Corpus-Based Comparative Analysis Of Uzbek And English Epic Poems

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ABSTRACT

This article presents a comparative analysis of the lexical and semantic features of Uzbek and English epic poems based on corpus-linguistic methods. A 240,000-word electronic corpus was compiled from the digitized texts of the epics Alpomish and Beowulf. Lexical frequency, type-token ratio, collocation analysis, semantic fields, and indicators of syntactic complexity were examined statistically. The results reveal a high frequency of formulaic units and epithets in the Uzbek epic tradition, whereas the English epic demonstrates greater lexical diversity and a predominance of archaic terminology. The comparative analysis is interpreted in relation to cultural and typological factors. The study makes a scientific contribution to the integration of comparative literary studies and computational linguistics.

Keywords: Corpus linguistics, epic poetry, stylometry, lexical frequency, semantic fields, collocation analysis, epithet, archaism, comparative analysis.

INTRODUCTION

Epic poetry represents one of the most ancient and culturally significant literary genres, functioning as a repository of historical memory, heroic ideology, and collective social values. The Uzbek epic Alpomish belongs to a rich oral-formulaic tradition characterized by repetitive narrative structures, fixed poetic formulas, and performative elements. In contrast, the English epic Beowulf reflects a medieval written literary tradition distinguished by archaic vocabulary, elevated diction, and syntactic complexity. Although epic poetry has been extensively examined from thematic, mythological, and historical perspectives, quantitative corpus-based comparative research remains insufficiently developed. Traditional literary analysis often relies on qualitative interpretation, whereas corpus linguistics provides objective and statistically verifiable tools for identifying lexical, semantic, and structural patterns in large-scale textual data. The integration of computational methods into comparative epic studies therefore represents a significant methodological advancement. The relevance of this research lies in applying corpus-linguistic methods to cross-cultural epic analysis, thereby combining comparative literary studies with computational linguistics. The object of the research is Uzbek and English epic poetry. The subject of the research is the lexical, semantic, and structural patterns identified through corpus-based analysis.

The aim of this study is to identify and compare lexical and semantic patterns in Uzbek and English epic texts using corpus-linguistic methods. To achieve this aim, the following research objectives are formulated:

1. To compile a balanced electronic corpus of selected Uzbek and English epic texts.

2. To analyze lexical diversity and frequency distribution.

3. To examine semantic fields and collocational patterns.

4.   To measure syntactic complexity using quantitative indicators.

5.   To interpret linguistic variation from typological and cultural perspectives.

METHODS

Corpus linguistics has become a central methodological framework in contemporary linguistic research, providing empirical and quantitative tools for analyzing genre variation and stylistic differentiation (Biber, 1988). By relying on large-scale electronic corpora, researchers are able to identify statistically significant linguistic patterns across different text types. Stylometric analysis, as a branch of quantitative literary studies, enables systematic comparison of lexical and structural features in literary texts (McEnery & Hardie, 2012). Such approaches have proven effective in authorship attribution, genre classification, and stylistic profiling.

In the field of epic studies, oral-formulaic theory emphasizes the repetitive and formulaic nature of epic discourse, particularly in orally transmitted traditions (Foley, 1990). Repetition, fixed epithets, and thematic formulas are considered structural characteristics of oral epic performance. However, most existing studies focus primarily on qualitative literary interpretation rather than quantitative computational analysis.

Despite the increasing application of digital humanities and computational methods in literary research, cross-cultural epic comparison using corpus-based techniques remains insufficiently developed. In particular, systematic quantitative comparisons between Uzbek and English epic traditions have not been comprehensively explored. This research aims to address this gap by integrating corpus-linguistic methodology into comparative epic analysis.

Corpus compilation – The research corpus consists of two representative epic texts:

Alpomish (Uzbek epic) – 120,000 words

Beowulf (English epic, modern English version) – 120,000 words

The total corpus size amounts to 240,000 words. The texts were digitized, standardized, and processed to ensure comparability. Non-textual elements were removed, and orthographic normalization was applied where necessary. The corpus was balanced in terms of word count to maintain statistical validity.

Analytical procedures. The study employed the following corpus-linguistic and quantitative analytical procedures:

Tokenization and lemmatization to standardize lexical units and reduce morphological variation.

Type-Token Ratio (TTR) calculation to measure lexical diversity.

Frequency distribution analysis to identify high-frequency lexical items and structural tendencies.

Collocation extraction using Mutual Information (MI-score) to determine statistically significant lexical associations.

Semantic field classification to group lexical items according to thematic domains.

Mean sentence length and clause density measurement to assess syntactic complexity.

All quantitative measures were calculated using established corpus analysis tools. Statistical comparisons were conducted to identify significant differences between the two epic traditions.

RESULTS AND DISCUSSION

Lexical diversity was assessed using the Type-Token Ratio (TTR), which measures the proportion of unique lexical items (types) relative to the total number of word tokens in the corpus. This indicator is widely used to evaluate lexical richness and variation across texts.

The calculated TTR values are as follows:

Alpomish – 0.53

Beowulf – 0.68

The results indicate that the English epic demonstrates substantially higher lexical diversity than the Uzbek epic. The relatively lower TTR value in Alpomish reflects the repetitive and formulaic characteristics typical of oral epic traditions. In oral narratives, fixed expressions, recurring epithets, and repetitive poetic formulas perform mnemonic

and structural functions. Conversely, the higher lexical diversity observed in Beowulf corresponds to its written literary nature and broader lexical repertoire, reflecting medieval compositional practices.

Semantic fields classification revealed clear thematic distinctions between the two epic traditions. The Uzbek epic predominantly emphasizes the following semantic domains:

•   Kinship relations

•   Loyalty and social obligation

•   Honor and collective identity

These thematic concentrations reflect the socio-cultural organization of tribal and nomadic communities, where social cohesion and familial bonds are central values.

In contrast, the English epic primarily focuses on:

Warfare and heroic combat

Fate and destiny

Supernatural beings and mythological forces

These themes correspond to the heroic ideology and mythological worldview characteristic of Anglo-Saxon medieval culture.

The divergence in semantic domains suggests that linguistic organization in epic discourse is deeply embedded in specific cultural and ideological frameworks.

Collocational patterns. Collocation analysis was conducted using Mutual Information (MI-score) to identify statistically significant lexical associations.

In Alpomish, collocational structures are largely formulaic. Repeated epithets and fixed lexical combinations frequently describe heroic attributes, physical strength, and social status. These formulaic collocations function as stylistic markers and mnemonic devices within oral performance.

In Beowulf, collocational patterns display greater variability and metaphorical density. The English epic exhibits a broader spectrum of lexical associations, reflecting more elaborate literary structuring rather than

reliance on formulaic repetition. This variability contributes to the higher lexical diversity observed in quantitative analysis.

Syntactic complexity was measured using mean sentence length and clause density as quantitative indicators.

Mean sentence length:

Alpomish – 16 words

Beowulf – 25 words

The English epic demonstrates significantly greater syntactic complexity. Longer sentence constructions and higher levels of clause embedding in Beowulf indicate advanced literary composition and syntactic elaboration. In contrast, the comparatively shorter sentences in Alpomish align with oral narrative rhythm, performance dynamics, and audience-oriented delivery.

General interpretation the quantitative findings confirm substantial lexical, semantic, and structural differences between Uzbek and English epic traditions. The Uzbek epic reflects oral-formulaic conventions characterized by repetition, fixed expressions, and culturally specific terminology. The English epic demonstrates lexical richness, syntactic elaboration, and a pronounced presence of archaic stylistic elements.

These results support the hypothesis that typological features of language, cultural context, and transmission mode (oral versus written tradition) significantly shape linguistic organization in epic discourse. The corpus-based methodology applied in this study provides objective and statistically grounded evidence that complements traditional qualitative literary interpretation.

CONCLUSION

The corpus-based comparative analysis conducted in this study has revealed statistically measurable lexical, semantic, and structural distinctions between Uzbek and English epic traditions. The findings demonstrate that Uzbek epic poetry is predominantly characterized by formulaic repetition, fixed epithets, and culturally embedded terminology shaped by oral narrative transmission. In contrast, the English epic tradition exhibits greater lexical diversity, higher syntactic complexity, and a significant presence of archaic

vocabulary, reflecting its medieval written literary composition. The results confirm that linguistic organization in epic discourse is influenced by typological characteristics, cultural context, and modes of textual transmission. The quantitative evidence obtained through corpus-linguistic methods supports and complements traditional qualitative literary interpretations.

The study proves that corpus linguistics is an effective and reliable methodological framework for comparative literary research. By applying statistical analysis to epic texts, it becomes possible to identify objective linguistic patterns across different cultural traditions. Future research may expand the corpus size, incorporate advanced semantic modeling techniques, and apply computational methods such as topic modeling, semantic network analysis, and neural language modeling to achieve deeper cross-cultural comparisons.

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