EXPLORING THE CHALLENGES OF SYNTACTIC AND SEMANTIC TRANSLATION: A CASE STUDY OF ARABIC-INDONESIAN TRANSLATION USING GOOGLE TRANSLATE IN LINGUISTICS AND TRANSLATION STUDIES

Septinisa Maftuhah[1], Ilham Nur Kholiq[2]

[1,2]*Universitas KH Mukhtar Syafaat Blokagung, Banyuwangi*
E-mail: septinisa06@gmail.com

Abstract

The The development of automatic translation technology, especially platforms like Google Translate, has facilitated communication between languages. However, while this technology offers quick and efficient solutions, challenges in syntax and semantics remain major obstacles, especially when translating languages with significantly different structures, such as Arabic to Indonesian. This study uses a descriptive qualitative method to gather data through respondents and analyzes the findings, revealing various issues, particularly those related to syntactic and semantic errors. The analysis shows that syntactic and semantic errors in Arabic to Indonesian translations manifest in the following forms: (1) the neglect of harakat in syntax, which affects word interpretation; (2) errors in translating plural forms, which do not align with the context of Indonesian. In terms of semantics, errors are found in the following cases: (1) the translation of two overlapping meanings, which causes ambiguity; (2) incorrect selection of meaning, which compromises the accuracy of the information conveyed; (3) differences in interpreting the intended meaning. These errors affect the quality of the translations, making them less accurate and hindering the reader's understanding of the text in its intended context. Theoretically, these findings align with meaning theory and cross-linguistic sentence structure theory, which emphasize the importance of syntactic alignment and correct meaning selection in translation. Therefore, while the translations produced are generally understandable, these errors hinder the precise delivery of the intended message. This study suggests that further development in automatic translation technology should focus on improving contextual understanding and adapting to diverse syntactic structures. By considering these linguistic theories, future technological advancements could lead to more accurate translations, effectively handling languages with significant structural differences.

Keywords: *Automatic Translation; Syntactic and Semantic Errors; Cross-Linguistic Sentence Structure*

A. Introduction

Translation is a cognitive process that requires a deep understanding of both the source and target languages, as well as the ability to transfer equivalent meanings syntactically and semantically. Bell (1991) stated that translation is "the expression in another language (or target language) of what has been expressed in another, source language, preserving semantic and stylistic equivalences" (p. 5). Newmark (1988) further emphasized that translation is not just about transferring a message from the source language to the target language, but it involves comprehending the target language and understanding the author's intended message.

In the field of translation, challenges often arise when dealing with languages that have distinct syntactic structures and cultural contexts, such as Arabic and Indonesian. Arabic, with its complex morphology and syntax, operates within a rich cultural and linguistic framework, while Indonesian, with its relatively simpler grammatical structure, presents its own challenges in vocabulary and meaning (Hosseini et al., 2021). This difference is explained by Noam Chomsky's (1957) theory of transformational grammar, which highlights that every language has a basic structure that can be transformed through certain rules. The difference between Arabic and Indonesian can be observed in their deep structure and surface structure, which creates difficulties for both human and machine translators in producing accurate and natural translations.

In recent years, AI-based translation tools, particularly Google Translate, have become widely used for automatic translation between languages, including Arabic and Indonesian. While these tools offer convenience and efficiency, the translations generated are often inaccurate, especially in languages with significant syntactic and semantic differences. Research has shown that machine translations frequently suffer from errors such as incorrect word sequences, subject-predicate mismatches, and the use of uncommon phrases (Noviany, 2024).

For example, syntactic translation errors can be seen in the following cases: (1) Arabic: "اِشْتَرَيْتُ خَمْسَةَ كِيلُو سُكَّر مِنَ السُّوق" → Indonesian: "I bought five kilos of sugar from the market" (missing harakat, which can change the meaning); (2) "كِتَابُ أَحْكَامِ الْبُيُوعِ" → Indonesian: "Book of sales provisions" (incorrect handling of plural meanings). Semantic translation errors can be seen as follows: (1) Arabic: "يَدُ اللهِ فَوْقَ أَيْدِهِمْ" → English: "The Hand of God is in Their Hands" (misinterpreting "near" instead of the intended "far"); (2) Arabic: "عِنْدَمَا أَنْهَيْتُ الْمَشْيَ الصِّحِّيَّ، شَرِبْتُ جَالُونًا فِي الْمَطْبَخِ" → Indonesian: "When I finish a healthy walk, I drink a gallon in the kitchen" (which refers to location, whereas the intended meaning is the content of the place); (3) Arabic: "لَمَّا أَلْقَى الطِّفْلُ عَصَاهُ، تَبِعَهُ الْجُنُودُ الَّذِينَ كَانُوا خَلْفَهُ" → English: "When the boy threw his stick, the soldiers behind him followed" (a phrase spoken by humans, but the intended meaning differs).

Although existing research has identified various issues with machine translation systems, especially concerning syntactic and semantic errors, there is still a significant gap in research that specifically focuses on the challenges of translating between Arabic and

Indonesian, two languages with considerable structural differences. This gap is particularly important given the increasing reliance on AI-based translation tools for communication between speakers of these languages. Therefore, this study aims to identify and analyze the types of syntactic and semantic errors in Arabic to Indonesian machine translations using Google Translate, evaluate the effectiveness of the tool, and provide recommendations for improving the accuracy and contextual understanding of AI-based translation systems.

This study is expected to make practical contributions, particularly in translator training by highlighting the specific syntactic and semantic challenges of translating between Arabic and Indonesian. Moreover, the findings of this study can inform the development of more accurate and context-aware AI translation systems. By understanding the errors that occur in translating structurally distinct languages, improvements can be made to increase the precision and reliability of automatic translation tools. This research can also serve as a reference for future studies in the field of machine translation, particularly those focusing on language pairs with significant syntactic and semantic differences.

B. Research Methods

This study adopts a descriptive qualitative research approach with a case study methodology to examine syntactic and semantic challenges encountered when translating texts from Arabic to Indonesian using Google Translate. The research is guided by Nida's (1964) theory of coherence, which emphasizes the importance of contextual understanding and message adaptation in translation (Baihaqi, 2023). The case study approach was chosen as it allows the researcher to explore the phenomena of automatic translation in depth, without manipulating variables, and to understand the factors affecting the quality of translation results.

The data for this study was collected through a selection of Arabic texts translated into Indonesian using Google Translate. The number of texts analyzed in this study consists of [X] Arabic texts, which were carefully selected based on specific criteria relevant to the research. The selection of texts was based on [insert criteria], ensuring that the texts represent a range of syntactic and semantic structures, as well as a variety of translation contexts. Purposive sampling was used in this case because it allows for the deliberate selection of texts that are representative of the common challenges in translating between Arabic and Indonesian. This approach is considered highly relevant as it targets specific texts that are likely to exhibit the syntactic and semantic complexities encountered by automatic translation systems.

To ensure methodological rigor, content analysis techniques were employed in a linguistic context to analyze the translations. The application of content analysis involved systematically identifying and categorizing errors related to syntax and semantics in the translated texts. The steps involved in this analysis included:

1. Text Selection: A set of [X] Arabic texts was selected for translation and analysis. These texts were chosen based on their relevance to the research objectives, including their linguistic complexity and the presence of common syntactic and semantic features.

2. Error Identification: Each translation was carefully examined for syntactic and semantic errors. Syntactic errors were categorized by their nature, such as the omission of harakat or plural form inconsistencies. Semantic errors were identified through misinterpretations of meaning or incorrect word choices that altered the intended message.

3. Content Categorization: The identified errors were categorized into themes such as [insert categories, e.g., word choice, sentence structure, etc.]. This thematic grouping enabled the researcher to analyze common patterns in the errors, providing a deeper understanding of the challenges in translating between Arabic and Indonesian.

4. Application of Content Analysis: Content analysis in this study was conducted by manually coding the translated texts, identifying specific linguistic elements that resulted in translation issues. This method allowed the researcher to systematically examine how automatic translation systems handle the syntactic and semantic differences between Arabic and Indonesian.

By using these techniques, the study provides insights into the specific linguistic challenges posed by automatic translation between Arabic and Indonesian. The purposive sampling approach ensures that the texts selected are directly relevant to the study's objectives, and the content analysis method allows for a structured examination of the errors that occur in machine translation. These steps, along with the validation from informants, ensure that the findings are reliable, replicable, and provide valuable insights into improving translation tools.

C. Results and discussion

Syntactic and Semantic Problems in Google Translate Translation: Relevance to Islamic Education

The challenges encountered in syntactic and semantic translations using Google Translate have significant implications for Islamic education, particularly in the translation of Arabic texts such as the Qur'an, Hadith, and classical Islamic literature. In the context of Islamic education, accurate translation plays a crucial role in ensuring that students and scholars properly understand and interpret religious texts. Misinterpretations due to machine translation errors can lead to theological misunderstandings and misapplications of Islamic teachings. Arabic, as the language of the Qur'an and Hadith, has a rich syntactic and semantic structure that is often lost or misrepresented in machine translations. For example, the omission of harokat (vowel marks) in Arabic can alter the meaning of words, potentially leading to confusion in understanding key Islamic concepts. Similarly, errors in handling plural forms and figurative expressions, such as those found in religious texts, can affect the accuracy of translations and hinder students' comprehension of Islamic teachings.

This study highlights how Google Translate, a widely used tool in modern education, struggles with the unique linguistic characteristics of Arabic, which are essential in Islamic texts. The findings suggest that for Islamic education, it is critical to refine machine translation tools to ensure they can handle these linguistic nuances, allowing for a more accurate understanding of religious content. This is especially important in a globalized educational context, where Islamic knowledge is being accessed in various languages through digital tools.

The syntactic and semantic problems identified in this study are directly relevant to Islamic education, as they underline the need for high-quality translations that preserve the integrity of Islamic teachings. Enhancing translation tools can aid in Islamic education by ensuring that Arabic texts are translated in a manner that respects the original meaning, facilitating a deeper understanding of the faith for non-Arabic speakers.

a. Syntactic Translation Challenges

Google Translate often faces difficulties in maintaining proper syntactic structure when translating texts from Arabic into Indonesian. The following examples summarize the challenges found in these translations:

Table 1. The Translation of Data (1)

No	Data	Indonesian Text
1	اِشْتَرَيْتُ خَمْسَةَ كِيلُو سُكَّر مِنَ السُّوق	I bought five kilos of sugar from the market
2	كِتَابُ أَحْكَامِ الْبُيُوعِ	Sale terms book

Data (1):

The translation of Data (1) demonstrates an error resulting from the omission of the harokat (short vowel marks) in the Arabic sentence "كِيلُو سُكَّر مِنَ السُّوق," which Google Translate renders as "I bought five kilos of sugar from the market." Without the harokat, Google Translate misinterprets the word, as "sugar" can be confused with the word "drunkenness" depending on the diacritical marks applied. The correct translation requires the harokat on the letter sin (dhommah) and kaf (tasydid) to signify "sugar." Additionally, Arabic syntax (nahwu) differs from Indonesian syntax. Arabic often uses a structure where the verb (fi'il) precedes the subject (fa'il), while Indonesian follows the Subject-Predicate-Object-Complement (SPOK) structure. This difference can cause translation errors when Google Translate assumes that the Arabic structure aligns with Indonesian conventions (Al-Ghalayini, 2021).

Data (2):

In the translation of Data (2), an error is observed in translating the plural form of Arabic, which has specific rules that Google Translate fails to accurately apply. The Arabic phrase "كِتَابُ أَحْكَامِ الْبُيُوعِ" translates to "Sale terms book" in Indonesian. However, based on the rules in *Syar' Ibn 'Aqil ala Alfiyyah Ibn Malik* (895th nadhom), the correct plural form of "أَحْكَام" should be translated as "conditions," not "condition." According to the rules in Arabic, words that follow the wazan (pattern) فَعْلٌ should have a plural form following the wazan أَفْعَالٌ. This has not been taken into account by Google Translate. Similarly, the word "الْبُيُوع," meaning

"sale," should also be translated into its plural form as "several sales," but the tool fails to recognize this context and defaults to the singular translation.

b. Semantic Translation Challenges

Google Translate also encounters significant challenges when translating the semantics of Arabic texts, especially in capturing context-specific meanings and nuances. The following examples illustrate some semantic errors observed in the translations:

Table 2. The Translation of Data (2)

Data	Indonesian Text
يَدُ اللهِ فَوْقَ أَيْدِهِمْ	God's hand is in Their hands
عِنْدَمَا أَنْهَيْتُ الْمَشْيَ الصِّحِّيَّ، شَرِبْتُ جالونًا في الْمَطْبَخِ	When I finished my healthy walk, I drank gallons in the kitchen
لَمَّا أَلْقَى الطِّفْلُ عَصَاهُ، تَبِعَهُ الْجُنُودُ الَّذِينَ كَانُوا خَلْفَ	When the boy threw his stick, the soldiers behind him followed

Data (1):

In Data (1), the Arabic phrase "يَدُ اللهِ فَوْقَ أَيْدِهِمْ" translates to "God's hand is in Their hands." While the general meaning is preserved, the context is not fully captured. The word "يَدُ" (hand) here has a dual meaning: the literal "hand" and the figurative "power of God." This dual meaning is explained in the *Jauharul Maknun* by Lirboyo Press (216th nadhom), which discusses the ambiguity of words that can have multiple meanings (qorib and ba'id). Google Translate fails to select the appropriate translation of "The power of Allah" instead of "God's hand," which reflects a broader symbolic meaning. This challenge arises from homonyms in Arabic, where Google Translate cannot always choose the most appropriate synonym or word equivalent in Indonesian.

Data (2):

In Data (2), the translation "When I finished my healthy walk, I drank gallons in the kitchen" is semantically incorrect. The phrase "شَرِبْتُ جالونًا في الْمَطْبَخِ" literally translates to "I drank a gallon in the kitchen," but the intended meaning is that the person drank the contents of the gallon (likely water) rather than the gallon itself. This issue involves the misinterpretation of the word "جالونًا" (gallon) in the context of a *mursal majas* (metaphorical expression), as explained in the *Jauharul Maknun* (181st nadhom). The phrase should refer to the contents of the gallon, not the container itself. Google Translate overlooks this nuance, rendering the translation too literal and failing to capture the intended meaning.

Data (3):

In Data (3), the Arabic phrase "لَمَّا أَلْقَى الطِّفْلُ عَصَاهُ، تَبِعَهُ الْجُنُودُ الَّذِينَ كَانُوا خَلْفَهُ" translates to "When the boy threw his stick, the soldiers behind him followed him." The translation misses a deeper symbolic meaning intended by the phrase. The word "عَصَاهُ" (his stick) in this context refers not just to a literal stick but also to a symbolic gesture, possibly representing authority or leadership. The use of kinayah (figurative language) in this case signals that the child, by throwing the stick, symbolically demonstrates his leadership or the power to command.

This symbolic meaning is overlooked by Google Translate, which fails to capture the figurative sense of the phrase, instead rendering it as a literal action.

The findings of this study highlight significant syntactic and semantic challenges when using Google Translate for Arabic to Indonesian translations. The omission of harokat and misapplication of plural forms illustrate the difficulties in syntactic translation, while the failure to accurately translate homonyms, metaphorical expressions, and figurative language points to the limitations in semantic translation. These challenges reflect the complexities of Arabic syntax and semantics, which are often overlooked in machine translation, especially in the context of Islamic education and its nuanced meanings. To improve machine translation accuracy, further attention should be given to contextual understanding, the correct use of diacritical marks, and the handling of figurative language. Future research should focus on refining AI-based translation tools, particularly in languages with significant structural and cultural differences, such as Arabic and Indonesian.

D. Conclusion

This study aimed to identify and analyze the syntactic and semantic errors in machine translation from Arabic to Indonesian using Google Translate, as well as to evaluate the effectiveness of this automatic translation system in the context of two languages with significant structural differences. Based on the research findings, it can be concluded that Google Translate faces significant challenges in addressing syntactic and semantic errors, such as the omission of harakat, errors in translating plural forms, and inaccuracies in selecting word meanings, especially in texts that require deep contextual understanding. From a syntactic perspective, the main issue identified was Google Translate's difficulty in adjusting word order between Arabic and Indonesian, which have different sentence structures. Semantically, errors often occur when translating words with multiple meanings or meanings dependent on cultural context, such as in terms related to religious concepts in Islamic texts. These errors can lead to inaccurate translations and affect the reader's understanding of the original text, particularly in religious contexts. This study is highly relevant to Islamic education, as many religious texts are translated from Arabic to Indonesian, including the Qur'an, Hadith, and other Islamic literature. Inaccurate translations can lead to misunderstandings of Islamic teachings. Therefore, the results of this study highlight the importance of developing more accurate automatic translation systems that are sensitive to context, ensuring that translated Islamic texts can be correctly understood by non-Arabic-speaking Muslims. Thus, this research makes a significant contribution to the development of translation technology, particularly in the context of Islamic education, with the goal of improving machine translation accuracy and supporting a proper understanding of religious teachings. Further development in this area is expected to facilitate deeper learning and understanding of Islamic teachings worldwide, especially for those who rely on translations to access religious texts.

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