

**SEMANTIC TRANSFORMATIONS OF ARABIC-ORIGIN MEDICAL LEXEMES IN
“THE CANON OF MEDICINE”: A CASE STUDY OF UZBEK FOLK MEDICINE
AND ENGLISH EQUIVALENTS**

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Abstract: This article investigates the semantic transformations undergone by Arabic-origin medical lexemes as they migrated from Ibn Sina's *Kitab al-Qanun fi al-Tibb* (The Canon of Medicine, c. 1025 CE) into Uzbek folk medicine vocabulary and their subsequent rendering into English. Drawing on the theoretical frameworks of historical semantics, loanword typology, and ethnolinguistics, the study analyses a representative corpus of Arabic medical terms that entered the Uzbek lexical system through the Canon and traces the semantic shifts narrowing, broadening, pejoration, amelioration, and metaphorical extension they underwent across centuries of practical folk use. The article further examines how these culturally embedded Uzbek folk-medicine terms find equivalents, partial equivalents, or descriptive translations in English, highlighting the asymmetries that arise when culturally specific medical concepts migrate across typologically and culturally distant languages. The findings contribute to the comparative lexicology of medical terminology and to the broader understanding of how canonical scientific texts shape vernacular language over time.

Keywords: Arabic loanwords, Canon of Medicine, Ibn Sina, Uzbek folk medicine, semantic transformation, medical lexicology.

Literature Review

The linguistic legacy of Ibn Sina's Canon of Medicine has attracted attention from historians of science, medical anthropologists, and linguists working across Arabic, Persian, Turkic, and European traditions. Ullmann's (1978) authoritative study of Islamic medicine and its transmission to the West established the foundational philological framework within which the Canon's terminological influence may be understood, documenting how Arabic medical vocabulary entered medieval Latin and subsequently shaped the European medical lexicon. Goichon's (1938) lexicon of Ibn Sina's philosophical vocabulary, while focused on philosophical rather than strictly medical language, demonstrated the methodological value of tracking semantic change across the Arabic originals and their translations, a model directly applicable to medical lexicology.

On the Turkic side, Clauson's (1972) *Etymological Dictionary of Pre-Thirteenth-Century Turkish* provides the essential baseline for understanding which medical terms were already present in the Turkic lexicon before Arabicization and which were borrowed wholesale from the Islamic medical tradition. Bosworth's (1968) work on the Ghaznavid and Timurid courts the cultural contexts in which the Canon circulated most intensively in Central Asia supplies the sociohistorical frame for understanding how Arabic medical learning became embedded in the intellectual life of the region that would become Uzbekistan. More recently, Bosworth and Levi's work (2002) on Central Asian medical traditions in the Islamic period has shown that Arabic medical vocabulary entered Uzbek not as a monolithic borrowing but through a complex process of mediation by Persian, creating layered etymological structures that complicate straightforward Arabic-to-Uzbek analysis.

In the specific domain of Uzbek folk medicine lexicology, Khujakulov (2024) has demonstrated that folk medicine terminology in English reflects deep cultural specificity that resists transparent equivalence, and his comparative-historical analysis (Khujakulov, 2025) has traced the multi-layered etymological histories of lexical units in this domain across English and Uzbek. The derivational patterns of folk medicine lexemes in both languages have been examined by Khujakulov (2021, 2025b), revealing systematic differences in the morphological resources each language deploys to expand and adapt its medical vocabulary. These studies collectively establish that the lexical field of folk medicine is not a peripheral or archaic domain but a productive site of ongoing semantic and derivational activity, shaped by the intersection of classical learning, vernacular practice, and cross-linguistic contact.

On the English side, Skinner's (1949) *Origins of Medical Terms* remains a standard reference for the etymological histories of English medical vocabulary, while Dirckx's (1983) study of the Greek and Latin roots of medical language provides the comparative Indo-European background against which Arabic contributions to English medical vocabulary may be assessed. More recently, Quinion's (2002) work on the formation of English medical terms has updated the etymological picture to include Arabic pathways that were underrepresented in earlier scholarship. The broader theoretical framework for analyzing semantic change in loanwords is provided by Hock and Joseph's (1996) *Language History, Language Change, and Language Relationship*, whose typology of semantic shifts narrowing, broadening, metaphorical extension, pejoration, and amelioration informs the analytical categories applied in the present study.

Introduction

Ibn Sina's *Kitab al-Qanun fi al-Tibb*, completed around 1025 CE and known in the West as *The Canon of Medicine*, represents one of the most consequential intellectual achievements in the history of medicine. For nearly six centuries it served as the primary medical textbook in both the Islamic world and, through its Latin translations, in European universities. Its influence on Central Asian medical practice was especially profound and long-lasting: the territories of present-day Uzbekistan lay at the heart of the Khorasani and Transoxanian intellectual cultures from which Ibn Sina himself emerged, and the Canon's Arabic vocabulary became deeply embedded in the region's medical language long before the standardization of modern Uzbek.

The semantic history of the Canon's Arabic medical terms in Uzbek is a story of creative adaptation. As Ibn Sina's technical vocabulary moved from the learned manuscript tradition into the oral practice of folk healers *tabiblar* and *dorixonachi* it underwent the kinds of semantic transformation that characterize all living language: terms were narrowed to specific local applications, broadened to cover conceptual domains the original text had not anticipated, extended metaphorically to describe physical and psychological conditions in culturally specific ways, and occasionally subjected to pejoration or amelioration as changing social contexts revalued particular therapeutic practices.

The challenge of rendering these transformed, culturally embedded Uzbek folk-medicine terms into English adds a further layer of linguistic complexity. English medical vocabulary, shaped primarily by Greek and Latin roots through the Western medical tradition (Dirckx, 1983), encounters Arabic-origin Uzbek medical terms from a position of partial overlap: some Arabic terms entered English directly through medieval Latin translations of the Canon (Ullmann, 1978), producing cognates with shared etymologies but divergent semantic histories; others have no direct English equivalent and require descriptive circumlocution or neologistic coinage. This article examines representative cases of each type,

drawing on the author's ongoing research into the folk medicine lexicons of English and Uzbek (Khujakulov, 2021, 2024, 2025a, 2025b).

The goals of the article are threefold: first, to document and theorize the semantic transformations undergone by a representative set of Arabic medical lexemes from the Canon as they entered and evolved within Uzbek folk medicine; second, to analyse the strategies available for rendering these terms into English; and third, to contribute to the broader comparative lexicology of medical terminology by demonstrating how a single canonical text can generate divergent semantic trajectories in the languages it influences over centuries of practical use.

Main Part

1. Theoretical Framework: Semantic Transformation in Medical Loanwords

The semantic transformation of loanwords is governed by a set of well-documented processes that Hock and Joseph (1996) classify as narrowing (specialization), broadening (generalization), metaphorical extension, pejoration, and amelioration. In the case of learned medical vocabulary migrating into folk usage, narrowing and metaphorical extension are particularly prevalent: technical terms tend to be narrowed to the specific therapeutic applications most familiar to local practitioners, while the unfamiliar or opaque technical senses may be reinterpreted through culturally available metaphorical frameworks.

Arabic medical terminology presents particular challenges for this analysis because it is itself the product of a massive translation movement in which Greek medical vocabulary primarily from Hippocrates, Dioscorides, and Galen was rendered into Arabic through a combination of direct transliteration, calquing, and semantic extension of existing Arabic roots (Ullmann, 1978). Many of the Arabic terms in the Canon therefore carry layered etymological structures: a Greek concept encoded in Arabic morphology, subsequently borrowed into Persian, and then into Turkic Uzbek. Khujakulov (2025a) has demonstrated that this layering produces complex etymological profiles in Uzbek folk medicine lexemes that are not recoverable from the surface form of the terms alone, requiring philological investigation across multiple linguistic strata.

The distinction between learned borrowing and folk-etymological reinterpretation is analytically crucial here. When a term moves from a learned text into oral folk practice, it passes from an environment of philological control where scholars can refer back to the Arabic original and its Greek sources into an environment of phonetic and semantic drift, where the term's form and meaning are shaped by analogy, sound change, and the practical requirements of vernacular therapeutic communication. Clauson (1972) documents this process for pre-Islamic Turkic medical vocabulary, and the same dynamic is observable in the Canon's Arabic legacy in Uzbek.

2. Case Studies in Semantic Transformation

The following case studies are drawn from a corpus of Arabic medical lexemes attested in the Canon that retain active or residual use in Uzbek folk medicine vocabulary. Each case illustrates a distinct semantic transformation type and is analysed for its English translation equivalence.

2.1. *Dori* (from Arabic **Dawa** - دواء): Semantic Broadening and Cultural Domestication

The Arabic term *dawa* originally denoted a specific therapeutic agent, typically a compound preparation administered as part of a systematic treatment protocol. In the Canon, it appears in highly technical contexts specifying dosage, preparation method, and therapeutic indication (Quinion, 2002). In Uzbek folk usage, the term has been adapted as *dori*, undergoing a process of semantic broadening: it now denotes any curative substance

whatsoever, from a pharmaceutical compound to a herbal preparation to a spoken blessing with healing intent. This broadening reflects the integration of Islamic learned medicine with pre-Islamic shamanistic and animistic healing traditions in Central Asian folk practice, in which the boundary between material and verbal therapeutic agency is not categorical (Bosworth, 1968).

The English equivalent most commonly proposed for dori in translation contexts is medicine or remedy, both of which capture the broadened sense but lose the culturally specific connotations of the Uzbek term. In particular, neither medicine nor remedy encompasses the range of non-material therapeutic interventions prayer, incantation, ritual action that the folk use of dori can include. This translation asymmetry exemplifies what Khujakulov (2024) has described as the cultural specificity of folk medicine terminology, where the apparent equivalence concealed by shared referential coverage masks significant pragmatic and cultural divergence.

2.2. *Safro (from Arabic **Safrā** - صفراء): Semantic Narrowing and Humoral Residue*

The Arabic term *safra* referred in Ibn Sina's humoral framework to yellow bile, one of the four humours whose balance was held to determine health and temperament. In the Canon, it appears in extensive discussions of bilious diseases, temperamental types, and dietary regimens for rebalancing the humours. As the learned humoral framework receded from medical practice in the early modern period, the Uzbek folk adaptation *safro* underwent semantic narrowing: it came to denote specifically the condition of excessive heat and irritability attributed to bilious excess, effectively collapsing a broad humoral theory into a single psychosomatic folk-diagnostic category. Notably, the term retains medical currency in Uzbek folk discourse in contexts such as describing an irritable child or an overheated elderly person where its Avicennian humoral origins are no longer consciously accessible to speakers.

English offers no single-word equivalent for this folk-semantic sense of *safro*. The historical English term *choler*, derived from the same Greek-Arabic tradition through Latin, occupies the same etymological space but is now archaic and incomprehensible to most speakers. The modern English equivalents available irritability, bilious, choleric are either clinical or register-specific, none of which captures the colloquial diagnostics ease of the Uzbek term. This case illustrates what Dirckx (1983) calls the terminological gap that opens when a shared classical tradition diverges through vernacularization in different linguistic communities.

2.3. *Mijoz (from Arabic **Mizoj** - مزاج): Metaphorical Extension and Identity Encoding*

The Arabic *mizaj*, denoting temperament in Ibn Sina's systematic account of individual constitutional types, has undergone extensive metaphorical extension in Uzbek folk usage. The folk Uzbek term *mijoz* now encompasses not only physical-temperamental constitution in the broadly Avicennian sense but also mood state, social disposition, relational compatibility, and even the inherent character of non-human entities such as soils, plants, and seasons. This extension from technical medical category to a generalized folk-psychological and even cosmological concept represents one of the most productive semantic trajectories in the Canon's Uzbek legacy.

The derivational productivity of *mijoz* in Uzbek with derived forms addressing character compatibility in interpersonal and marital contexts is documented by Khujakulov (2021), who shows that this term has generated a derivational family that has no parallel in English medical or folk-psychological vocabulary. English temperament, while etymologically cognate through the Latin *temperamentum* (itself a translation of *mizaj*), has been semantically narrowed by its incorporation into modern psychological taxonomy and does not carry the relational and cosmological extensions that the Uzbek term sustains.

Nature and disposition are available as partial equivalents, but neither preserves the technical-folk hybrid quality that makes *mijoz* so semantically productive.

2.4. *Zufa* (from Arabic **Zūfā** زوفا): *Pejoration and Therapeutic Specificity*

Zufa, from the Arabic *zufa* referring to hyssop (*Hyssopus officinalis*), appears in the Canon as a therapeutically significant herb recommended for respiratory conditions, digestive disorders, and inflammatory complaints. In contemporary Uzbek folk medicine, the term *zufa* has undergone a degree of pejoration: while still recognized as medicinally useful by folk practitioners, it is associated specifically with pungent, difficult-to-ingest preparations used for serious or chronic complaints, carrying connotations of unpleasantness that are absent from the Canon's clinical assessment. This shift reflects the general tendency for folk usage to encode experiential-affective associations that learned medical discourse deliberately excludes.

The English equivalent hyssop is an exact botanical cognate, derived from the same Hebrew-Greek-Latin etymological chain (Skinner, 1949), but it is essentially a learned botanical term in contemporary English with no folk resonance. The pejoratively-flavoured experiential associations of Uzbek *zufa* have no equivalent in English usage of hyssop, illustrating how parallel etymological pathways can generate semantically divergent outcomes when one trajectory passes through folk usage and the other remains within learned botanical taxonomy. Khujakulov (2025a) identifies this type of experiential divergence as characteristic of folk medicine terminology across the English-Uzbek comparison.

2.5. *Qon* (from Arabic *qann* / Persian *khun*): *Polysemy and Diagnostic Breadth*

The term *qon* (blood) in Uzbek folk medicine exemplifies the extreme polysemy that Avicennian medical categories can develop through centuries of folk use. In the Canon's humoral framework, blood is both a bodily substance and a temperamental type, associated with moisture, warmth, vitality, and emotional intensity. Uzbek folk usage has extended this polysemy further: *qon* features in diagnostics of family resemblance and hereditary character (*qoni tortmoq* to take after someone), in descriptions of relational harmony and conflict (*qoni qorashoq* incompatible blood), and in the etiology of a wide range of conditions attributed to blood quality or movement. The derivational analysis of *qon*-based folk medicine expressions conducted by Khujakulov (2025b) reveals over twenty stable compound and derived forms in current use, each encoding a distinct diagnostic or therapeutic concept.

English blood, while semantically rich in its own right and similarly extended into non-literal usages (blue blood, bad blood, blood feud), follows a different pattern of extension that reflects Anglo-Germanic rather than Avicennian cultural logic. The medical-technical sense of blood in English is largely restricted to haematological terminology, with the folk and metaphorical extensions operating in a parallel but non-overlapping domain. Translation between *qon*-based Uzbek folk-medical expressions and English therefore typically requires either descriptive paraphrase or the use of English folk idioms that approximate the meaning without sharing its medical-cultural logic.

3. Translation Strategies and Their Implications

The case studies reviewed above suggest a typology of translation relationships between Uzbek Arabic-origin folk medicine terms and their English equivalents. Four principal types may be identified.

First, etymological cognates with divergent semantic histories such as *saфро*/*choler* and *mizoj*/*temperament* share a common classical source but have developed divergent meanings through their respective folk and technical-academic trajectories. Translation between these terms risks false equivalence: the surface etymological similarity conceals substantial semantic divergence that can mislead readers unfamiliar with both traditions.

Second, partial referential equivalents such as *dori*/medicine share core referential coverage but differ in pragmatic range, connotation, and cultural embeddedness. These cases require translator commentary or contextual glossing to preserve the full communicative content of the source term.

Third, lexical gaps cases where no English equivalent, cognate or otherwise, exists for a culturally specific Uzbek folk-medicine concept require descriptive circumlocution or the adoption of the Uzbek term itself as a borrowing. The increasing internationalization of ethnobotanical and ethnomedicine research creates contexts in which such borrowing is both legitimate and terminologically productive.

Fourth, false friends cases where a superficially similar English term actually covers a substantially different semantic domain are perhaps the most practically consequential type, since they risk systematic mistranslation in medical and ethnographic texts. The ongoing programme of comparative-historical and derivational research into folk medicine lexicology (Khujakulov, 2021, 2024, 2025a, 2025b) is therefore a practical as well as a theoretical contribution, providing the philological groundwork that informed translation and lexicographic decisions require.

Conclusion

The semantic transformations undergone by Arabic-origin medical lexemes from The Canon of Medicine as they entered Uzbek folk practice represent a microcosm of the broader dynamics of lexical borrowing, semantic change, and cultural adaptation that characterize the long history of medical knowledge transmission across Eurasia. The five case studies examined here *dori*, *safro*, *mizoj*, *zufa*, and *qon* illustrate the principal transformation types: broadening, narrowing, metaphorical extension, pejoration, and polysemic expansion. Each case reveals that the relationship between the Canon's learned Arabic vocabulary and contemporary Uzbek folk medicine terminology is not one of passive retention but of active, culturally driven semantic renegotiation.

The implications for English translation are significant. The apparent availability of etymological cognates or referentially similar English terms conceals substantial semantic, pragmatic, and cultural divergence that can mislead in medical, ethnographic, and lexicographic contexts. Effective translation requires both historical-philological knowledge of the terms' Arabic-Avicennian origins and ethnolinguistic knowledge of their folk-semantic trajectories a combination that the emerging field of comparative medical lexicology is uniquely positioned to supply.

Future research should extend the corpus of analysed terms, incorporate quantitative corpus data from Uzbek folk medical texts and oral ethnographic records, and develop a comprehensive contrastive lexicon of Arabic-origin Uzbek folk medicine terms with annotated English equivalents. Such a resource would serve the needs of medical translators, ethnobotanists, historians of Islamic medicine, and linguists working in the rich but underexplored field of Central Asian medical language.

Further Reading Suggestions

Readers wishing to explore the themes of this article in greater depth are directed to the following works. For the historical and scientific context of the Canon of Medicine, Goichon (1938) and Ullmann (1978) remain indispensable reference works. For the Turkic linguistic background, Clauson (1972) provides the essential etymological resource. For comparative medical lexicology with an English focus, Skinner (1949) and Dirckx (1983) offer complementary perspectives on the classical roots of medical English vocabulary. For broader theoretical frameworks of semantic change and loanword typology, Hock and Joseph (1996) provide the most accessible scholarly synthesis. For the specific context of Uzbek and

Central Asian medical traditions, the author's own series of studies (Khujakulov, 2021, 2024, 2025a, 2025b) offer the most detailed available analysis of folk medicine lexicology in the English-Uzbek comparative context.

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