

Translation machine: an introduction

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Abstract - Technology is a benchmark for universal development by providing easy access for users. Technology has also spread to the realm of languages where online translation tools make communication across languages easier. This research aims to provide information about the accuracy of translation in the Indonesian to English using Google Translation and Papago Naver to examine the language use of translation tools for websites. In this paper, we used qualitative methods to support our analysis by comparing both selected tools. The results indicated the quality of online translation tools is ineligible as the language used on the website. Several errors were found, mostly because the system could not recognize pronouns and only translated as according to their literal meaning without considering lexicosemantic. In conclusion, both translation tools have different accuracy levels to translate a variety of text and 50% of it is considered inaccurate which needs to be corrected by replacing each word and editing the whole text. This research is expected to facilitate the translation of words or sentences on a small or large scale and to provide another alternative on switching language use.

Keywords: accuracy of translation; language and machine; translation machine; web system

I. INTRODUCTION

Language skills in this modern era have created brand new lifestyles for society. Along with technological developments, language also develops. The need to be fluent in foreign languages, particularly in English, has become a major need for those who are taking part in the online world. Internet access makes it easy to provide various types of information, mainly on websites. This is becoming a basic reason for someone to learn English. But for some people, learning another language is a difficult thing. This constraint would lead to an inability to receive information properly. Therefore, the technology which aims is to make the whole thing easier has provided a solution by creating online translation tools. Hopefully that this tool can convey and deliver meaning. Google Translation tool recently could translate to more than 90 languages (Ghasemi & Hashemian, 2016), one of them is to translated from Bahasa Indonesia to English and vice versa. Then, Papago recently added Bahasa Indonesia as one of the language targets. Both are widely used but the level of accuracy in their translations remains to be considered.

According to Newmark, translation is a process of interpreting the meaning of source text to any language target chosen based on its author's projection (Newmark, 1988). He argued that translation did not only occur with transferring messages in writing but also verbally using separate technic to produce the same meaning between languages. Another expert, Catford, described translation as changing source text in one language into another language in particularly the same (Carford, 1965). The translation results using Google Translate can provide an overview of the text but cannot provide an accurate translation. According to Amar, N., the level of accuracy generated by Google Translate was only 31%.

Meanwhile, about half are less understandable and the rest cannot be understood (Amar, 2013). GT and Papago use the principle of machine translation. MT is a computer program that is translated language by providing source content into language target with no intermediary of human involved (Ashraf & Ahmad, 2015). Where the input is the source content and the output is a language target. The major component of machine translation is the effectiveness of providing the result of translation into language target immediately (Ashraf & Ahmad, 2015). In general, both of them provide translation automatically and quickly so that the accuracy of the text is very low. Resulting in only a literal translation without considering the lexicosemantic aspect. But there is still a little literacy that discusses the use of language on the website. Therefore, in this study, we discuss translation tools as a determinant of the accuracy of the website's language. To be more precise in receiving information on the internet, we need to know how accurate the text is provided by online translation tools whose aim is to make our work easier. Because if there is an error in just one word it can change the meaning of the whole word.

Therefore, this study expected to facilitate the translation of words or sentences on a small or large scale and provide another alternative to switching language use. In this study, we compare two translation tools and examine which one has an enhanced accuracy level. This comparison results in a better refine selection for translation. Therefore, it is easier to select which translation tool is more applicable. In supporting this research, a qualitative method was implemented.

II. METHOD

This Analysis applies qualitative approaches. The data used in this research were a total of four sentences collected from various websites. To determine the accuracy of the two selected tools, we used the Silalahi's approach by identifying the error in the translation of language targets and classified words or phrases into their translation technic (Silalahi, 2009). After that, we make a comparison by comparing it with the equivalent level measuring instrument. This analysis was conducted by identifying the translation technic and classify the source of text into the table. The table consists of a translation text requirement whether it can be classified as accurate, least accurate, and inaccurate. The indicator of accuracy can be seen in Table 1.

Table 1 Indicator of Accuracy (Rohman, et al, 2019)

Kind of Accuracy	Explanation	Scale
Accurate Translation	A word, phrase, or sentence is delivered accurately into the language target without any change in their meaning	3
Less Accurate Translation	When most of the text delivered to the language target well but several meanings were changed	2
Inaccurate Translation	Happened when a word, phrase, or sentence of the language target is not meet the need of the accurate meaning	1

III. RESULTS AND DISCUSSION

One of the language-translation service providers is Google and Papago. We choose Google Translate because it is a well-known and easily accessible service, available in various languages, and google translate can translate tens or hundreds of words per second. While Papago is similar to Google Translate, a machine translation service has a new feature that could sense the disambiguation of the word. It can also facilitate translation in written form, provide translation using images, and be accessed in offline mode (Lee, et al., 2016). Although both provide comfort and easy access in their use, there is still a lack of accuracy in their translation.

3.1 Comparing Google Translate and Papago

Here are the four source sentences that have been researched and the results of both translation tools shown in Table 2.

Table 2 Translation results

Data Num.	Source Text	Language (Google Translate)	Target	Language (Papago)	Target
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1.	<i>Jangan ragu untuk berterus terang dengannya ketika sudah menunjukkan sinyal-sinyal toxic.</i>	Do not hesitate to come clean with him when he shows toxic signals	Don't tell her the truth when you've already shown the laparoscopic signal
2.	<i>Menyambut awal tahun 2021, Baskara Putra melepas karya terbarunya bersama DJ dan produser music, Dipha Barus</i>	Welcoming the start of 2021, Baskara Putra is releasing his latest work with DJ and music producer, Dipha Barus	In early 2021, his son Baskara took off his new work with DJs and music producers.
3.	<i>Toner akan memastikan segala produk skincare dan makeup untuk kulit berminyak meresap dengan baik</i>	The toner will ensure that all skincare and makeup products for oily skin are absorbed properly	Skin absorbs all skin care and makeup products well
4.	<i>Colorful identik dengan warna yang atraktif, ramai, dan berani mix 'n match warna yang dihindari.</i>	Colorful is synonymous with attractive, lively, and daring colors to mix and match the colors you avoided.	Colophor is an attractive, agile, nmatch-like color.

We could see the differences in each translation strategy. Referring to the indicators in Table 1, an analysis was performed on each sentence by identifying translation technic. There are several ways to translate manually (i.e., the direct translation and oblique translation strategy). However, in finding out the error of translation, it was found that the translation strategy that used Literal translate in sentences 1 and 2, Modulation in sentence 3, and Transposition in sentence 4 occurred. In the first sentence, pronoun, where GT uses "his" and Papago, uses "her". This happens because the pronoun is a crucial part in order to address people in English so that both of the translation tools translate it as his and her, while Bahasa Indonesia is the language that uses a neutral pronoun. We categorize this translation using literal translation. The literal translation is a method that transfers the source language into the target language without changing its meaning (Bahremand, 2015). For example, the Indonesian expression "saya dari Jakarta", would be "I am from Jakarta" in English.

In sentence 2, there is a significant difference in the results of Papago's translation. The phrase his son Baskara took off his new work. Papago translated the source output "Putra" into "his son". This translation technique is also a literal translation in which "son" is indeed a son in English. But in this sentence, Baskara Putra is a name wherein translation rules, the name should not be changed. The word took off is also a result of literal translation but took off is not a correct word to define "releasing". The translation results from sentence 3 did not find several errors but in the translation results of Papago, it changed the "Toner" to "skin" by removing toner as the subject. The translation technic that can describe this process is Modulation. Modulation is a change of perspective that shifts the word placement without actually change the entire meaning. The entire meaning is not changed in this sentence but got shifted into "skin" that it should be "toner".

Lastly, in the translation of the 4th sentence, GT translation occurred a little error by mentioning "daring" to "mix and match". This whole sentence makes "brave" act as a verb for object mix and matches in terms of meaning. Brave here is an adjective. In this word, there is a distortion of meaning. In translation technic, it can be called a transposition, namely changing the class of words without

changing the actual meaning, only changing the grammatical structure (Serbina, et al., 2017).

3.2 Comparing manual translation and both translation tools

In conducting this research, we provide manual translation and comparison of both translation tools below in Table 3.

Data Num.	Manual Translate	Language Target (Google Translate)	Language Target (Papago)	Translation Technic
1.	Don't hesitate to open up with them if they have shown toxic signals.	Do not hesitate to come clean with him when he shows toxic signals	Don't tell her the truth when you've already shown the laparoscopic signal	Literal translation
2.	Welcoming the start of 2021, Baskara Putra is releasing his latest work with DJ and music producer, Dipha Barus	Welcoming the start of 2021, Baskara Putra is releasing his latest work with DJ an music producer, Dipha Barus	In early 2021, his son Baskara took off his new work with DJs and music producers.	Literal Translation
3.	Toner will make sure all of skincare and makeup products for oily skin are absorbed properly	The toner will ensure that all skincare and makeup products for oily skin are absorbed properly	Skin absorbs all skin care and makeup products well	Modulation
4.	Colorful is identic with attractive, variety, and brave colors that can mix and match the colors you avoided.	Colorful is synonymous with attractive, lively, and daring colors to mix and match the colors you avoided.	Colophor is an attractive, agile, nmatch-like color.	Transposition

Table 3 shows the result of comparing manual translation and both online translation tools. Words or phrases in bold were identified with each translation technic to show each language target's differences. As we can see in the translation technic of literal translation, the manual translation has changed the pronoun to "they" and not as "his" or "her" because the text does not mention gender or the pronoun sign. The meaning did not change much but it can be a fatal mistake if the pronoun was different from what was addressed. At least that was the result of GT mostly delivering well into language target even though there was a change, but Papago detected the word laparoscopic as a translation of the word toxic. According to the Cambridge dictionary, laparoscopy is a tube that is used in surgery (Cambridge Dictionary, 2021), which is very different from the word toxic itself. This translation result did not meet the need for accuracy.

In the second sentence of Papago's translation, "his son" is a literal translation from Putra and makes the whole meaning shift. The main subject in this sentence is Baskara but the language target makes it change into his son. The process that can describe this one is modulation, as it said, modulation is not completely changed the whole meaning is just the point of view of the text who is changed. However, in this case, it makes the whole sentence into language target become dissimilar. Meanwhile, Papago translate seems to have a lot of error because "colors" was translated into "colophor". Therefore, the whole meaning got shifted.

After comparing manual translation, we can classify the accuracy of translation tools by comparing them to accuracy indicators. GT has three accurate and one least correct. Papago has one least accurate and 3 inaccurate.

3.3 Machine Translation System

Neural Machine Translation technology is considered a more accurate system because it examines sentences broadly and not word for word. Instead, it uses a broader context to produce the most suitable translation according to the conversation's language and using proper grammatical. One of the translation tools that use this system is Google Translate. With this artificial intelligence, Google Translate can learn certain patterns in the input text and then find the most suitable equivalent, enabling Google to learn the words it has just encountered. Split it into sections, then make words into language target. The GNMT system can also produce about a 60% reduction in translation errors (Yu, et al., 2016). To train the machines behind NMT, Google Translate uses a special open-source machine learning library developed by Google, such as TensorFlow and Tensor Processing Units (Abadi, et al., 2016; Atmaja, et al., 2020). They put a lot of sentences and their translations into the machine to improve the translation result. Not only that, the GT Neutral Machine also provides long and short-term digital memory to understand the whole meaning so as not too many changes occurred.

Meanwhile, Papago is the same as other machine translators. However, many people review that Papago is more accurate for those who live in parts of East Asia than other translation machines. Papago can input voice, text, or image as input and provides translated text and text-to-speech as the same output as other translators. It is the same as Google Translate. Papago also uses a Neural Machine translation system, but there are still problems with the NMT translation machine such as ambiguity that will force the system to translate the different meanings of the word we mean.

IV. CONCLUSION

From the explanation above, it could be concluded that GT and Papago have different levels of accuracy. Google Translate has fairly high accuracy and superior value over Papago with three accurate data from the research, which means it partly reached accuracy. Since GT has successfully identified word for word correctly and measured the meaning of one sentence very well. Meanwhile, Papago has a low level of result, which is only a quarter of the accuracy level. Most of them are inaccurate because they only produced the translation in literal form and have trouble grasping the whole meaning of the word. With this, GT can be used as a determinant of the use of text on the website. But, also that Bahasa

Indonesia sentences are already well structured and formal. However, Papago still needs to work on the system.

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