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Kazakh and Arabic-Persian Vocabulary in Radlov's Turkic Dialects Dictionary: A Structural-Semantic Comparison

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ABSTRACT

V.V. Radlov's An Attempt at a Dictionary of Turkic Dialects is a monumental lexicographic source for the study of 19th-century Turkic languages, including Kazakh. This article investigates the structural-semantic characteristics of native Kazakh words and Arabic-Persian borrowings in Radlov's dictionary. The primary aim is to analyze how these lexemes were categorized, defined, and semantically represented, and to identify how their forms and meanings have evolved into modern usage. The methodology integrates structural linguistics, comparative-historical analysis, and statistical evaluation of lexical data. Lexical units were thematically classified (e.g., human, society, nature), and their grammatical, morphological, and semantic features were examined. Special focus was given to Arabic-Persian words, including their phonetic adaptation and degree of integration into the Kazakh lexical system. The findings show that many lexemes labeled by Radlov as archaisms or historicisms remain relevant in contemporary Kazakh, particularly in terminological or professional contexts. The study also reveals how certain loanwords acquired new meanings, underwent semantic shifts, or were reanalyzed through native suffixes. A linguostatistical analysis confirms the dominance of native Kazakh words in the dictionary corpus, while also highlighting the systematic treatment of loanwords. The research contributes to historical lexicography, Turkic studies, and the documentation of language contact phenomena, and offers a foundation for developing multilingual and diachronic dictionaries.

Keywords: V.V. Radlov; Turkic Lexicography; Kazakh Language; Arabic-Persian Loanwords; Lexical-Semantic Analysis; Linguistic Statistics; Historical Lexicology

1. Introduction

One of the most prominent figures in the field of linguistics is the academician of the St. Petersburg Academy of Sciences, orientalist, archaeologist, and ethnographer Vasily Vasilyevich (Friedrich Wilhelm) Radlov. His four-volume work An Attempt at a Dictionary of Turkic Dialects (hereafter – the Dictionary), consisting of eight books, each exceeding one thousand pages, holds immense significance for the historical study of Turkic languages. This Dictionary, a scholarly and practical work compiled by one of the leading Orientalists and Turkologists of his time, occupies a special place in Turkic language research. According to specialists, in terms of coverage, volume, and importance, it ranks second in Turkology after Mahmud al-Kashgari's 10th-century work Dīwān Lughāt al-Turk.

The Dictionary extensively covers the vocabulary of various Turkic languages and dialects of that period. Moreover, it reflects linguistic phenomena such as the obsolescence of lexical units or their semantic transformation over time. The article explores such phenomena based on examples extracted from Radlov's Dictionary. V. Radlov not only explained the meanings of words but also analyzed articulatory differences and similarities in sounds across Turkic languages, identified the linguistic affiliation and regional use of each term, and noted loanwords.

The Dictionary lists dialects and regional varieties such as Lebed, Taranchi, Koibal, Kachin, Koman, Kyzyl, Mishar, Simbir, Sayan, Tobol, Turalin, among others. In the present study, Radlov's original designations are retained without alteration.

Although numerous linguistic studies have explored the life and scholarly contributions of Academician V.V. Radlov, the relevance of this article is determined by its focus on the lexical composition of the Dictionary. It examines words common to the Kazakh and other Turkic languages, Arabic and Persian borrowings, the process of lexicographical representation and neologization, and the phonetic assimilation of Arabic and Persian words registered in the Dictionary.

Terminological Clarification of Key Concepts

To ensure clarity and accessibility, the following key terms used throughout the study are briefly defined:

Terminologization: The process by which a word—originally general or borrowed—acquires a specialized, technical meaning within a professional or academic field. For example, aqyqat (truth) has been terminologized in Kazakh philosophical discourse to mean an ontological or epistemological truth.

Semantic Reinterpretation: The shift in meaning that occurs when a borrowed word takes on new connotations or functions within the recipient language. For instance, pana originally meant "calamity" but came to signify "protection" in modern Kazakh.

Phonetic Adaptation: The transformation of a foreign word's sound structure to align with the phonological rules of Kazakh, such as daneshmend → danyshman.

Lexical Diffusion: The process by which words spread across dialects or regions, often acquiring local phonological or semantic traits.

Diachronic Lexicography: The study of how words and their meanings change over time as documented in historical dictionaries.

Structural-Semantic Analysis: A methodology that examines the internal morphological structure of a word in conjunction with its meaning and functional category.

These definitions support the analytical framework of the paper and help readers interpret the data and arguments in context.

2. Literature Review

Academician L.V. Shcherba, in his work devoted to the principles of typological classification of dictionaries, offered the following assessment:

"Modern explanatory dictionaries are generally based on the idea of nationhood. However, this is not always the case. There is one dictionary that became the foundation for a national idea – the dictionary by V.V. Radlov, An Attempt at a Dictionary of Turkic Dialects" [1].

Indeed, the lexicographic work under consideration may be regarded as an etymological dictionary. In this context, A. Khaidar and M. Orazov refer to Radlov's work as "a fully developed comparative-historical dictionary" [2]. Agreeing with these evaluations, we propose that the Dic-

tionary may be classified as a trilingual, partially etymological, ethnographic, encyclopedic, and comparative-historical lexicon.

Academic dictionaries not only encompass the vocabulary of a language but also serve as essential tools for addressing a wide range of linguistic issues [3]. In this regard, Professor K. Khusainov, evaluating the Dictionary as "a lexicographic work that extensively and comprehensively covered specific Turkic languages and dialects of its time," notes that the compilation involved materials from dozens of Turkic languages. He also reports that Radlov collected Kazakh vocabulary during his travels through the eastern and southern parts of Kazakhstan in the 1860s. Professor Khusainov describes the Dictionary as "1) a translation dictionary, 2) a comparative dictionary, and 3) a partially etymological reference work," and analyzes Radlov's phonological and morphophonemic insights regarding the Kazakh language, including his observations on vowel harmony and borrowed lexical elements (e.g., Russianisms, Arabic-Persian loanwords), as well as the internal lexical enrichment mechanisms of the Kazakh language [4].

The linguistic description of the Dictionary, including its lexical and grammatical features, has been studied from various perspectives. Notable studies include:

- Ubryatova E.I., "Academician V.V. Radlov," Proceedings of the Siberian Branch of the USSR Academy of Sciences, Social Sciences Series, 1969, No. 6, Issue 2;
- Afanasyev P., "A Distinguished Turkologist," Sotsialisticheskaya Yakutiya, 1957;
- Kononov A.N., "V.V. Radlov and Russian Turkology," Turkological Collection, 1971, p. 10;
- Pomelev V., "Radlov's Enlightenment and Pedagogical Activity," Pedagogika, 2013, No. 6, pp. 112–118;
- Zakirova L.N., Linguistic Work of V.V. Radlov in 1871–1884, PhD Thesis, Kazan, 2012;
- Yertayev K.E., The Linguistic Status of Postpositions in Radlov's Works, PhD Abstract, Almaty, 1992;
- Malbakov M., Kazakh Dictionaries, Almaty, 1995.

F. Akhmetova-Urmanche, analyzing the scholarly legacy of Academician Radlov, noted that the Dictionary includes material from 121 literary works, including 41 fairy tales, 29 songs, 23 legends and chronicles, and 16 poems [5].

Researcher E.A. Artyukh, in her dissertation, examined Radlov's archaeological, ethnographic, and Orientalist activities during his time in the Altai region [6]. P.A. Matveeva analyzed Radlov's contribution to the formation of a museum of universal culture [7], and D.V. Rukhlyadev discussed Radlov's collection of ancient Turkic inscriptions (Eastern Turkestan/Mongolia, Yenisei inscriptions, Karabalgasun, Kul Tegin, Orkhon-Yenisei monuments) [8].

Additionally, recent studies on the lexical content of the Dictionary have been conducted by Kyrgyz researchers S. Musaev and S. Sadykova [9], Kazakh scholars S. Kulmanov and G. Burkitbai [10], as well as G. Mamyrbek [11].

3. Materials and Methods

3.1. Materials

This study is based on the analysis of V.V. Radlov's "Опыт словаря тюркских наречий" (The Experience of the Dictionary of Turkic Dialects) [12], specifically focusing on the Kazakh lexical layer. The research corpus included lexemes related to ethnocultural fields such as human life, nature, society, clothing, professions, and topographic terms. For comparison, Kazakh explanatory dictionaries, etymological dictionaries, and encyclopedic resources were used to verify meanings and trace semantic transformations [13–19].

3.2. Procedure

The selection of lexical units was based on thematic-semantic fields within the dictionary entries. Each lexeme was cross-referenced with modern Kazakh equivalents to determine semantic continuity, lexical shifts, or terminologization. Special attention was paid to Arabic-Persian borrowings to explore their integration into the Turkic lexicon. Entries were transliterated into Latin script and classified according to their origin and usage domain.

3.3. Analytical Methods

The study employed structural-semantic and comparative analysis methods. A definitional analysis helped to clarify the evolution of word meanings. Quantitative analysis (frequencies and distribution patterns) was also used to

determine the relative representation of borrowed vs. native lexemes. To support semantic interpretation, lexicographic tools and principles of diachronic linguistics were applied. For statistical visualization, simple tables and charts were generated.

4. Results and Discussion

4.1. Lexicographic Representation of Native Kazakh Words

4.1.1. Thematic Classification and Cultural Context

Thematic analysis of the native Kazakh words registered in V.V. Radlov's An Attempt at a Dictionary of Turkic Dialects reveals a lexicon shaped by the triadic ethnolinguistic structure of "human–society–nature," reflecting the worldview and way of life of Kazakh nomadic culture. The dictionary's Kazakh lexical entries encompass a broad range of semantic fields that reflect not only linguistic, but also ethnographic, cultural, and spiritual domains.

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The human-related lexicon includes terms describing the physical and psychological characteristics of individuals (bas – head, köz – eye, köñil – soul), stages of life (bala – child, qarı – old man), kinship terms (ağa – elder brother, äke – father), emotional states (quanysh – joy, zar – sorrow), and cognitive functions (aqıl – intellect, oy – thought). This thematic area is the most voluminous, comprising more than 1,000 lexical units, and underscores the anthropocentric orientation of the Kazakh worldview.

The societal vocabulary reflects political, administrative, and legal structures as they existed in the 19th century. Words such as duan (district center), äkım (governor), äskér (army), jazu (punishment or legal decision), and qaryz (debt) indicate an active lexicon of governance and social relations. Moreover, occupational terms such as esepshi (accountant), qozıqara (shepherd assistant), and qarauylshy (watchman) demonstrate the functional roles within Kazakh society and its interaction with economic and legal systems.

The nature-related vocabulary encompasses topographic and ecological terminology that reflects the Kazakh people's intimate relationship with their environment. Terms such as tau (mountain), özen (river), qūm (sand), būlt (cloud), jylqı (horse), tülki (fox), and betpeze (meadow) reveal the practical knowledge of landscape, climate, flora, and fauna. Many of these terms are integrated into idiomatic expressions and proverbs, underscoring their cultural salience.

Another notable lexical group pertains to traditional material culture, including household items (sabau – churn staff, bosağa – threshold), architecture (kïiz üy – yurt, tüsek – bedding), and clothing (shapan – robe, börik – fur hat). This lexicon captures everyday life and offers a linguistic window into the nomadic lifestyle of the Kazakh people.

Furthermore, the dictionary includes ritualistic and spiritual vocabulary, such as bata (blessing), aruaq (spirit of the ancestor), and köşpek (rite of passage object), reflecting deep-rooted beliefs and the sacralized perception of natural and social realities. These lexemes are crucial for understanding the semiotic and mythological layers of Kazakh traditional thought.

The thematic classification also captures the lexicon of horse culture, a cornerstone of Kazakh identity. Terms such as ayıl (girth strap), zübürge (bridle decoration), qamshy (whip), and tokym (saddle pad) represent not only practical tools, but also symbolic elements of status, honor, and masculinity. Their recurrence in the dictionary highlights the cultural embeddedness of equestrianism.

Importantly, Radlov's approach does not merely list words in isolation, but often includes example sentences and contextual remarks that allow for a deeper cultural and semantic understanding. For instance, the word audaryspaq is defined as a traditional horseback wrestling game, and is accompanied by a brief cultural description, situating it within the broader context of Kazakh sports and communal gatherings. Likewise, the entry for aitaq (command to sic a dog on a wolf) references the Kazakh tradition of using trained dogs to guard livestock, thus illuminating a specific cultural practice through lexical analysis.

In summary, the thematic grouping of native Kazakh

words in Radlov's dictionary reveals the profound interconnectedness between language and traditional Kazakh life. Through categorizing lexemes according to domains of human experience, social organization, natural environment, and material culture, Radlov's work provides not only a linguistic record but also an ethnographic portrait of the Kazakh worldview in the late 19th century.

A particularly noteworthy segment of Radlov's Dictionary concerns the layer of vocabulary classified as historicisms and archaisms [20]. Although many of these terms have lost their active communicative function, they continue to exist in various functionally and stylistically marked contexts within the modern language. The analysis of such lexemes—especially in terms of their semantic transformation, reinterpretation, and potential terminological revival—reveals deep patterns of linguistic continuity, cultural memory, and pragmatic usage.

Professor K. Khusainov identifies the current meanings and synonyms of archaisms (e.g., döket, elem, sart, ualayat, shaŋğyl) and historicisms (e.g., altyn qabaq, atu, aldıyar, alym, būlaman, duan, dolyq, edis, esepşi, jawaptama, jayshy, qushyr, dauylpaz, dilda, qarjymaqyl, qoyqyn, qoyqyn shyit, boz qoyqyn, qastawys, müiet, oqyra, ölgei (elw + qoy), saqpan-saqman, sarapshyn, sasyr, telgei, üdirim, ildirik, shanash, tartys, tuldap bailady, tudy qandau)—which constitute a major lexical stratum of the Dictionary [4]. While it is well known that all of the aforementioned words are either archaisms or historicisms, it is important to highlight that due to various trends in term formation (semantic broadening, lexicosemantic shift, etc.), some of these terms are still in use—either with their original meaning or with new semantic connotations.

For instance, the word alym is recorded in the Dictionary as "a tax or per capita levy," yet in modern economic terminology it denotes "a type of payment" or "numerator/subtrahend" in mathematics. Similarly, esepshi is noted as "a person who predicts the weather," but now commonly refers to "accountant" in the economic sphere. The word dauylpaz, once meaning "a falcon-attracting instrument or drum," is now used as a term for an "ancient Kazakh musical instrument."

The entries in the Dictionary are arranged alphabetically. Consider the example of the word ail (айыл):

1. аіл [Kir., ayl, ail (Kom.), = ajıl, cf. koloŋ (Alt.), Mong.]

– girth strap, cinch – Bauchgurt des Pferdes; аіл tart – tighten the girth; tartys аіл – girth passed over the saddle; аіл басы (Kir.) – buckle (Schnalle).

2. аіл [ايل (Dsch. OT.), = 1аіл]

• Example: "The girth of my horse broke and the saddle turned" – der Bauchriemen meines Pferdes riss und der Sattel rutschte herab.

3. аіл [Alt. Tel. Kkir., (Uig, Chin. Wrtb.), cf. ağıl, aul, āl, yal (Jak), jal (Tschw.), Mong. (Nachbar)]

• (Alt.) yurt – felt tent; аілдыӊ төрүндө – in the honored corner of the yurt; аілға janaïn – I want to return home; käregä аіл – lattice yurt; аіл турғусту – he set up the yurt.

• (Tel. Kkir.) village or aul; Ulu Ail – a village in Bachat; Kazakh Ail – a Russian village; пу аіл турадаӊ рак әмәс – this village is not far from the city.

4. аіл (v.) [Sag., Koib., Kkir., Ad., آيلمق (Osm.), = ajıl, from ai (mind), cf. aik, ajyk]

• "to come to one's senses," "to recover" (from illness or madness) – zur Besinnung kommen.

The first two entries refer to ayıl meaning "girth." The third sense, derived from the Altaic languages, first denotes "yurt" and then "village" (aul). The meaning of "village" appears to be secondary, evolving from the primary concept of a dwelling. In this case, the author applies an etymological approach to draw his own conclusions.

Compare related forms such as ağıl, aul, āl, yal (Jak), jal (Tschw.). The term aul is shown as a derived meaning from the earlier sense of "enclosure" or "yurt." The scholar presents comparative forms to trace semantic evolution:

"1ağıl [Küär. Ad., آغيل أغل (Osm.) = eastern dialect ail, western dialect aul; cf. also eğil (Tar.), ağ (Osm.), ağın (Krm.), yal (Jak.)… This word is undoubtedly of Turkic origin, traceable to the root ağ. The Mongolian ail is a borrowing from Turkic]" – used to mean "enclosure for sheep"; ai ağylı – mist ring around the moon;

(Küär.) village – das Dorf [12].

The form ağıl in the southern dialects—spoken in Turkish, Azerbaijani, and others—is the source of the eastern dialectal form ail, which denotes "village." According to the scholar, this word was borrowed into Mongolic from Turkic.

In the Divan, the following proverb appears:

أَغيَادَا أُغلاَق تُغسَا اَرق دا اوتِى أُونَار

– Aγïlda oγlaq toγsa, arïqda otï önär

If a kid is born in the enclosure, grass grows for it by the river [MK].

This is used in reference to those who passively wait for means of survival rather than actively striving for them.

The most significant and voluminous lexical layer in Radlov's Dictionary is comprised of words related to the concept of "human." According to general scientific classifications and specifically the system proposed by academician A. Kaidar in his ethnolinguistic dictionary, The Kazakhs in the World of the Native Language [19], the starting point should be the notion of "a human being as a living creature." Beginning with general terms such as "man, humanity, ancestor, brother," the dictionary contains more than five hundred lexical items associated with the stages of human life, body parts and organs, perception and cognition, the human body as a whole, its movements, appearance, diseases, and more. Within the subcategory "human as a feeling, thinking, and speaking being," an additional five hundred entries are included. Thus, the topic "human" encompasses over a thousand lexical items in total.

- The system relating to the concept of "society" encompasses state symbols, municipal governance, homeland defense, names of public services, professions, finance, social groups, clothing, household terminology, and other phenomena of material and spiritual culture. Among the important aspects of Radlov's lexicographic work was the documentation and interpretation of lexical items pertaining especially to material culture and traditional crafts. A prominent place is occupied by terms related to silk fabrics, many of which trace their origins to Mahmud al-Kashgari's medieval work Dīwān Lughāt al-Turk [21]. For instance, the following names of fabrics in Kazakh, relevant to 19th-century material culture, can be found.

Many of these silk-related terms are also found in Kashgari's Divan, indicating deep influence from Chinese and Persian textile traditions. For example, torqu ("fine silk"), barçïn ("silk"), qacac ("type of Chinese silk"), cinaxsi ("painted Chinese silk fabric"), ziŋküm, tahçak, äskürt, qafyara, and hulï ("multicolored silk") are attested. A proverb from Kashgari emphasizes the cultural and pragmatic value of silk: "Tavγač xannïŋ torqusï tälim täŋlämäδip bïčmas" – "The Tabgach khan has plenty of silk, but does not cut

a robe without measuring." This warns against waste and highlights the cultural significance of silk among medieval Turkic peoples. Another proverb, "Barçïn jamaγï barçïnqa, qariš jamaγï qarišqa" – "A silk patch belongs to silk, a wool patch to wool," conveys both material and social meanings, suggesting that people gravitate toward what is similar in nature and origin.

Radlov records torqu as a high-quality fine silk popular among Kazakhs and Kyrgyz. The term barçïn also appears as a designation for luxurious fabric used in noble attire. He further emphasizes the socio-pragmatic nuances of textile usage, in line with the proverbs recorded by Kashgari. The inclusion of silk terminology like äskürt and hulï confirms both the lexical richness of Turkic languages and their cultural continuity from medieval monuments to 19th-century language use. In some cases, Radlov documents phonetic or semantic variations, demonstrating the natural evolution of these lexemes in the living language.

Radlov's Dictionary is also characterized by its rich vocabulary related to land, terrain, geographical objects, rock types, minerals, bodies of water, air, and soil types. Considerable attention is given to the sky, natural phenomena, weather conditions, seasons, and temporal and spatial categories. Additionally, the Dictionary includes an abundance of animal and plant names—domestic and wild animals, livestock, predators, birds, fish, insects, and a wide array of plant species. This lexical diversity makes the dictionary an invaluable source for exploring the traditional life and worldview of Turkic peoples. In this way, Radlov's Dictionary functions not only as a lexical record of the Kazakh language but also as a unique source for analyzing the ethnocultural identity of the Kazakhs. The terminology presented in the dictionary enables tracing the evolution of material culture, revealing semantic and pragmatic shifts in the language and reconstructing the broader context of ethnocultural connections among Turkic peoples.

A significant portion of the entries in Radlov's Dictionary consists of lexemes found exclusively in the Kazakh language and included in the Dictionary as independent lexical items. For example:

- Aitaq – "a shout used to sic a dog on a wolf." It is known that Kazakh nomads raised special dogs to protect sheep from wolves. The word aitaq is still used in modern Kazakh in the same meaning as recorded in the

Dictionary.

- Audarıspaq – "a game where two riders try to wrestle each other off their horses." This is a well-known traditional sport of the Kazakh people, where two men engage in mounted wrestling using only physical strength, without weapons or tools. As the name of a national game, the meaning of audaryspaq has been preserved unchanged in modern Kazakh.

- In other cases, however, the semantics and usage of certain words recorded in the Dictionary have shifted in contemporary Kazakh literary language. For example:

- Olqy – "sunken, not full." Examples from the Dictionary include: qazan olqy boldy – "the cauldron is not full"; işim olqy boldy – "my stomach is empty"; ayaq olqy tartty – "the content of the bowl has decreased"; dáulet olqy tartty – "his wealth has diminished." In modern Kazakh, the word olqy is used not in the sense of "emptiness" or "hollow" but rather in the meaning of "shortcoming, deficiency, flaw," and its derivative form olqylyq is widely used today.

- Ospaq – "hint, insinuation." The phrase ospaq söz meant "a hint conveyed through words." In modern Kazakh, the term appears in the fixed expression äzil-ospaq meaning "jokes, humor," thus reflecting a semantic shift.

- Ospaqta – "to hint, to imply." In the example ospaqtap bildim – "I figured it out by subtlety," the word suggests clever or indirect understanding. This verb has been largely replaced in modern Kazakh by expressions such as astarla, astarlap ayt, or astarlap ayttym, meaning "to speak in hints or metaphors." While ospaqta was once used in classical literature and poetry, it has since fallen out of use.

- Itinşek – originally described as "an animal that pulls or strains forward when led by a leash." Modern Kazakh dictionaries also record a figurative meaning: "a stubborn person who does not change or grow" [14].

- Some of the lexemes recorded in the Dictionary have evolved to acquire metaphorical meanings over time. For instance:

- Ayyrbas – "barter, trade." The phrase ayyrbas qyldy means "he exchanged (something)." In nomadic Kazakh life, barter played a vital role in meeting essential needs. Livestock was often exchanged for necessary goods not for profit, but as a means of survival.

- In some cases, the semantics of words presented in the Dictionary are not fully elaborated.

From these forms, one can deduce that auyzdyq refers to the "metal part of a horse bridle placed in the mouth." In contemporary Kazakh, the word auyzdyq also has other meanings and is used in dialectal contexts. These include: "a contagious disease in livestock affecting the lips and throat" [16]; "a type of wound at the corners of a human mouth" [18].

Some words in Radlov's Dictionary are not recorded in modern Kazakh lexicographic sources. For example: Oñqa – "a swelling on a horse's shoulders." This meaning is not found in contemporary dictionaries, where oñqa is defined instead as: "a type of asyk game" [15]; "a medical instrument, jar" [16]; or "a position in which the flat side of the ashaasık stands upright" [18]. Radlov's documentation of such obsolete meanings helps trace semantic shifts and transformations in cultural realities within the Kazakh language over the past century.

Radlov's Dictionary also includes compound expressions, derived forms, idioms, and phrasal equivalents related to the headwords, further demonstrating the author's lexicographic competence. Additionally, Radlov often indicates suffixes and affixes in parentheses. Such morpheme segmentation is highly valuable for linguistics and lexicography, as it provides a basis for cognitive and functional linguistic analysis [22].

- Furthermore, Radlov includes proper names belonging to the core Kazakh lexical heritage.

4.1.2. Phonetic and Semantic Shifts

The phonetic and semantic evolution of native Kazakh words as documented in Radlov's Dictionary illustrates the diachronic dynamics of the language over the past century and highlights how lexical items adapt to changes in usage, pronunciation, and meaning. While many lexemes have preserved their original forms and functions, a significant number exhibit either phonetic transformation or semantic reanalysis in contemporary Kazakh.

One major area of phonetic change involves consonantal and vocalic alternation, often due to the natural processes of sound simplification or assimilation. For instance, the word quyrdaq (a traditional meat dish) is recorded in Rad-

lov's dictionary as qaurdaq, demonstrating the preservation of earlier vocalic forms. Likewise, the verb qausyn ("to fasten a robe across the chest") is no longer found in modern usage, though its base root qausyru remains in derivative forms. These examples reflect the phonological shifts that occurred during the standardization of Kazakh in the 20th century, where dialectal and archaic variants were gradually replaced by unified literary forms.

Changes in stress and vowel harmony are also evident. Radlov's entries reflect full vowel harmony in multi-syllabic words such as bürmölö and töbölöstür, whereas modern orthography tends to neutralize harmony beyond the second or third syllable. This weakening is partly due to the morphophonemic principles adopted in the codification of Kazakh spelling and grammar in the Soviet era.

Semantic shifts, meanwhile, offer insight into the conceptual restructuring of lexemes. The term olqy, for example, was used to denote "not full," "hollow," or "reduced" (e.g., qazan olqy boldy – "the cauldron is not full"), but in modern Kazakh, olqy primarily refers to a shortcoming, fault, or deficiency (olqylyq – imperfection). This semantic narrowing reflects the process of specialization, whereby a general physical sense is metaphorically extended into the domain of abstract evaluation.

Similarly, the noun ospaq originally referred to a subtle hint or insinuation (ospaq söz – "veiled speech"). Today, however, it survives only within the fixed collocation äzil-ospaq, meaning "humor, joke," suggesting a semantic shift from indirectness to light-heartedness. The associated verb ospaqta ("to hint") has disappeared from contemporary usage, replaced by constructions such as astarlap aytý ("to speak metaphorically").

Another example is the word dauylpaz, which in Radlov's dictionary denoted a drum used in hunting or military contexts. In modern Kazakh, this word is preserved as the name of a traditional musical instrument, but now holds more symbolic and artistic connotations rather than a strictly functional meaning. This evolution reflects semantic elevation, where a utilitarian object acquires cultural or aesthetic value over time.

The word alym, initially used to refer to "tax" or "levy," has undergone functional expansion in modern Kazakh, where it now also refers to "payment," "numerator," or "deduction" in mathematical and economic contexts. This illustrates the influence of terminologization, a process in which general lexemes become embedded within specialized discourses, particularly in education, science, and administration.

Several words have developed figurative or metaphorical senses in contemporary usage. For instance:

audaryspaq (a game where riders wrestle on horseback) maintains its original definition, but also serves symbolically in political or journalistic discourse to describe conflict or ideological struggle.

itinşek, once describing an animal that pulls stubbornly on a leash, now denotes a person who is obstinate or slow to change, reflecting a semantic metaphorization based on animal behavior.

In contrast, some words recorded by Radlov have become obsolete or have radically altered their meanings in modern usage. The term oñqa, described in the dictionary as "a swelling on a horse's shoulder," is now defined in standard dictionaries as "a child's game" or "a jar used in folk medicine," indicating a complete resemanticization possibly due to homonymic convergence.

Overall, the comparison of Radlov's phonetic and semantic documentation with modern Kazakh usage demonstrates the fluid nature of language change. These examples confirm that even within a relatively stable agglutinative system, Kazakh vocabulary has undergone continuous adaptation through processes of phonetic simplification, semantic shift, metaphorization, terminologization, and cultural reinterpretation.

4.1.3. Morphological Features

The grammatical structure of the Kazakh language is one of the most significant indicators of its lexical richness and the depth of its word-formation system. In Turkic languages, including Kazakh, not only verbs but also nouns and other parts of speech are subject to grammatical inflection. This feature provides a valid basis for adopting grammatical parameters as the principal criterion in lexicographic description.

Nouns:

Common suffixes include:

- -lıq/-lik (e.g., amanlıq – well-being),
- -şı/-şi (örmekşi – spider, şaŋıraqşı – person dealing with yurts, balşıqşı – clay digger),
- -şılıq/-şilik, -das/-des, -şaq/-şek, -tek, -u (adamşılıq – humanity, äriptes – colleague, böktörünşäk, jamaü),
- -ma/-me, -m/-ım/-i (bürme, bürkim, bağım),
- -ş, -s, -ış, -is (burılıs, jubanyş),
- -aq/-ek (atak),
- -ğı/-gi (qozğalqı),
- -n (qatyn),
- -şyq/-şik (qarauylşyq),
- -uwyş/-uwiş (jaylawyş, jelpewiш),
- -q/-k/-yq/-ik (bölik, şyrmawıq),
- -ay (bauray),
- -maq/-paq (salmaq),
- Compound forms: qozıqulaq, qazoty, qosayaq, qarqyz, qarorman.

Adjectives:

Productive adjectival suffixes include:
- -ly/-li (esti, tayly),
- -şıl/-şil (mysqılşıl, shayşıl),
- -qy/-ki (oynaqy, qıyañqy),
- -syz/-siz (teksiz, uyqysyz),
- -şaŋ/-şeŋ (boyşaŋ, sözşeŋ),
- -qor/-ker (zinakop),
- -bet (önerbet),
- -k/-q (tayğaq, tarbaq),
- -maş/-maş, -mel, -dar (tanymal, armas, tekdar),
- -las/-les (tabaktas, minezdes),
- -u (jarau),
- -ma/-me (tutıqpa),
- -şı/-ші (öşşi),
- -ğaq/-gek (urysqaq),
- -şaq/-şek (maqtanşaq),
- -symaq (oryssymaq),
- -saq (bylqymsaq),
- -ñ (oypañ),
- -bas/-paz (mawbas, jempaz),
- -ağan/-egen (tebegen),
- -syq (tañsyq),
- -qyr/-gir (tapqyr, şilenggir).

Numerals:

- Cardinal: bir, eki, üş, tört, bes, alty, jeti, segiz, toqyz, on, jiyırma, otyız, qyryq, jelu, alpys, jetpis, sexsen, toqsan, jüz, myñ.
- Ordinal: toqsanynshy.
- Collective: altau, üşeui, bireu.
- Approximate: birer.
- Group: onar, segizden.
- Fractional: jarım, jarty, birisi.

Pronouns:

- Personal: men, sen, siz, biz, ol.
- Demonstrative: būl (bu+ol), osaq (osy+aq), osy (osh+bu), ol, o, tu, mine = minekey, myna, so, sonda (sol+da), sondai (sol+dai), sol, tūnau.
- Interrogative: neshe?, nelikten?, qashan?, qashanǵy?, kim?, ne?, qalai?, qansha?, qandai?, qaida?, qaisy?
- Reflexive: öz
- Indefinite: äldekim, ärkim, är, birdeme, pälen, pälenşe, nedeme (ne+deme)
- Negative: esh, eshteme, dym
- Definitive: barsha, jalpy, tämäm

Verbs:

Examples of verb-forming affixes include:
- -la/-le (abaila, oynaqta, söyde),
- -dan/-den (ayazdan, bylşıqtan),
- -las/-les (arazdas),
- -syn/-sin (jamansyn, jigitsin),
- -sy/-si (раңsy),
- -syra/-sire (uyqysyra, öksire),
- -r/-ar/-er (pisir, tazar),
- -y/-ay/-ey (zorai, köbey),
- -ğız/-giz (engiz),
- -q/-ıq/-ik (totyq),
- -ıra/-ire (uşyra, sirkire),
- -ırai/-irei (tesirei),
- -t (uzat),
- -s (tebis),
- -ker (kőmker),
- -na/-ne (pysna),
- -l/-ıl/-il (tabyl),
- -şı/-ші (terşi),
- -dır/-tır (tabystyr),
- -a/-e (jasa),
- -qıra/-kire (iriŋkire),
- -n/-ın/-in (tartyn, türin),

- -sa/-se (uqsa),
- -qa/-ke (jatyrqa),
- -y/-i (tarpı),
- -şa/-şe (ekşe),
- -ra/-re (iljir),
- -tyq (soqtyq),
- -ny (ainy),
- -qy/-ki (auytqy),
- -jy (mymyljy).

Adverbs:

- Time: mana, jarın, jazğı, bayırğı, jazdy küni, birsügin, biyl, būrnağı kün
- Place: syrt, joğary, az, azyn-awlaq, arğı, tömende, bermen, aryly-berili
- Measure and Degree: jalğızaq, süyem, solaq, osynsha, sonşama, azğana, azmaz
- Manner: jiti, jañsaq, dürkin, dereu, solaysha, birim, solai, tyrağai, jutqyn, tūkyran, qaitadan, jazataiym, biratola, saq-saq, tünqat
- Purpose: jorta
- Intensifiers: eñ, tipti
- Cause and Consequence: beker, şarasız
- Conjunctions: coordinating – tügil, sykıldy, taman, soñ, keyin.
- Onomatopoeic words: shölp – shölp etti, dürs – dürs etti, zyr, halt, qyrsh, qyrsh-qyrsh.
- Modal words: bar, sekildi, shyɣar, sykıldy.
- Introductory words: sirä, dʒüdä, dʒaryqtyq, ayna.

The dictionary predominantly consists of simple words. The simple words in the dictionary are presented as primary roots and derived stems. The methods of forming derived stems are indicated in accordance with the word-formation rules of each part of speech. In the lexicographic treatment of language units in the dictionary, the grammatical parameter prevails, and the grammatical structure of the Kazakh language is fully lexicographically represented.

Considering that in Turkic languages not only verbs but also nouns are subject to inflection [23], it can be concluded that the grammatical parameter dominates the lexicographic description of language units, and the grammatical structure of the Kazakh language is compre-

hensively presented (**Table 1**).

Table 1. Number of Kazakh Words in the Dictionary Register.

№	Parts of Speech	Number of Words
1	Nouns	3,212
2	Verbs	3,181
3	Adjectives	1,611
4	Adverbs	263
5	Pronouns	61
6	Numerals	51
7	Onomatopoeic words	11
8	Conjunctions	15
9	Interjections	28
10	Modal words	5
11	Introductory words	5

This quantitative and grammatical classification allows for a comprehensive description of the morphological system of the Kazakh language. In addition, the dictionary systematically presents word-formation models and productive affixes based on linguistic data, which ensure the generation of new words.

4.2. Lexicographic Treatment of Arabic and Persian Words

4.2.1. Phonetic Adaptation and Transcription

One of the most remarkable aspects of V.V. Radlov's lexicographic method is his attention to the phonetic adaptation of Arabic and Persian loanwords in the Turkic languages, particularly in Kazakh. Unlike other Turkic languages where loanwords tend to preserve foreign phonetic features, in Kazakh, borrowed lexemes undergo phonological assimilation in accordance with the native phonotactic system and the principles of vowel harmony.

Radlov notes that Arabic and Persian words found in Kazakh have often lost their original phonetic complexity and acquired simpler, Turkic-friendly forms. For example, see **Table 2**.

Table 2. Arabic/Persian and Kazakh Phonetic Form.

Original Form (Arabic/Persian)	Kazakh Phonetic Form (Radlov's Spelling)	Gloss
daneshmend	danyshman	scholar, sage
tagham	däm	food, taste
siyah	siya	black
haramzade	aramza	immoral person
arab	arap	Arab
salām	sälem	greeting
dushman	dūspan	enemy
ruqsat	luqsat	permission

These changes demonstrate several core phonological processes:

- Vowel centralization and rounding: e.g., daneshmend → danyshman
- Consonant simplification: e.g., haramzade → aramza
- Epenthesis or metathesis: e.g., ruqsat → luqsat
- Dropping of syllables: e.g., tagham → däm

Additionally, Radlov's dictionary is notable for its phonetic notation system, using diacritical marks such as macrons and umlauts to indicate vowel length and quality. For instance, in his transcription of adab ("etiquette"), the vowel a may appear with a macron in dialects that preserve vowel length, as in:

- ādab (Ottoman Turkish, Chagatai)
- ädäp (Kazakh variant, Radlov's transcription)

These notational strategies allow for dialectal comparison across Turkic languages. For example, the word nadān (ignorant) appears in multiple variants.

- nadān (Kazan, Ottoman)
- dadan (Taranchi, Kara-Kyrgyz)

The label pers. or arab. is often applied to the more standardized form, whereas regional variants are listed without explicit etymological marking. In some entries, both forms are shown, highlighting their coexistence in oral and literary usage.

In many cases, the adaptation is so complete that borrowed words are perceived as native lexemes, lacking any foreign marking. For instance:

- adam (human), äkım (ruler), älem (world), and künde (daily) are no longer recognized as Arabic in everyday use.
- These words are recorded in Radlov's dictionary under Kir. (Kazakh) without arab. or pers. tags, indicating early integration.

Phonetic adaptation also manifests in compound forms and derivations. For example:

- däriger (doctor) → därigerlik (medical profession)
- älim (knowledge, force) → älimdi (powerful)

Such productivity shows how borrowed roots became fully incorporated into Kazakh morphophonemic patterns, supporting derivational processes typical of Turkic morphology.

Based on the Russian academic alphabet, V. V. Radlov developed a special transcription system for the dictionary. Drawing on a wide range of expeditionary materials, he transcribed borrowed words common to the Turkic languages of that time in accordance with the phonetic and dialectal features of each language (Azerbaijani, Altai, Armenian, Turkish, Bashkir, Kyrgyz, Tatar, Uyghur, Khakas, and others). These words were presented as separate dictionary entries, accompanied by language-specific labels.

In the preface to his work, the scholar writes: "To facilitate the comparison of dialects with one another, I indicate for each word its related and corresponding forms in all other dialects, so that the reader has the opportunity,

without any difficulty, to trace and identify the relationships of related forms" [20]. This approach constitutes the principal advantage of Radlov's method in compiling the dictionary.

The presented transcription system reveals the phonetic and graphic differences across various dialects. Since most of the materials collected by V. V. Radlov were examples of oral folk literature, the dictionary includes many literary lexical items. Following the above-mentioned principle, Radlov transcribed Arabic and Persian words occurring in literary language into forms that were phonologically assimilated into Kazakh spoken usage. For example, not daneshmend, but danyshman; not tagham, but däm; not arab, but arap; not siyah, but siya; not haramzade, but aramza, etc.

The dictionary entries also include phonetic variants of Arabic and Persian words used in everyday speech. Examples include: salam/sälem, dūrys/dūryst, nadan/dadan, tärip/därip, zeket/seket, dūshpan/dūspan, düißenbi/tüißenbi, danyspan/danyshman, ruqsat/luqsat, qalyq/halyq, dalap/talap, and others. In some cases, the labels arab. or pers. are applied only to one variant—the one most commonly used at the time. For instance, the label pers. is assigned to the word nadan, not dadan, and to tüißenbi, not düißenbi:

- Nadan (adj.) pers. – ignorant, uneducated, foolish, uncultured, insolent, rude;
- Dadan (adj.) – nadan; ignorant, uneducated;
- Tüißenbi (noun) (düißenbi) pers. – Monday;
- Düißenbi (noun) – Monday.

However, for some borrowed words such as adam, asyl, azhwa, abdyra/abdara, etc., no arab. or pers. labels are indicated. The probable reason for the omission is that these words entered the language early and over time came to be perceived as native elements of the Kazakh lexicon.

Thus, the dictionary presents diverse variants of borrowed words in the Kazakh vocabulary of the 19th–20th centuries. Consequently, it can be stated that this dictionary is among the first to compile historical data on loanwords and played a significant role in the gradual normalization and standardization of Arabic and Persian words in modern written Kazakh.

In summary, Radlov's transcription and phonetic analysis of Arabic and Persian words in Kazakh reflects not only the historical contact between linguistic systems but also the strong assimilative capacity of Kazakh phonology. His attention to dialectal variants, vowel quality, and morphological integration provides a robust model for modern comparative phonology and contact linguistics.

4.2.2. Semantic Reinterpretation and Terminologization

Semantic reinterpretation and terminologization represent key processes through which Arabic and Persian loanwords were integrated into the Kazakh lexicon, not merely as borrowed terms but as dynamic units adapted to the evolving sociocultural, scientific, and linguistic needs of the Kazakh-speaking community. These processes reflect the semantic productivity of the Kazakh language and the adaptive transformation of borrowed lexemes into native usage.

Semantic reinterpretation involves a shift in meaning as words are recontextualized within Kazakh. Often, this process leads to a divergence between the original sense of the borrowed term and its later usage in Kazakh. For example, see **Table 3**.

Table 3. Borrowed Term.

Word	Original Meaning	Modern Kazakh Meaning	Type of Shift
olqy	not full, hollow	deficiency, shortcoming	Metaphorization
ospak	subtle hint, insinuation	humor, joke (in äzil-ospak)	Functional narrowing
pana	calamity, distress	refuge, protection	Semantic reversal
naqyl	story, tale	proverb, wise saying	Semantic elevation
teperish	pleasure	suffering, hardship	Antonymic shift
zheber	majestic, noble	weed, glutton, infectious agent	Semantic degradation

These examples demonstrate the following types of semantic shift:

- Metaphorization: concrete → abstract (e.g., olqy)
- Narrowing/Broadening: reduced or expanded meaning (e.g., ospak)
- Elevation/Degradation: improved or diminished valuation (e.g., naqyl, zheber)
- Reversal or Antonymy: complete flip of meaning (e.g., pana)

In many cases, the reinterpretation occurs through contextual embedding, such as inclusion in idioms, metaphoric usage in literature, or transfer to new semantic domains (e.g., academic, religious, or legal).

Terminologization refers to the process by which formerly general or foreign lexical items are redefined and standardized as technical or professional terms. This is particularly notable in the domains of science, religion, law, and education. For example, see **Table 4**.

Table 4. Terminologization Refers.

Word	Original Meaning	Terminological Use in Modern Kazakh	Field
alým	tax or tribute	numerator, deduction	Economics, Math
esepshi	weather predictor	accountant	Finance
aqyqat	truth, reality	philosophical truth	Philosophy
adamshylyk	humanity	ethics, humanism (standardized concept)	Ethics, Law
nätije	result	scientific conclusion	Research
mäsele	matter, issue	academic or legal problem	Law, Academia

These examples illustrate the functional reorientation of lexemes. Words of Arabic origin like aqyqat, ilm, hikmet, and shariat have been incorporated into philosophical and theological discourse, while Persian-derived terms like mäsele, meiman, and önershi have entered academic, cultural, and artistic vocabulary.

Terminologization is often accompanied by:

- Standardization of spelling and pronunciation
- Inclusion in dictionaries and textbooks
- Integration into educational curricula and media discourse

Moreover, many of these terms acquire derivational productivity through Kazakh suffixation, as seen in:

- älim (force, knowledge) → älimdi (powerful)
- ädeb (etiquette) → ädebiet (literature)
- bilim (knowledge) → bilimdi, bilimdi adam (educated person)

Thus, Arabic and Persian roots are reanalyzed as productive bases within the Kazakh morphological system.

The reinterpretation of meanings is often shaped by broader historical and cultural contexts. For example, terms that once carried religious significance (haram, şariat, aqyqat) were redefined during the Soviet period to align with secular or ideological narratives. Conversely, in post-independence Kazakhstan, some of these terms have regained or redefined their original meanings, especially in religious, educational, and cultural revival movements.

This semantic plasticity highlights the role of language contact, ideology, and education in shaping vocabulary development. Radlov's documentation of early semantic states serves as a historical baseline against which these shifts can be measured.

In summary, the semantic reinterpretation and terminologization of Arabic and Persian loanwords demonstrate the dynamic and adaptive capacity of the Kazakh language. Through processes of metaphorization, specialization, and institutional standardization, formerly foreign elements have been transformed into integral components of the modern Kazakh lexicon. Radlov's dictionary, by capturing their original forms and meanings, provides a unique resource for tracing these transformations and understanding the mechanisms of lexical integration.

4.2.3. Dialectal Variation and Historical Use

The Arabic and Persian loanwords documented in V.V. Radlov's Dictionary reveal considerable dialectal diversity across the Turkic language continuum. While many of these lexemes became widely used in standardized literary Kazakh, others retain traces of their earlier distribution in regional varieties, or have since become obsolete. Radlov's notational system, which includes explicit references to dialect labels, offers a unique opportunity to trace the geographical and functional distribution of these borrowings in the 19th century.

Radlov uses consistent abbreviations to indicate the dialectal source of a word:

- Kir. – Kazakh or Old Kyrgyz (often corresponds to standard Kazakh)
- Kkir. – Kara-Kyrgyz (modern Kyrgyz)
- Tar. – Taranchi (Uyghur-related dialect)
- Osm. – Ottoman Turkish
- Krm. – Crimean Tatar
- Tschag. – Chagatai

These labels help distinguish both phonological variants and semantic distinctions across dialects. For instance, see **Table 5**.

Table 5. Dialect.

Dialect Label	Word	Meaning	Observation
Kir.	aibat	fear, awe	Standard form in Kazakh
Kkir.	dadan	ignorant, uneducated	Variant of nadān (pers.)
Tar.	dästar	large embroidered turban	Not found in modern Kazakh usage
Osm.	dästgīr	protector, captor	Retained in Ottoman, not in Kazakh
Krm.	dästan	story, tale	Shared with Kazakh, but varies semantically

These examples demonstrate how the same Arabic or Persian root manifests differently depending on the phonological system, cultural context, and historical contact patterns of the dialect. The word nadān, for example, meaning "ignorant," is rendered as dadan in some dialects, reflecting metathesis and phonetic simplification (**Table 6**).

Table 6. Distribution of Loanwords in the Dictionary.

№	Type	Number of Words
1	Kazakh Native Words	8,443
2	Arabic Loanwords	250
3	Persian Loanwords	114
4	Other languages	61,360
Total	All Entries	~70,000

Some words appear across multiple dialects, allowing for comparative phonological and semantic analysis. For instance:

- Allah → Alla, Alda
- ruqsat → luqsat, rūxsat
- aqyqat → haqiqat, aqyqat, qaqyqat

In many cases, Radlov includes both variants in the same entry, listing the dialectal label, phonetic form, and definition side by side. This enables the reconstruction of lexical diffusion pathways across Central Asia and the broader Turkic world.

Some Arabic and Persian loanwords recorded in the dictionary appear to have been used only in specific regions or among particular social groups. For example:

- mazembet – "condemnation" appears in Kir. and Kkir. dialects but is absent in modern Kazakh.
- tarıq – meaning "reckoning" or "law" in older texts, now obsolete.

These items often fall into the category of historical lexical strata, representing earlier religious, legal, or poetic traditions that have since faded from active use.

Radlov also documents proper names of Arabic or Persian origin, including toponyms (Almalıq, Aidarhan) and anthroponyms (Nauruz, Abdurrahid). These onomastic entries indicate the deep historical integration of Arabic-Persian elements into the naming system of the Kazakh people.

Many such names, while phonologically adapted, retain their semantic and cultural origins.

For example:

- Nauruz (from Persian nōrūz – "new day") appears both as a calendar festival and a male personal name.
- Aidarhan is linked to the region of Astrakhan, reflecting political and trade connections.

These entries contribute to our understanding of how Arabic-Persian elements shaped not only the Kazakh lexicon but also its cultural geography and identity markers.

Many Arabic loanwords were introduced through Islamic religious practices, Sufi poetry, and scholastic tradition. Words such as azan, namaz, shariat, and aqyqat reflect their entry via oral instruction and religious texts. Radlov's documentation shows that even in the 19th century, the phonetic forms of these words had already undergone vernacularization, indicating their widespread and long-standing use [24,25].

The spread of Arabic terms often followed educational networks, particularly madrasa culture, where theological and philosophical texts served as vehicles for Arabic lexical transmission. Persian influence, by contrast, is often associated with material culture, poetry, and administration, particularly in vocabulary relating to daily life, clothing, and household items.

In summary, Radlov's meticulous documentation of dialectal variation and historical usage of Arabic and Persian loanwords in Kazakh provides an invaluable window into the linguistic diversity and contact-driven evolution of the Turkic world. By tracing how these words were realized across dialects, adapted phonologically, and embedded in different cultural domains, the dictionary offers more than a snapshot of lexicon—it offers a map of linguistic and cultural history.

5. Conclusions

This study has examined the lexicographical representation of native Kazakh words and Arabic-Persian loanwords in V.V. Radlov's *Dictionary of Turkic Dialects*, focusing on their structural, semantic, and historical dimensions. Through detailed qualitative and quantitative analysis, the paper has demonstrated how Radlov's documen-

tation offers both a synchronic and diachronic view of the Kazakh lexicon during the 19th century.

One of the key findings is the **structural distinction** between native Kazakh and borrowed Arabic-Persian vocabulary. Native lexemes in Radlov's dictionary are marked by transparent Turkic morphological structures, clear semantic categorization (e.g., nature, society, profession), and strong phonological consistency. Arabic and Persian loanwords, by contrast, often reflect phonetic adaptation and semantic transformation, ranging from shifts in meaning to full terminologization in religious, legal, philosophical, and scientific domains.

The study has identified multiple processes of **phonological assimilation**, such as vowel harmony, consonant simplification, and syllable reduction, which shaped how loanwords entered the Kazakh linguistic system. These adaptations, captured in Radlov's phonetic transcription, show how borrowed forms were nativized over time.

Equally significant is the process of **semantic reinterpretation**, where originally foreign terms were assigned new meanings within Kazakh sociocultural and intellectual contexts. This includes metaphorization (*olqy*), semantic elevation (*naqyl*), and even antonymic shift (*pana*). Such resemantization is evidence of the creative lexical agency of Kazakh speakers in appropriating borrowed forms.

Furthermore, the paper has highlighted the role of **terminologization**—the transformation of general or foreign lexemes into standardized technical vocabulary—as a crucial phase in the evolution of modern Kazakh. Many Arabic and Persian words now function as institutionalized terms in philosophy (*aqyqat*), law (*mäsele*), and science (*nätiжe*), often becoming productive roots in derivational morphology.

The analysis of **dialectal variation** has shown that Radlov's dictionary also functions as a record of lexical diffusion across the Turkic world. Variants such as *nadān/dadan*, *ruqsat/luqsat*, and *dästan* illustrate the fluidity of form and meaning across dialects, while dialectal notations (Kir., Kkir., Tar., etc.) offer a valuable framework for understanding regional linguistic variation.

Importantly, the dictionary captures layers of **historical, religious, and cultural interaction** that shaped the Kazakh lexicon. Many Arabic words entered through Is-

lamic education and Sufi discourse, while Persian influence is evident in poetic, administrative, and domestic vocabulary. The continued presence of these elements in modern Kazakh, albeit transformed, affirms the long-term impact of language contact.

From a methodological standpoint, this study demonstrates the value of combining **structural-semantic analysis, comparative linguistics, and lexical statistics**. Such a multidisciplinary approach reveals not only the internal organization of the Kazakh lexicon but also the dynamics of lexical change under historical and cultural pressures.

In conclusion, V.V. Radlov's dictionary is not merely a lexicographical record; it is a cultural-historical artifact that reflects the linguistic evolution, contact history, and intellectual heritage of the Kazakh people. The findings of this study contribute to broader discussions in Turkology, historical lexicography, and contact linguistics, offering insights for future work in compiling diachronic, multilingual, and culturally sensitive dictionaries of the Turkic languages.

Author Contributions

All authors contributed equally to the conception, design, data collection, analysis, and writing of this study. All authors have read and agreed to the published version of the manuscript.

Funding

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable.

Data Availability Statement

The data that support the findings of this study are derived from the publicly accessible volumes of V.V. Radlov's An Attempt at a Dictionary of Turkic Dialects, available in academic and archival repositories. Additional lexicographic materials and analytical tables generated during the study are available from the corresponding author upon reasonable request. No new datasets were created or analyzed that require separate deposition.

Acknowledgments

Conflicts of Interest

The authors declare no conflict of interest.

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