

UDC 82-1/-9

<https://doi.org/10.33619/2414-2948/119/57>

ANALYSIS OF LITERARY TEXTS WITH DIGITAL METHODS (BASED ON CH. AITMATOV'S WORK "MOTHER EARTH" AND ITS TRANSLATION)

©*Ergeshbaeva N.*, ORCID: 0000-0001-6504-6980, SPIN-code: 42335-8076, Kyrgyz State University named after I. Arabaev, Bishkek, Kyrgyzstan, nuris-abd@mail.ru

©*Mambetkulova Z.*, Kyrgyz State University after named I. Arabaev, Bishkek, Kyrgyzstan

АНАЛИЗ ХУДОЖЕСТВЕННОГО ТЕКСТА С ИСПОЛЬЗОВАНИЕМ ЦИФРОВЫХ МЕТОДОВ (НА МАТЕРИАЛЕ ПРОИЗВЕДЕНИЯ Ч. АЙТМАТОВА "МАТЕРИНСКОЕ ПОЛЕ" И ЕГО ПЕРЕВОДА)

©*Эргешбаева Н.*, ORCID: 0000-0001-6504-6980, SPIN-код: 42335-8076, Кыргызский государственный университет им. И. Арабаева, г. Бишкек, Кыргызстан, nuris-abd@mail.ru

©*Мамбеткулова З.* Кыргызский государственный университет им. И. Арабаева, г. Бишкек, Кыргызстан

Abstract. This article investigates the application of digital methods to literary texts, focusing on a comparative analysis of Chingiz Aitmatov's work *Samanchynyn zholu* (Mother Earth) and its English translation. Recognizing the growing importance of digital humanities in advancing textual research, the aim of this article is to assess the translation's quality and explore the efficacy of Voyant Tools for analyzing texts in the Kyrgyz language, marking one of the first such attempts. Comparative analysis and Voyant Tools' functionalities, including word frequency calculation, collocation identification, and visualization (word clouds, graphs, concordances), the study processed both the 27,161-word Kyrgyz original and the 38,737-word English translation. Key findings reveal thematic alignment between the two texts; characters like Aliman and Tolgonai, and themes such as "Mother Earth," war, and daily life, consistently emerged as central. Despite linguistic structural differences, the translation effectively conveyed the core narrative and character prominence. While minor variations in lemmatization across languages were observed, Voyant Tools successfully provided quantitative and qualitative insights into textual characteristics and semantic preservation. This research demonstrates the robust potential of digital tools to complement traditional literary scholarship, offering a data-driven approach to understanding translation fidelity and enriching the study of Kyrgyz literature.

Аннотация. Рассматривается применение цифровых методов в исследовании литературных текстов, при этом особое внимание уделяется сравнительному анализу повести Чингиза Айтматова «Саманчынын жолу» (Материнское поле) и её английского перевода. Учитывая растущее значение цифровых гуманитарных наук в развитии текстологических исследований, цель работы — оценить качество перевода и изучить эффективность использования инструмента Voyant Tools для анализа текстов на кыргызском языке, что представляет собой одну из первых подобных попыток. Сравнительный анализ и функциональные возможности Voyant Tools, включая подсчёт частотности слов, идентификацию коллокаций и визуализацию (облака слов, графики, конкордансы), были применены к оригинальному тексту на кыргызском языке объёмом 27 161 слово и к его английскому переводу объёмом 38 737 слов. Основные результаты свидетельствуют о тематическом соответствии двух текстов: например, такие персонажи, как Алиман и Толгонай, а также темы «Материнская земля», война и повседневная жизнь стабильно выделяются как центральные. Несмотря на структурные различия между языками, перевод

эффективно передаёт основное повествование и значимость ключевых персонажей. Хотя были зафиксированы незначительные различия в лемматизации между языками, Voyant Tools успешно предоставил как количественные, так и качественные данные о текстовых особенностях и сохранении семантики. Данное исследование демонстрирует высокий потенциал цифровых инструментов как дополнения к традиционному литературоведению, предлагая основанный на данных подход к оценке точности перевода и способствуя более глубокому изучению кыргызской литературы.

Keywords: digital humanities, frequency, word cloud, visualization.

Ключевые слова: цифровые гуманитарные науки, частотность, облако слов, визуализация.

Humanitarian disciplines have made significant progress in solving scientific problems using computer technologies, computerized text research, creating a linguistic corpus, and automating text analysis procedures. Digital humanities are a unique tool for improving the quality of education and helping students grow in many ways. In today's digital era, it is necessary to move to new educational technologies that help students gain new life and professional skills. That is why students should learn digital methods in the humanities while they are still at university, so they can apply what they learn in their future work at schools. Most digital humanities databases are based on texts. For this reason, text mining and literary text analysis are key research methods. It is important to develop different tools that help with text research. This need has led to the creation of many text analysis tools such as punctuation analysis, tagging, content extraction, reading tools, keyword detection, and more. Literary studies have long been concerned with the examination, understanding, and interpretation of texts. However, over the past few decades, the development of technology has brought about significant changes in this field, with digital methods opening up new possibilities for analyzing literary texts. As a branch of digital humanities, researching literature with digital methods allows for processing large volumes of data (Voyant Tools), discovering new patterns, and identifying connections that might be overlooked with traditional approaches. Voyant Tools was developed by Stefan Sinclair (McGill University) and Geoffrey Rockwell (University of Alberta) (<http://voyant-tools.org>).

It is a web-based application that helps researchers and students explore and analyze texts in a visual and interactive way. Voyant Tools makes it possible to find word frequency, key terms, patterns, and relationships in texts quickly and clearly. It is especially useful for studying large amounts of literary texts and discovering ideas and meanings that are not always easy to see by just reading. Therefore, using Voyant Tools can make digital text analysis more accessible and effective in education and research. This article compares the original Kyrgyz version of Ch. Aitmatov's work *Samanchynyn Jolu* with its translation using the Voyant text analysis tool. The aim of the article is to assess the quality of the translation and to explore the potential of Voyant for analyzing texts in the Kyrgyz language. This research represents one of the first attempts to apply digital methods to Kyrgyz texts and opens new perspectives for the study of Kyrgyz literature. This article represents a pioneering effort in applying digital humanities methods to Kyrgyz literary texts, opening new avenues for academic inquiry into Kyrgyz literature and translation studies. Integrating digital tools like Voyant Tools into literary analysis not only enhances research efficiency but also provides a more data-driven and comprehensive approach to exploring the intricate relationships between original works and their translated counterparts.

One of the earliest digital humanities projects centered on text analysis. When text is available in digital format, it becomes significantly easier to apply text analysis techniques to answer scholarly questions. These methods allow us to examine large volumes of texts, known as corpora, to familiarize ourselves with the information contained within them, and to address specific inquiries. This contrasts with traditional reading, which involves a careful, close study of individual texts we are familiar with. Research Materials: The original Kyrgyz-language full text of Ch. Aitmatov's work [1].

Samanchynyn zholu (Саманчынын жолу) and English translation of Mother earth translated by James Riordan [2].

Chinghiz Aitmatov's work Samanchynyn jolu expresses the universal human protest against war. The work is narrated through symbolized images of nature and the Earth. The Kyrgyz title Samanchynyn Jolu refers to the constellation of stars in the sky, the Milky Way. However, in Russian (Материнское поле – Mother's Field and in English (Mother Earth), this astronomical term is not rendered literally. These translations represent a particular literary choice that corresponds to the main themes and meanings of the work. The Earth and nature are depicted as symbols of a mother, inseparably linked to human life and destiny. In Aitmatov's creative vision, the unity of man and nature plays a central role. In most cases, translations aim to convey the symbolic meaning and philosophical context of a work in order to make it accessible to readers of another cultural environment. For this reason, translators often choose titles that are not literal but rather appropriate to the content. The rendering of Samanchynyn Jolu as Материнское поле and "Mother Earth" follows this principle.

Thus, the decision to translate the title in a conceptual and philosophical sense, rather than in a terminological one, altered the original wording. At the same time, it sought to communicate certain aspects of the work more profoundly on the international level.

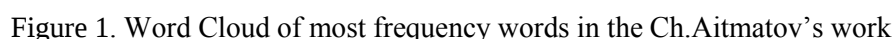
Research Methods: Comparative Analysis: By comparing the original text with its translation, this method identifies similarities and differences. It helps assess how well the translation conveys the meaning, whether stylistic features are preserved, and reveals any potential losses or changes in the translation. Textual Analysis using Voyant Tools: This method involves both quantitative and qualitative analysis of the texts through the Voyant tool (<https://voyant-tools.org/>).

It includes the following steps: Uploading the texts into Voyant Tools. Calculating word frequency (identifying the most frequently used words). Identifying collocations (analyzing how words are used in context). Using visualization tools (generating word clouds, graphs, and charts).

As stated in one of the indisputable principles of modern translation theory, no translation can ever be a complete (absolute) replica of the original, because linguistic and cultural barriers lead to the loss of various aspects of the original text's content. In other words, it is impossible to convey information through translation with one hundred percent completeness. This does not mean that translation is entirely impossible; rather, it means that a translation can never be entirely identical to the original [3].

Ch. Aitmatov's work "Mother earth" presents significant challenges in translating Kyrgyz cultural elements into English. Many Kyrgyz works have been translated into English through Russian rather than directly from Kyrgyz. This intermediate step has often resulted in the loss or alteration of original cultural meanings and stylistic features. Many Kyrgyz epithets and cultural symbols (such as "Kut", a sacred symbol of goodness, or "Mother Earth") are difficult to convey in English. Translators have often resorted to simply translating general terms such as "Talaa", which loses their cultural and artistic meaning. Words related to the nomadic lifestyle and traditional Kyrgyz social structure, such as *aiyl* (a type of nomadic settlement), do not have precise English or Russian equivalents. Translators sometimes use general words such as *aiyl*, which mislead readers,

The original contains 27,161 words, with the most frequent being мен (188), ал (162), Алиман (149), келе (132), Толгонай (86), Эне (80).



The dominance of personal pronouns (мен, сен) and main verbs (болуп, жаткан, келет) suggests first-person or conversational content. Words like Алиман and Толгоной likely names or key concepts, point to main characters or recurring themes. The color and spatial distribution help quickly identify which words and topics are most influential or central. This visual overview aids in forming initial hypotheses before deeper manual or computational analysis. Voyant Tools' visualization quickly highlights the structure and thematic density of the text, bringing core content and recurring motifs to the foreground. Such tools empower users to make data-driven inferences about a text's composition and underlying messages. The English text contains 38,737 words, with the most frequent being: Aliman (199), said (176), Mother (123), time (114), come (103) and names like Kasym, Aliman and Suvankul. These indicate the main subjects and characters of the text. Words like came, began, know, like, saw, left and work suggest actions and events that are key to the narrative or theme. The text seems to revolve around family relationships (mother), important characters (e.g., Kasym, Aliman, Suvankul), and everyday life events such as coming, leaving,

The Kyrgyz text's most frequent words include many pronouns and function words (мен, ал), reflecting the language's grammatical structure. The English translation's frequent words focus more on content words related to plot and dialogue (said, mother, time, come). This reflects differing linguistic structures and possibly choices in translation style (more explicit subject use, more reported speech). The word said appearing frequently (176 times) in English suggests many dialogues are explicitly marked, possibly more so than in the Kyrgyz original. The presence of words like time and come indicates narrative action verbs and temporal markers are frequent in English. Text length of English translation is significantly longer. Kyrgyz mostly shows pronouns and particles, while English highlights narrative and dialogue words. This comparison shows typical patterns of translation between the two languages with structural differences and stylistic choices impacting vocabulary frequency and text length.

Both word clouds strikingly align on the central themes and main participants (I/man, mother, said/telling, came/coming) of the text. This strongly suggests that the translation effectively captures the primary content of the original. The English word cloud more clearly highlights proper nouns like Kasym, Suvankul and Tolgoni. While these names would be present in the original Kyrgyz text, their visual prominence might be less due to other highly frequent common words, or perhaps different lemmatization/tokenization behavior for Kyrgyz in Voyant Tools. The English version seems to have consolidated related forms or recognized proper nouns more distinctly. The presence of various forms of a single verb (e.g., келди, келе, келген) in the Kyrgyz cloud, compared to often a single base form (e.g., came) in the English, suggests that Voyant Tools' lemmatization (reducing words to their base form) might be more robust or fully applied for English than for Kyrgyz. Both clouds point to a narrative involving human interaction, time (day, night), and specific settings (home, village, earth, road), indicating a story-like text. Both word clouds effectively represent the content of their respective texts. The translation appears to have successfully conveyed the core themes and most frequent terms from the original. Any subtle differences in prominence might be attributed to the linguistic processing capabilities (like lemmatization) of Voyant Tools for different languages.

Terms allows the tool to select and process the most frequently used words in the text and predict the content of the text. For example, by analyzing the list of the most frequent words, we can predict what events are discussed in the work. The next figure illustrates the connections between words — a network visualization of terms that frequently occur near each other in Ch. Aitmatov's work *Mother Earth*. This visualization helps group words into meaningful phrases and provides insight into the context in which these phrases are used. However, in the Kyrgyz version, the figure reveals only a limited number of such connections.



Figure 3. A fragment of the concordance of contexts of the use of the word "Aliman" in the work of Ch. Aitmatov

It is evident that *Эне* (whether the physical mother, the symbolic Mother Earth, or the concept of motherhood) is the absolute core of this text. *Aliman* and *Tolgonai* are crucial characters, deeply intertwined with the *Эне* concept and with each other. This aligns perfectly with "The Mother Earth," where *Tolgonai* is the protagonist and *Aliman* is her daughter-in-law. The frequent use of pronouns like *Ал* and *экеөбүз* indicates a narrative style focusing on character relationships and interactions, often seen in Aitmatov's works.

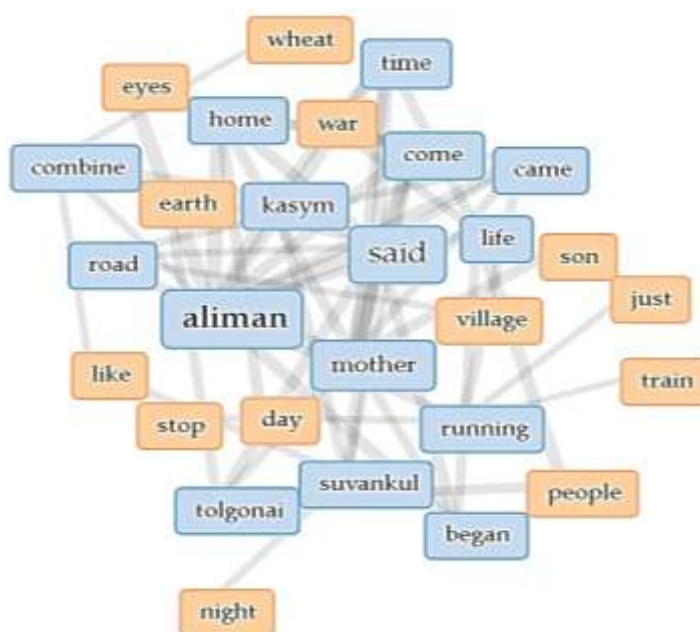


Figure 4. A fragment of the concordance of contexts of the use of the word "Aliman" in the work of Ch. Aitmatov

The presence of verbs like келе (coming) suggests that the text involves specific actions or events, adding a dynamic layer to the narrative centered around these characters. This analysis strongly supports the assumption that the text is from Chyngyz Aitmatov's "The Mother Earth," as the relationships between Mother, Tolgonai and Aliman are central to that novel's plot and themes.

The word Aliman appears to be a central node because it is connected to many other words. Other important nodes are: said, Tolgonai, war, earth, village. The following themes can be observed in this visualization: words like war, life, people, village show the impact of war on people's lives. Words like Aliman, Tolgonai, Subankul, mother, son reflect family relationships and the connection between the characters. Words like earth, wheat, forest show the importance of farming and labor. Strongly connected to time, home and combine. This is a crucial thematic element in "The Mother Earth" describing the impact of World war II on the characters and their lives. Home is connected to Aliman, mother, war, earth, road and Tolgonai. Emphasizes the significance of the home as a setting and concept. Earth is connected to Aliman, home, road. Reinforces the theme of the land and its connection to the characters. Temporal words time, day, night are scattered but connected to various characters and actions, emphasizing the passage of time and daily life (and its disruption by war). Life is connected to Aliman, Tolgonai and began. A central theme. Wheat is connected to combine and time. Directly related to the agricultural setting and the harvest.

This English network graph strongly reinforces the conclusions drawn from the previous Kyrgyz graph and the English word cloud, specifically: Aliman, Mother, Tolgonai and Suvankul are clearly the most significant entities, with Mother and Aliman having the highest number of strong connections. The prominence of said indicates that a large part of the narrative is conveyed through speech or reported speech. The strong connections around war, home, earth, combine, life, wheat and temporal words (time, day, night) perfectly align with the core themes and setting of Chyngyz Aitmatov's "The Mother Earth," which recounts the story of Tolgonai during World War II, her family, and their struggle with the land and the combine harvester. The graph suggests a narrative that focuses on characters' relationships, their daily lives (agriculture, home), and the profound impact of historical events (war) on their existence (<https://voyant-tools.org/>).

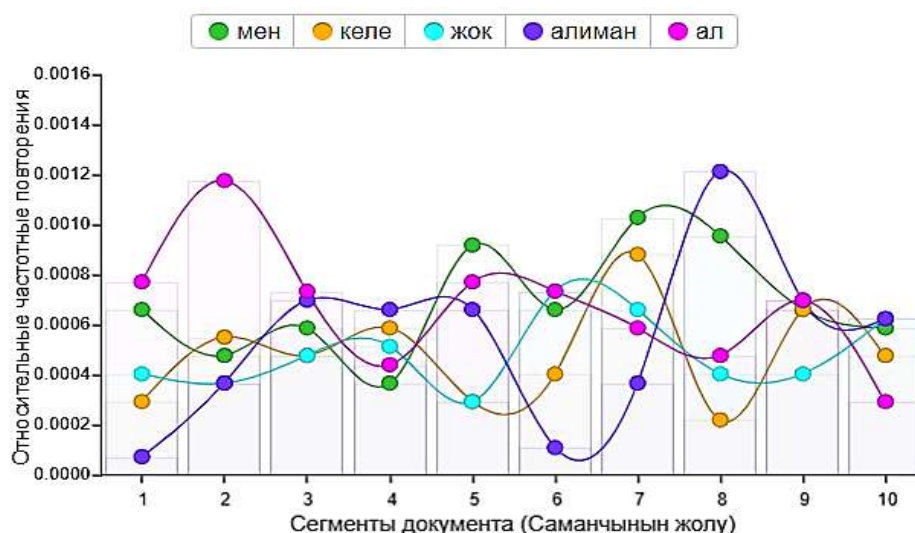


Figure 5. View of the Trends in the original text

The general trends in word usage in the English and Kyrgyz versions are similar: the name of the main character (Aliman/Алиман) reaches a peak in each text, which may indicate important changes in that part of the plot. Also, the English text is more descriptive and action-expressing

(said, come), while the Kyrgyz version is dominated by personal names and short words (мен, ал, жок). This is explained by the specificity of the translation and the natural word choice in the Kyrgyz language.

The relative dynamics of words differ slightly in the two languages - in the English version, some words have sharper peaks, while in the Kyrgyz version, the differences between sections are relatively less.

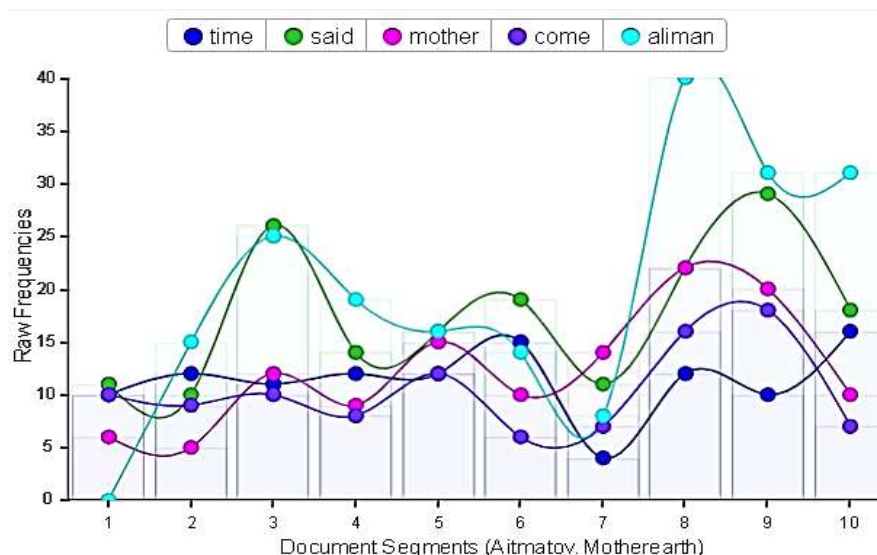


Figure 6. View of the Trends in the target text

You have seen that the verb said is the most frequently used word in the work if we compared to other words found in the work, it has a constant use in all lines. As can be seen from the graph, this type of analysis consists of dividing the text into 10 equal parts and finding the number of occurrences of the most frequently used words in the text (in this case, time, said, mother, come, Aliman).

Contexts				
Document	Left ↑	Term	Right	
Aitmatov: Mother...	What should we do about	aliman	?" Aisha pressed her fist to	
Aitmatov: Mother...	Hurry!" And everyone ran after	aliman	"God forbid! God forbid!" I	
Aitmatov: Mother...	She'll be over soon!" After	aliman	left, the days dragged on	
Aitmatov: Mother...	died about three years after	aliman	I mourned my dear friend	
Aitmatov: Mother...	with me for long afterwards	aliman	came running towards me, tears	
Aitmatov: Mother...	on the way home again. "	aliman	, do you really know him	
Aitmatov: Mother...	were grazing. Now once again	aliman	began going off in the	
Aitmatov: Mother...	take her own life. Ah,	aliman	Aliman! If you were here	
Aitmatov: Mother...	her own life. Ah, Aliman,	aliman	I if you were back with	
Aitmatov: Mother...	I began calling her "Aliman!	aliman	I" But she did not answer	
Aitmatov: Mother...	began to gasp hoarsely "Aliman!	aliman	I What's the matter?" I said	
Aitmatov: Mother...	a little girl "Oh, Aliman,	aliman	my dear helpless daughter-in	
Aitmatov: Mother...	her own ideas. Oh, Aliman,	aliman	my sweet daughter-in-law	
Aitmatov: Mother...	her and began reading aloud	aliman	, meanwhile, squatted down and began	
Aitmatov: Mother...	again to learn the alphabet!"	aliman	began pummeling him, then they	
Aitmatov: Mother...	always held them back. And	aliman	herself never wanted to listen	
Aitmatov: Mother...	Suvankol, Kasym, Maselbek, Ojanak and	aliman	As long as I live	
Aitmatov: Mother...	the work on Ojanak and	aliman	, they had no rest night	
Aitmatov: Mother...	In the spring he and	aliman	will set up house for	
Aitmatov: Mother...	me his address: " Kasym and	aliman	headed towards the road, leading	
Aitmatov: Mother...	the next afternoon, Kasym and	aliman	overlooked the others and came	
Aitmatov: Mother...	When I saw Kasym and	aliman	standing side by side near	
Aitmatov: Mother...	here and there. Kasym and	aliman	had also received a plot	
Aitmatov: Mother...	in his letter he asked	aliman	and me to forgive him.	

Figure 7. A fragment of the concordance of contexts of the use of the word "Aliman" in the work of Ch. Aitmatov

Контексты	Слова	Сино	Орфо
Саман...	тоокан кайы каагай эмес, адамдын ко аракетинен турмушка, элге ыштан мамилесинен, бирине-бири калганын, а...	алиман	кеткен жакып-уулулук жет, эстен кетсе жай болду. Ошол жылы элибиз эң эле эрте бычтардыбы. Сайдаты чоң суу
Саман...	жол эмес эле. Андай ошолдо мен термүү эмесим, колдон келсе, натуулуктан калышпай милетине эне кетсем. Ка...	алиман	жынап алып, бир убакытта, менден уртаксыз, буудай арасы менен уулулук кетип бара калат. Бул эмески, колдун.
Саман...	бетине алып кетип калгандар, коум да сөмкө тутат. карымат деген жылындай алып жат эмеспи болсун! "3-3	алиман	"Суусу жетпесе келетин" деп караганы алып, Касымга жүрүдү. Алардын араптан, ысык жолго, эң көйнөк Алиман.
Саман...	3-36, арабым, бол эрте! деп, карым тоонун башынан үн салгандай кыймылды эле, тайтай арабы кетпө кетпө, кайма.	алиман	чуркап бара калгандар, колунда карыматты караган эмес, жердеги тартуу кылып кетипти бара калгандар, сүйлөп кары.
Саман...	чөйчөккө жол бербечудай болуп турду. Бир үй-бүлөбүз менен алыстан сырттанан орон алды. Субанкул эне мен...	алиман	жолдугун жерге жай салып, үйдөн алып кеткен алымагы чечип таштады да, кеселерге ашына үйдү. Арыктагы суу.
Саман...	тоо-тоону болуп калды, деп мөөдөн түпкүрүп калтып, жаз чыгары менен көпчөмөн элөө болуптур, үй-жай күтүп кети.	алиман	да калмак, иш арада бир минут бирге болушса да, ымабат эмеспи. Майкайбемдери сүйлөсө, салгылашкандар ка
Саман...	өзөгө кайрыла кетпейби? "Кайрыла кетпей", дедим мен. Жаны кеня дегенбиз, айыпта өрө берип жат болгондо эле...	алиман	да көңү менен баш жагынан карбай алышпайды Бете. Киринтерин каап калган үмөтүл ороп калмак, аларды ку...
Саман...	шөбүр да, калканы кетерги жокта бүтүрүрүз. Туура эмеспи. Токон!" "Тууда, үстүн калса калканы бүтөр, аныктык.	алиман	жечеси аны калдырдып кетет. "Ой, кичине бала туура элек баласа ат койгонсубай, жайдак эле жерге көчкөн атын и.
Саман...	чаап жүргөн Касымдын каймакы хан болуп токтоп калгандар, мен ага аны деле мээр салган жокмун, деген бир жер.	алиман	"Эне!" деп ачуу чырды. Мындай карасам, ороон колунан түшүрүп, көлөмөм кан-сөтү жок кутуу болуп турган эм.
Саман...	берди, анына жаманда жүргөн Алиман. "Эне!" деп ачуу чырды. Мындай карасам, ороон колунан түшүрүп, көлөмө...	алиман	уулулук жок. Анын агайтан кездери тикеттен таратты карай бергенде, тула боюн дүр эле түштү. Каймактын жан.
Саман...	тула боюн дүр эле түштү. Каймактын жаманда алар карай кыймылтар, туу-туу калган буудайды аралап жүрү.	алиман	каймактын кездери жүрүп жүрүдү. "Ой, булар соо эмеспи! Каймактын бычканын кичине, майкай болгон то" деген
Саман...	балка, ысык суу, каймактын курап түшүр бекенем!" деп ичинден сызым, бирок айтууга оорун барбайт. Дүйнө эмн...	алиман	бир убакытта ысык карай, ташталып кетет. "Тоонесте келетин" деген ат аран сүйлөп. "Качан?" Жана сөзүсөтөт.
Саман...	жүрөт, каймактайбы?" дедим мен дегендеген эңериме эа боло албай. "Кечке барам деди ко. Мен үйгө барып да...	алиман	Каймак кеттирүп тур. Мен да азыр барам" Алиман кеткенден кийин да, көпчө чөйчөк ордунан турбайт, шалдырап.
Саман...	албай. "Качан барам деди ко. Мен үйгө барып дегендеген деди. Мен кетп берейин, эне. Атаны айтып коюмун. Бирки	алиман	иткенден кийин да, көпчө чөйчөк ордунан турбайт, шалдырап ордун. Башымдан алыштылып түшкөн жолдугун.
Саман...	калуу айтамын дедим да, кайра, коюу, жаш неменен иренетпегенин иче суу калбасын деп жат койдум. Жаш ошондо...	алиман	жалып калган оюн таштап, жүгүрүп барып койнуна асылды да. "Сенден ачырабаймын! Сенден ачырабай аламын!" д
Саман...	кетди. Ал кароого күйп кетер менен, Алиман жатып калган оюн таштап, жүгүрүп барып койнуна асылды да. "Сенд...	алиман	Көп түрү азыра, салымын алып кет, чоң сууга барып жуунайгай" деди эле, Алиман менен жалт-жалт караганы.
Саман...	койнуна асылды да. "Сенден ачырабаймын! Сенден ачырабай аламын!" деп бурчорон ылабы. Касым каймактын т...	алиман	мени жалт-жалт караганын ийменемин сөз көлү, суу алып кет деп колун чака кармаган койдум. Алар ошондо ай.
Саман...	тушту. Мындай карасам, согушка кетип бара калгандар пардактандар не бир согушкан, чаралай жалгыздар экен. У...	алиман	ошол учурда колунда сыга кармап. "Эне!" деп шыбырап жиберди. Ашыны деге балкай турган, билген менен орам.
Саман...	айтканан түк унутпаймын. "Эмбизим мени элек, токтомай. Мына ушун эл, ушун эрт менен ишан болду. Жашалыптын...	алиман	эмбизим көргөндү бирин да көргөн жок, ал ыйлаша-ануу баска. Сен эмн дедт. Билет койгун, согуш ушунгай күчөй б.
Саман...	дейт. Билет койгун, согуш ушунгай күчөй берсе, мен да кетем. Майкайбемдин кызы да кетип турат, керек экен бербей.	алиман	жол артып, согуш кетпешти. Үйүрө тайе кетип колдошуп чыккан деп, Касымга уртакта берелетпир. Алымдын эки.
Саман...	Касым, бетине соокоо ысык шалкага карап, көзүрүн көрөт күтүп жатты. Трагедия эне алда энекердин кыймы.	алиман	да ошондо азыр ачырашарын унутпандар, кубанып турган экен. Бакырдан да алып Айда кошунабырдын баласы, ан.
Саман...	карасам, асыресе жөнөмөндөр айырым тушунан өтө берип, ышкыдап жетпө кеткен экен. Үшүктүп, Касымды жанту...	алиман	мен кайра көлөм, көрсөтүп го эрте, эле болжолу кетем, ыйлашканы мына, мен кетем, оштон меней" деп Касым аттан.
Саман...	бетке, ушул учурда да каралбай, эмне үчүн ушунча болду асырды?" "Каш эмн, Алиман, мен кайра кетем, көрсөтү...	алиман	кайра эле барып, койнуна асылып, көзүрөй жаш балана көргөн сүйрөк, көп түрү деп ыйлай берди. "Эмесе барам.
Саман...	карап турушту да. "Түшүрүңүз!" деди Субанкул. "Түшүрүңүз, ага!" деди Касым. "Эмесе жөнөй". Субанкул атаны нан...	алиман	кол кармапшып, чоң жолго жетпө баргана карап турдум. Адегенде Алиман үрөмүнү кармаган жүрүп, анан ат үстүнөн.
Саман...	Эмесе жөнөй". Субанкул атаны минип, ырмакын кездээ чаап кетти. Мени менен колдошкандар, Касым, Майкайбест...	алиман	үрөмүнү кармаган жүрүп, анан ат үстүнөн алышканы маңдайын азыра жолу өтп. Касым сары жерден башын көй б.

Figure 8. A fragment of the concordance of contexts of the use of the word "Aliman" in the work of Ch. Aitmatov

Relative frequency is divided into ten parts, indicating the frequency and percentage of terms in the document. For example, the word "Aliman" has a relative frequency of 0.0010326, which is about 10% of the document. Context helps to determine the usage of the most common key words used in the tool and shows the text that appears to the left and right of the word in the text. The visualization that includes all events related to Aliman in context.

The Kyrgyz contexts generally appear to provide longer, more complete snippets of the original text, as they are in the source language. This allows for a deeper understanding of the nuances in the original phrasing. The English contexts offer direct translations, which may sometimes be slightly more concise or focus on the immediate words around Aliman. The highlighting of Aliman in the Term column is consistent in both. These two images are highly valuable demonstrations of Voyant Tools' contextual analysis capabilities. They clearly illustrate the significance of the word Aliman in Chingiz Aitmatov's "The Mother Earth" and how she is referenced in various contexts, including character descriptions, family relationships, actions, and dialogue. The Kyrgyz image provides the authentic, original phrasing, while the English image offers the translated counterpart. By comparing them, one can not only understand Aliman's role but also observe how linguistic nuances are handled in the translation, providing insights into both the original text and its rendition in another language.

It can be very useful to use tools such as Voyant Tools to analyze how the frequency of words in the original text affects the meaning of the translation. These tools allow you to compare the frequency of words in two texts (original and translated). As a result of the comparison, you can determine how the overall meaning has been affected.

The frequency of words in the original text affects the meaning. If certain words or phrases are used frequently in the original text, they may indicate the main themes or concepts of the text.

The frequency of words can help determine the style and characteristics of the author's writing. For example, the frequent use of a particular word may indicate the author's point of view or emphasis. The frequency of certain words can indicate the emotional tone of the text. For example, a large number of words with a negative connotation may indicate that the text is sad or critical. If the frequency of words in the translation matches the original, then the translation is considered to have conveyed the meaning correctly. If the frequencies differ significantly, then the meaning in the translation may be distorted. The frequency of words in the translation should correspond to the grammatical and stylistic features of the target language. For example, in Kyrgyz, some words may be used more often than in other languages. The frequency of words in the translation affects how readers perceive the text. If the translation contains many unfamiliar or rarely used words, it may become difficult to understand the text. Voyant Tools offers a powerful, accessible platform for applying digital textual analysis to literary works such as *Mother Earth*. By combining frequency analysis, concordances, collocations, and visualization, scholars can uncover patterns that enrich understanding of themes, character prominence, and narrative structure. This complements traditional literary scholarship and opens new avenues for comparative and translation studies.

This study demonstrates the immense potential of digital methods, particularly using Voyant Tools for the in-depth analysis of literary texts and their translations. By comparing Chingiz Aitmatov's original Kyrgyz novella, *Samanchynyn Jolu*, with its English translation, we successfully assessed translation quality and explored Voyant's capabilities for analyzing texts in the Kyrgyz language. The analysis revealed that despite linguistic structural differences, the translation effectively conveyed the core themes and character prominence of the original, as evidenced by the similarities in word clouds and thematic networks. The dominance of key characters like Aliman, Tolgonai, and the recurring theme of "Mother Earth" was consistently highlighted across both versions, affirming the translation's success in capturing the narrative essence. This was clearly evidenced by the striking similarities in word clouds and thematic networks across both versions. The consistent prominence of key characters like Aliman and Tolgonai, along with the recurring theme of "Mother Earth," affirmed the translation's success in capturing the narrative's essence.

While Voyant Tools proved effective in identifying word frequencies, collocations, and thematic clusters, the study also underscored some nuances, such as differences in lemmatization robustness for Kyrgyz versus English, which can influence visual prominence of words. Nevertheless, the ability to generate word frequency graphs, word clouds, and concordances provided invaluable quantitative and qualitative insights into the textual characteristics and the preservation of meaning across languages. The analysis of word trends further illustrated how central elements of the plot, such as the peak appearance of the main character's name, are reflected similarly in both original and translated texts.

This research represents a pioneering effort in applying digital humanities methods to Kyrgyz literary texts, opening new perspectives for academic inquiry into Kyrgyz literature and translation studies. Voyant Tools offers an accessible and powerful platform that complements traditional literary scholarship by enabling scholars to uncover patterns, assess translation fidelity, and enrich understanding of complex textual layers. The findings strongly suggest that integrating such digital tools into literary analysis not only enhances research efficiency but also provides a more data-driven and comprehensive approach to exploring the intricate relationships between original works and their translated counterparts.

References:

1. Aitmatov Ch. *Mother Earth*. <https://clck.ru/3PjGKw>
2. Aitmatov, Ch. (1982). *Sochineniya*, 2, Frunze. (in Kyrgyz).

3. Ergeshbaeva, N. A. (2019). Problema ekvivalentnosti perevoda. *Vestnik Kyrgyzskogo gosudarstvennogo universiteta imeni I. Arabaeva*, (1), 207-211. (in Russian) <https://doi.org/10.33514/1694-7851-2019-1-207-211>

Список литературы:

1. Aitmatov Ch. Mother Earth. <https://clck.ru/3PjGKw>
2. Айтматов Ч. 3 томдон турган чыгармалар. Т. 2. Фрунзе: Кыргызстан, 1982. 512 б.
3. Эргешбаева Н. А. Проблема эквивалентности перевода // Вестник Кыргызского государственного университета имени И. Арабаева. 2019. №1. С. 207-211. <https://doi.org/10.33514/1694-7851-2019-1-207-211>

Поступила в редакцию
28.08.2025 г.

Принята к публикации
08.09.2025 г.

Ссылка для цитирования:

Ergeshbaeva N., Mambetkulova Z. Analysis of Literary Texts with Digital Methods (Based on Ch. Aitmatov's Work "Mother Earth" and its Translation) // Бюллетень науки и практики. 2025. Т. 11. №10. С. 441-451. <https://doi.org/10.33619/2414-2948/119/57>

Cite as (APA):

Ergeshbaeva, N., & Mambetkulova, Z. (2025). Analysis of Literary Texts with Digital Methods (Based on Ch. Aitmatov's Work "Mother Earth" and its Translation). *Bulletin of Science and Practice*, 11(10), 441-451. <https://doi.org/10.33619/2414-2948/119/57>