Equivalence Challenges in Machine Translation: An Analysis of Google Translate Output through Mona Baker's Theory (2011) and Post-Editing Strategies

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Abstract

This research aims to analyse the level of equality based on Mona Baker's theory translated by J.K. Rowling's "Harry Potter and the Order of the Phoenix" from English to Indonesian using Google Translate. Specific goals include identifying and discussing translation issues at various linguistic levels and providing post-editing suggestions for machine-translated output. The methodology section outlines the qualitative research design, using observation and document methods for data collection. The data source is J.K. Rowling's novel, translated by Google Translate into Indonesian. The process includes observing, identifying, classifying, and evaluating the level of equivalence in the translated text. In conclusion, this introduction provides the basis for an in-depth analysis of the degree of translation equivalence in the context of machine translation, especially in the translation of literary works such as "Harry Potter and the Order of the Phoenix". the analysis of translation problems in the Harry Potter novel reveals common challenges across different parts of sentences, categorized into word level, above word level, textual level, grammatical level, and pragmatic level. While machine translators assist in translating text, especially with large volumes, they still require human monitoring for post-editing to rectify inaccuracies. Consistency in translation practice is emphasized to improve student abilities and ensure progress. Teachers are urged to apply consistent practices, progressing from simple to complex texts and allowing students freedom in choosing translation materials once professional.

Keywords: Translation, Equivalence, Post-Editing

1. Introduction

Translation plays an important role in learning a foreign language. It focuses on translating the writer's ideas from the original language into the intended target language (Newmark, 1987). Both semantically and pragmatically should be equivalent. The process of translating is referred to as translation. It indicates that selecting the source text (ST) and adapting it into a text in the target language is fundamental to translation (Shuttleworth and Cowie, 1997: 181 in Hatim and Munday, 2004).

The goal of machine translation in general is to learn how to translate from a huge corpus of source and destination sentences that are equivalent. Artificial intelligence (AI) systems are used for machine translation (Wilks, 2008). A text form or language is mechanically translated into another language using a machine translation system (Chan, 2018). The bold dictionary position that was utilized to translate words has also been replaced by Google Translate as machine translation (Al-Mahasees, 2020). Due to GT's advantages, users can record their voice instead of typing because it has a voice recorder capability. (Nasution;2022) Describe that Although it can aid readers in comprehending the basic subject matter of writings written in foreign languages, it does not offer an accurate translation. Additionally, it has been established that Google Translate provides accurate translations between European languages.

In the realm of translation, significance plays a crucial role. According to Caroline (1987), meaning, akin to other language facets, is shaped by a community of native speakers rather than relying on a specific authority such as a dictionary or grammar book. This suggests that determining meaning can be challenging due to variations in the language proficiency of the user and diverse perspectives on the interpretation of speech or words.

The equivalence meaning in the target text is a very important thing. Human translation is required as a result. Human translation is any translation carried out by professionals with training in the field. According to Whyatt (2012: 11), the subject of translation as a human ability is broad and multifaceted. It can. It can be examined from a variety of angles, and each one will produce pertinent findings and a wealth of resources. Imran (2003: 286), who asserts that a sophisticated translation engine will not be able to provide a translation like what an advanced interpreter can do, supports this viewpoint. Post-editing is therefore crucial to improving human translation ability in equivalence meaning. It is confirmed by (Almaytaah:2022) that Post editing involves making corrections to the result to improve it over what the MT software has generated. It concludes that post-editing is a helpful way for translators to make equivalence meaning if a translator needs to translate a phrase or word that expresses a particular nation's culture, they must locate a suitable translation in the target language that conveys the same meaning as the original.

The post-editing process for equivalency, according to Baker (2018), consists of the following stages: textual equivalence, which refers to the function of word order in structuring text-level messages; above word level, which focuses on combination words or phrases and occasionally also deals with collocation meaning; grammatical level, which focuses on word grammatical elements and their availability or absence in different languages; and word level, which only focuses on the meaning of a single word or single expression in text. The final level of the text, known as the pragmatic level, deals with how text is employed in communicative contexts and takes into account the writer, reader, and cultural context.

The novel is one of the popular texts among other literary works that most people have read until now. Besides entertaining people, novels also become a source for researchers in the literary field (New mark:2017) "Novel or short story is the complex literary work that usually has a variety of characters and plots" From the above explanation we can understand that novel is literary work delivered narratively telling about the human experience with has a variety of characters and plot. J.K. Rowling's Harry Potter is one of the most popular Novel books today.

Based on the preceding information, the research aims to achieve the following objectives: (1) the exploration of translation issues involves identifying and discussing the challenges that arise from equivalency problems at different levels, such as word level, above word level, grammatical level, textual level, and pragmatic level, and (2) Post-editing suggestions: Make post-editing recommendations to resolve the equivalency problems found in machine translation (MT) output.

In the realm of translation studies, numerous researchers have delved into the multifaceted landscape of machine translation (MT) and its implications for translation training and linguistic equivalence. One notable investigation by Karnal and Vera (2013) screened the applicability and challenges associated with using machine translation in translation training. Their findings illuminated that students, rather than blindly accepting the output of Google Translate, engaged in a post-editing process after using it as a foundation for their initial drafts. This approach showcased a heightened awareness among translation training students regarding the potential pitfalls of relying solely on automated translation tools. Notably, they acknowledged that machine translation, including Google Translate, might introduce misinterpretations, especially when translating words with multiple meanings from the source language.

Building upon this foundation, Alvin Taufik's research in 2020, titled "Pre-Editing of Google Neural Machine Translation," emphasized the importance of implementing pre-editing and post-editing rules for the machine translation process. While various studies have extensively explored post-editing, a notable research gap identified by Taufik is the absence of specific investigations into pre-editing rules for Indonesian input into machine translation. The significance of this gap lies in the potential to enhance the efficiency and effectiveness of machine translation, particularly within the Indonesian-English language pair. The research adopts a product-oriented approach, revealing that key aspects, such as sentence length, conjunctions, and inappropriate source text (ST) words, demand attention during the pre-editing process.

The evolution of translation workflows in recent years has witnessed a heightened focus on post-editing. Notable studies, such as those by Lommel and Depalma (2016), have explored post-editing dynamics, driven by the improved quality delivered by Neural Machine Translation (NMT) and the imperative to streamline costs and time cycles. The consensus across these studies is that post-editing is generally faster than translating from scratch. However, the nuanced nature of post-editing productivity extends beyond just quantity and quality metrics. Cognitive effort is identified as a crucial factor, with studies, including O'Brien (2011), asserting that higher cognitive effort may correlate with lower productivity.

In parallel, Arenas & Toral's (2020) research on the impact of post-editing and machine translation on creativity and reading experience offers a unique perspective. Their study

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focuses on the translation of a fictional story from English into Catalan, considering three modalities: machine-translated (MT), post-edited (MTPE), and translated without aid (HT). The outcomes underline the substantial role of professional translators in enhancing creativity, leading to heightened narrative engagement and a more favourable reception of translated literary texts.

Expanding the scope, Angaita's (2018) research undertakes a lexico-semantic analysis of four Luhya dialects in informative text, assessing Baker's strategies in translation. The study investigates whether Baker's framework is suitable for describing and evaluating the word-level translation strategies employed in Mulembe FM newscasts, considering the lexical mismatches inherent in Luhya dialects. The findings suggest that Baker's procedures comprehensively describe and assess the translation of informative text.

Lastly, Hanifah's (2018) research entitled "An Analysis of Students' Equivalence in Translating English Idioms into Indonesian" sheds light on the challenges encountered by students during translation. Employing a descriptive qualitative analysis, the study focuses on fifth-semester students at Raden Intan State Islamic University Lampung. The research uncovers the difficulties students face in maintaining the meaning of English idioms during translation, revealing that students struggle to transfer the natural meaning of idioms from the source text to the target text.

In summation, the collective insights from these studies contribute to a comprehensive understanding of the nuances within machine translation, pre-editing, post-editing, creativity in translation, and the challenges students encounter in idiomatic translation. These varied perspectives enrich the discourse on translation studies, providing a nuanced appreciation of the intricacies involved in different facets of the translation process.

2. Research Methods

The research adopts a qualitative design, involving the collection, classification, analysis, and conclusions primarily based on statistical evaluation without intending to make generalizations. Creswell (2009: 4) defines qualitative research as an investigation to understand the assumptions of individuals or groups in social or human problems. It is employed to discover and recognize the reasons and mechanisms behind social phenomena.

2.1. Source of Data

Qualitative research data can be drawn from various sources, such as documents, interviews, observations, audio-visual recordings, and physical artefacts (Creswell, 2012). For this study, the primary data source is the original J.K. Rowling's novel "Harry Potter and the Order of the Phoenix," specifically chapters 4-10, which has been translated using machine translation into Bahasa Indonesia.

2.2. Data Collection

Arikunto (2002: 126) outlines four methods for collecting data: (1) interview, (2) observation, (3) questionnaire, and (4) document. In this study, the observation and document methods are employed. The document method is chosen as the data chunking chapters 4-10, translated into Bahasa Indonesia using machine translation.

Observation: Following the original of the translated chapters in Bahasa Indonesia saved in Excel files, initial observations were carried out to assess the suitability of the data for the study. The objective of the observation was to pinpoint diverse equivalence challenges at the

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word, above-word, textual, grammatical, and pragmatic levels, by Baker's categorization (1992).Identification: The researcher identified equivalence levels in the translation of English sentences into Indonesian by matching each word or phrase in the English text with its corresponding meaning in the Indonesian translation.

Classifying. In this step; the selected sentences were classified into the strategies of three-level equivalences.

Evaluating. All identified words and sentences were evaluated to see whether the equivalent in translation of the target text

2.3. **Data Analysis Technique**

The audiovisual was transcribed and coded using the code in each table. The code transcripts were analyzed by the researcher. In addition, a peer debriefing was conducted on the code transcripts to ensure that the coding process was carried out correctly, and there were no errors in translating participant statements into the code.

Data Reduction Data reduction is a process flow that identifies, classifies, and concentrates related data occurrences. In this case, we focused on the occurrence of shifts based on this criterion. Next, the researcher analysed the equivalence of the data. Therefore, the researcher reduced data that seemed irrelevant to this study.

The data display describes the contents of the data. Researchers displayed data based on data categories.

Confirmation The final step is to draw conclusions and confirm the analysis performed on the selected data.

3. **Results and Discussion**

3.1. **Equivalence at the word level**

Adopting the building-blocks approach, in translating the first consideration is the equivalence at the word level because a translator starts analysing and exploring the meaning of words as single units in the source languages. Baker (2018) defined the word as "the smallest unit of language that can be used by itself"

Table 1. **Equivalence at the word level**

Chapter and line	Source Language	Target Language	Post Editing	Review
Chapter 4 line 56	`Mrs Weasley, why -?	Mrs Weasley, why -?	Mrs Weasley, why -?	Mrs" is a title used to address or refer to a married woman. In Indonesian, the equivalent title for a married woman is "Nyonya." Both titles are honorifics indicating marital status and are commonly used in formal or polite contexts to show respect.
Chapter 4 line 59	I'll call you when it's over.	I'll give you a call (menelepon) when it's done.	I'll give you a call when it's done.	The word Pendleton is 'talking (calling) over the phone'.*Whereas* calling v) means to call someone's name to approach. so for this context calling is more

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				appropriate than calling because the context is a conversation between Ron and Hermione
Chapter 5 line 15	He followed his godfather to the bottom of the steps and through a door leading into the basement kitchen.	Means describes someone accompanying their godfather down a staircase and through (*melalui*) a door that leads to the kitchen located in the basement.	describes someone accompanying their godfather down a staircase and through a door that leads to (*melewati*) the kitchen located in the basement.	Melalui' it is used for something that moves by some kind of channel channel or medium, for example, a cable or straw or land or sea or air. 'Melewati' is used for something that moves next to an object. So in this case, melewati is more suitable than through because in the context Harry and his godfather are moving beside the object, namely walking through the door.
Chapter 5 line 26	Bill called, trying to gather up twelve scrolls at once.	Means Bill tried to gather twelve scrolls at once when he called.	(sahut bill) while trying to collect twelve scrolls of parchment at once	seru= sahut, in Indonesia seru is used to call, but in the context of this conversation what is meant by Sahut is to answer, because answering is the way someone responds to communication in the form of an interrogative sentence or other types of sentences.
Chapter 5 line 111	`Let's eat,' said Bill quickly.	Let's eat,' said Bill quickly" indicates that Bill swiftly suggested or proposed the idea of having a meal.	Let's eat,' said Bill quickly" indicates that Bill swiftly suggested or proposed the idea of having a meal.	quickly shows adverbs of the manner of having a meal.

3.2. Above Word Level

and the differences in lexical patterning between source and target languages can pose challenges for translators. Lexical patterning encompasses collocations, idioms, and fixed expressions. According to (Baker: 2018), since words typically work together to convey meaning, non-equivalence may arise above the word level. The translator had to adapt because the source language's and the target language's lexical patterns were different. typically has trouble translating. Problems with lexical patterning involve collocation along with fixed expressions and idioms.

Table 2. Above Word Level

Chapter and line	Source Language	Target Language	Post Editing	Review
Chapter 4. Line 125	Suggested: "Don't be stupid,' said Ron, looking very confused."	Suggested: "Don't be stupid,' said Ron, looking very confused."	Suggested: "Don't be stupid,' said Ron, looking very confused."	Suggested: "Don't be stupid,' said Ron, looking very confused."

Chapter 4 Line 139	Explanation: "Don't be thick" is an idiom, and the more appropriate translation is "Don't be thick" instead of "Don't be thick."	Explanation: "Don't be thick" is an idiom, and the more appropriate translation is "Don't be thick" instead of "Don't be thick."	Explanation: "Don't be thick" is an idiom, and the more appropriate translation is "Don't be thick" instead of "Don't be thick."	Explanation: "Don't be thick" is an idiom, and the more appropriate translation is "Don't be thick" instead of "Don't be thick."
Chapter 5 Line 61	Who Got Rid of Riddle?	Who Got Rid of Riddle?	Who Got Rid of Riddle?	Who Got Rid of Riddle?
Chapter 5 Line 178	Original: "Who Found the Riddle?"	Original: "Who Found the Riddle?"	Original: "Who Found the Riddle?"	Original: "Who Found the Riddle?"

3.3. Textual Level

(At the Textual Level, according to (Baker: 2018), Textual Equivalence involves ensuring equivalence in terms of information and cohesion. The decision to maintain cohesive ties and coherence from the source language rests with the translator. Textual Equivalence can be explored through various aspects, including reference, substitution, ellipsis, conjunction, and lexical cohesion.

Table 3. Textual Level

Chapter and line	Source Language	Target Language	Post Editing	Review
Chapter 4. Line 69	Have you been furious with us?	Have you ever been angry with us??	Are you angry with us?	Original: "Have you been furious with us?"
Chapter 4 Line 298	`Mum's been in a right state,' said Ron dully.	Mum's in the right shape,' said Ron dryly. Mother always thought it was right	Mum's in the right shape,' said Ron dryly. Mother always thought it was right	Suggested: "Have you ever been angry with us?" or "Are you angry with us?"
Chapter 5 Line 31	`Journey all right, Harry?'	"harry your trip very well,(*baik-baik saja*) Harry?'	Harry is your trip going well?	The given statement "Harry, was your trip okay?" is a clear and grammatically correct sentence in Bahasa Indonesia. It translates to "Harry, is your journey going well?" in English. The question is appropriately structured, and the use of "fine" adds a touch of concern about the well-being of Harry's journey. Overall, it effectively conveys the intended meaning.
Chapter 5 Line 31	Mrs Weasley had seen him looking.	Mrs. Weasley had seen him looking (*Telah melihatnya*).	Mrs. Weasley had seen Harry, seen him.	Mrs Weasley had seen him looking. It's not equivalence with Mrs Weasley telah melihatnya melihat in Bahasa Indonesia this sentence is quite messy so it must be Mrs Weasley had seen him looking.

Chapter 5 87	`What cleaning?' asked Harry.	(What cleaning?' ask. Harry.	what are you cleaning?' Harry asked.	`What cleaning?' asked Harry. showing the continuous tense form so it depends on the activity that we do around the period so it must be 'sedang membersihkan apa?' Tanya Harry.

3.4. Grammatical

Grammatical equivalence involves the variation in grammatical categories across different languages. According to Baker (1992), variations in grammatical rules among languages can create challenges in establishing a direct correspondence in the target language. This challenge may lead translators to either add or omit information in the target language due to the absence of specific grammatical devices in that language.

Table 4. Grammatical

Chapter and line	Source Language	Target Language	Post Editing	Review
Chapter 4. Line 308	`What are you talking about?'	'What are you talking about?'	what are you talking about now?	The sentence " The sentence "what are you talking about?" is correct in terms of present progressive or continuous tense in Indonesian. It translates to "What are you talking about?" in English. The use of "medium" indicates an ongoing or continuous action, reflecting the present progressive tense. The sentence is grammatically accurate and effectively conveys the intended meaning.
Chapter 4 Line 194	`So, what have you two been doing, if you're not allowed in meetings?' he demanded.	So, what do you two do, if you're not allowed in the meeting?' he asked.	So, what have you two done	grammatical level the sentence So, what have you two been doing presents perfect continuous/progressive tense. Therefore it is translated into So, what have you two done
				grammatical level because it presents a continuous tense
Chapter 5 Line 33	`This sort of thing ought to be cleared away promptly at the end of meetings,' she snapped, before sweeping off towards an ancient dresser from which she	'This kind of thing has to be cleaned up at the end of the meeting,' he forms, before walking over to the ancient cupboard where he	clean this all up at the end of the meeting,' he said before he walked over to the ancient cupboard that held the dinner plates.	because in this context it is Mrs Weasley yelling then a direct sentence is needed.

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	started unloading dinner plates.	begins to unpack the dinner plates.		

3.5. Pragmatic

Mona Baker (1992) highlights that pragmatic equivalence involves how utterances are utilized in communicative situations and how we interpret them within a context. Understanding pragmatic concepts is crucial for interpreting semantic relations. It's important to note that different societies and even distinct groups within the same society may have varied experiences, influencing their pragmatic interpretations.

Table 5. Pragmatic

Chapter and line	Source Language	Target Language	Post Editing	Review
Chapter 4. Line 276	`Dumbledore's name is mud with the Ministry these days, see,' said Fred.	Dumbledore's name is all the mud in the Ministry these days, look,' said Fred.	Dumbledore's name was in disrepute	mud": The word "mud" poses ambiguity as it can be translated as either "mud" or "bad".
Chapter 5 Line 34	Bill took out his wand, muttered, `Evanesco!' and the scrolls vanished.	Bill took out his wand, muttering, 'Evanesco!' and the scroll disappeared.	Bill took out his wand, chanting, 'Evanesco!' and the scroll disappeared.	"Evanesco": This term is related to a magical spell, and its translation should capture its magical context.
Chapter 5 line 11	`But I'm the last Black left, so it's mine now.	But I'm the last Black, so this is mine now.	But because I'm the last generation of the 'black' family, this house was passed down to me	"black": The word "black" here should not be translated as "black" (black) because it refers to the family name of Sirius.
Chapter 5 Line 117	`The curtains in there are full of Doxys, too,' Mrs Weasley went on.	'The curtains (Tirai) over there are full of Doxy too,' Mrs Weasley continued.	The curtains over there are full of Doxy too,' Mrs Weasley continued.	"The curtains in there are full of Doxys, too," Mrs Weasley went on.: The context-specific term "Doxys" might require additional knowledge or consideration during translation.

4. Conclusion

An overarching similarity in translation problems is evident across various components of sentences. These challenges align with Baker's (1992) proposed categories, encompassing word level, above word level, textual level, grammatical level, and pragmatic level equivalences.

At the word level, it becomes evident that the utilization of words in the translation of the Harry Potter novel lacks precision, leading to potential inaccuracies in the translated sentences. The incorporation of idioms as figures of speech to depict events adds another layer of complexity, with machine translators struggling to accurately convey the idiomatic

meanings. Consequently, post-editing becomes a necessary step to regularly refine and enhance the translated results.

Moving to the textual level, the researcher identifies numerous words within sentences that pose comprehension challenges. Post-editing interventions are then employed to preserve cohesive ties and maintain the coherence of the source language text. This step is crucial in ensuring that the translated text remains coherent and easily understandable. At the grammatical level, disparities between English and Indonesian grammar contribute to irregularities in the machine-translated language. Post-editing becomes imperative as the researcher addresses grammatical differences, potentially requiring additions or omissions to maintain information flow due to the absence of certain grammatical devices in the target language.

The pragmatic dimension, concerned with the contextual usage and interpretation of utterances, presents additional challenges. The presence of magic terms and spells specific to the context of the novel, known only to its readers, necessitates post-editing. The translator must navigate implied meanings in the translation to effectively convey the intended message.

While machine translators assist in rendering text, especially for extensive translations, continuous human monitoring through post-editing remains essential to rectify ambiguities and ensure coherence. This highlights the collaborative nature of translation, where human intervention is crucial for refining machine-generated content.

Pedagogical Implications:

The findings of this research hold significant pedagogical implications for the field of translation education. Educators are urged to incorporate these insights into their teaching methodologies, placing particular emphasis on the crucial role of post-editing in the translation process. By addressing challenges at various levels—word, textual, grammatical, and pragmatic—students can gain a comprehensive understanding of the intricacies involved in translation. Real-world examples from translated literary works, such as the Harry Potter novels, can be integrated into the curriculum to enhance students' appreciation of the complexities of linguistic and cultural interpretation. Furthermore, the research emphasizes the ongoing importance of human translators in refining machine-generated translations, reinforcing the continued relevance of human expertise in the translation profession.

The Importance of Understanding Translation Theory:

Translation is a multifaceted skill that demands a combination of literacy, knowledge, and theoretical understanding. The research underscores the crucial role of translation theories in the teaching and learning process. Teachers who lack a solid theoretical foundation in translation may produce less effective results. Continuous professional development, including reading the latest research on translation, is essential for educators. Mona Baker's detailed explanations in her book on translation theory are recommended, and educators are encouraged to explore additional references to broaden their knowledge base. Understanding translation theory equips teachers with the tools to apply various methods and strategies in their teaching, making their classes more engaging and effective.

Teacher Professional Development:

Uzer (2010) highlights that a teacher's effectiveness lies in mastering both the subject matter and teaching methodologies. In the context of translation education, teachers need to continually upgrade their knowledge and skills. This research advocates for ongoing

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professional development, encouraging teachers to explore various methods and strategies, particularly in the realm of translation. By deepening their understanding of translation theory, teachers can enhance their ability to design effective translation activities and create engaging classroom experiences for students.

The Importance of Consistency in Translation Practice:

Consistency in translation practice emerges as a key factor in improving students' translation abilities. Teachers are encouraged to maintain a consistent approach in translating exercises to assess and validate students' progress effectively. Rather than sporadic and spontaneous translation efforts, a structured approach from simple to complex texts is recommended. As students become proficient, teachers can provide them with the freedom to choose materials for their translation exercises, promoting autonomy and a deeper engagement with the translation process. Consistency in translation practice ensures a systematic and effective development of students' fluency and proficiency in translation skills.

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