ISBN: 978-602-17017-7-5

TYPES OF ERRORS FOUND IN GOOGLE TRANSLATION: A MODEL OF MT EVALUATION

Gustika Dayama Putri, Havid Ardi
Faculty of Languages and Arts, State University of Padang
putri.dayama@gmail.com, havid_a@fbs.unp.ac.id

Abstract

Machine translation has become the trending topic in translation studies. The ease and practicality offered by machine translation make it become the prominent choice in translating source texts. Nowadays, machine translation has also spread its influences in English education. It is utilized as a tool to teach foreign language to language learners, especially in translation course. *Google Translate* which has shown the best accuracy among any other machine translations is proved to be the most used MT. However, the quality of its output is not guaranteed thoroughly since translation errors occasionally appear in Google translation. Apart from a numerous lexical resources, the understanding of both source and target language is significantly needed to produce a good translation. This paper presents the results of a research study focusing on the types of Google translation errors found in the English translation of Indonesian folklores. The analysis of Google translation errors not merely shows what types of errors produced by *Google Translate* but also illustrates the implications of these errors to the message delivered in the translation, which can be used as didactic media to increase the critical thinking of language learners related to language use. The study found that there are 4 types of errors in the English translation of Indonesian folklores produced by *Google Translate* such as '*incorrect words*', '*missing words*', '*word order*', and '*unknown words*' errors. These results are hoped to sharpen up linguistic awareness of language learners, particularly related to the choice of words and the grammatical structure.

Key words: Machine Translation, Translation Errors, *Google Translate*, Folklore

Introduction

Machine translation (MT) has considerably assisted many people in translation activities. The ease, the practicality as well as the free access offered by MT make it become the prominent choice in translating source texts. It has been utilized by not only language learners but also professional translators. Certainly, for professional translators, MT is simply a tool which increases their productivity mainly on the technical translation (Hutchin: 2001). It provides draft translation which assists them to minimize tedious business of looking up unknown words in dictionaries and ensuring terminological consistency (Arnold, 1994: 8). This means that the output of MT is still evaluated and revised by the professional translators. Nevertheless, some people especially the beginners of target language or language learners often completely rely on the output of MT to translate the source texts without evaluating its output beforehand. The phenomenon of MT usage particularly among language learners becomes the reason of raising MT topic in this paper.

Nowadays, MT has been utilized not only in professional settings but also in educational settings. It takes an important role in developing second language acquisition for language learners. In this modern era when the development of technology is growing significantly, the usage of MT is no longer a taboo subject. As a matter of fact, in EFL setting, MT has been operated as an effective media for language learning. Garcia (2013) claims that the use of machine translation helps language learners to communicate the second language more and better particularly in writing skills. Furthermore, the usage of MT also provides considerable assistance in developing translation competence for students who take translation courses. In this context, MT is utilized as an applicable tool in translation training. As revealed in Korošec's study (2011), freely accessible machine translation systems and platforms are used by students of translation to provide first drafts and save labour.

Lots of machine translations are freely accessible on the web. However, the most used and popular one is *Google Translate* (Aiken and Balan, 2011; Korošec, 2011). Based on the research done by Aiken et al (in Aiken and Balan: 2011), *Google Translate* has shown the best accuracy among other machine translations. *Google Translate* provides translations among a large of number languages so that it has more language-pair combinations compared to other MT systems. Nevertheless, it is noticed that the research merely covers one type of text as samples. The consideration of peculiar text type is also an important element to analyze how far *Google Translate* can produce a potential translation so that the users, especially the beginners of TL, are able to utilize MT in an effective way. Moreover, it is confirmed that although *Google Translate* shows good translations between European languages, it gives relatively poor translations involving Asian languages (Aiken and Balan: 2011). However, it is not uncommon that most of lecturer

prohibit their students to use *Google Translate.* Actually, language learners, particularly the native speakers and translator candidate of Asian languages, must be aware of the errors appear on the translation produced by *Google Translate*related toAsian languages.

This paper presents the results of a research study focusing on the types of Google translation errors found in the English translation of Indonesian folklores. The purpose of this paper are (i) to indicate what types of translation errors produced by *Google Translate* in translating Indonesian folklores into English(ii) to describe the implications of these errors to the message delivered in the translation, which can be used as a didactic media to increase the critical thinking of language learners related to language use. Through the study, the linguistics' awareness of the learners are expected to increase as the learners are able to recognize text type and its characteristic features, identify the objective of translation and prepare the alternative translation.

Brief Review of Related Theories

Machine Translation and Translation Activity

Machine translation is one of the translation aids utilized to ease the process of translation (Holmes in Munday: 2008). Unlike the other translation aids, MT is special since it aims to automate the core task of the translation (Munday, 2009: 106-107). The whole source texts are translated into target texts in a very short time by MT, which is impossible to be done by human translators. Due its ease and practicality, MT has often become the prominent choice in translating source texts by many people, especially by language learners. One of machine translations is *Google Translate* which is the most used media in the era of globalization (Aiken and Balan: 2011).

Regarding to translation process, *Google Translate* does not apply grammatical rules because its algorithms are based on statistical analysis rather than traditional rule-based analysis. Based on the description of "Inside Google Translate" (cited from translate.google.com/about/intl/en_ALL), in generating a translation, *Google Translate* looks for patterns in hundreds of millions of documents to help decide on the best translation. It detects patterns in documents that have already been translated by human translators in order to make intelligent guesses for an appropriate translation. This process of seeking patterns in large amounts of text is called statistical machine translation.

Even though *Google Translate* provides a simple and practical way in producing TT, some linguists believe that translation activity should not depend on statistics only. As mentioned by Hall et al. (2011: 224), translation does not merely relate to a process of linguistic substitution, but it also involves semantic, pragmatic and cultural process. In this case, the meaning of source words is not restricted to linguistic forms only but it is also influenced by its contextual use. This idea is supported by Nida (in Munday, 2008: 39) which denies the idea that the orthographic word has a fixed meaning, in fact, the meaning of a word is obtained through its context and varying responses can be produced according to culture.

From these two linguists, it is understood that translation is not only dependent to language but also culture. That is because languages are also affected by cultures. For languages which have different ancestor, the task of machine translation can be more difficult because each language may have different grammatical system as well as different structure. For example, English has tenses on its verbs as its people value punctuality. Indonesian, on the other hand, does not have tenses but it has honorifics on its terms of address as its people regard for social status. The differences between these languages might become the obstacles for *Google Translate* to produce accurate translation. Moreover, the type of text also has an influence in transferring SL to TL (Newmark, 1988: 5). For literary text like folklore, which contain culture specific, translation can be more complicated. That is because folklore consists of stylistic and poetical language (Propp, 1997: 5-6).

Since *Google Translate* merely involves statistics (cited from translate. google.com/about/intl/ en_ALL), its output sometimes consists of translation errors, in which source words are swapped into common terms for similar but nonequivalent common terms in other language. In this occasion, this paper presents the types of translation errors produced by *Google Translate*. The source texts were folklores, and the source language chosen was Indonesian language which is one of Asian languages while the target language was English language.

Error Analysis

Error analysis was conceptualized and applied based on the behaviorist theory of language learning implied that errors were signs a language learner had simply not learnt the rules of the target language effectively (Brown, 1987: 95). With this conceptualization, errors are regarded as the manifestation of ineffective language learning and are focused upon by linguists. Brown (1987: 171) defines error analysis as "the fact that learners do make errors and these errors can be observed, analyzed and classified to reveal something of the system operating within the learner led to a surge of study of learners' errors." In other

words, it can be said that error analysis is a technique to identify, classify and interpret second language learners' errors systematically. In addition, error analysis emphasizes the significance of errors in learners' interlanguage system (Brown, 1994: 204). Interlanguage itself refers to the systematic knowledge of a second language (L2) which is independent of both the learner's first language (L1) and the target language (TL). Corder (1967) refers it as Transitional Competence, in which the learners have the ability to transfer L1 to L2 in equivalence based on the target language rules.

Related to translation studies, errors occur when there is no-equivalence between ST and TT, mostly known as translation errors (Koller in Hansen, 2010: 385). For evaluation of machine translation, error analysis can be defined as the identification and classification of individual errors in a machine translated text. Such an evaluation can direct to specific strengths and problem areas for a machine translation system, which can be resources for language learners who want to utilize this system in translating source texts. Translation error analysis, in this sense, helps language learners to improve their linguistic performance in regard to their translation skills (Presada and Badea: 2014).

In machine translated texts, translation errors are classified into several types. Vilar et al. (2006: 698) divide the errors into five big classes such as "Missing Words", "Word Order", "Incorrect Words", "Unknown Words" and "Punctuation" errors. "Missing words" error refers to the missing items which ought to be present in a sentence. This error is distinguished into *content* and *filler* words. *Content word* concerns with missing words which are important to express the meaning of a sentence whereas *filler word* concerns with missing words which are merely needed to form a grammatically correct sentence. "Word order" error directs to the wrong structure of the sentence. This error is distinguished into *word* and *phrase* based orderings, and within each of these categories is more specified into *local* and *long range* reorderings. The distinction between *local* or *long range* is that *local* reorders the words in a same syntactic chunk of the source text, whereas *long range* moves the words into another chunk. "Incorrect words" error refers to the incorrect translation. This error is distinguished into *wrong lexical choice*, *incorrect disambiguation*, *incorrect form*, *extra words*, *style*, and *idiom* errors. "Unknown words" error directs to untranslated words. This error is distinguished into *unknown stem* and *unseen form*. *Unknown stem* is a condition when MT cannot find the right translation due to the source lexeme while *unseen form* is a condition when MT cannot recognize the morphological complex words of SL. "Punctuation" error refers to the errors related to marks used in writing.

This paper aims to reveal the types of translation errors discovered in the English translation of Indonesian folklores produced by *Google Translate*, and to describe the implications of these errors to the message delivered in the translation. By acknowledging kinds of translation errors occur in Google translation, language learners are expected to become more cautious in using *Google Translate* to translate literary texts like folklores. Also, their sensitivity of language use between English and Indonesian is sharpen up since they are able acknowledge the typical errors discovered in the translation.

Research Methods

The research was classified into a descriptive qualitative research because the data of the research were described in words rather than in numbers, and were evaluated through error analysis. The main point of this research was to analyze the errors appeared on Google translation. The data of this research were the English translation of Indonesian folklores produced by *Google Translate*. The source of data were four Indonesian folklores, such as Pak Lebai Malang (from West Sumatera), Si Pitung (from DKI Jakarta), Sangkuriang (from West Java), and Manik Angkeran (from Bali), which were downloaded from educational site of Indonesian culture, http://www.seasite.niu.edu/indonesian/budaya_bangsa/ cerita_rakyat/, used as source texts. The target texts were obtained from the English translation of those folklores by using *Google Translate*. In order to ease the analysis and the classification of the data, the indicators were formulated based on the theories.

Data Analysis and Discussion

The data contain 142 translated sentences of Indonesian folklores produced by *Google Translate* on 31st October 2014. From those data, 386 errors were discovered. It was revealed that most of source sentences were not translated well. Each sentence mostly consisted of more than one type of translation errors. Yet, there were also 21 sentences which contained no translation errors. The other 121 translated sentences, however, consisted of one or more than one translation error. For the details of MT error based on its types (Vilar et al.: 2006), the results are shown in the following tables.

Table of Findings

No.	Types of MT Errors	Frequency	Percentage
1.	"Missing Words" Errors	**139**	**36.01 %**
	a. Content Words	13	3.37 %

	b. Filler Words	126	*32.64 %*
2.	"Word Order" Errors	**34**	**8.81 %**
	a. Local Word Order	5	1.30 %
	b. Local Phrase Order	8	2.07 %
	c. Long Range Word Order	15	3.89 %
	d. Long Range Phrase Order	6	1.55 %
3.	"Incorrect Words" Errors	**209**	**54.14 %**
	a. Sense		
	- Wrong Lexical Choice	28	7.25 %
	- Incorrect Disambiguation	40	10.36 %
	b. Incorrect Form	91	*23.58 %*
	c. Extra Words	16	4.14 %
	d. Style	31	8.03 %
	e. Idiom	3	0.78 %
4.	"Unknown Words" Errors	**4**	**1.04 %**
	a. Unknown Stem	1	0.26 %
	b. Unseen Form	3	0.78 %
Total		**386**	**100 %**

The findings reveal that all types of machine translation errors proposed by Vilar et al. (2006) exist in the English translation of Indonesian folklores produced by *Google Translate*. Nevertheless, the number of occurrence differs in each type. Among all types of errors, it was discovered that the most dominant type of Google translation errors was "incorrect words", followed by "missing words" errors, "word order" errors and "unknown words" errors. Dealing with these results, it is indicated that *Google Translate* still has lack of ability in translating Indonesian folklores into English because it produced lots of translation errors particularly related to the choice of words which are crucial in translation activity.

In the table, the main problem of "incorrect words" can be observed from the forms of its words, which were inclined to be incorrect. The selection of its form tended to be random disregard to the context of the sense of a word in a sentence. The frequent cases were seen from wrong tenses used in a sentence as in '*He thought that if he went to a party in the village upriver, the host* ***will*** *give him a reward oftwobuffalo heads*.' In translating narrative texts like folklore, it is important to notice the sequence of event in a text (Newmark, 1988: 13). Since English tenses reveal the time of the action in the relation to the time of the utterance, the mistakes of tense's selection will influence the idea of the text, or the least, they will make the text become unnatural. Related to this problem, language learners need to recognize the objective of translation in folklores. Since folklores are included as narrative texts, the sequence of events revealed on the English verbs or phrasal verbs should be heeded (Putri: 2014; Putri *et al*, 2014). This condition requires language learners to catch the context of the source text to determine what tenses should be used in target text, which is not possibly performed by *Google Translate*.

The next dominant type of Google translation errors was "missing words." The most missing words found in the data were *filler words*. *Filler words*, in this case, are similar with function words which play an important role in sentence structure and express grammatical relationship with other words within a sentence (Cui et al. : 2011). In other words, the purpose of filler word is more to signal the grammatical relationship rather than the lexical meaning of a sentence. Hence, when filler words are missing, it will have impacts on the naturalness of TL instead of the content of the sentence. In the data, *filler words* which were frequently missing were prepositions, articles, and linking verbs.

Through the study, it was found that these errors are influenced by the exclusive language of folklore as well as the structural distinctions between the two languages. Folklore has peculiar structure which does not exist in English texts, as indicated below.

ST : Semua harta benda yang **didapatnya** diberikan kepada Manik Angkeran dengan harapan dia tidak akan berjudi lagi.

TT : All property that (…) gets (…) given to Manik Angkeran in the hope (…) he will not gamble again.

The data reveals three '*missingfiller words*' such as subject pronoun, linking verb, and conjunction. The missing of subject pronoun was due to the unusual dependent clause after '*semua harta benda yang didapat(nya)*' in which the subject pronoun is not written independently but is stuck after the verb. This kind of structure, in fact, is not commonly found in English text but is often used in Indonesian cultural text. The missing linking verb and conjunction are the results of different structure owned by the two languages.

Indonesian sticks prefixes with the verb to indicate passive structure. However, English separates linking verbs from the verb to show passive structure.

In the data, *Google Translate* seems to follow the original structure by employing word-for-word translation in translating '*didapatnya*' instead of adapting the structure of TL. Similar situation also appears in the missing conjunction. The translation copies the ST's structure, omitting the conjunction which is actually important in English's structure. Related to this problem, language learners are required to be more cautious of these errors, and needs to adapt TL's structure in order to produce meaningful translation.

The third dominant type of Google translation errors relates to the wrong structure of the sentence, "word order" errors. The findings indicate that *Google Translate* were inclined to rearrange the sentence's structure beyond the original structure. Yet, it results in nonsensical and obvious errors. One of the cases can be seen below.

ST : Mendengar kematian anaknya, kesedihan hati Sidi Mantra tidak terkatakan.
TT : Hearing his son's death, heartbreak unspeakable Sidi Mantra.

In this case, the possessive adjective '*Sidi Mantra*' which was supposed to modify the noun '*heartbreak*' was placed after the adjective compliment '*unspeakable*' which results in nonsensical message in TL.

Mostly, "word order" errors were caused by broad distinctions of structure between Indonesian and English related to different structure orientation and syntactical pattern in constructing phrases, clauses, and sentences. One of the cases can be observed in the previous example. English has an absolute order in arranging a sentence (S=NP.VP) whereas Indonesian has a variety ways in constructing a sentence. In the above example, the sentence contains subject noun phrase and adjective compliment (S=NP.AP). There is no linking verb which connects the subject with the adjective in the sentence, resulting in the confusion about the role of individual words in the sentence. This case is a serious problem which language learners will face as entering languages with different structures. Therefore, it is important for language learners to understand the main point of the original sentence, then adapt it to TL's structure. In this context, the understanding of both SL and TL related to structural distinctions is significantly needed in order not to mess the message conveyed in the translation.

The least type of Google translation errors was "unknown words." Unlike the other types of machine translation errors, "unknown words" errors deal with untranslated words produced by *Google Translate*. In a statistical machine translation, unknown words are SL words which are not acknowledged in the system, so that they have no target translations (Zhang et al., 2012: 176). One of "unknown words" discovered in the data was '*sepikul*.' Since it is a kind of Indonesian culture term which does not exist in TL, '*sepikul*' remained untranslated in TL. Consequently, this results in a confusion of what the meaning of unknown word '*sepikul*' for foreign readers. On this matter, students of translation courses are expected to be able to clear the vague meaning of this word. There are two methods that can be done to overcome the confusion of unknown words for foreign readers (Putri: 2014; Putri *et al*, 2014). The first method is to make a footnote explaining the unknown words, and the second method is to find the closest equivalent that can describe the idea of SL word. In a cultural text like folklore, cultural terms are one of its characteristic features, and may occasionally be found. Thus, it is important for the students to choose the alternative translation for cultural terms which occur in the source texts.

Based on the finding above, it shows us that Google translate still has some weaknesses. However, it does not mean that we may not use it, or prohibit the English Department students to use it. Google translate has the strength in the speed compared to human translation. Based on the analysis above, if we compare the SL and TL, it shows us the google translate can produce the diction appropriately, as it uses statistical process to find the word that really close related to its context. Therefore, it can be used to help them to check their word choice. Moreover, we should provide the skill in using google translate effectively since translation is one of the competencies that must be owned by the students including facilities and current technology in translation.

Conclusion and Suggestion

All types of machine translation errors proposed by Vilar *et al* occur in the output translation; namely "missing words" errors, "word order" errors, "incorrect words" errors, and "unknown words" errors. Among all types of machine translation errors, "incorrect words" errors were mostly discovered in the data. On the contrary, "unknown words" errors were the least type of errors found in the output translation produced by *Google Translate*. From these results, it is noticed that *Google Translate* is rich in vocabulary since there were very few errors related to unknown words. Thus, this machine translation can be a useful tool to increase the productivity of translation students in translating source texts.

Nevertheless, it should be put in mind that *Google Translate* has difficulties in determining the correct translation of Indonesian words into English. These were mostly triggered by the grammatical and structural distinctions between SL and TL. Also, the characteristic features such as the cultural terms, contents and structures brought in folklores became the reasons of certain discrepancies which resulted in translation errors. For these reasons, the students must not rely completely on the works of *Google Translate* but reevaluate the output translation in advance, particularly related to the choice of words and grammatical structure. In this context, they need to be able to recognize text type and its characteristic features, identify the objective of translation and prepare the alternative translation which can deliver the SL's message.

However, as translation is one of the competencies offered by English Department of UNP, and also in other universities, the students should be able to use google translate and anticipate its error as one of machine translation. Then, they should be able to manipulate the source language to produce a good translation. Therefore, give some practice to the students to use *Google Translate* effectively.

References

Aiken, Milam and Shilpa Balan. 2011. "An Analysis of Google Translate Accuracy." *In Translation Journal 2000*, *Volume 16(2)*

Arnold, Douglas., Balkan, Lorna., Meijer, Siety., Humphreys, R. Lee and Sadler, Louisa. 1994. *Machine Translation: An Introductory Guide*. London: NCC Blackwell Ltd.

Brown, H. D. 1987. *Principles of Language Learning and Teaching*. Englewood Cliffs, NJ. : Prentice Hall, Inc.

Brown, H. D. 1994. *Teaching by Principles: Interactive Language Teaching methodology*. New York: Prentice Hall Regents.

Corder, S. P. 1967. "The significance of learners' errors." *International Review of Applied Linguistics* (*IRAL*), 5(4): 161-170.

Cui, Lei., Zhang, Dongdong., Li, Mu and Zhou, Ming. 2011. "Function Word Generation in Statistical Machine Translation Systems." *In the Proceedings of 13th Machine Translation*, pages 139-146, Xiamen. September 2011.

García, Ignacio. 2013. "Can Machine Translation Help the Language Learner?" *ICT for Language Learning 3rd edition*.

Hall, Christopher J., Smith, Patrick H. and Wicaksono, Rachel. 2011. *Mapping Applied Linguistics: A Guide for Students and Practitioners*. London: Routledge.

Hansen, Gyde. 2010. *Handbook of Translation Studies*. Amsterdam: John Benjamins Publishing Company.

Hutchins, John. 2001. "Machine translation and human translation: in competition or in complementation?" *International Journal of Translation* 13, 1-2 Jan-Dec 2001, pp.5-20.

Korošec, Melita Koletnik. 2011. "Applicability and Challenges of Using Machine Translation in Translator Training." *In ELOPE / Volume VIII / Autumn, page 7-18.* Ljubljana :University of Ljubljana

Munday, Jeremy. 2008. *Introducing Translation Studies*. New York: Routledge.

Munday, Jeremy. (eds) 2009. *The Routledge Companion to Translation Studies*. New York: Routledge.

Newmark, Peter. 1988. *A Textbook of Translation*. London: Prentice Hall International Ltd.

Presada, Diana and Mihaela Baeda. 2014. "The Effectiveness of Error Analysis in Translation Classes. A Pilot Sudy." *PORTA LINGUARUM*, pages 49-59.

Propp, Vladimir. 1997. *Theory and History of Folklore*. Minneapolis: The University of Minnesota Press.

Putri, Gustika Dayama. 2014. "An Analysis of Google Translation Errors in Translating Indonesian Folklores into English" (*Unpublished Thesis*). Padang: Universitas Negeri Padang.

Putri, Gustika Dayama,Hamzah, Ardi, H. 2014. "An Analysis of Google Translation Errors in Translating Indonesian Folklores into English" in *E-Journal English Language and Literature*. Vol. 3 No. 5 September 2014 avalaible at http://ejournal.unp.ac.id/index.php/ell/.

Vilar, David., Xu, Jia., Fernando D'Haro, Luis and Hermann Ney. 2006. "Error analysis of statistical machine translation output." *In Proceedings of the 5th International Conference on Language Resources and Evaluation (LREC 06)*, pages 697–702, Genoa.

Zhang, Jiajun., Zhai, Feifei and Chengqing Zong. 2012. "Handling Unknown Words in Statistical Machine Translation from a New Perspective." *In Proceedings the 1st CCF Conference on NLP&CC*, pages176-187, Beijing, October 31-November 5 2012.