ISSN: 2181-3906 2025

International scientific journal
«MODERN SCIENCE AND RESEARCH»
VOLUME 4 / ISSUE 5 / UIF:8.2 / MODERNSCIENCE.UZ

PROBLEMS OF TRANSLATING TEXTS RELATED TO ASTRONOMY (IN THE EXAMPLE OF ENGLISH-UZBEK-ENGLISH TRANSLATIONS)

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https://doi.org/10.5281/zenodo.15547754

Annotatsiya. *Mazkur maqolada astronomiyaga oid matnlarni ingliz tilidan o‘zbek tiliga va aksincha tarjima qilishda uchraydigan asosiy muammolar tahlil qilinadi. Tarjima jarayonida yuzaga keladigan lingvistik, terminologik va madaniy tafovutlar, shuningdek, ilmiy atamalarning to‘g‘ri ekvivalentlarini topishdagi qiyinchiliklar yoritilgan. Shuningdek, maqolada tarjima jarayonida qo‘llanilishi mumkin bo‘lgan samarali strategiyalar, xususan, kontekstual tahlil, atamalar bazasi yaratish va tarjimonning ixtisoslashuvi muhim omil sifatida ko‘rsatib o‘tiladi.*

Tadqiqotda inglizcha va o‘zbekcha astronomik matnlar tahlil qilinib, amaliy misollar orqali muammolar va ularning yechimlari ko‘rsatib berilgan.

Kalit so‘zlar: *Astronomiya tarjimasi, ilmiy atamalar, inglizcha-o‘zbekcha tarjima, madaniy tafovutlar, tarjima strategiyalari, kontekstual tahlil, atamalar ekvivalenti.*

Abstract. *This article analyzes the key problems encountered in translating astronomy-related texts from English into Uzbek and vice versa. It highlights linguistic, terminological, and cultural differences that may arise during the translation process, along with the challenges of finding accurate equivalents for scientific terms. The article also discusses effective strategies that can be applied in translation, including contextual analysis, building a specialized terminology base, and the importance of translator specialization. The study includes an analysis of English and Uzbek astronomical texts, providing practical examples to illustrate the challenges and their possible solutions.*

Keywords: *Astronomy translation, scientific terminology, english-uzbek translation, cultural differences, translation strategies, contextual analysis, terminology equivalence.*

INTRODUCTION

In today’s globalized world, translating scientific texts accurately is essential for effective knowledge exchange. Astronomy, with its complex terminology and abstract concepts, presents unique challenges for translators—especially when working between English and Uzbek, two linguistically and culturally different languages.

Astronomical texts often include terms derived from Latin or Greek and require a deep understanding of both language and subject matter. In the Uzbek context, many of these terms lack standardized equivalents, which leads to inconsistency and misunderstanding in translation.

This study explores the main problems in translating astronomy-related texts between English and Uzbek. It focuses on linguistic, terminological, and cultural difficulties, and examines practical strategies used by translators. By analyzing real examples and applying insights from translation theory, the research aims to contribute to the improvement of scientific translation in this specialized field.

LITERATURE REVIEW AND METHODOLOGY

Translating scientific texts—especially those related to astronomy—has been a subject of growing interest in the field of translation studies. Various scholars have explored the challenges that arise when rendering specialized terminology, abstract scientific concepts, and culturally specific references into another language. Works by scholars such as Susan Bassnett, Mona Baker, and Eugene Nida have laid a foundation for understanding translation theories, including equivalence, skopos theory, and functionalism, which are particularly relevant when addressing the translation of scientific discourse.

In the context of astronomy, the complexity increases due to the highly specialized and evolving nature of the field. Many astronomical terms are derived from Latin or Greek and often do not have direct equivalents in Uzbek. Additionally, scientific texts tend to be dense and context-dependent, requiring translators to have not only linguistic competence but also domain-specific knowledge.

This study draws on both theoretical frameworks and practical case studies to analyze the problems of translating astronomy texts between English and Uzbek. The methodology employed in this research includes qualitative content analysis and comparative textual analysis. A selection of authentic astronomy-related texts in English and their Uzbek translations (and vice versa) were examined. The focus was placed on identifying patterns of terminological inconsistency, syntactic divergence, and shifts in meaning.

Key steps in the analysis included:

- Selecting a corpus of astronomy-related texts from scientific journals, textbooks, and online educational resources.
- Comparing original texts with their translations to detect inaccuracies or losses in meaning.
- Analyzing how translators dealt with neologisms, compound terms, and cultural references.
- Evaluating the strategies used: literal translation, adaptation, borrowing, and paraphrasing.

The research also includes expert consultation, where feedback from professionals in the fields of both astronomy and translation was considered to validate the interpretations.

This combined approach allows for a comprehensive understanding of the linguistic, cognitive, and technical challenges faced by translators working with astronomy texts and provides insight into effective strategies for overcoming them.

DISCUSSION

In this section, the key problems identified in the translation of astronomy-related texts between English and Uzbek are discussed in detail. Through selected examples, I will analyze specific cases of terminological inconsistency, structural differences, and contextual challenges.

Each example will be examined to highlight the difficulties faced by translators and the strategies used to overcome them. This analysis aims to provide deeper insight into the nature of translation problems in scientific discourse, particularly within the field of astronomy.

Text in English:

The Horoscope

The key to natal astrology is the **horoscope**, a chart showing the positions of the planets in the sky at the moment of an individual's birth. The word "horoscope" comes from the Greek words *hora* (meaning "time") and *skopos* (meaning a "watcher" or "marker"), so "horoscope" can literally be translated as "marker of the hour." When a horoscope is charted, the planets (including the Sun and Moon, classed as *wanderers* by the ancients) must first be located in the zodiac. At the time astrology was set up, the zodiac was divided into 12 sectors called *signs*, each 30° long. Each sign was named after a constellation in the sky through which the Sun, Moon, and planets were seen to pass—the sign of Virgo after the constellation of Virgo, for example.

Text in Uzbek:

Astrologiya boshlanishining asosiy elementi — bu goroskop (**munajjimlar bashorati)**, ya'ni inson tug'ilgan paytdagi osmondagi sayyoralar holatini ko'rsatib beruvchi **jadval**dir. **"Goroskop"** so'zi yunoncha **hora** (ya'ni "vaqt") va **skopos** (ya'ni "kuzatuvchi" yoki "belgi") so'zlaridan kelib chiqqan bo'lib, bu atamani **"soat belgisi" yoki "vaqtni ko'rsatuvchi belgi"** deb tarjima qilish mumkin. Goroskop tuzilganda, avvalo sayyoralar (shu jumladan, qadimgi davrlarda sayyora sifatida qaralgan Quyosh va Oy) **zodiak** belgilari ichida joylashgan o'rni aniqlanadi. Astrologiya tizimi ilk bor shakllanganda, **zodiak 12 ta burjga** ajratilgangan bo'lib, har biri **30 daraja yoy uzunligida edi.** Har bir belgi osmondagi bir yulduz turkumiga (yoki yulduzlar to'plamiga) qarab nomlangan. Masalan, **Virgo (Parizod) belgisi** — Quyosh, Oy va sayyoralar ko'rinib o'tuvchi **Virgo yulduz turkumiga** moslab nomlangan.

Translation methods used in the Horoscope Passage

1. Borrowing

Using a word from the source language, especially if it has no direct equivalent.

Example:

- "horoscope" → "goroskop"

→ This is a borrowed term that exists in Uzbek with similar form and meaning.

2. Omission (Ellipsis)

Leaving out words or phrases that are unnecessary or redundant in the target language.

Example from the text:

It is not translated "a chart showing" word-for-word as "jadval bu ko'rsatadigan", but just said "jadvaldir", then went straight into "sayyoralar holatini ko'rsatib beruvchi" — a more natural flow in Uzbek.

3. Expansion (Addition)

Adding explanatory words to clarify meaning for the target audience.

Example:

- "each 30° long" → it is written "har biri 30 daraja yoy uzunligida edi"

→ the term "yoy uzunligida" clarifies the meaning of "degrees" for those unfamiliar with astrological charts.

4. Modulation

Changing the point of view, logic, or category of thought while keeping the meaning.

"The key to..." becomes "Asosiy elementi..."

Here, it is expressing the same idea (importance or central element) but through a different conceptual angle.

"The key to natal astrology is the horoscope..."

Uzbek version:

"Astrologiya boshlanishining asosiy elementi — bu goroskop..." and here by changing the word "natal " to "boshlanishi" it is used lexical transformation.

5. Equivalence

Definition: Translating the idea or function, often using an idiomatic or culturally natural phrase in the target language.

Example: "signs" (in astrology) → "burjlar"

- → A culturally and conceptually accurate equivalent.

Organized table based on translation methods analysis of the Horoscope passage:

Translation Method	**Definition**	**Example (Source → Target)**	**Explanation**
Borrowing	Using a word from the source language, especially if it has no direct equivalent.	*horoscope* → *goroskop*	The term is borrowed into Uzbek, preserving both form and meaning.
Omission (Ellipsis)	Leaving out unnecessary or redundant words/phrases in the target language.	*a chart showing* → not translated as *jadval bu ko'rsatadigan*, but simplified as *jadvaldir*	Avoids redundancy by naturally merging it with the next phrase: *sayyoralar holatini ko'rsatib beruvchi*.

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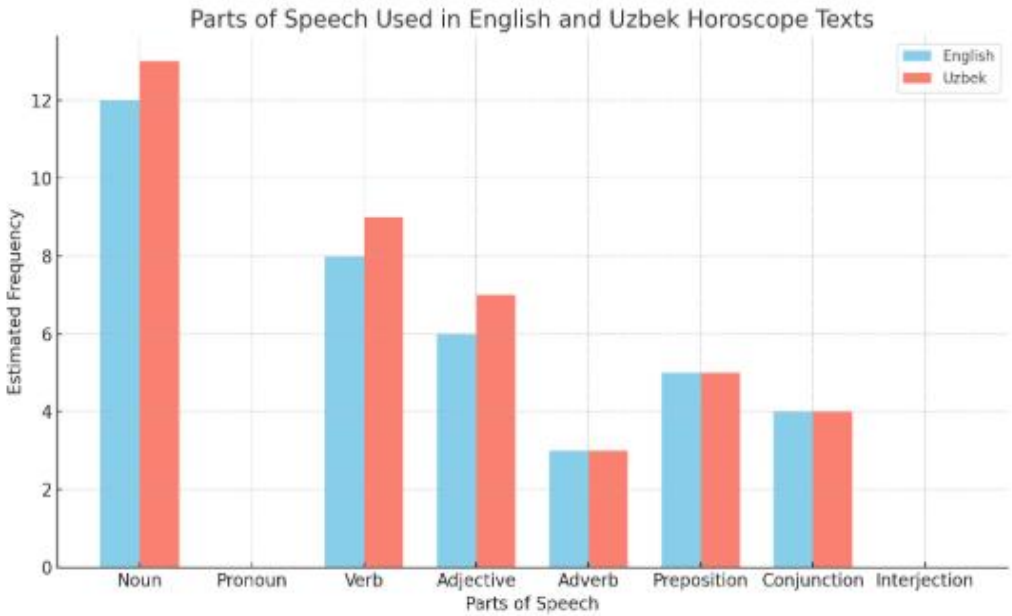
Translation Method	Definition	Example (Source → Target)	Explanation
Expansion (Addition)	Adding explanatory words to clarify meaning.	*each 30° long → har biri 30 daraja yoy uzunligida edi*	The addition of *yoy uzunligida* helps clarify the concept of degrees in an astrological context.
Modulation	Changing the viewpoint, logic, or category of thought while maintaining meaning.	*The key to natal astrology is the horoscope → Astrologiya boshlanishining asosiy elementi — bu goroskop*	*natal* becomes *boshlanishi*, shifting from a technical term to a conceptually understandable term in Uzbek.
Equivalence	Translating the idea/function using a culturally and linguistically natural expression.	*signs → burjlar*	A culturally appropriate term that matches the concept in astrology.



RESULTS

The analysis of selected astronomy texts revealed several recurring translation issues. These included the absence of Uzbek equivalents for certain technical terms, inconsistent use of terminology, and a lack of context-based adaptation. Literal translation often led to misinterpretation, while more flexible strategies—such as paraphrasing and borrowing—proved more effective in conveying meaning accurately.

CONCLUSION

This research has addressed the major challenges encountered in translating astronomy-related texts between English and Uzbek. Through a detailed discussion supported by practical examples, the study demonstrated how differences in grammatical structure, terminology, and cultural understanding create difficulties for translators. The examples and their translations were closely analyzed to identify the reasons behind certain choices and the outcomes they produced.

The research also explored the effectiveness of various translation methods—such as literal translation, borrowing, descriptive translation, and contextual adaptation. These strategies were applied to real examples to assess which approaches worked best in preserving both meaning and clarity. The analysis showed that overly literal translation often fails to deliver accurate meaning, while adaptive strategies can improve readability and understanding.

A key issue revealed in this study is the lack of standardized Uzbek terminology for many astronomy-related terms. This gap makes the translator's task more complex and increases the risk of misinterpretation. Therefore, it is essential to develop a consistent set of scientific terms in Uzbek and provide more linguistic resources for translators working in this field.

Overall, the findings emphasize the importance of both linguistic knowledge and subject expertise in translating scientific texts. This research contributes to the field by offering a clearer understanding of the difficulties involved and encouraging further work on scientific terminology development and translation practice in Uzbek.

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