic space in post-Soviet Eurasia – a topic rarely addressed in existing Kazakhstani research.

- A **comparative cross-regional analysis** has been undertaken, correlating semantic motifs in Kazakh toponyms with those of other Turkic regions (Kyrgyzstan, Xinjiang, Crimea), thus placing Kazakh material into a **broader typological context**.

In doing so, the research fills a gap in current scholarship, which has so far offered either fragmentary analyses or overly generalized ethnolinguistic commentaries. While other works have noted the shared principles of ancient Turkic toponyms, the present article expands upon these by offering structured classification models and corpus-based visualizations.

The outcomes of this study may be applied in a number of practical domains:

- **Digital toponymic atlases** for Kazakhstan's regions, integrating linguistic metadata and cultural annotations;
- **Educational materials** for teaching onomastics, Turkology, and cultural geography;
- **Tourism and cultural branding**, highlighting mythological and historical dimensions of place names;
- **Policy consultation** for language planning and heritage preservation under Kazakhstan's state programs on the revival of traditional toponyms.

The comparative dimension of this study reveals that these patterns are not isolated. Parallel toponymic structures in other Turkic-speaking regions – such as Kyrgyzstan, Xinjiang, and Crimea – Indicate a shared linguistic and cultural matrix across the Central Eurasian steppe. Similarities in naming conventions, morphological formations, and symbolic motifs highlight a common heritage and interregional connectivity among Turkic populations.

Toponyms, therefore, emerge as more than static markers on a map. They are dynamic repositories of cultural memory, environmental knowledge, and collective identity. Their preservation and study have significantly applied value. In education, they serve as interdisciplinary tools for language, literature, history, and geography. In cultural policy, restoring traditional names enhances linguistic sovereignty and counters colonial erasure. In regional development, toponyms offer clues for land use planning, ecological modeling, and heritage tourism.

Furthermore, this study advocates for the development of a Toponymic Atlas of Kazakhstan that would organize names by semantic field, region, and historical depth – integrating oral narratives, folklore, and etymological data. Such a project would enrich national cultural resources and foster public engagement with the country's linguistic heritage.

Nonetheless, certain limitations must be acknowledged. The lack of historical documentation complicates the etymological reconstruction of some names. The effects of language contact – particularly during Russian colonization – have altered the original phonological and semantic properties of numerous toponyms. Additionally, this study primarily focused on central Kazakhstan; future research should expand to western, eastern, and border regions.

Author Contributions

Conceptualization, S.I. and B.N.; methodology, S.I., B.N. and B.K.; formal analysis, B.K. and Z.K.; investigation, B.K. and A.A.; resources, Z.K. and A.A.; data curation, B.K.; writing—original draft preparation, B.K.; writing—review and editing, S.I., B.N., Z.K. and A.A.; visualization, B.K.; supervision, S.I. and B.N.; project administration, B.K. and S.I. All authors have read and agreed to the published version of the manuscript.

Funding

ern countries: A foundation for modern Turkic integration: historical-etymological, linguistic vision.

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable.

Data Availability Statement

Data are available from the authors upon reasonable request.

Acknowledgments

Conflicts of Interest

References

[1] Amanzholov, S., 1986. Issues in the History of the Kazakh Language. Gylym: Almaty, Kazakhstan. pp. 22–35. Available from: https://nabrk.kz/bookView/view/?brId=1006772&simple=true&green=1 (cited 2 April 2025)

[2] Zhanyzakov, T., 1990. Place Names in the Kazakh Language. Gylym: Almaty, Kazakhstan. pp. 1–296. Available from: https://n.eruditor.one/file/2517952/ (cited 2 April 2025) (in Kazakh)

[3] Koyshybayev, Y., 1985. Geographical Names of Kazakhstan. Mektep: Almaty, Kazakhstan. pp. 1–256. Available from: https://mylibrary.kz/slovari/kratkij-tolkovyj-slovar-toponimov-kazahstana-e-kojchubaev/?utm_source=chatgpt.com (cited 2 April 2025) (in Kazakh)

[4] Zhuchkevich, V. A., 1968. General Toponymy: Textbook for Geography Faculties of Universities. 2nd ed., revised. Vysheyshaya Shkola: Minsk, Belarus. 432 pp. Available from: https://rusneb.ru/catalog/000199_000009_006186545/ (cited 2 April 2025) (in Russian)

[5] Koichubaev, E., 1985. Explanatory Dictionary of Kazakh Toponyms. Nauka: Almaty, Kazakhstan. Available from: https://kazneb.kz/index.php/kk/catalogue/view/1012774?utm_source=chatgpt.com (cited 2 April 2025)

[6] Bektasova, B.K., 1989. Toponymy of the Kostanay Region [Doctoral dissertation abstract]. A. Baitursynov Institute of Linguistics: Almaty, Kazakhstan. pp. 1–30. Available from: https://rusneb.ru/catalog/000199_000009_000122170/ (cited 2 April 2025) (in Kazakh)

[7] Zhanuzakov, T., Abdrakhmanov, A., Kerimbaev, E., Junisov, D., 1989. Central Kazakhstan Toponymy. Наука КазССР: Almaty, Kazakhstan. Available from: https://rusneb.ru/catalog/000199_000009_001488494 (cited 2 April 2025) (in Kazakh)

[8] Kamollidin, S., 2006. Ancient Turkic Toponymy in Central Asia. Fan Publishing: Tashkent, Uzbekistan. Available from: https://www.academia.edu/37293057/Ancient_Turkic_Toponyms_of_the_Middle_Asia_Turkic_Place_Names_in_Ancient_and_Medieval_Textual_Sources_Saarbr%C3%BCcken_LAP_2010 (cited 2 April 2025) (in Russian)

[9] Musukov, B.A., 2011. Lexical-semantic features of onomatopoeic verbs with the suffixes -Da- // -De- in the Karachay-Balkar language. Russian Journal of Linguistics. 1, 67–76. Available from: https://journals.rudn.ru/linguistics/article/view/9617 (cited 2 April 2025)

[10] Otsomieva, Z., 2020. Lexical manifestation of the image of man in the Avar toponymy. Russian Linguistic Bulletin. 4(24), 25–29. Available from: https://cyberleninka.ru/article/n/leksicheskoe-vosploschenie-obraza-muzhchiny-v-avarskoy-toponimii/viewer (cited 2 April 2025)

[11] Urazmetova, A.V., 2022. Axiological aspect of toponymic vocabulary. Voprosy Kognitivnoy Lingvistiki. 2, 138–144. DOI: https://doi.org/10.20916/1812-3228-2022-2-138-144 (in Russian)

[12] Komara, U., Sobarna, C., Gunardi, G., et al., 2019. A linguistic study of toponymy and environmental identity in Sundanese ethnic. International Journal of Innovation, Creativity and Change. 8(3), 398–412.

[13] Akhmetova, G., 2024. Lexico-semantic nature of toponyms: theory and analysis. Bulletin of Shokan Ualikhanov Kokshetau University, Philological Series. № 4 (2024), 9–22. DOI: https://doi.org/10.59102/kufil/2024/iss4

[14] Koichubaev, E., 1974. Brief Toponymic Dictionary of Kazakhstan. Almaty: Nauka. Available from: https://kazneb.kz/bookView/view/?brId=1030643 (cited 2 April 2025)

[15] Stewart, G.R., 1970. American Place-names: a Concise and Selective Dictionary for the Continental United

States of America. Oxford University Press: New York, NY, USA.

[16] Martynenko, I.A., 2023. Spanish-Language Toponymy of the World as a Geolinguistic System [Doctoral dissertation]. People's Friendship University of Russia (RUDN University): Moscow, Russia. Available from: https://www.academia.edu/104517548 (cited 06 January 2025) (in Russian)

[17] Hladký, J., 2022. On the use of basic hydronomastic terms and the possibilities of their harmonization. Onomastica. 66, 313–328. DOI: https://doi.org/10.17651/ONOMAST.66.21

[18] Sapozhnikov, V. V., 1949. Across the Russian and Mongolian Altai. Gosudarstvennoye izdatel'stvo geographicheskoy literatury (Geografgiz): Moscow, Russia. p. 580. Available from: https://elib.rgo.ru/handle/123456789/217753 (cited 2 April 2025) (in Russian)

[19] Nikonov, V., 1978. Notes on the Oronymy of Kyrgyzstan. In: Nikonov, V. and Reshetov, A., (eds.). Onomastics of Central Asia. Nauka: Moscow, Russia. pp. 86–107. Available from: https://www.academia.edu/92843575/Ономастика_Средней_Азии_Вып_1_М_1978 (cited 2 April 2025)

[20] Arutyunova, E. V., Beshchenkova, E., Ivanova, O. E., 2021. The Linguistic Basics of the Contemporary Toponyms Spelling Norms (on the Spelling Rules Theory). Izvestiia Rossiiskoi akademii nauk. Seriia literatury i iazyka. 80(1), 21–41. Available from: https://ras.jes.su/sliya/s241377150014006-9-1-en (cited 2 April 2025)

[21] Ulakov, M.Z., Musukov, B.A., 2020. Differential and Integrating Features of the Lexeme ola/ala in Turkic Languages: A Case Study of the Uzbek and Karachay-Balkar Languages. Oriental Studies. 13(3), 728–742. DOI: https://doi.org/10.22162/2619-0990-2020-49-3-728-742

[22] Martynenko, I.A., 2022. Linguo-ethnographic Portrait of Paraguay Through the Prism of Hispanic Toponymy. Ethnography. 2(16), 167–190. DOI: https://doi.org/10.31250/2618-8600-2022-2(16)-167-190

[23] Saparov, K., Chlachula, J., Yeginbayeva, A., 2018. North-Eastern Kazakhstan. Quaestiones Geographicae. 37(3), 35–52. DOI: https://doi.org/10.2478/quageo-2018-0024 (in Kazakh)

[24] Zhunissova, M., 2014. Historical periodization of Turkic languages. Life Science Journal. 11(6), 438–444.

[25] Urazmetova, A.V., Shamsutdinova, Y.K., 2017. Principles of place names classifications. XLinguae. 10(4), 26–33. DOI: https://doi.org/10.18355/XL.2017.10.04.03