The effectiveness of machine translation to improve the system of translating language on cultural context

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Abstract. The objective of this study is to present the effectiveness of machine translation in translating language provided by the technology as well as to point out some disadvantages and advantages in using Google Translate (GT) on the cultural context in Indonesia. This research results that the written translation is better than the translation of images using GT. Consider the cultural context as expressive in society to be spread throughout the world, and GT as one of the technological tools available in communication must be used well to overcome language translation systems and cultural barriers.

1. Introduction
Each country has its own culture and uniqueness, including Indonesia, which has a lot of cultures, sometimes foreigners assume that it is unusual. This is because Indonesia has many cultures. Culture, defined in its broadest sense, is the totality of a society's distinctive beliefs, knowledge, ideas, and values. It exhibits the ways humans interpret their environments.

Catford in Lili Ni (1982) states that translation is the replacement of textual material in one language by equivalent textual material in another language. In this definition, the most important thing is the equivalent textual material. Yet, it is still vague in terms of the type of equivalence. Culture is not taken into account [1].

Culture and language are inseparable. They are expressions of social and people behavior. The inseparability of culture and language has resulted from researcher to carry out studies in the subject of translating on the cultural context in Bahasa Indonesia into the English Language by using machine translation.

Culture is the main term that encompasses the social behavior, and norms originated in human societies, as well as the knowledge, beliefs, arts, laws, customs, capabilities and habits of the individuals in these groups. According to research, culture is crucial to the way humans think, and possibly vice versa [2].

Increasing cultural research that applies directly to effective translation is a challenge for translation theory, which, in turn, leads to better translation strategy. It is this theory that needs to captivate the attention of translators and linguists alike. We need to combine these collective skills to cross-traditional discipline boundaries in order to produce translations that meaningfully communicate the intent of the source. The message needs both to act and to talk right with respect to the receptors while communicating the meaning intended by the author.

The translation is a procedure of transferring the message starting from source language toward target language. A translator has an important role in the result of translation in which the acceptance
is the main point of transferring the meaning. There is a machine used to translate from the source language to the target language that is Google Translate. One of the investigations concerning translation and culture lies in how the machine translation produces the translation product on cultural context.

Translating theory is a crucial aspect of translation because it covers the way to transfer meaning from the source text to the target text equivalently. Translating theory does not only about the nature of translation but also about the characteristics of the source and target text. Translation theory is not only about the nature of the translation but also about the characteristics of the source and target text because this research is about translating the theory from Indonesian into English.

Machine translation is the task of automatically converting source text in one language to text in another language. It also performs simple substitution of words in one language for words in another, but that alone usually cannot produce a good translation of a text because recognition of whole phrases and their closest counterparts in the target language is needed. Machine translation is recommended for quick translations in general texts. Considering the rigidity of scientific written language, one should take into mind the words into their context in such a model of communication. One of the most used machine translation is Google Translate.

Google Translate is a free multilingual machine translation service developed by Google to translate text. It offers a website interface, mobile apps for Android and iOS, and an API that helps developers build browser extensions and software applications. According to Wikipedia, Google Translate supports over 100 languages at various levels and, as of May 2017, serves over 500 million people daily [3].

Google Translate can translate multiple forms of text and media, which includes text, speech, images, and videos. Specifically, its functions include:

- **Written Words Translation:** A function that translates written words or text to a foreign language.
- **Website Translation:** A function that translates a whole webpage to selected languages.
- **Document Translation:** A function that translates a document uploaded by the users to selected languages. The documents should be in the form of: .doc, .docx, .odf, .pdf, .ppt, .pptx, .ps, .rtf, .txt, .xls, .xlsx.
- **Speech Translation:** A function that instantly translates spoken language into the selected foreign language.
- **Mobile App Translation:** In 2018, Google Translate introduced its new feature called “Tap to Translate,” which made instant translation accessible inside any apps without exiting or switching it.
- **Image Translation:** A function that identifies text in a picture taken by the users and translates text on the screen instantly by images.
- **Handwritten Translation:** A function that translates the language that is handwritten on the phone screen or drawn on a virtual keyboard without the support of the keyboard.

In recent years, machine translation has grown in sophistication and accessibility beyond what we imaged. Many people have suggested that human translators could be an endangered species. There are currently a number of online translation services ranging inability. Google Translate is one of the most used machine services because of its convenience. It currently translates over 100 billion words a day. The most interesting function of GT in here is Image Translation and Written Word Translation.

Based on the descriptions, the researcher needs to analyze the effectiveness of machine translation to improve the system of translating languages in a cultural context.
According to Verity and Larson (1986) [3], translation is classified into two main types, namely form-based translation and meaning-based translation. Forms-based translation attempts to follow the form of the source language (SL), and it is known as the literal translation, while meaning-based translation makes every effort to communicate the meaning of the SL text in the natural forms of the receptor language. Such translation called idiomatic translation. A literal translation sounds like nonsense and has little communication value.

2. Research Method

2.1. Scope and location of the research
This study used a descriptive qualitative approach. The study was conducted in Makassar, South Sulawesi - Indonesia, from September to October 2019. It involved four selected cultural contexts in Indonesian society:
1. Lettering,
2. Government Warning,
3. Door Sign,
4. Smoking Prohibition,

By using GT as a medium of translation and only focus on the most used effectiveness of Image Translation and Written Words Translation.

2.2. Data collecting procedures
This study is mainly investigating the effectiveness of Google Translate in translating Bahasa Indonesia – English in 4 selected cultural contexts. It means that the source language is Bahasa Indonesia, and the target language is English. Here, in the first research, the writer uses Google Translate Application to translate the source texts in Bahasa, as the input texts, into the target language is English, as the output texts. In the second research, compare the Image Translation and the Written Word Translation using Google Translate Application.

3. Result

3.1. Littering
The culture of disposing of garbage is not in its place, apparently still a habit of some people in Indonesia. Not even a few who do it without guilt. However, the effects of the polluted environment will also have an impact on the community itself. To avoid this culture in society, some people make a sign to warn others from littering, see figure 2.
a. Image translation

![Real Image Data A (SL) and GT Image Translation Data A (TL)](image)

**Figure 2.** Real Image Data A (SL) (a) and GT Image Translation Data A (TL) (b)

In this case, GT cannot recognize the text in the image correctly. All the texts were translated into a broken translation.

**SL:** YA, ALLAH...TURUNKANLAH AZAB BAGI ORANG-ORANG YANG MEMBUANG SAMPAH DI SEPAJANG JALAN INI.
**TL:** YES, ALLAN TUNE THE AZAB BAGIORANGEORANG THAT OAEMBUANG GARBAGE BEYONG JALANIKO.

b. Written Words Translation

![Google Translate](image)

**Figure 3.** GT written word translation data (SL-TL).

This written word translation translated the sentence from Bahasa Indonesia into the English Language by literary translation because the sentences are translated word-by-word.

**SL:** Ya, Allah...
**TL:** Yes, Allah...

The GT translated this word-by-word, but in the SL context means to beg/call out God, the best equivalent should be *Dear God.*
3.2. Government warning

a. Image translation

![Image](image_url)

**Figure 4.** Real image data (SL) (a) and GT image Translation data B (TL) (b).

The GT did not translate all the texts in the target language well. The error translations that GT produces in this figure were found in:

SL : mencoret-coret pagar sepanjang jalan ini, atas perhatiannya di ucapkan terima kasih
TL : screen—coret fence all the long this LAN, at his attention in the say THANK YOU.

b. Written words translation

![Image](image_url)

**Figure 5.** GT written words translation data B (SL-TL).

In the Indonesian language and culture, *Buang Sampah Sembarangan* is throwing away some objects on the ground or leaving them lying on the ground instead of disposing them at recycling bin/trash container/garbage can. In English, it is called *littering*. But GT translated *dilarang biang sampah* as *do not throw garbage,* it supposed to *do not litter.*
3.3. Door sign

a. Image translation

Figure 6. Real image data C (SL) (a) and GT image translation data C (TL).

SL: Dilarang masuk bagi yang tidak berkepentingan, bukan jalan umum.
TL: Do not enter for that no interest, not a general night.

This is not an effective translation because of its failure to find the equivalent of the word.

b. Written words translation

Figure 7. GT written words translation data C (SL-TL).

SL: Dilarang masuk bagi yang tidak berkepentingan, bukan jalan umum
TL: Prohibited entry for unauthorized persons, not a public road

According to the oxford dictionary (2019) [5], road means a hard surface built for vehicles to travel on. Therefore, "bukan jalan umum" supposed to be translated as not for public access.
3.4. Smoking prohibition

a. Image translation

![Figure 8. Real image data D (SL) (a) and GT image translation data D (TL) (b).](image)

SL: Anda memasuki kawasan bebas asap rokok, Terima kasih untuk tidak merokok
TL: You enter area free smoking smoking, thank you for not smoking

This image translation fails to translate bebas asap rokok. But, in literary, bebas = free, asap = smoking, merokok= smoking.

b. Written Words Translation

![Figure 9. GT written words translation data D (SL – TL).](image)

SL: Anda memasuki kawasan bebas asap rokok, Terima kasih untuk tidak merokok
TL: You enter a smoke free area, thank you for not smoking

This translation is acceptable in the target language; therefore, this written word translation is effective.

4. Discussion

4.1. The advantages

There are many advantages to GT. However, it is only a machine, and it cannot recognize emotions. Therefore, if you are trusting for the translation of various important documents from Google translate, then it is not a good idea. You had better hire a professional translator. Because there is no way to integrate context, the significance in the target language can be a mistake by using GT. The text's
complexity, as well as any context that cannot be interpreted without a real culture and language understanding, increases the probability of mistakes. The direct translation is common to GT and often results in non-essential literal translations, while professional translators take great pains to ensure the quality of translation.

The quality of translation is dependent on the language pair. Which source and target languages are involved also affects the quality of the translation. Since Google's web-based translation database is built primarily from existing online translations, common translations for languages, e.g., Bahasa or English, tend to be more accurate while translations for other languages that are not as available in Google's database are less likely to be accurate.

4.2. Disadvantages
GT often produces translations that contain significant grammatical errors. This is because Google's translation system uses a method based on language pair frequency that does not take into account grammatical rules; here are some disadvantages of using the google translator base on this study:

● It cannot translate cultural equivalent
● It can make the ambiguity
● free translation platforms are not ideal when important/confidential/creative text is involved
● no guarantee of checking if the content has been translated with any mistakes.
● To use GT, you need to be connected to the internet at all times.
● It can't understand cultural understanding.

5. Conclusion
Many factors affect how machine translation systems are evaluated. These factors include the intended use of the translation. There are various means for evaluating the output quality of machine translation systems. The oldest is the use of human judges to assess a translation's quality. Even though human evaluation is time-consuming, it is still the most reliable method to compare different systems, such as rule-based and statistical systems.

There is still no complete good to replace human translation; based on knowledge, and a good deal of effort and a lot of interest in keeping an eye on the evolution of these online devices are recommended. Even though Google Translate provides translations among many forms of text and media, the accuracies vary greatly. This research gives a question of how good or bad a potential translation might be using machine translation. The analysis shows that translations between written word translation are usually good, while those using image translation are often relatively poor. Further, the large majority of language combinations probably provide sufficient accuracy for understanding the cultural context in Indonesia.

Google Translate continually maintain their machine translation, and the existing language translation algorithm is constantly improved as the software is trained with additional text and volunteers correct mistranslations. Although its performance is never likely to reach the level of an expert human's, it can provide quick, cheap translations for unusual language pairs.

6. Suggestion
Even though Google Translate is an excellent translation app, there are always going to be potential inaccuracies in the product. Language is a complicated, changed, and subtle thing. We cannot expect machines to understand every aspect of the way human beings communicate with each other, especially in a cultural context. If someone wants the best accuracy for the translation, it's important to hire a professional human translator than using machine translation.

References
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