KOLITA 20

Konferensi Linguistik Tahunan Atma Jaya Kedua Puluh
Tingkat Internasional

Diselenggarakan secara Daring

Pengajaran Bahasa
Analisis Wacana
Analisis Kesalahan
Bahasa dan Budaya
Fonologi
Pragmatik
Pemerolehan Bahasa
Sintaksis
Psikolinguistik
Tes Bahasa
Semantik
Fonetik
Morfologi
Linguistik
Sosiolinguistik

Pusat Kajian Bahasa dan Budaya
Universitas Katolik Indonesia Atma Jaya
2022

THE PERFORMANCE OF GOOGLE TRANSLATE IN TRANSLATING THREE CATHOLIC FUNDAMENTAL PRAYERS

Marchelline Berliandika Saksono[1], **Alma Anindita**[2,] **Harris Hermansyah Setiajid** [3]
Universitas Sanata Dharma, Yogyakarta,
marchellineberliandika@gmail.com[1]; almaanindita123@gmail.com[2]; harris@usd.ac.id[3]

ABSTRACT

Literary translation is one of the most difficult areas of machine translation (MT) development. Accuracy in MT is susceptible to issues that are frequently encountered in literary works, such as lexical ambiguity, syntax complexity, and structural grammatical constructs. This study examines the literary translation of three Catholic prayers: the "Sign of the Cross," "The Lord's Prayer," and "Hail Mary." These objects were chosen for their language's unique characteristics, which include antiquated vocabulary, strange structures, and unusual line breaks. The research is conducted to determine the MT's ability, that is represented by Google Translate (GT), to overcome hurdles in literary translation as measured by the number of errors made, their discussion, and their relative difficulty rectification based on Hutchins and Somers' assertions. The quality of a translation, whether human or computer, has long been a subject of discussion, with no universally accepted metric. There are a variety of factors to consider based on the circumstances around the exercise, including accuracy, naturalness, fluency, and function. For machine translation, which is frequently used to obtain quick information about a document, semantic accuracy should definitely take precedence over fluency as Koponen states.The research attemps to measure GT's performance in translating three Catholic prayers using Koponen's error category. Koponen's notion of semantic accuracy categorizes the errors produced by the MT into two broad categories: individual concept errors and relational concept errors. The two groups are further subdivided. The results indicate that GT is underperformed when confronted with the individual concept errors, but performs admirably when the ST line is straightforward and well-structured. GT made a total of 12 errors of individual concepts, but generated no "destructive error" in relational concepts. In conclusion, GT shows a sufficiently reliable translation, and performs admirably and consistently in the three Catholic prayers.
Keywords: *Catholic prayers, error analysis, Google Translate, Koponen error category, machine translation*

INTRODUCTION

Translation work be it in oral or written form is a crucial activity that has been carried out since around the second century. Over time with the development of technology, humans with their intelligence created machines to facilitate an instant transfer between languages and ease the exchange of information and the dissemination of knowledge that once might be a complicated process. Since its invention in 1949, machine translation (MT) has been high in demand for the public. But despite going through a long and continuous quality improvement, MT has not yet reached the stage of being fully reliable.

The quality of a translation, whether for human or machine, has been a long topic discussed with no universal parameter for the concept. There are various aspects to put importance on depending on the situations sorrounding the practice, such as accuracy, naturalness, fluency, function, etc. For the case of machine translation, which often used to seek quick information about a text, semantic accuracy "should probably be the first and foremost concern over fluency" (Koponen, 2010:2).

There are different levels of difficulty in reaching semantic accuracy depending on the type of the text. For the case of automatic translation, conversing texts that are to be translated in a literal way such as legal, academic, or business text would be systematically less complicated than those that are to be translated in a literary way. MT accuracy is prone to problems often found in literary texts such as lexical ambiguity, syntax complexity, structural grammatical constructions, unfamiliar words, and literary language (Hutchins and Somers, 2003:2-3, Benjamin, 2019).

This study offers research in the case of automatic literary translation with three Catholic fundamental prayers as the objects, which are; "Sign of the Cross", "The Lord's Prayer" also known as "Our Father" (Traditional version from The Book of Common Prayer 1928 edition), and "The Hail Mary". The prayers are chosen for the unique style of their language which mixed modern English with archaic English resulted from the many updates of the prayers troughout the history of English. The archaic words present in the texts are, for example; art(the archaic form of are), thou, thee, thy, and thine. The prayers also arguably have similarities in their style compared to poetry, for example in lines such as "Thy will be done on earth as it is in heaven", "Blessed art thou amongst women, and blessed is the fruit of thy womb, Jesus" and 'poetic' style words order such as, "Forgive us our trespasses", "Thy will be done", and "Hallowed be Thy name".

This research measures the performance of the NMT owned by Google Translate in translating the prayers. Google Translate uses the system called neural machine translation which uses deep learning techniques to translate whole sentences at a time.

METHODOLOGY

The data in this research are objective data, meaning the data that are taken from the source text (ST) and the target text (TT), therefore, based on its sources the data are primary data collected directly from the translation products of the two MTs in translating "Sign of Cross", "The Lord Prayers", and "Hail Mary" instead of from previous studies. In terms of quality, this research uses both qualitative and quantitative data. Qualitative data is used in description and elaboration of the errors including what might cause them and also in further discussion on relative difficulty correction. Quantitative data is used in the counting of errors made by the MTs in their translation products.

Library research is applied in this study to collect the definitions, theories, related studies, and supporting arguments or statements for this thesis. Library research method as stated by George (2008) "involves identifying and locating sources that provide factual information or personal/expert opinion on a research question" (p.6). This study is a qualitative research, meaning that the discussion "focuses on answering "how" and "why" questions, of understanding a phenomena or a context" (Cleland, 2017). The data analysis is in the form of explanation of the errors by identifying the type of errors and the possible source that might caused the error as well as with the discussion of relative difficulty correction of the errors. Quantitative method is used in counting the amount of errors made by the MTs in their translation product which later be used to determine their performances. According to George, quantitative method "describes any approach where the phenomenon under study is captured via measurement and expressed in numbers that can be analyzed" (2008:7).

Moreover, the quantitative research as defined by George is "to describe any approach in which the phenomenon under study is captured via measurement and expressed in numbers that can be analyzed". The quantitative method applied in this research is survey methods. According to George, the characteristic of survey method is that "it poses some question to a group of people with specific responses for the individuals to choose from".

The data are analyzed in the unit of line (the line breaks is according to Vatican's version) to find the errors in the level of word, phrase, and/or sentence. The errors found is categorized into two main categories based on Koponen's classification in assesing translation machine (p.11). The comparison between the performances of the two MTs is measured by the amount of errors made by the two MTs and also by considering the discussion on relative difficulty correction of the errors.

FINDINGS AND DISCUSSION

There are 27 error categories detected in Google Translate's translation versions of the three Catholic Prayers. From the total, 6 errors belong to the category of individual concept error, and 12 errors belong to the category of relation between ideas error.

The discussion and analysis for this subchapter is separated into two parts based on Koponen's main category of errors. The two sections are: 1) Individual idea errors, and 2) Relation between concepts faults. For each primary category, the conversation is grouped depending on its subdivisions.

Individual concept error refers to the error on a single concept made by an MT in which 'concept' is represented by content terms such as noun, verb, and adjective. Koponen further argues that "one concept" does not necessarily consists of one word, instead, it may be expressed by "unit larger than individual words, for example in the case of compound noun, names, and idioms" (2010:3). Individual concept errors are separated into six subcategories, those are: omitted, inserted, untranslated, mistranslated, substituted, and explicitated ideas.

In the first prayer, there are no errors found. GT has successfully translated the English prayer of "Sign of the Cross" into Indonesian as seen in the following table.

Table 1. GT translation of "Sign of the Cross"

No. of Data	Source Text	No. of Data	GT Translation
1/SC	In the name of the Father, and of the Holy Spirit. Amen.	1/TS	Dalam nama Bapa.
2/SC	and of the Son,	2/TS	dan dari Putra,
3/SC	and of the Holy Spirit.	3/TS	dan dari Roh Kudus.
4/SC	Amen.	4/TS	Amin

In the second prayer, "The Lord's Prayer", GT translation can be seen in Table 2 as follows:

Table 2 GT translation of "Lord's Prayer"

No. of Data	Source Text	No. of Data	GT Translation
1/LP	Our Father, who art in heaven, hallowed be thy name,	1/BK	Bapa kami, yang di surga, dikuduskan nama-Mu,
2/LP	thy kingdom come,	2/BK	kerajaanmu datang,
3/LP	thy will be done on earth as it is in heaven.	3/BK	jadilah kehendak-Mu di bumi seperti di surga.
4/LP	Give us this day our daily bread	4/BK	Berilah kami pada hari ini makanan kami sehari-hari
5/LP	and forgive us our trespasses as we forgive those who trespass against us	5/BK	dan ampunilah kesalahan kami sebagaimana kami mengampuni orang yang bersalah kita,
6/LP	and lead us not into temptation, but deliver us from evil.	6/BK	dan janganlah membawa kami ke dalam pencobaan, tetapi bebaskanlah kami dari yang jahat.
7/LP	Amen.	7/BK	Amin.

It is interesting to see GT translation result. As a neural machine translation which is developin and improving, GT has shown itself as almost reliable machine. The individual concept errors found in GT translation is on data 4/LP concerning the translation of "us" into "kami" and "kita". It is a bit strange why GT changed the second translation of "us" in that phrase into "kita". Indonesian differentiates "kami" and "kita", i.e. "kami" excludes the second person while "kita" includes the second person.

The third prayer to analyze is "Hail Mary" translation by GT as follows:

Table 3 GT translation of "Hail Mary"

No. of Data	Source Text	No. of Data	GT Translation
1/HM	Hail, Mary, full of grace,	1/SM	Salam Maria, penuh rahmat,
2/HM	the Lord is with thee.	2/SM	Tuhan bersamamu.
3/HM	Blessed art thou amongst women,	3/SM	Berbahagialah kamu di antara wanita
4/HM	and blessed is the fruit of thy womb, Jesus.	4/SM	dan terpujilah buah rahimmu, Yesus.
5/HM	Holy Mary, Mother of God,	5/SM	Santa Maria, Bunda Allah,
6/HM	pray for us sinners,	6/SM	doakanlah kami yang berdosa ini,
7/HM	now and at the hour of our death.	7/SM	sekarang dan pada saat kematian kita.
8/HM	Amen.	8/SM	Amin.

The errors in this prayer were also found in the translation of possesive pronoun "our" which was translated by GT as "kita". The prayer is meant exclusive only for those who pray "Hail Mary" should be included. That is why "our death" should translated as "kematian kami." GT seems confused with this difference.

Error on the relation between concepts refers to the error caused by MT in translating relations which are expressed by function words such as conjunction, preposition, including word ordering, and inflection (for instance) (Koponen, 2010:3). A relation is regarded to be present in the TT if it could easily be parsed (p.4) and is counted as error when the reverse happens or if the relation is semantically

different in the ST and TT. Relation between concepts error is separated into eight subcategories: omitted participant, omitted relation, added participant, added relation, mistaken participant, mistaken relation, substituted participant, and substituted relation.

There are only one subcateory of relation between ideas mistake that are absent in GT translation products, that is mistaken relation errors.

Table 4. Relation Error by GT

No. of data	ST	No. of data	TT
Mistaken Relation Errors			
2/SC	and **of** the son,	2/BK	dan **dari** Putra,
3/SC	and **of** the Holy spirit.	3/BK	dan **dari** Roh Kudus.

Drawing from the data collection, the lines in which errors are comitted by the GT confirm Benjamin statement that MT could produce conversions between English and several languages close to human translations when the TT is well-structured, with simple sentences, and written in formal language (2019). In the lines in which those conditions do not apply, for example, in a line with unfamiliar arhaic words and literary language (uncomon grammar and syntax structure) is where the MTs typically made errors.

From the discussion, GT is cleary struggling when faced with challenges typically seen in literary works such as lexical ambiguity, syntax complexity, and structural grammatical constructs, which is corroborating Huntchins and Somers assertions (2003:2-3).

From the relative difficulty comments on each error in the previous sub-chapter, it can generally be drawn that for individual concept errors, the repair necessary to fix the TT into "standard" translation is somewhat easier than the error caused in the relation between ideas. Errors based on individual idea are mainly caused by lexical (word for word) deficiency of an MT. Most of the errors in this category can be fixed by quick lexical alterations in the MTs dictionary and the problem can often be solved, whereas for errors based on the relation between concepts, the correction mostly requires more effort as the errors are often resulted from the grammatical and syntactical weakness or incapability of the MT in facing language complexity in the ST.

CONCLUSIONS

There is no visible pattern or tendencies for a certain line characteristic in which certain MTs make mistakes, but in general, GT clearly struggle when faced with problems often found in literary texts such as lexical ambiguity, syntax complexity, and structural grammatical constructions, unfamiliar words and literary languages, but for the lines that are well-structured GT is able to produce decent translation.

This result, however, is confined to the objects of Catholic prayers with the previously specified characteristic, for other forms of literary text. Another disadvantage of this study is that this study did not take into consideration the diction, style, and naturalness in comparing the products from the two MTs but rather focused on finding the errors.

Future researches on linked subjects and items are greatly encouraged especially those focusing the talks from other point of views. This study may apply as a reference and a review on the quality development of machine translation technology.

Acknowledgements

REFERENCES

Ariany, S. (2017). *Bing Translator's And Google Translate's Performance In Translating English Literary And Academic Texts Into Indonesian.* [Unpublished Undergraduate Thesis, Universitas Sanata Dharma]. http://repository.usd.ac.id/id/eprint/12109

Elster, C. (2003). Authority, performance, and interpretation in religious reading: Critical issues of intercultural communication and multiple literacies. *Journal of Literacy Research. 35(1)*: 667–670.

Hail Mary. (n.d). In *Brittanica*. https://www.britannica.com/topic/Hail-Mary-prayer

Hutchins, J. (2003). Commercial systems: The state of the art. In H. Somers (ed), *Computers and translation: a translator's guide* (pp. 161-174). John Benjamins.

Hutchins, J. & Somers, H. (1992). *An Introduction to Machine Translation.* Academic Press Limited.

Koponen, M. (2010). Assessing Machine Translation Quality with Error Analysis. In *Electronic Proceedings of the KäTu Symposium on Translation and Interpreting Studies 4*, 1-12. https://sktl-fi.directo.fi/@Bin/40701/Koponen_MikaEL2010.pdf

Kurnianto, D. D. (2012). *Google Translate Assessment with Error Analysis: An Attempt to Reduce Errors*. [Unpublished Undergraduate Thesis, Universitas Sanata Dharma]. http://repository.usd.ac.id/id/eprint/26699

Martin, B. S. (2017). *Translation Quality Assessment of Google Translate and Microsoft Bing Translator.* Universidad de Valladoid.

Our Father. (n.d.).*Vaticannews*. https://www.vaticannews.va/en/prayers/our-father.html

CURRICULUM VITAE

Complete Name	Institution	Education	Research Interests
Marchelline Berliandika Saksono	Universitas Sanata Dharma, Yogyakarta	S1	Translation Studies
Alma Anindita	Universitas Sanata Dharma, Yogyakarta	S1	Translation Studies
Harris Hermansyah Setiajid	Universitas Sanata Dharma, Yogyakarta	S2	Translation Studies