SEMANTIC SIMILARITIES AND DIFFERENCES OF ENGLISH AND UZBEK TERMINOLOGICAL SYSTEMS

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Abstract

This study investigates the semantic similarities and differences between English and Uzbek terminological systems across three specialized domains: medicine, information technology, and jurisprudence. Using a corpus of 600 terms (300 per language), the research applies componential analysis and contrastive semantics to examine how terminological meaning is structured, borrowed, and adapted across these typologically distinct languages. The findings reveal that while English terms tend toward morphological brevity and Greco-Latin compounding, Uzbek terminological equivalents exhibit a hybrid pattern combining native semantic calques with direct phonological borrowings. Significant semantic divergence was observed in juridical terminology, where socio-cultural concepts resist direct translation, while IT terminology showed the highest degree of convergence. The study concludes that semantic similarity between the two systems is strongest in internationally standardized fields and weakest in culturally embedded legal discourse, with implications for translation pedagogy, lexicography, and terminological policy in Uzbekistan.

Keywords: *terminology, semantics, contrastive linguistics, English, Uzbek, lexical borrowing, componential analysis, domain-specific language.*

INTRODUCTION

The study of specialized vocabulary - or terminology - occupies a central position in contemporary linguistics, as technical and scientific communication increasingly demands precision, consistency, and cross-linguistic transferability. In the context of globalization and the expanding role of English as the dominant language of science, technology, and international law, terminological research has acquired renewed importance for languages operating within multilingual and postcolonial contexts, including Uzbek.

Uzbek language, with approximately 35 million speakers and official status in the Republic of Uzbekistan, has undergone significant terminological transformation since independence in 1991. The shift from a Soviet-era Russian-mediated terminological canon to a system incorporating direct engagement with international (predominantly English) terminology has created a complex semantic landscape (Hasanov, 2018). Meanwhile, English itself continues to generate new terms at an extraordinary rate, particularly in the domains of information technology, biomedicine, and law.

This paper addresses a gap in the literature by conducting a systematic contrastive semantic analysis of English and Uzbek terminological systems. While individual studies have examined borrowing patterns (Nazarov, 2020), translation equivalence (Toshmatov & Lee, 2021), and lexicographic practices (Ergashev, 2019), no

comprehensive investigation has applied componential analysis to compare the semantic architecture of terms across both languages in multiple domains simultaneously.

The central argument of this paper is that semantic similarity and divergence between English and Uzbek terminological systems are domain-dependent: they are shaped by the degree to which a given field is internationally standardized versus culturally embedded. This argument has direct implications for terminological standardization policy, bilingual dictionary construction, and the teaching of English for Specific Purposes (ESP) in Uzbekistan.

LITERATURE REVIEW

Modern terminology science (terminography) traces its systematic foundations to the work of Eugen Wüster (1979), whose General Theory of Terminology postulated that ideal terms should be monosemous (bearing a single meaning), stable, and internationally transferable. Subsequent scholars, notably Sager (1990) and Cabré (1999), challenged this prescriptivist view, demonstrating that terms function within natural language and are therefore subject to polysemy, metaphorical extension, and pragmatic variation. The socio-cognitive approach of Temmerman (2000) further argued that terminological categories are prototypically structured, not discretely bounded - a position with significant implications for cross-linguistic comparison.

Componential analysis, as developed by Katz and Fodor (1963) and applied to lexical semantics by Nida (1975), provides a robust framework for decomposing word meanings into discrete semantic features or semes. Applied to terminology, this approach reveals the architecture of conceptual meaning and enables systematic comparison across languages. Key semantic relations examined in terminological studies include synonymy, hyponymy, meronymy, and antonymy (L'Homme, 2004). In cross-linguistic contexts, false synonyms or "terminological false friends" present particular challenges for translation and standardization (Grinev-Griniewicz, 2009).

Contrastive linguistics between English and Uzbek remains an underdeveloped field relative to European language pairs. Early contributions by Ashurova (2006) examined syntactic and morphological contrasts, while Nazarov (2020) documented phonological adaptation strategies in Uzbek borrowings from English. Toshmatov and Lee (2021) identified systematic gaps in Uzbek medical terminology, noting that many internationally standardized medical terms lack established Uzbek equivalents and are used in transliterated form. Hasanov (2018) traced the historical trajectory of terminological policy in Uzbekistan, arguing that the post-independence shift toward direct English borrowing, rather than mediation through Russian, has produced terminological inconsistency across reference works and educational materials.

Despite these contributions, no study has applied a unified analytical framework to compare English and Uzbek terminological semantics across multiple domains. The present study addresses this gap.

METHODS

The study analyzed a purposively assembled corpus of 600 specialized terms: 300 in English and 300 in Uzbek, distributed equally across three domains - medicine (100

pairs), information technology (100 pairs), and jurisprudence (100 pairs). English terms were drawn from established reference sources including Dorland's Medical Dictionary (32nd ed.), the IEEE Standard Glossary of Software Engineering Terminology, and Black's Law Dictionary (11th ed.). Uzbek equivalents were identified using the Uzbek Terminological Dictionary of Medicine (Tashkent, 2020), the Uzbek IT Terminology Standard (UZST, 2019), and the Uzbek Legal Encyclopedia (2018). Where multiple Uzbek variants existed for a single English term, all attested variants were recorded and the most widely used form selected for primary analysis.

Three analytical procedures were applied in sequence. First, componential analysis was used to decompose each term into its constituent semantic features (semes), enabling structural comparison of meaning across the language pair. Second, a semantic correspondence typology was developed to classify each term pair according to its degree of semantic equivalence: (1) full equivalence, where both semes and pragmatic range match; (2) partial equivalence, where core semes match but peripheral meanings differ; (3) functional equivalence, where referential function matches despite structural divergence; and (4) zero equivalence (lexical gap), where no established Uzbek term exists and transliteration or descriptive paraphrase is used. Third, borrowing pathway analysis traced the etymological origin and adaptation route of Uzbek terms derived from English, distinguishing between phonological borrowing (transliteration), semantic calquing, and hybrid formations.

All term classifications were independently coded by two specialist linguists (one with expertise in English terminology and one in Uzbek lexicography). Inter-rater agreement, measured by Cohen's kappa, was $\kappa = 0.81$, indicating strong agreement. Discrepancies were resolved through discussion and reference to authoritative bilingual sources.

RESULTS

Table 1 presents the distribution of semantic correspondence types across the three domains. Results indicate that full semantic equivalence was most common in IT terminology (62%) and least common in legal terminology (28%). Partial equivalence was the predominant category in medicine (48%) and law (41%). Zero equivalence (lexical gaps) was most pronounced in jurisprudence (19%) and negligible in IT (4%).

Table 1.

Distribution of Semantic Correspondence Types by Domain (%)

Correspondence Type	Medicine	IT	Law
Full Equivalence	34%	62%	28%
Partial Equivalence	48%	29%	41%
Functional Equivalence	12%	5%	12%

Zero Equivalence (Gap)	6%	4%	19%

In the medical domain, full equivalence was most readily observed in internationally standardized anatomical and pharmacological nomenclature. Terms such as myocardial infarction (Uzb. miokard infarkti) and hypertension (Uzb. gipertenziya) show straightforward phonological adaptation with preserved semantic structure. These terms entered Uzbek primarily through Russian as an intermediary during the Soviet period and have since been reinforced through direct English-language medical education.

Partial equivalence was characteristic of clinical and symptomatic terminology. For example, the English term burnout (a psychiatric construct denoting chronic workplace exhaustion) has a partial Uzbek equivalent in charchash (fatigue) but lacks the socio-professional specificity encoded in its English counterpart. Similarly, the English term compliance (in the pharmacological sense of patient adherence to a treatment regimen) maps onto Uzbek davoni qabul qilish darajasi (literally "degree of medication intake"), a descriptive phrase that captures denotative meaning but lacks lexical economy.

The IT domain exhibited the highest degree of full semantic equivalence, attributable to the internationally standardized nature of digital technology concepts and the rapid, direct adoption of English terms into Uzbek technical vocabulary since the 2000s. Terms such as server (Uzb. server), browser (Uzb. brauzer), and algorithm (Uzb. algoritm) demonstrate near-perfect phonological assimilation with no semantic shift.

An important structural difference, however, was observed in compound term formation. English IT terminology extensively employs left-branching noun compounds (e.g., cloud computing, machine learning, data warehouse), while Uzbek equivalents typically employ izofali (possessive) constructions: bulut hisoblash, mashina o‘rganishi, ma'lumotlar ombori. While semantic content is preserved, the grammatical architecture differs significantly, reflecting typological differences between the analytic structure of English and the agglutinative morphology of Uzbek.

The domain of jurisprudence showed the greatest semantic divergence between English and Uzbek terminological systems. Concepts embedded in common law tradition, such as estoppel, tort, equity (in its legal sense), and injunction, lack direct Uzbek equivalents because Uzbekistan's legal system is based on a codified civil law tradition. These terms require extensive paraphrase or functional description in Uzbek legal texts, often appearing as lengthy noun phrases that approximate but do not fully capture the specific common-law conceptual content.

Conversely, certain Uzbek legal terms derived from Islamic jurisprudence - notably mahkama (court), vasiyatnoma (will/testament), and mehr (dower) - carry culturally specific semantic content that English equivalents partially capture but contextually flatten. These findings are consistent with Wierzbicka's (1997) assertion that legal concepts are among the most culturally anchored of all specialized terms.

DISCUSSION

The results confirm the central hypothesis that semantic similarity between English and Uzbek terminological systems is inversely related to the cultural embeddedness of the domain. The gradient from high convergence (IT) through intermediate convergence (medicine) to significant divergence (law) corresponds directly to the degree to which each field is governed by internationally unified standards versus historically and culturally specific legal or institutional frameworks.

The finding that Uzbek IT terminology has achieved near-full convergence with English supports the argument of Cabré (1999) that globalized, technology-driven fields generate pressures toward terminological harmonization that override language-internal derivational preferences. In this domain, the speed of technological change - and the dominance of English-language documentation - has effectively outpaced Uzbek terminological policy, resulting in widespread, institutionally accepted borrowing.

The medical domain findings reveal a more complex picture. While anatomical and pharmacological terms show strong convergence, psychosocial and clinical terms display significant partial equivalence gaps, suggesting that the biomedical sciences are not uniformly globalized: core biological science is international, while patient-centered and psychological dimensions remain culturally inflected. This has direct implications for medical translation and the training of clinical interpreters in Uzbekistan.

The legal domain findings have the broadest theoretical implications. The prevalence of zero equivalence and functional equivalence in this domain - particularly for common law concepts - illustrates what Snell-Hornby (2006) has termed translation asymmetry: the structural impossibility of one-to-one terminological correspondence when underlying legal systems are incommensurable. The data suggest that attempts to produce Uzbek equivalents for common-law terms inevitably result in semantic impoverishment, legal ambiguity, or pragmatic distortion.

A cross-cutting finding concerns the role of Russian as a terminological relay language. Older Uzbek terms - particularly in medicine - show Russian phonological adaptation patterns (e.g., stressful > stressli via Russian стрессовый), while terms entering Uzbek from the 2000s onward show direct English-based adaptation (e.g., freelancer > frilanser). This diachronic shift reflects both political change and the expanding direct engagement of Uzbek-speaking professionals with English-language sources.

CONCLUSION

This study has demonstrated that semantic similarity between English and Uzbek terminological systems is a domain-variable phenomenon, shaped by the interplay of international standardization, cultural embeddedness, typological difference, and historical borrowing pathways. The three domains examined - medicine, information technology, and law - represent a continuum from relative convergence to significant divergence, with IT showing the highest degree of semantic alignment and jurisprudence the lowest.

The componential analysis methodology proved effective for systematically comparing the semantic architecture of bilingual term pairs, revealing not only surface-

level equivalence patterns but also the structural mechanisms by which meaning is expanded, narrowed, or contextually reoriented in translation. The borrowing pathway analysis further established that the route of terminological transfer - direct from English, mediated through Russian, or calqued from Uzbek roots - significantly affects both the formal and semantic properties of Uzbek terms.

These findings have practical implications across several fields. For terminological policy in Uzbekistan, they support a differentiated approach: unrestricted borrowing may be appropriate in rapidly evolving technological fields, while careful semantic analysis and consultative standardization are essential in legal and clinical domains where terminological imprecision carries institutional risk. For ESP pedagogy, the results suggest that contrastive terminological awareness should be built into language courses for medical and legal professionals. For lexicographers, the typology of correspondence types offered here may serve as a productive organizing framework for bilingual technical dictionaries.

Future research should extend this framework to additional domains (engineering, economics, environmental science) and incorporate corpus-linguistic methods to examine terminological variation in actual usage - beyond the prescriptive norm represented by official dictionaries and standards. Longitudinal analysis of how Uzbek terminological systems evolve in response to ongoing English-language influence would also constitute a valuable contribution to the field.

REFERENCES

1. Ashurova, D. (2006). Contrastive analysis of English and Uzbek grammar. Tashkent: Fan.
2. Cabré, M. T. (1999). Terminology: Theory, methods and applications. Amsterdam: John Benjamins.
3. Ergashev, B. (2019). Lexicographic challenges in Uzbek bilingual technical dictionaries. Uzbek Language and Literature, 3, 44–58.
4. Grinev-Griniewicz, S. V. (2009). Terminovedenie [Terminology science]. Moscow: Akademiya.
5. Hasanov, J. (2018). Terminological policy and language planning in post-Soviet Uzbekistan. Language Policy, 17(4), 519–537.
6. Katz, J. J., & Fodor, J. A. (1963). The structure of a semantic theory. Language, 39(2), 170–210.
7. L'Homme, M.-C. (2004). La terminologie: Principes et techniques. Montreal: Presses de l'Université de Montréal.
8. Nazarov, O. (2020). English loanwords in contemporary Uzbek: Phonological adaptation strategies. Acta Linguistica Asiatica, 10(1), 29–47.
9. Nida, E. A. (1975). Componential analysis of meaning. The Hague: Mouton.
10. Sager, J. C. (1990). A practical course in terminology processing. Amsterdam: John Benjamins.
11. Snell-Hornby, M. (2006). The turns of translation studies. Amsterdam: John Benjamins.
12. Temmerman, R. (2000). Towards new ways of terminology description. Amsterdam: John Benjamins.
13. Toshmatov, N., & Lee, S. (2021). Medical terminology transfer from English to Uzbek: Gaps, adaptations, and standardization challenges. Asian-Pacific Journal of Second and Foreign Language Education, 6(1), 1–18.

14. Wierzbicka, A. (1997). Understanding cultures through their key words. Oxford: Oxford University Press.

15. Wüster, E. (1979). Einführung in die allgemeine Terminologielehre und terminologische Lexikographie [Introduction to the general theory of terminology and terminological lexicography]. Vienna: Springer.