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Linguistic and Geographical Parameters of Speleonyms in Mangistau, Kazakhstan

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Abstract
Speleonyms are linguistic terms that originally identify underground formations within the Earth's subsurface, and also reflect the geographical and cultural history of a region. This study investigates the cultural, historical, and linguistic significance of water wells (speleonyms) in the Mangystau region of western Kazakhstan – a harsh, arid environment where groundwater is a vital resource. The study sampled toponymy of 19 selected water wells, with the objective to analyze their etymology and toponymic structure and illustrate how their names encoded rich narratives about local geography, nomadic traditions, spiritual beliefs, and ecological conditions. Using these combined methods, this study built a multidimensional understanding of the origins and meanings behind the toponyms, preserving Mangystau's linguistic heritage and its significance for future generations. The study found that the cultural, historical, and ecological meanings are encoded in the naming practices of wells among the Kazakh people. The study categorized speleonyms into types – such as zoospeleonyms, phytospeleonyms, anthropospeleonyms, colorspeleonyms, and numerical speleonyms, to revel the complex relationship between language, landscape, and identity in Kazakh nomadic culture. Implications for research and practice. The study contributes to the preservation of intangible cultural heritage by highlighting the role of names of water wells in transmitting knowledge, survival strategies, and spatial identity in arid environments. This empirical methodology not only documents and interprets real-world linguistic data but also contributes to the preservation of endangered cultural-linguistic heritage in arid Central Asian contexts.

Keywords: Toponyms, Speleonyms, Etymology, Cultural Heritage, Linguistic Landscape, Water Wells.

Introduction

Speleonyms are originally a means of identifying underground formations within the Earth's subsurface. Depending on the characteristics of the area, speleonyms may include: *Caves* – natural underground cavities, often featuring distinctive geological formations; *Grottos* – small caves or cavities, usually with picturesque

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appearances; *Chasms* – deep and narrow fissures or depressions, often with cliffs; and *Wells and Shafts* – artificial or natural vertical structures used for extracting minerals or water. Speleonyms play an important role in toponymy – the science that studies proper names of geographical features. These features allow us to identify and classify underground formations; reflect the geographical and cultural history of a region; and serve as landmarks for speleologists and tourists interested in exploring cave systems. Interestingly, speleonyms also reflect the richness of linguistic and cultural heritage. They combine elements of geology, history, and linguistics, offering a deeper understanding of how people used to interact with the world around them.

The Mangystau region, located in southwestern Kazakhstan, is renowned for its arid yet historically rich landscapes. Amidst its deserts and semi-deserts, the area is dotted with numerous water wells, each carrying a unique name or toponym that often reflects local history, culture, or natural features. These water wells have been essential to life in Mangystau for centuries, serving as lifelines for nomadic herders, travelers, and local communities. Their names, passed down through generations, often held stories of the people who once roamed across these lands, the geographical characteristics of the surroundings, or historical events that shaped the region. The names of wells in Mangystau, a region in Kazakhstan, often reflect the area's rich cultural and historical heritage. Many of these names have roots in the local Kazakh language, which is rich in descriptive terms that refer to geographical features, historical events, or notable figures. Exploring the toponyms of these water wells not only offers insights into Mangystau's physical geography but also reveals a tapestry of the region's cultural and linguistic heritage. Toponyms of wells in Kazakhstan not only reveal the practical importance of these water sources but also preserve stories, beliefs, and traditions of Kazakh culture. Each name carries insights into the historical, environmental, and cultural landscapes that shape and sustain life across the diverse regions of Kazakhstan.

The toponymy of wells – the naming conventions and origins of names associated with wells – is a fascinating field that intersects geography, history, and linguistics (Perono Cacciafoco & Cavallaro, 2023). Examining the linguistic aspects of well names around the world offers insights into the cultural, historical, and environmental values of the communities that named them. Therefore, the central idea of this study was to explore and document the origins, meanings, and cultural significance behind the names of wells scattered across Mangystau. These names serve not only as geographic markers but as cultural artifacts that encapsulate aspects of the region's linguistic heritage, history, and local traditions. Through an etymological and cultural examination of these toponyms, the study seeks to uncover how the names of wells reflect the identities, values, and environmental interactions of the people who named and relied upon them. This framework allows for a deeper and culturally situated understanding of how the names of wells in Mangystau serve not only hydrological or locational roles, but also act as repositories of myth, identity, and ancestral knowledge.

The current study is grounded in the Kondybai's mythological-semiotic methodology to explore the etymologies, symbolic meanings, and cultural contexts of Mangystau's well names (Kondybai, 2008). Specifically, such names were analyzed that reflected animalistic (totemic), botanical, anthropological, and mythic imagery, tracing their possible origin stories, functions in oral tradition, and semantic evolution. This study aimed to delve into the fascinating origins and meanings behind the names of some of the most significant wells, shedding light on Mangystau's storied past and its connection to present-day identity. For this purpose, a sample of 19 well toponyms (speleonyms) in the Mangystau region were selected through empirical methods involving an etymological and linguistic analysis of these toponyms. By grounding the analysis of Kondybai's conceptual approach, the sampled 19 toponyms were interpreted as mythologemes – units of cultural meaning linked to ancient narratives, with the following objectives: to reveal the spiritual and symbolic functions of naming practices among Kazakh nomads; to demonstrate the relevance of cultural memory in the preservation and transformation of toponyms. The rationale for this research stems from the growing recognition of toponymy as a multidisciplinary tool that extends beyond geographic labeling to encompass cultural memory, environmental knowledge, and symbolic representation.

Conceptual Framework

This study draws upon the mythopoetic and cultural-linguistic ideas of Serikbol Kondybai, whose pioneering work on the toponymy of Mangystau has significantly reshaped scholarly perspectives on the semantic and symbolic layers embedded in Kazakh geographical names (Bekezhan, 2020; Zhumabayeva, 2021). According to Kondybai, the toponyms of Mangystau are not merely utilitarian labels but cultural texts, carrying the encoded worldview of ancient peoples and reflecting their mythology, cosmology, and tribal memory. Kondybai conceptualized Mangystau as a sacred semantic landscape, in which every name – from wells and mountains to plateaus and valleys – operates as a symbolic sign bearing the imprint of mythical archetypes, totemic beliefs, and spiritual geography (Kondybai, 2008). By approaching toponyms through this lens, he uncovered the deep interweaving of language, belief systems, and identity, positioning Mangystau as a cultural and mythological palimpsest of the Turkic world.

The conceptual ideas of Serikbol Kondybai about the toponyms of Mangystau represent a distinctive synthesis of mythological thinking, cultural semiotics, and ethnogenetic interpretation. His work goes beyond traditional linguistic classification and introduces a philosophical-mythopoetic approach to the study of place names (Kondybai, 2008). There are a few core conceptual ideas of Serikbol Kondybai regarding the toponyms

of Mangystau. First, it relates to mythopoetic nature of toponyms. Kondybai argues that many toponyms in Mangystau are not merely geographical markers, but encoded myths, cosmological references, and symbols of ancient beliefs. According to him, these names preserve archetypal meanings and reflect a mythological worldview embedded in Kazakh culture. For example, the name Shakpakata, in his interpretation, is connected to the myth of fire and spark (Shakpak – flint), symbolizing the cosmogonic power of light and transformation. Second, Serikbol conceptualized Mangystau as a "Sacred Text," a geo-cultural palimpsest, where the landscape itself is a sacred text inscribed with the history, migrations, and spiritual life of the Turkic peoples. He believed that the semantic landscape of Mangystau should be read like a mythological-epic narrative. He often referred to Mangystau as "a sacred museum under the open sky", containing sacred layers of Turkic, Iranian, and even pre-Turkic cultural elements.

Third, Kondybai connected toponyms as markers of ethnogenesis, relating to the history of Turkic tribes, especially the Oghuz, Kipchak, and other nomadic lineages. He believed that the etymology of certain names could reveal patterns of migration, tribal identity, and cultural memory. For example, names with components like "baba," "tek," "ata" are often linked to ancestral cults or tribal patriarchs. Fourth, Kondybai carried out animalistic and totemic interpretation, using animal-based toponyms (zoonyms) as traces of ancient totemic beliefs, where animals symbolized tribal protectors, mythic ancestors, or spiritual entities. For example, Barys, Arystan, Kiyik – these names are not only descriptive but hold totemic significance and represent tribal affiliations or cosmic symbolism. Fifth, Kondybai takes a syncretic approach (myth + linguistics + philosophy) to conduct linguistic analysis with symbolic hermeneutics and comparative mythology. This often requires comparing Kazakh toponyms with Indo-European, Sumerian, or Iranian myths, proposing controversial but thought-provoking hypotheses about ancient contacts and cultural diffusion. Finally, Kondybai proposed an alternative reading of the name "Mangystau", suggesting it may derive from "Mangyshlak" (possibly meaning "eternal camp" or "place of ten thousand tribes"), embedding it within a larger mytho-historical context rather than a purely linguistic one (Bekezhan, 2020; Zhumabayeva, 2021).

Literature Review

Although there is a dearth of studies dedicated to the names of water wells, especially in regions like Mangystau, however, there are broader studies that contribute indirectly to understanding water well names in studies in the domain of toponymy, historical geography, and Central Asian studies. These studies are landmarks in regional toponymy, linguistics, and cultural heritage. Several works of the past and present have examined Iranian and Central Asian place names, including the names of wells and springs, examining toponyms and their Persian ethnicity as well as providing a systematic classification of Iranian toponyms (Alizadeh, 2020; Assadorian, 2017; Gorshenina, 2021; Herzfeld & Walser, 1968; Stein, 1907). In particular, Herzfeld & Walser (1968) evaluated the etymology of water bodies often found on ancient routes, and declared speleonyms as part of historical-geographical memory and archaeological markers along ancient routes. In their approach, wells and springs were key points for reconstructing migrations, pilgrimages, and the borders of ancient states. Marc Aurel Stein (Stein, 1907) also explores the toponyms of the desert regions and oases of Central Asia, including the names of wells and springs, and their linguistic origin. Marc Stein used well toponyms as archaeographic tools, believing that their names reflect cultural layers – from Iranian to Turkic, from Buddhist to Islamic. He argued that each well is a cultural node preserving traces of linguistic and religious transformations along the Silk Road. Paul Eugène Pelliot (1878 - 1945) was a French sinologist who also explored Central Asia and the Silk Road regions, to acquire Tibetan Empire-era manuscripts and Chinese texts at the Sachu printing center storage caves. Pelliot (1904) analyzed speleonyms in the context of communicative geography, emphasizing their role as spatial landmarks and meaningful markers along ancient caravan routes. His concept is that a water name is not just a toponym, but an element of the cultural cartographic system (Atwood, 2013).

There are also geographers, anthropologists and environmental scientists like Michael McReynolds , Jessica H. O'Reilly, Ernst Herzfeld and Gerhard Doerfer whose works in ethnography in general and speleonyms, in particular, are much applauded. Doerfer (2006), for example, approached speleonyms as lexicological artifacts, to study their etymological structure. He viewed the names of wells as stratified lexemes that reflect Iranian borrowings, Old Turkic roots, as well as adaptations to the phonetics of nomadic languages. He also contributed to understand the origin of Turkic place names associated with water bodies, including wells, and analyzed the etymology of Turkic words for water sources. Likewise, ethnographic research teams in Al-Farabi Kazakh National University and the Institute of History and Ethnology in Kazakhstan have frequently studied the cultural and historical importance of water sources, which often includes documenting place names tied to wells and springs as part of nomadic heritage. Local Kazakh scholars and oral historians have also studied toponyms in folk prose and conducted studies on ethnographic development of Kazakh toponymy (Bugybaykizi et al., 2015; Shuriyeva, Abisheva, & Yussimbayeva, 2025).

Golubeva and Ubushayeva are great toponymists and linguists in Central Asia who are known for Central Asian toponymy and the etymology of Turkic and Kazakh place names. Their research examined how place names reflected historical migrations, language shifts, and cultural exchanges, which would provide a context

for understanding the well names in Mangystau (Golubeva & Ubushayeva, 2018). They also studied speleonyms as part of the historical-linguistic process – reflecting migrations, ethnolinguistic contact, and language shifts. They identified semantic types of well names and established their connection to dialectal variations, clan histories, and territorial affiliation. Similar contribution has been cited by other Kazakh scholars (Adilova et al., 2021; Bugybaykizi et al., 2015; Karaeva, Alkaya, & Meirbekov, 2025; Zhumabayeva, 2021).

A recent study, Muroň et al. (2023) explores a focused component of the geoparsing pipeline– specifically, the process of toponym disambiguation, which it refers to as geocoding in this context. This study presents a focused and timely investigation into a significant sub-problem within geoparsing – namely, toponym disambiguation. The authors explore how user interaction, particularly through clarification dialogues, can be leveraged to improve the precision of place name resolution in natural language texts. The authors conceptualize toponym disambiguation as a specialized form of Word Sense Disambiguation (WSD), applying similar principles to geographic names. In the context of the Welsh toponyms, Khassenov, Adilova, & Rapisheva (2022) encode geographical, social, and linguistic knowledge, acting as archives of landscape use and community history. The Welsh names are described as "stepping-stones to our past", linking contemporary society with ancestral heritage. In a similar study, Parry (2023) makes a good attempt to promote and protect Welsh toponyms through a detailed examination of the cultural, historical, and legal challenges associated with the preservation of Welsh place names. The author combines historical research with contemporary social analysis to propose ways forward for the protection and promotion of Welsh toponyms. This study is a thoughtful and timely intervention into the debate on linguistic and cultural preservation in Wales. It highlights the fragile status of Welsh toponyms in the face of modernization, Anglicization, and tourism, while also offering practical steps through community action and policy engagement. The work underscores that place names are not merely labels – they are linguistic artifacts of memory, belonging, and identity, deserving of legal and societal protection (Parry, 2023).

Empirical Studies on Well Toponyms (2020–2024)

There are a few recent empirical studies that deserve attention. A study using digital technologies in toponymy (Serikova & Baishukurova, 2022) utilizes digital mapping tools such as Google Maps, Apple Maps, and Yandex to identify and analyze toponyms in Almaty. By leveraging GIS technologies, the researchers conduct a semantic and cultural analysis of various toponym types, including hydronyms and urbanonyms, demonstrating the efficacy of digital tools in toponymic research. Similarly, Karaeva et al. (2025) make a comparative linguistic and cultural analysis of Kazakh-English toponyms. Employing methods such as structural word-formation and etymological analysis, the study highlights differences and similarities in the semantic characteristics of toponyms across the two languages, providing insights into cultural perceptions embedded in place names. In the local context, Adilova (2020) highlights features of toponyms in East Kazakhstan and examines the history and structure of local place names, focusing on regions like Beskaragai, Borodulikha, and Shemonaikha districts. Through etymological and semantic classification, the research also identifies the complex layers and origins of toponyms in the East Kazakhstan region, contributing to the understanding of regional linguistic heritage. Meirbekov & Meiirbekov (2021) examine the national identity of Kazakh toponyms in multilingual contexts by organizing a toponymic expedition across Kazakhstan to create an etymological catalog of geographical names in Kazakh, Russian, English, and Latin. The study utilizes historical-comparative and typological methods, to analyze the linguistic and cultural significance of toponyms, reflecting on the Kazakh identity in a multilingual setting.

Methodology

Research Design

The study used a qualitative research design that involved established analytical techniques like historical-comparative, linguistic and etymological, including morphemic decomposition, semantic field analysis, and comparative analysis of similar Turkic and Persian toponyms. By categorizing the well names into typologies (zoospeleonyms, phytospeleonyms, anthropospeleonyms, etc.), the study applied a data-driven linguistic classification system that revealed patterns in naming conventions and cultural significance.

Data Collection

The data for this study was collected from numerous sources to ensure a thorough examination of the etymology, history, and cultural significance of well toponymy. The secondary data comprised historical documents such as records, maps, and documents from regional archives and libraries which provided historical context for the names of water wells. These resources also included manuscripts, travelogues, and historical narratives that mention specific wells or place names. Linguistic sources included dictionaries, etymological resources, and linguistic studies of Kazakh, Persian, Arabic, and other languages essential for understanding the roots of each name. These materials helped trace the phonetic and semantic origins of toponyms. Empirical data was collected through field visits, consultation with local oral historians and archival documents, and cross-referencing historical maps and lexicons.

Data Analysis

The data was analyzed using etymological, comparative, geographical and environmental, and classification and categorization methods. The etymological analysis, particularly, involved break down the linguistic components of each well name to trace their roots, meanings, and language influences. This analysis involved studying prefixes, suffixes, and root words and comparing these elements to other local and regional place names. The historical method involved analyzing historical records, and contextualizing each well name within Mangystau's broader history. This enabled to understand how the names may relate to specific periods, events, or people in the region's past.

The comparative analysis was used to compare the well names of Mangystau with those in surrounding areas to identify similarities, differences, and broader patterns. This method helped establish connections with other Central Asian cultures and revealed patterns of migration, language influence, or shared cultural heritage. The geographical and environmental analysis included the analysis of the physical features of well locations (terrain, vegetation, and proximity to natural landmarks) to understand the environmental context of the names. This revealed why certain wells were named after geographical features, plants, animals, or visual characteristics. Finally, classification and categorization helped in organizing the well names into categories based on themes, such as geographic features, historical references, or cultural symbols. This categorization helped highlight naming patterns and identify the primary factors influencing well names in Mangystau. Through this mix of materials and methods, the study provided a detailed and multidimensional analysis of well names, preserving Mangystau's linguistic and cultural heritage and offering a resource for future research in toponymy and cultural history.

Findings

Prevalence of Wells in Mangystau

Kazakhstan is rich in wells, distributed across the entire country. Figure 1 illustrates the number of wells in each region of Kazakhstan.

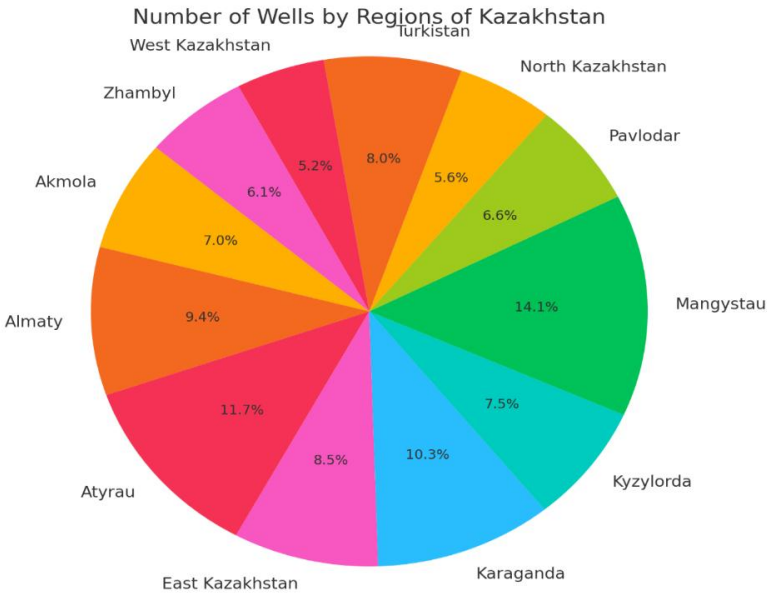

Figure 1: *Wells in Kazakhstan.*

Mangystau is a region located in western Kazakhstan. It is an arid region with limited natural freshwater resources. Its dry climate and lack of surface water make groundwater a crucial source of water for local communities, livestock, and industries. This is why there are many wells across the region, each with its own significance and history. There are several reasons for the prevalence of wells in Mangystau, namely (1) Traditional Water Source. Historically, nomadic Kazakh herders relied on wells to access water for themselves and their livestock. Mangystau has been a key area for these nomadic lifestyles, and wells allowed them to settle in certain areas, at least temporarily. (2) Limestone Aquifers. The region's limestone bedrock holds aquifers that store groundwater. Wells are dug to access these aquifers, and different wells reach different depths, depending on the location and geology of each site. (3) Settlements Along Trade Routes. Mangystau has long been a crossroads for trade routes, such as parts of the Silk Road. Wells were essential to support traders and caravans moving through the harsh desert terrain. (4) Resource Development. With Mangystau's economic focus on oil, gas, and mineral resources, wells have also been developed to meet the water needs of

industry and growing settlements. Industrial activities often require significant water resources, adding to the need for more wells. (5) Reliance on Groundwater. In the absence of rivers and lakes, groundwater is essential. Wells are scattered across the region to provide regular access to water, especially in remote and rural areas. Each well has its own depth, history, and sometimes even sacred significance. Many people in the region regard certain wells as landmarks or places of cultural and spiritual importance.

Toponym as a "Compressed" Cultural Code

Globally scholars have delineated the nature of a toponym as a "compressed" cultural code, a cultural artifact, a toponymic text, a cultural landscape, a spatial identity, a semiotic sphere, and a tool for territorial branding. For instance, Zelinsky (1997) has studied toponyms within the cultural landscape of the USA; the zoological components in Turkic toponymy have been examined by Pozdnyakova, Yildirim, & Hamurkoparan (2014). Toponyms as expressions of geo-cultural space and as a unique spatial-sign system are discussed in the works of Russian scholar Akhmetova who studies lexico-semantic nature of toponyms (Akhmetova, 2024). The prospects of studying toponymy as an urban semiotic sphere have been laid out by representatives of the Moscow-Tartu semiotic school, who introduced the concepts of "urban text," "myth," and "image" in their works. Further developments in urban semiotics are evident in the works of Lavrenova (2019), which focuses on the analysis of the "cultural text;" and another study of Basik (2022) who examines the role of toponyms in shaping the toponymic (geo) politics in the post-Soviet states.

The primary characteristic of these studies is their research focus on analyzing geographical names as symbolic codes that encapsulate information about the history, traditions, and culture of the places from which they originate. Consequently, right at the outset, this study deciphered and interpreted these codes through defining numerous terms. For instance, phytospeleonym is a term which refers to the name of a well that is derived from or influenced by local vegetation. In linguistic and toponymic studies, a phytospeleonym provides insights into how natural vegetation influences place naming and reflects the interaction between the natural environment and human cultural expression. Such names often highlight the prominent flora found near or within the well area and may reflect the ecological characteristics, natural history, or cultural symbolism associated with the plants. For example, Azhyraktyoi is also a phytospeleonym, which refers to a well located in the Karakiya region. It got its name from the plant azhyryk, which grows in the salty and desert areas of Mangistau. The meaning of the word ‘azhyryk’ is a well in a place where Aeluropus grows strongly. Another well located in the Karakiya region is Ayakkaran, which is formed by combining the words "ayak" (end) and "caragána" (phytonym - name of a plant). The meaning of the word is a well dug at the bottom of a place where caragana grows in abundance.

Another term, zoospeleonym is a cave name derived from or associated with animals. Such names often reflect the local fauna, animal behavior, or cultural and symbolic meanings attributed to animals in the context of the wells. A zoospeleonym can provide insights into the ecological characteristics of a well, its role as a habitat, or the cultural significance of certain animals to the local community. Examples include Kiyikty, which is a large well located in the Beyneu district of the Mangystau region. It is a place where the well is situated and where saiga antelopes frequently come to graze. The third term, antropospeleonym is the name of a well that is derived from or is associated with a human name. In linguistic and toponymic studies, an antropospeleonym is of interest because they often commemorate historical figures, local legends, or notable individuals, thereby reflecting the cultural and social interactions between communities and their subterranean landscapes. For example, Esengeldykazgan is a well in the Mangistau region, which means a well dug by a person from the Esengeldy clan. Esengeldy is now the name of an ethnonym from the Zhauly tribe. Likewise, Kozhakazgan-Zhaily is a well located in the Beineu district. This well belonged to the brothers Khodzhi and Zhayly. Kozha is from the elder influential family. It was he who gave the idea to dig a well. Zhayly is his brother, the one who dug and built the well.

The fourth term colorspeleonym is the name of a well that incorporates references to colors. Such names typically describe the visual or aesthetic qualities of a well. This may include the color of rock formations, water, or mineral deposits, and can also carry symbolic or cultural significance. A colorspeleonym provides insight into how local communities perceive and articulate the unique visual characteristics of subterranean environments, often blending natural observation with cultural symbolism. For instance, Akkuduk is a well located in the Beyneu area, whose name was derived from the combination of the words “white” (referring to the color) and “well.” The name implies that the water is clean and transparent - ideal for drinking - and suggests that the soil in which the well was dug is also white. Kokkuduk is another example of a well located in Mangystau. This well is so named because the water in it is blue, transparent and clean. In Kazakh culture, blue has a symbolic meaning, meaning clean and transparent.

The fifth term, numerical speleonym is a type of wells or subterranean feature that incorporates numerical elements. Such names often use numbers to describe physical dimensions, quantities, or significant numerical symbols related to the feature. For example, a numerical speleonym might refer to the number of steps, the depth measured in units, or other quantities that have both descriptive and cultural significance. These names not only provide a practical reference for the size or structure of the well but also reflect the historical and cultural importance of numbers in the local linguistic and symbolic system. For example,

Altykuduk is the name of a well in the Beineu district. The meaning is that six wells were dug close to each other. It is formed from the combination of the words six and well. Similarly, Zhuzadym is a well located on the southern plateau of Mangystau. It is formed from the combination of the words "zhuz" (number) and "adym" (step). The meaning of the word is a well whose depth is 100 steps. Table 1 summarizes these toponyms with the symbolic codes and examples

Table 1: *Toponyms and their Symbolic Codes.*

Toponyms	Meaning	Examples
Phytospeleonym	a well that derives its name from local vegetation	Azhyraktyoi from a plant azhyryk Ayakkaran, combines words "ayak" (end) and "caragána" (phytonym - name of a plant).
Zoospeleonym	name derived from or associated with animals	Kiyik- a well frequented by saiga antelopes
Antropospeleonym	name of a well that is derived from or is associated with a human name.	Esengeldykazgan - a well dug by a person from the Esengeldy clan Kozhakazgan-Zhaily- a well belonged to the brothers Khodzhi and Zhayly.
Colorspeleonym	name of a well that incorporates references to colors	Akkuduk- combination of the words “white” (referring to the color) and “well” Kokkuduk -refers to the blue color of water, transparent and clean
Numerical Speleonym	incorporates numerical elements	Altykuduk - six wells were dug close to each other Zhuzadym - combination of the words "zhuz" (number) and "adym" (step). The name means a well whose depth is 100 steps.

Homonymy in the Names of Wells

Homonyms appear in the names of wells for several linguistic, cultural, and historical reasons. Homonymy in well names is a natural linguistic phenomenon shaped by cultural traditions, naming constraints, and decentralized toponymic practices. Rather than being a flaw, it reflects the functional and descriptive priorities of local communities in naming vital water sources in arid landscapes like Mangystau. For example, in Kazakhstan, multiple wells are named Karabulak, which translates to "Black Spring". The term "kara" ("black") is frequently used in Kazakh toponymy to describe features such as dark-colored soil, water, or surrounding landscapes. It also carries cultural and symbolic meanings in Kazakh tradition, contributing to its frequent use in place names. There are several reasons attributed to homonymy in the names of wells. First and foremost are the limited lexical resources in nomadic naming traditions. Kazakh and other Turkic-speaking nomadic cultures often named geographical features like wells based on observable traits, personal names, animals, colors, or events. Since these categories are finite, repetition and overlap are inevitable. For example, several wells might be named Karakudyk ("Black Well") simply because of dark-colored soil or water, regardless of their location.

Secondly, homonymy is due to the geographical dispersion and oral tradition. Wells were often named locally and passed down orally. Because different regions might not have been in regular contact, the same name could emerge independently in separate places – thus creating geographically distinct homonyms. Third, symbolic and functional naming also caused homonymy to penetrate in the names of wells. Names like Ashykudyk ("Bitter Well") or Sulukudyk ("Watery Spring") refer to physical properties of the water. Since multiple wells might share such traits, it is natural for these descriptive names to recur, even though they refer to different locations. Fourth, homonymy comes due to honorific and personal naming. There are wells named after people (e.g., Essenkudyk – "Yesen’s Well"), which reflect common personal names, leading to multiple wells bearing the same name across different regions. Finally, homonymy is caused due to semantic shift or reinterpretation. Over time, semantic drift or reinterpretation can occur: a name may be reused but understood differently by different communities. For example, a name originally linked to a person may later be associated with a nearby landscape feature.

Linguistic and Etymological Analysis of Toponyms

The linguistic aspect of well toponymy is a reflection of how cultures interact with their environment, their historical heritage, and their social beliefs. The variety of names attached to wells around the world is rich with linguistic significance, illustrating the importance of water sources to human settlements and the ways in which language evolves in response to the geography and culture of a place. Wells in the world often have names associated with their cultural or religious significance, history, location, or water features. For instance, the name *Jacob's Well* originates from a biblical tradition in the Hebrew Scriptures and the New Testament, where it is associated with the patriarch Jacob. According to the Book of Genesis, Jacob, who was one of the forefathers of the Israelite tribes, is traditionally credited with having dug or established the well to provide water for himself, his family, and his flocks. In the New Testament, Jacob’s Well is mentioned

specifically in the Gospel of John (John 4:5–6), where Jesus meets a Samaritan woman and engages in a significant conversation. This interaction, known as the story of the Samaritan Woman at the Well, gives *Jacob's Well* a lasting place in Christian tradition as a symbol of spiritual nourishment and the "living water" of eternal life. The etymology of *Jacob's Well* thus combines: Biblical attribution - the well is named after Jacob, a central figure in both Jewish and Christian religious history. Symbolic meaning - it signifies not only a source of physical water but also a place of spiritual significance, representing themes of connection, reconciliation, and faith.

Likewise, *Zamzam Well* is a sacred well in Mecca (Saudi Arabia), next to the Kaaba, which is visited annually by pilgrims during the Hajj. According to Islamic legend, this well appeared to get Hagar and her son Ismail drunk. Today, the well – believed to be located in the West Bank near the city of Nablus – remains a pilgrimage site, honoring the well's deep religious and historical importance across cultures. Another well, *Beer-lahai-roi,* is of Hebrew origin and can be translated to mean "well of the living One who sees me." The etymology breaks down as follows: Beer - the Hebrew word *beer* means "well" or "spring." This term is often used in the context of wells that provide water and signifies a source of life-giving sustenance. Lahai - the word *lahai* is derived from the Hebrew root *chai* , which means "living" or "life." In this context, it refers to the source of life or living water. Roi - the term *roi* comes from the Hebrew verb *ra'ah* (ראה), meaning "to see." In this name, it indicates the presence of a divine observer or protector. The phrase can be interpreted as "the living One who sees me," suggesting a connection to God's watchfulness and care.

There are a few other examples. *Trevi* Fountain in Rome, Italy is not exactly a well, but a historical source from where the ancient Romans took water. It has also become a symbol of wish fulfillment for tourists. The name Trevi is derived from the Latin word trivium, meaning "three ways" or "three roads." The fountain is located at the intersection of three streets (via delle Muratte, via di Trevi, and via del Lavatore), which is reflected in its name. This origin suggests that the fountain marks a significant junction in the city. Another example, Well of *Vilaça* in Portugal, is a unique well with mosaics decorating its walls, which turns it into an artistic object. The name Vilasa Well (Portuguese: *Poço de Vilaça*) in Portugal has etymological roots that reflect both its geographical and historical context. Etymology Vilasa / Vilaça - the term *vila* in Portuguese generally refers to a "town" or "village." It is derived from the Latin word *villa*, which originally denoted a country house or estate, and by extension came to mean a settlement or community. The suffix *-ça* can be a diminutive or a locational suffix, suggesting a smaller place or a specific characteristic related to the term. Thus, *Vilaça* could imply a small town or a locality associated with a larger community. Last, but not the least, the name of *Well (Poço)* is derived from the word 'poco' which in Portuguese translates to "well," coming from the Latin word *putius*, meaning "pit" or "hole." It specifically refers to a water source that is accessed by digging or boring into the ground. The Vilasa Well is often linked to the local history and culture of the region where it is found. Wells like this one were vital for communities, particularly in rural areas where access to clean water was essential for daily life and agriculture.

Etymologically, in many languages, names of wells often describe the well's physical characteristics or qualities. For example, Arabic names like "Ain" (عين) often mean "spring" or "well," often followed by an adjective that describes the water's quality or the well's location, like "Ain Safra" (Yellow Spring). Similarly, there are symbolic names of wells, reflecting cultural or spiritual beliefs. In Sanskrit, names like "Tirtha" refer to a crossing or sacred place, and wells named as such were seen as spiritual points for purification. In addition, there are geographical indicators or location-based names, which stand out as geographical markers. In English, names like "North Well" or "Hill Well" describe where they are located relative to landmarks. In languages like Russian, names like "Kolodets Gornyi" (Горный колодец) mean "Mountain Well," indicating its elevated position. There are also wells associated with settlements. There are many well names linked to nearby towns, villages, or regions. For instance, "St. Mary's Well" in English or "Fontaine Sainte-Marie" in French connect the well to a patron saint or a settlement, reflecting the community's identity.

Historical and cultural influence is also witnessed in the names of wells. For instance, due to colonial influence in countries with colonial history, there are well names that often carry the influence of both indigenous and colonial languages. In India, the use of both Hindi and English in names like "Ganga Well" reflects British colonial influence alongside local reverence for the Ganges. There are indigenous well names in areas with indigenous cultures, which frequently reflect traditional languages. For example, in Australia, Aboriginal languages contribute names to wells, such as "Jinparrak," meaning "spring" in the Walmajarri language, which gives linguistic insight into Aboriginal ties to the land and water sources. There are also religious and mythological aspects. Sacred Names - wells have often been perceived as holy places in many cultures, leading to names that reflect their sacred significance. For example, wells in Ireland named after saints, like "St. Brigid's Well," are linked to local patron saints and myths. Mythological Connections - in many cases, wells have names associated with mythological figures or stories. For instance, in Greek mythology, the "Castalian Spring" was sacred to the Muses, and its name reflects its mythological importance.

As languages came into contact through trade, migration, or conquest, linguistic borrowings and loanwords enter toponymy. For example, in the Middle East, Arabic terms for wells, like "Bir" (بئر), appear in Turkish well names due to Ottoman influence. In colonial regions, indigenous terms often became part of the

local toponymy. In North America, Native American words like “michi” (meaning "great") in Michigan’s “Michigamme” (Great Water) illustrate how indigenous names influenced place-naming. Likewise, there are dialectal and regional variations within each individual country. These dialectal differences may alter the names of wells. In Spain, the word for well is "pozo," but in some regions, local dialects create variations or add suffixes that reflect the local linguistic identity. Regional languages may also contribute unique names that would not appear in standard forms. In Wales, for example, “ffynnon” is used for wells and springs, and names like “Ffynnon Dyfrigi” show the influence of Welsh on place-naming conventions. Lastly, wells often carry names related to their use or the community’s environmental and economic activities. Names like "Salt Well" or “Miner’s Well” indicate that the water source is used for salt extraction or is situated near mining areas. There are many wells named after agricultural terms, like “Ox Well” or “Sheep Spring,” indicating that they were historically used to water livestock.

Historical, Geographical and Cultural Significance of Toponyms

Toponyms of wells in Kazakhstan reflect a rich blend of history, geography, and cultural significance tied to the land and water sources. In a country known for its vast steppes, deserts, and mountain ranges, wells have been crucial in supporting communities, especially in arid and semi-arid regions. The names of these wells often carry deep cultural, historical, and geographical meanings, revealing how locals perceive and interact with their environment. The historical influence on names of wells is due to historical events, people, or ancient tribes. For instance, certain wells are named after famous warriors, tribal leaders, or historical figures who played a role in the region's history. These names serve as markers of history, reminding local communities of their ancestors and important events. A well named "Khan's Well" might commemorate a leader who established control over that region, or it could have served as a strategic water source during historical migrations.

Second, some toponyms reflect the geographical and environmental characteristics surrounding the well. For example, "Kyzylbulak", meaning "Red Spring," likely indicates the color of the surrounding rocks or soil, while "Shubar", which translates to "Dappled" or "Mottled," may describe a landscape with varied vegetation or a rocky terrain. Wells situated in sandy areas might have names like "Kumshyga" meaning "Sandy Spring," reflecting the arid and desert-like landscape. Third, names of wells have cultural and spiritual significance as well. Wells are not only sources of water but also hold spiritual significance in Kazakh culture. Many well names reflect spiritual beliefs or legends associated with them. For instance, some wells are named after saints or are considered sacred due to local beliefs that they hold healing powers. Wells named "Baba Ata" (Баба Ата), translating to "Father Ancestor," could signify a revered figure associated with the site, where locals come to offer prayers and seek blessings. Fourth, there are flora and fauna that inspire the names of wells, highlighting Kazakhstan's biodiversity. Names like "Arkarbulak", meaning "Mountain Sheep Spring," suggest the presence of wildlife like the argali (mountain sheep) nearby. "Zhalguzagash", meaning "Lone Tree," may indicate an isolated tree near the well, which would have served as a landmark for travelers. Last, but not the least, the names of wells have economic and practical importance. Many toponyms indicate the economic and practical roles of wells. For example, wells used primarily for livestock might have names like "Malshy Bulak", meaning "Shepherd's Well." Such names highlight the vital role these water sources play in supporting herding and agriculture, which are foundational to Kazakh rural life. Here are a few notable examples of well toponyms with their meanings. Aulie Bulak refers to "Holy Spring," often associated with local legends or thought to have sacred properties. Sarykol means "Yellow Lake" refers to the color of the water or the presence of certain minerals in the area. Kokbulak or "Blue Spring" is likely named for the color of the water or the surrounding landscape. Kanshaldy or "Blood Spring" is the name that refers to historical conflicts or the reddish color of minerals in the water.

Wells in the Mangistau Region Having Etymological Significance

This study examined 19 wells in the Mangistau region, some of the names of the well have an etymology.

1. Bazygurli is a well in the northeastern part of Kenderli Kiyasai in the Mangystau region. The depth is 18 m, the volume of water is 100 l/h. The name "Bazygyrly" (or "Bazykyrla") comes from the Kazakh language and its etymology can be divided into two parts: "Bases" can refer to the source, "source" or "base". In the context of wells, it means a source of water. "Gurla" is associated with the word "drilling", which means "digging". The combination of these components can be explained as "Bazigurli" dug well (or spring)", the specific meaning and significance of the Bazigurli Well can be enriched by local research and traditions. Many names of wells in Mangystau have cultural and historical significance, reflecting the connection of the local population with land and water sources.

2. Beki is a well on the Mangystau Peninsula. It is located in the Mangystau district. The depth is 12 m, the water depth is 800 l / h. the height of the well is about 250 m. It is located on the slope of the Tortkol hill. To the south of the well is the village named after the well. The etymology of the Beki well, located in the city of Mangystau in Kazakhstan, originates in Kazakh history and culture. "Bek" (or "Bek", sometimes translated as "Bey" in Turkish) is a name often found in Turkic cultures, referring to the nobility or leader. In the context of Central Asia and Kazakhstan, this means authority or respect. In historical times, people who bore the title of "Bek" were leaders of society or tribal leaders. The well may have

received its name from a respected person bearing this title, indicating that this place may be under the care or protection of an outstanding leader or may be associated with an outstanding historical figure named Beck. Naming wells after leaders or important people is a tradition of the people aimed at remembering and respecting influential people, since the well was a lifesaver providing travelers and nomads with necessary water in the desert Mangystau region.

3. Besokty is the name of the well on the eastern side of the Tuesu sand. It is located 20 km east of the village of Senek in the Karakiya district. An ancient legend says that a sniper fired five arrows. The name of the well is related to this.

4. Besoguz is a deep well in Mangystau. It is located 12 km northeast of Zholbayan Peak, near the Tolep railway station. According to the people, the man who drilled the well was given five bulls. Therefore, the well is called Besoguz. According to scientific data, 5 related Oguz tribes lived in Mangystau. The Kazakhs also called them the country of the five Bulls. The name of the well, which stood in the area where they lived, was named Besogiz in their honor.

5. Borly is a well in the western part of the Mangystau Peninsula. Depth - 2 m, water volume - 500 l/h. Mangistau Bay is located next to a well in the eastern part of the Tupkaragan Peninsula.

6. Auyzorpa is a well located 3 km northwest of the salt lake Karakeshu in the Mangistau region. There are several orp wells at the foot of the horizon. About 3 km northwest of the salt lake Karakeshu in the Mangystau region, near the slopes, it is well known as Auyzorpa, which indicates the connection of the area with both geographical and cultural elements. The word "orpa" in Kazakh means shallow wells or natural depressions that collect and store water, which is the main feature of the Mangystau arid landscape. In this context, the name "Auyzorpa" is a combination of "mouth" (which means "mouth" or "opening" in Kazakh) and "orpa" (which means a shallow well). This indicates that the mouth means "the mouth or opening of a well", which is interpreted as a well with a wide neck, so that access or construction of water is easier to obtain compared to a deep well.

7. Ashchyboldy is a well located in Mangystau, Karakiya district. The depth is 21 m, the volume of water is 500 l/h. The soil is gray-brown. The name "Ashchyboldy" likely originates from Kazakh, where "ashchy" means "bitter" or "salty." This could imply that the water may have a salty or mineral-rich taste, which is common for groundwater in saline and semi-desert regions like Mangystau. The term "boldy" can mean "became" or "turned into," so together, "Ashchyboldy" may translate to something akin to "it became salty" or "it turned bitter," possibly describing the quality or mineral profile of the water. The well's surroundings of gray-brown soil are typical of Mangystau's semi-desert, with limited organic content, which can impact the taste and mineral quality of the groundwater. This naming convention gives insights into the historical or sen

8. Ayakkarasai is a well located in the Karakiya district of the Mangistau region. The Ayakkarasai well, situated in the Karakiya district of the Mangystau region, likely holds a name reflecting both its geographical and cultural significance. In Kazakh, the word "ayak" means "foot" or "lower part," which often refers to a location at the base of a geographical feature, such as a hill or mountain slope. "Kara" translates to "black," and "sai" is often used to describe a ravine, gorge, or valley. Thus, "Ayakkarasai" could mean "the black ravine at the foot" or "the valley at the lower part." This name suggests that the well may be located near a dark-colored geological formation or in a shaded ravine, possibly formed by darker rocks or soil. Wells like Ayakkarasai have been crucial in the Karakiya district, as they provide water in an area where natural resources are sparse. These names not only serve as markers for travelers and local communities but also carry a record of the landscape's physical characteristics and how Kazakh nomadic culture relates to it.

9. Akorpa is a well located on the Buzachi peninsula of the Mangystau region. The Akorpa well, located on the Buzachi Peninsula in Mangystau, has a name that offers insight into both the landscape and the cultural nuances of the region. In Kazakh, "ak" means refers to a shallow well or a natural depression that collects water. Therefore, "Akorpa" could be translated as "white well" or "white hollow." The descriptor "white" might relate to the color of the surrounding soil or rock, which could have a pale or whitish hue, typical of the limestone and chalk formations common in parts of Mangystau. It could also refer to the quality of the water itself, potentially indicating a source with clearer or fresher water compared to other wells, as "ak" can sometimes imply purity in Kazakh culture. The Buzachi Peninsula, a remote area, relies on wells like Akorpa to support local herders and wildlife, making such water sources integral to the region's survival.

10. Baltaketken is a well located in the Mangystau region. The depth is 12 m, the volume of water is 600 l/h. The depth of the well is 12 meters, the water consumption is 600 liters/hour. The name " Baltaketken" is formed from the combination of "axe" and "fell" in the Kazakh language. The combined name can mean "the land left by the axe" or "the land where the axe was lost". This name may have historical or cultural roots. For example, one can rely on the motivation of the axe, assuming that the area was once occupied by logging settlers or that construction work was even cleared of bushes to prepare the steppe for grazing.

11. Basshorym is a well located to the west of the Northern Ridge of Aktau. The depth is 4 m, the volume of water is 180 l/h. The Basshorym well, located west of the Northern Ridge of Aktau in the Mangystau region, has a name that reflects Kazakh linguistic and cultural nuances. The term "Bas" in Kazakh and other Turkic languages can mean "head" or "top," and "orym" could be interpreted as "place" or "location." Together, "Basshorym" might mean "the place at the top" or "the head location," potentially indicating that the well is situated near a prominent high point or is a significant landmark in the area. The Northern Ridge of Aktau is a notable geological formation, and wells like Basshorym would be strategically placed near such formations to maximize access to groundwater. Historically, such wells served as important points for travelers, herders, and nomadic communities, who relied on them for survival in Mangystau's arid environment. The name Basshorym likely reflects the well's prominence or strategic location relative to the ridge, emphasizing its role as a crucial and identifiable water source in this landscape.

12. Zholbayan - wells of the brackish plain on the Northern plateau of Mangystau. The number of wells was more than 10. The name "Zholbayan" provides insight into both the nature of the area and the historical significance of these wells. In Kazakh, "zhol" means "road" or "path," and "bayan" can imply something enduring or lasting. Therefore, "Zholbayan" might translate to "lasting path" or "road of endurance." This name may hint at the wells' location along a route historically traveled by nomads, herders, or traders, providing an enduring source of water on the plain. Given the brackish quality of the plain, these wells were likely indispensable for travelers who could tolerate the mineral-rich water. The cluster of wells would have offered reliability, as water sources in arid areas often require multiple points of access to ensure that at least some wells contain water year-round. The Zholbayan wells thus highlight both the resourcefulness of local communities in developing sustainable water sources and the role of these wells in supporting enduring travel and settlement routes across the plateau.

13. The Zhuzadyr well is located in the middle part of the Karakiyansky district of the Mangystau region, on a plain at an altitude of 200 m above sea level. Well water is tart. The name "Zhuzadyr" carries layers of meaning that may reflect local characteristics or experiences tied to the well. In Kazakh, "zhuz" can mean "hundred" or "face/surface," while "adyr" generally refers to "hill" or "elevation." Together, "Zhuzadyr" might translate to something like "the elevated hundred" or "face of the hill," which could imply a notable or prominent feature in the relatively flat surrounding landscape. The tart taste of the water likely results from mineral content unique to the local geology. In Mangystau, groundwater often absorbs minerals as it filters through layers of rock, which can affect the taste. This tartness, or mineral richness, would be characteristic of water sources in the area, making Zhuzadyr notable for travelers or herders familiar with its distinct flavor. Wells like Zhuzadyr are crucial in this region, as they offer life-sustaining water while also serving as memorable landmarks for those crossing the plains of Mangystau.

14. Keitar is a well in the north of the Karabakh range. Mangystau region is located within the borders of the Karakiyansky district and the Republic of Karakalpak. The depth is 37 m, the volume of water is 100 l/h. It was dug at an altitude of about 220 m above sea level. It is used for irrigation of livestock. The name "Keitar" could carry meanings tied to the Kazakh language and culture. ""Kai" (or "kei") may imply something related to "returning" or "coming back," while "tar" can mean "narrow" or "small." This could give "Keitar" a nuanced meaning, such as "returning path" or "narrow return," potentially alluding to the location's role as a dependable water source where herds might "return" regularly for sustenance. Wells like Keitar, often positioned at higher elevations, tap into deeper aquifers that sustain them even in dry seasons. This well's strategic placement, depth, and continuous use underscore its value in supporting livestock and sustaining nomadic practices in this part of the Mangystau region.

15. Saikui is a well near the Southern plateau of Mangystau along the Hiua Road. The Saikui well, located near the Southern Plateau of Mangystau along the Hiua Road, serves as an important water source for travelers and local communities in this arid region. Positioning along the Hiua Road indicates that Saikui likely serves a strategic purpose for those traveling this route, which has historically connected various communities across the region. Wells like Saikui are vital in the Mangystau area, where water scarcity is a significant challenge. Their presence along trade or travel routes facilitates not only the movement of livestock and goods but also enhances the resilience of nomadic lifestyles. The Southern Plateau itself is known for its rugged beauty and unique geological formations, making the Saikui well a noteworthy landmark for those journeying through this remote part of Kazakhstan. Its naming and function reflect the interplay between the landscape, local culture, and the importance of water in sustaining life in the region.

16. Saryshynyrau is a well with fresh water.It is located 5 km north of Tolep station, in the Beine district of Mangystau region. One of the heroes of Abulkhair Khan Sary Baltauly, who showed heroism in the war with the Dzungarian people, settled Kazakh villages, starting from this Saryshynyrau. The historical connection to Sary Baltauly, a notable hero of Abulkhair Khan, adds a rich layer of cultural significance to this well. Sary Baltauly's contributions during the war against the Dzungar people and his role in settling Kazakh villages emphasize the well's importance as a landmark for both historical and practical reasons. This well likely served as a critical point for communities, allowing for the establishment of settlements and the support of local agriculture and livestock. Saryshynyrau thus embodies both natural

and historical significance, representing not only a vital resource for the local population but also a symbol of resilience and community legacy in the face of historical challenges faced by the Kazakh people

17. Utas is a well in the Mangystau region. It is located on the Aktau-Beineu road. The Lime Well, located in the Mangystau district, is a noteworthy water source situated along the Aktau-Beineu road. The name "Lime" may suggest characteristics related to the geological or mineral composition of the area. Lime wells are often associated with limestone formations, which can influence the quality and characteristics of the water, such as its mineral content. In arid regions like Mangystau, wells are essential for supporting local communities and livestock. The Lime Well likely provides a crucial water supply in this dry environment, serving as a lifeline for those traveling through the area or for nearby settlements. The location along a significant route underscores its importance, as it would be a vital stop for herders and travelers. The presence of such wells not only facilitates survival in the challenging conditions of the region but also contributes to the historical and cultural landscape, marking points of interest for nomadic groups who relied on these resources for their way of life. The Lime Well exemplifies the interplay between natural resources and the livelihoods of those in the Mangystau region.
18. Kazbaskazgan is a well in the south-east of the Latypkazgan settlement. It is located in the Mangistau district of the Mangistau region. It lies at an altitude of 150 m above sea level. Depth 21 m, water consumption 500 l/ h. Kazbaskazgan may also have historical significance, possibly linked to local legends, folklore, or the settlement patterns of the Kazakh people. The well symbolizes not only a vital resource but also the resilience and adaptation of communities in this challenging environment, illustrating the deep connections between the land, water, and cultural identity in Mangystau.
19. Karakozy is a well located 25 km north of the village of Sayotes, Mangystau region, near the settlement of Karnau. The name "Karakozy" can be broken down into components: "kara," which means "black" in Kazakh, and "kozy," which translates to "goat." Together, "Karakozy" might be interpreted as "black goat," potentially referring to local wildlife or herding practices in the area. Given the well's location, it likely plays a vital role for the nearby communities and herders, providing necessary water for livestock and daily needs. Wells in such remote areas are crucial for sustaining life and facilitating movement across the arid terrain of Mangystau. The proximity of Karakozy to settlements like Karnau and Sayotes suggests that it has been historically significant for the local population, serving not only as a water source but also as a landmark for navigation and a point of reference for those traversing the region. The well embodies the relationship between local culture, the environment, and the necessity of water resources in sustaining communities in the Mangystau region.

Discussion

The current study on the names of wells as toponyms yielded several significant revelations. First, this study revealed that well names often reflect the cultural, historical, and social contexts of the communities that use them. The study highlighted how names can reveal information about local traditions, folklore, and practices related to water management. These names of wells also have etymological insights. Linguists have conducted detailed etymological analyses of well toponyms, uncovering their origins and transformations over time. This study also contributed to a deeper understanding of language evolution and regional dialects. Next, comparative studies have mapped the geographical distribution of well names across different regions. These studies reveal patterns in naming conventions and how environmental factors influence toponymy, showing connections between language, geography, and culture. The study also revealed that there are anthroponymic connections between well names and personal names (anthroponyms), identifying how individuals and families are often memorialized in place names, thus connecting personal history with the landscape.

A lot many frameworks are developed for classifying well toponyms based on their linguistic features and cultural significance. This classification aids in systematic studies of toponymy and enhances our understanding of local languages. Any study on names of wells contributes to efforts in language preservation, particularly for minority languages. By documenting these names, research studies help maintain linguistic heritage and promote awareness of endangered languages. Moreover, research on well toponyms often involves interdisciplinary approaches, integrating linguistics, anthropology, history, and geography. This holistic perspective enriches the analysis and fosters collaboration among different fields. Therefore, some studies emphasize the role of well names in environmental narratives, illustrating how these names can convey information about water resources, climate, and ecological changes over time. There is also linguistic diversity present in well names, showcasing variations in naming practices among different cultures and regions. This diversity provides valuable insights into human interaction with the environment. All these factors reflect the importance of well names in understanding linguistic, cultural, and environmental dynamics worldwide. They also emphasize the role of toponyms in preserving cultural heritage and fostering interdisciplinary dialogue.

The study also revealed that animalistic imagery and its role in Kazakh culture and art has led to explore the issues of zoospeleonyms, phytospeleonyms, and anthropospeleonyms, which are widely represented within the Kazakh geocultural space. Recently, toponymy – the science of studying geographical names – has

significantly broadened its scope, proving equally effective in the fields of history, ethnography, various philological disciplines, and cultural studies. This expansion goes beyond the narrow view of toponymy as merely the act of marking territory. In this study, it was observed that the territory of Mangistau and its geology, is dominated by limestone formations. It lends itself to the development of karst landscapes with wells and underground channels. The physical features of these formations – such as the presence of natural springs or intricate well systems – often influence the speleonyms. Names frequently include adjectives or descriptive phrases that characterize physical traits of a well– such as color, size, or shape. For example, terms indicating "white" or "grey" might be used to describe the coloration of rock or water.

Speleonyms in Mangistau often derive from the Kazakh language, sometimes interwoven with influences from Arabic, Persian, or Russian due to historical cultural exchanges. These roots can offer clues about ancient cultural contacts and migratory patterns. The arid, desert-like climate of Mangistau means that subterranean water sources are both rare and precious. This scarcity is frequently reflected in the names, which may emphasize water's life-sustaining role or its distinctive quality (e.g., mineral-rich, brackish). The study of Mangistau's speleonyms illustrates how language encodes a deep connection to the natural environment. Speleonyms can also be linked to the broader landscape features such as proximity to salt flats, dunes, or oases. The interplay between the natural environment and human settlement patterns often appears in the linguistic record. The placement of caves relative to ancient trade routes or traditional nomadic paths influences their naming. Speleonyms can serve as historical markers that indicate strategic importance or the location of culturally significant sites.

The study of the toponyms of wells, or well names, in Kazakhstan provides insights into the linguistic, cultural, historical, and environmental dimensions of the region. As a part of toponymy – the branch of linguistics devoted to the study of place names – examining well toponyms specifically is known as hydrotoponymy. This field is important in regions like Kazakhstan, where wells are integral to survival in arid and semi-arid areas, and their names often carry historical, social, and geographical significance. This field of study of well toponyms in Kazakhstan is a field that not only preserves cultural heritage but also has practical implications. For water resource management, understanding the location and historical reliability of wells can guide sustainable water use in rural areas. Additionally, as Kazakhstan continues to develop, preserving and understanding these names is essential to maintaining cultural identity in the face of globalization. In conclusion, the study of well toponyms offers a window into the lives, beliefs, and environmental awareness of past and present Kazakh communities. Through linguistic, historical, and environmental analysis, researchers gain valuable insights into how people have navigated and narrated their relationship with water – a crucial, life-sustaining resource in Kazakhstan.

Conclusion

The toponyms of wells in the Mangystau region serve as a unique linguistic archive, preserving vital information about the historical, cultural, and ecological identity of this arid landscape. Far more than geographic labels, these names act as vessels of collective memory and cultural symbolism, offering insights into how local communities have engaged with their environment across centuries. Historically, many well names commemorate prominent figures, legendary travelers, or entire clans, transforming each well into a historical landmark. These names not only anchor specific locations within oral history and folklore but also reflect significant social events and movements that have shaped the region. At the same time, many well names provide vivid descriptions of the natural landscape – capturing the colors, flora, fauna, and topographical features that once characterized their surroundings. Such descriptive naming preserves a snapshot of past ecological conditions, some of which may have since altered due to climate or land use changes.

Spiritual and cultural values are also deeply embedded in well toponyms. Some names reflect religious reverence or mythical associations, suggesting that certain wells served as sacred or ritual sites within Kazakh nomadic traditions. Additionally, many toponyms convey practical knowledge about water quality and reliability – using terms such as "bitter," "salty," or "pure" to guide usage and convey local hydrological knowledge. Linguistically, these toponyms demonstrate remarkable diversity, drawing on Kazakh, Turkmen, and other regional languages and dialects. This multilingual layering reflects centuries of intercultural contact, migration, and shared territory, offering scholars a window into the complex linguistic and cultural landscape of Mangystau. Through the study of these names, we can trace patterns of linguistic borrowing, semantic shifts, and evolving place-based identities. Altogether, the study of speleonyms in Mangystau reveals how language functions as a bridge between people and places. By exploring their etymology, semantics, and cultural context, this research contributes to the growing field of linguistic geography and ethnolinguistics. The findings illustrate how subterranean spaces – wells in particular – serve not only ecological and economic functions but also carry symbolic, historical, and semiotic weight within Kazakh culture.

The current study on the names of wells in the Mangystau Region holds both practical and theoretical significance, as it contributes valuable insights into the region's cultural, linguistic, and historical heritage, while also offering resources for contemporary applications. Theoretically, this study enhances our understanding of

the cultural history of Mangystau by analyzing how well names reflect local traditions, beliefs, and significant historical events. It provides a framework for understanding how toponyms can serve as records of human interaction with the land, passed down through generations. The study contributes to toponymy, providing methodologies and categorizations that can be used in similar research on place names in other regions. It broadens the field's scope by introducing new ways to interpret place names as cultural markers. The practical significance lies in it as an educational resource. The findings can be used as educational materials for local schools, museums, and cultural institutions. These resources help raise awareness among younger generations about the region's unique heritage, fostering a sense of pride and connection to Mangystau's history.

This study enriches the domain of linguistics by examining the semantic, structural, and cultural dimensions of hydronymic toponymy in Mangystau through the lens of cultural linguistics, cognitive semantics, and onomastics. By tracing the etymologies and symbolic functions of Kazakh well names, this research illustrates how language encodes ecological knowledge, cultural memory, and social identity. The classification of well toponyms into semantic fields – such as zoonyms, phytospeleonyms, anthroponyms, colorspeleonyms, and numeronyms – aligns with empirical methods grounded in fieldwork, archival data, and comparative etymology. This methodology enables a systematic analysis of naming practices, while also offering a theoretical contribution to linguistic anthropology and cultural semiotics, contributing a linguistic and etymological framework. In doing so, the study positions well toponyms as linguistic artifacts that reflect both environmental interaction and deep cultural continuity, providing a model for interdisciplinary research in toponymy and regional linguistics.

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