Post-Editing of Machine Translation: Creating a Better Translation of Cultural Specific Terms

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Abstract

The knowledge of machine translation has great importance in the pre-translation process, particularly when translating a literary work. There were a plethora of studies about the translation of cultural-specific items (CSI) with machines. However, they have not addressed machine translation post-editing to improve its translation. This study aims at describing the semantic analysis in the translation of cultural-specific items (CSI) by machine translation (MT) from Indonesian into English, analyzing their translation and whether or not they have similar meanings between the source text and target text to get a better quality translation. Qualitative research using descriptive methods was applied. The data were 12 sentences of CSI in the form of concrete and five sentences of CSI regarding socio-cultural terms from the short story of Betawi folklore entitled *Angan-Angan si Muin* (Muin's Wishful Thinking). The result revealed that the 2nd generated the better translation in concrete. Both machine translations (MT) produced different translations for translating CSI of socio-cultural terms. Therefore, post-editing is taken to improve their translation with semantic analysis of relation meaning with primary considerations such as material, shape, size, function, and description. Machines translator (MT) helps us to work efficiently and improve accuracy. But, the results of machine translations must still be reviewed by human translators to ensure key quality requirements are satisfied, including fidelity or correctness, intelligibility or clarity, and style, so we need post-editing translation.

Keywords: *Betawi folklore, cultural specific items, machine translation post-editing; relation meaning*

INTRODUCTION

Machine translation systems are online applications or services that use machine learning technology to translate large amounts of text to and from supported languages (Fitria, 2021b). The service translates "source" text from one language to a different "target" language. Machine translation is translation performed by the machine with the formula or formula that has been entered into the program to help with translation. This is fully translated by the machine after providing input in the form of text from the source language which is then translated by the machine to be transferred to the target language (Gestanti et al., 2019). With machine translation, translators can easily translate anywhere and anytime because translation applications can use computers, laptops, and even mobile phones (Baharuddin et al., 2021). There are machine translations with various capabilities, and one of the most commonly used services are Google Translate and Collins Translator.

Language and culture, as well as language and behavior, have a very vital relationship. Meanwhile, language is an expression of the

culture and self of the speaker, who understands the world through language (Fitria, 2012). In other words, there is an insight that every culture is embedded with social dimensions, including people interaction. This interaction reflects the way their life as well as the way they communicate with each other (Ukpong, 2017). The meaning of social and cultural is the relationship between the activities of cultural nuances and collaboration in the sense of social behavior. These activities are reflected in literary works as well (Hoed, 2006). Therefore, people should consider language as well as culture in translation, particularly in literary works because language and culture are an entity. Such works contain cultural values as represent social and cultural practices. These practices may become the main determinant of word choice in translation. Regarding the choice of the word during the translation process, a translator may use tools, i.e. machines (Lin et al., 2021). Knowledge of machine translation (MT) has great importance in the pre-translation process.

Many translators have various opinions about machine translation (MT) which is helpful, less accurate, and less fluent (Moorkens et al., 2018). Omar & Gomaa (2020) stated that machine translation (MT) is useful to some extent, however; post-editing of the automatic translations is imperative to address the translation errors usually made by the translation systems. Taivalkoski-Shilov (2019) also gave her view about the quality of translation by machine, namely the quality of a given translation product depends on the quality of the process during which it was brought into being, which in turn depends on social factors involved in the production. Moreover, Doherty (2016) explained that MT allowed for the creation of novel content types and newly created professional translation-related roles in the course of their development. Post

editing is related to MT whose quality is only comprehensible (Plyth & Craham, 2020). In other words, post-editing is necessary to improve the quality of translation by machine to be readable to the public.

Paying attention to the translation of cultural specific items (CSI) using machine translation (MT), Sekhri (2019) described that MT is useful because it facilitates the rendition of many elements, there should be a review of the text to find equivalents of CSI and not to fall in cultural gaps. But, he also emphasized that translating CSI with MT may fail in transmitting the message. Guerberof-Arenas & Toral (2020) analyzed the translation of fictional stories from English to Catalan and proved that the creativity of translation is shown by the translation without aid, rather than with (MT), and post-edited (MTPE). This creativity was pertinent to both narrative engagement and the translation process. In addition, Baihaqi & Mulyana (2021) examined Robin Hood's translation through MT and found that the machine cannot distinguish connotative or associative meanings which are frequently found in literary texts. Sholikhah & Indah (2021)described that translating texts with CSI is not easy as one region to another has different cultures, so it is difficult to look for parallel words that contain culture, religion, social, customs, social organization, procedure, sign language, and ecology parts, and MT cannot translate the term of cultural words easily. MT has lexical errors when translating a cultural text from English into Indonesian. These four studies indicated that translating CSI through the machine is challenging due to the difference in relation meaning between the source and target language. While existing studies have established inaccurate translation of cultural-specific items (CSI) with machines, they have not addressed machine translation post-editing to improve its translation.

The potential translation improvements through v would be potential. If raw MT quality is low, post-editing needs an attempt (Balling et al., 2014). This means to attempt and quality is significant factors to determine post-editing practicability. Monolingual post-editing is more assured when MT output is edited by specialists. Prior research stated that more than 90% of sentences post-edited monolingual by an expert were discovered to be correct (Schwartz, 2014).

Meaning does not relate directly to the reference, but it relates to the relationship of words as well as language. The word's meaning consists of lexical and non-lexical. For example, green as an adjective has four meanings, (1) Color, (2) Covered with grass, (3) Fruit, and (4) Person. The meaning of green depends on the context of sentences such as (1) She wears a green dress, (2) After raining, the land was green with the new growth, (3) The tomato is still green, (4) John is still green in accounting. The first sentence has lexical meaning and the rest have no lexical meaning. It depends on certain reference which is out of language and bound to the context (Fitria, 2021a).

Teilanyo (2007) clarified the difficulty in finding the equivalent of target language words to transfer the cultural ideologies and ideas into the target language because both languages have different meanings cultures and subsystems. These different languages may have different classifications, prototypes, and semantic features. Arifin (2009) stated that looking for equivalents in CSI translations is difficult as there are different lexicons and cultures. As a result, a translator should adjust various aspects of the source language into the target language as part of the translation.

However, Newmark (1988) explained that the way of life is a culture, especially the use of language as a means of communication by certain people in one region. Therefore, each language group shows specific features in terms of culture. He introduced cultural words which implied several considerations to translate, namely (1) the particular text type, (2) the character of readership, and (3) the importance of the cultural word in the text. Then, he classified cultural words as well into (1) ecology: flora, fauna, hills, winds, and plains, (2) material culture: food, clothes, houses, towns, and transport, and (3) social culture: work and leisure, (4) organizations: customs, activities, procedures, (5) gestures and habits.

We argued that Machine Translator (MT) is beneficial for translating cultural specific items (CSI) by explaining their translation from two different machines in a book entitled "Dongeng Betawi Tempo Doeloe" by Abdul Chair published in 2017, especially a story of *Angan-Angan Si Muin*. *Angan-Angan Si Muin* translated into Muin's Wishful Thinking was a story about a young man called Muin who lived alone in a village in Jakarta a long time ago. He just stayed in a hut and ate some raw vegetables nearby. For drinking and other water needs, there was a well that he dug close by his stay. In other words, the way he lived was very simple. He had two beehives; one was in his house and the other was in a jackfruit tree. After a traveler dropped in his hut and told him that honey is "valuable" because it can be sold. Knowing this, he became extremely happy to earn a lot of money. Unfortunately, his wishful thinking and uncontrollable action led him to destroy himself. He spilled a pot of honey and scattered it on the ground. Eventually, he was very regretful and very sad. Moral teaching that can be drawn from this story is daydreaming or wishful thinking tended to be a useless activity which was proved by Muin's unintended action due to daydreaming, i.e. the honey spilled. Then it was reflected in a *pantun* as stated in the ending part of the story. "Don't eat too much cucumber, Cucumbers have a lot of sap,

Don't sit and be a daydreamer, Daydreaming is very bad". In Betawi culture, *pantun* is usually recited for disseminating local wisdom. It could be found both in oral and written languages such as in this story. Then, the problem arose "How to edit CSI translated by machine from Indonesian into English to be readable by target readers in terms of relation meaning?". Therefore, this study aims at describing the semantic analysis in the translation of cultural-specific items (CSI) by machine translation (MT) from Indonesian into English, analyzing their translation and whether or not they have similar meanings between the source text and target text to get a better quality translation.

METHOD

The type of this research was qualitative descriptive. According to Creswell (2012), qualitative research views the object as something dynamic, the result of the construction of thoughts and interpretations of the observed phenomena. Therefore, this study tried to describe, analyze, and interpret the data of cultural-specific items (CSI) dealing with Betawi culture. These cultural items, as data, were taken from a short story.

The instrument was the researchers themselves to collect data. We chose one story *Angan-Angan Si Muin* out of 26 randomly from a book entitled "Dongeng Betawi Tempo Doeloe" by Abdul Chair published in 2017. Three phases were carried out to garner the data. Initially, we selected 12 sentences of CSI in the form of concrete and five sentences of CSI in the form of socio-cultural terms from the source text. Then, those sentences were translated into English by two different machines i.e. Google Translate and Collins. After that, those sentences were presented in the form of a table to be analyzed in terms of relation to meaning.

The data were then examined with four stages of data analysis procedures, namely (1) data reduction in which there is a synthetic thinking process requiring intelligence and a high breadth and depth of insight. Reducing data means focusing on things that are important to look for, namely CSI translation of two machines. (2) Analyzing the data respectively to be compared to each other since all of them were generated from two machines using semantic analysis. (3) Drawing conclusions of which machine produced equivalence meaning. (4) post-editing action to produce a quality translation.

FINDING AND DISCUSSION
Findings

This study aims at describing the semantic analysis in the translation of cultural-specific items (CSI) by machine translation (MT) from Indonesian into English, analyzing their translation and whether or not they have similar meanings between the source text and target text to get a better quality translation. The cultural-specific items (CSI) translation was generated from two machines. It can be seen from translation results that monolingual post-editing increased the linguistic quality of MT output and bilingual post-editing is better in terms of adequacy (Mitchell et al., 2013). Monolingual post-editing means an output of machine translation can be edited without the source text and bilingual post-editing means it can draw on the source text for editing the target text.

In finding CSI in that story, Baker (2011) asserted there are two groups i.e. abstract and concrete meanwhile Alvarez & Vidal (1996) grouped them into proper nouns and common expressions. Additionally, Thriveni (2002) described CSI as habits, customs and traditions, myths and legends, beliefs and feelings, religious components, and environmental and geographical components. After that, Durdureanu (2011) explained CSI has relation to foods, drinks, time divisions,

geographical terms, measurements, currencies, institutions, clothes, sports, dances, music, jobs, professions, historical terms, and socio-cultural terms. Therefore, this study considered the CSI taken followed by Baker (2011) and Durdureanu (2011), namely concrete and socio-cultural terms.

1. Concrete Cultural-Specific Items (CSI) Using Machine Translation

There were 12 sentences of CSI in that short story regarding concrete aspects of physical culture). Koentjaraningrat (2005) said that in traditional society there are several kinds of equipment systems and elements of physical culture used by the community in their culture. Mostly, these concrete aspects related to kitchen utensils and furniture, are presented on the table as follows:

Table 1. Concrete CSI Translation

No	Source text	1st Machine (Google Translate)	2nd Machine (Collins Translator)
1.	Si Muin tinggal di sebuah *gubug* yang sangat sederhana.	Si Muin lives in a very simple **hut.**	Si Muin lives in a very simple *gubug.*
2.	Perabotan di dalam gubug hanya ada sebuah *ta'pang* tempat dia tidur;	The furniture in that hut has only one *ta'pang* where he sleeps;	The furniture in the gubug has only a *ta'pang* where he sleeps;
3.	beralaskan selembar tikar dan berbantal *kelapa gabug*.	on a mat and a pillow with *gabug coconut*.	based on a sheet of mat and with *coconut gabug*.
4.	Dalam gubugnya itu ada sebuah *tempayan.*	In his hut there was a *tempayan.*	In the gubug there is a **jar**.
5.	…dengan gayung yang terbuat dari *batok kelapa*.	…with a dipper made of **coconut shell.**	…with dippers made of **coconut shells.**
6.	Di dalam rumahnya juga terdapat dapur dengan alat-alat masak seperti *periuk dan kuali.*	Inside the house there was also a kitchen with cooking utensils such as **pots** and **cauldron**.	In his house there is also a kitchen with cooking utensils such as **pots** and **wok.**
7.	…dia hidup hanya dengan menyantap buah-buahan dan *daun-daunan mentah* yang ada di sekitar gubugnya.	…he lives only by eating raw fruits and **leaves** around his hut.	…he lives only by eating fruits and **raw leaves** that are around his gubug.
8.	…dibuatkan kandang yang bagus dan dilengkapi *dongdang.*	…made a good cage and equipped with *dongdang.*	…made a good cage and equipped with *dongdang.*
9.	…tempat meletakkan *empanan* kambing.	…place to put the *empanan* goats.	…place to put **empanan** goats.
10.	…atau juga dibuatkan *cangklekan* untuk	…or also made *cangklekan* to hang the	…or also made *cangklekan* to hang the

	menggantung daun-daun *empanan* kambing.	leaves of goat *empanan*.	leaves of goat *empanan*.
11.	Dengan memiliki sepasang kerbau, dia akan membuka *sawah*.	By having a pair of buffalo, he will open *a field*.	By having a pair of buffaloes, he will open the *rice fields*.
12.	Dari dongeng ini si empunya dongeng ingin mengingatkan akan *pantun* yang dulu terkenal dalam masyarakat Betawi.	From this fairy tale, the owner of the tale wants to remind the *rhyme* that was once famous in Betawi society.	From this fairy tale the owner of the fairy tale wants to remind of the *pantun* that was once famous in betawi society.

We conducted the static post-editing of CSI translation above where the Machine Translation (MT) output is generated first and after that, it is edited statically in a separate way. Conversely, translators interact with the MT system at the same time the final version is generated. Interactive models with online learning were examined well-known as the CASMACAT project. The finding recommended that interactive conditions need less technical effort (Koehn, 2014). They affirmed a prior assumption that post-editors become faster because they get used to the mode of interactive mode. More technically, the process of this static post-editing referred to semantic analysis of relation meaning. Therefore, since the target readers were supposed to be native, a cultural substitution strategy was applied by comparing the result of two machines to obtain some insights.

The researchers explored that 2nd machine translator produced a better translation than 1st machine in the point of cultural equivalence since there were several differences in translation as shown in data numbers 1, 2, 4, 7, and 12. The ideology of 2nd machine translation is the cultural equivalence of domestication. However, the result of the translation of post-editing in terms of relation meaning improved the quality. To understand relation meaning, it refers to the triangle of symbolism from Ogden et al. (1989) who explained that language and reality are not always identical because the word is not sufficient to describe the situation being portrayed. The main reason is a word also covers the society's point of view toward language to reality. This point of view is part of the cultural element followed by Newmark's (1988) suggestion that a translator can only find an approximation of the equivalence.

As post editing we applied manually with regard to the semantic of component analysis. This was applied to consider several CSI translations, such as Material, Shape, Size, Function, and Description as stated below:

1. The word *gubug* is translated into "hut". The material of both *gubug* and hut is wood and bamboo and looks similar to each other. Their size is could be the same and their function is as a place to stay. They are usually found in rural area.

2. The word *ta'pang* is translated into "bed". Ta'pang and beds are made of wood and their shape and size are more or less the same. Both ta'pang and bed share a similar function as a place to sleep. They were found in a house.

3. The word *kelapa gabug* into "coconut fiber". Commonly, *kelapa gabug* or coconut fiber is a natural fiber extracted and used to fill something, like a pillow or cushion, or cloth doll in a tropical region. The function is to make these stuff comfortable when people make use of them.

4. The word *tempayan* is translated into "jar". The material of *tempayan* and jars could be clay and their shape and size are about parallel. Habitually, people use it for storing something liquid such as water and sweets and put it in a kitchen.

5. The word *batok kelapa* is translated into "coconut shells". The description of *batok kelapa* or coconut shell is the outer hard part of the coconut fruit. It is located in between the coconut flesh and the coconut husk which can be made into some utensils, one of which is deeper.

6. The word *periuk* is translated into "pot". The material to make *periuk* and pot is clay, however, nowadays they are made of steel or metal. Even though the size and the shape can be different from each other, both *periuk* and pot are for cooking, so they share a similar function.

7. The word *kuali* is translated into "wok". *Kuali* or wok is made of clay or metal. Their functions are for cooking and can be used for frying. The size and the shape of *kuali* and wok could be the same.

8. The word *daun-daunan mentah* is translated into "raw leaves". The description of *Daun-daunan mentah* or raw leaves is usually edible by some people. They are healthy and most the vegetarians like to consume these raw leaves.

9. The word *dongdang* is translated into "cage feeder". *Dongdang* or cage feeder is usually made of wood for a place of animal food, such as goats. In other words, they have the same function.

10. The word *empanan* is translated into "food". Empanan is a local language of Betawi that refers to food. This term is often used for indicating food, particularly for a domesticated animal.

11. The word *cangklekan* is translated into "hanger". *Cangklekan* is also a local language of Betawi and refers to a hanger. This hunger has the function to hang food for the animal, especially goats.

12. The word *sawah* is translated into "a rice field". Sawah or rice field is usually found in an agricultural region. It is a flooded field of arable land used for growing rice.

13. The word *pantun* is translated into "poem". *Pantun* or poem is often recited by Betawi people to express their intention. *Pantun* looks like a poem that has a pattern and sometimes it contains wise words.

2. Socio-Cultural Cultural-Specific Items (CSI) Using Machine Translation

There were nine sentences of CSI dealing with socio-cultural activities for our data to analyze. All of them referred to social culture: work and leisure as stated by Newmark (1988) which are in the form of a verb. They were summarized in the table below indicated in bold and italic.

Table 2. Socio-Cultural CSI Translation

No	Source Text	1st Machine (Google Translate)	2nd Machine (Collins Translator)
1.	…*beralaskan* selembar tikar dan berbantal kelapa gabug.	*on* a mat and a pillow with gabug coconut.	*based on* a sheet of mat and with coconut gabug.
2.	Dapur tersebut boleh dikatakan hampir tidak pernah digunakan karena dia hidup hanya dengan *menyantap* buah-buahan…	The kitchen is practically never used because he lives only *by eating* raw fruits…	The kitchen can be said to be almost never used because he lives only *by eating* raw fruits…
3.	Sejak saat itu dia pun mulai	From then on he began *to*	From then on he began *to*

	menampung dan mengumpulkan madu dalam dalam sebuah kuali	***collect*** and collect honey in a cauldron.	***hold*** and collect honey in a cauldron.
4.	Sejak saat itu dia pun mulai menampung dan ***mengumpulkan madu*** dalam sebuah kuali.	From then on he began to collect and ***collect honey*** in a cauldron.	From then on he began to hold and ***collect honey*** in a cauldron.
5.	Angan-angannya ***berjalan***.	The dream is ***running***.	His wishful thinking is ***walking***.
6.	Nanti keduapuluh telur itik itu akan ***dierami.***	Later the twenty duck eggs will be ***incubated***.	Later, the twenty duck eggs will be ***planted.***
7.	Pikirannya ***melayang*** terus.	His mind mind keeps ***drifting***.	His mind ***drifts*** on.
8.	Malam harinya sambil tiduran telentang pikirannya ***menerawang***.	At night while lying on his back his mind was ***dreaming.***	At night while lying on his back his mind was ***dreaming.***
9.	Tenaga kerbau itu akan digunakan untuk ***membajak*** sawahnya.	The buffalo's power will be used ***to plow*** the fields.	The buffalo's power will be used ***to plow*** its rice fields.

The translation of socio-cultural CSI generated from two machines had a similar translation as shown by data, numbers 2, 4, 8, and 9, namely ***menyantap*** :: ***by eating, mengumpulkan madu*** :: ***collect honey, menerawang*** :: ***dreaming, membajak*** :: ***to plow***. The reason was they are categorized as action verbs which are also known as concrete words. This made both machines recognize well the meaning of those concrete words in the source language and automatically translate them in a good way. Therefore, it was no doubt that the translation result was like each other which was not necessary to edit.

Data numbers 1, 3, and 6 were also concrete words but they had different translation results produced by two machines. The first machine translated more accurately while the second translated less accurately, directing to generate miss interpretation. The first machine translated, data number 1, ***beralaskan*** into ***on*** (position) which has the same meaning as the source language. On the contrary, the second machine translated ***beralaskan*** into ***based on*** which the meaning is not the same as the source language. Data number 3, ***menampung,*** is translated into ***to collect*** by the first machine. This indicated that the first machine can translate the source word correctly. The second machine translated ***menampung*** into ***to hold*** which has a different meaning from the source word. It was not the intended message translated by the second machine. Data number 6, namely the word ***dierami*** is translated into ***be incubated*** by the first machine. This translation is accepted because the meaning of the source language is transferred correctly into the target language. And, the second machine translated ***dierami*** into ***be planted.*** This was not a correct translation because the meaning is different.

Apart from the concrete words above as the data number 1, 2,3, 4, 6, 8, and 9, the rest data, i.e. numbers 5 and 7 were words that contained figurative language. They were ***berjalan*** **and melayang.** The full sentences were "Angan-angannya ***berjalan"*** and "Pikirannya ***melayang*** terus". Both machines translated differently. The first machine

translated it into "The dream is ***running"*** and the second machine translated it into "His wishful thinking is ***walking".*** These two machines failed to translate words with a figurative meaning. Therefore, they need to be revised.

The translation result after applying full post-editing manually in terms of semantic analysis of data numbers 5 and 7 became ***Angan-angannya berjalan*** into "***His mind wandered***" and ***Pikirannya melayang terus*** into ***His dreams flew away***. The word "wandered" was chosen because its meaning was similar to *berjalan* of connotative meaning in Indonesian. "Flew away" was selected due to the same comprehension between the source and target language.

Discussion

Translation is the most difficult process among all processes in language learning. It requires the application of advanced language aspects, including sentence restructuring, context analysis, interpretation of meaning, and so forth. Indeed, machine translation is not can be simply released. Machine translation is not completely reliable to do human work that involves many things in the brain, heart, and feelings social. For that the results of Google Translate, Collins Translation, or machine translation results still need to be edited by humans. There are two most famous processes of post-editing, namely 'light' and 'full' post-editing (Cadwell et al., 2019). This process is based on the perspective of expected target quality which is relied on the text's intended purpose and the quality of the raw MT output as well. Light post-editing engages a human post-editor to have minimal corrections to the translation result. Full post-editing is needed when recommendations vary the most, particularly focusing on the requirement of stylistics.

Language is an inseparable aspect of a particular culture and the translation process must also not exclude culture as an important aspect of language formation. In other words, language is a product of culture itself. Culture is a part of human life that is reflected in everyday life either through words, actions, or certain habits. Language reflects the culture of a place and forms the mindset and outlook on the life of its users. A translator must consider this cultural aspect in every translation process because the culture reflected in the source language can be very different from the target language. According to Larson (1998), target language readers must interpret something based on their own experience and culture. Simply put, readers can ignore the views and personal experiences of the original text writer. The relationship between culture and language can be seen in each translation project. So, the translator must understand the content of the project because translating is not only transferring data from one language into another language, but the translator also needs cultural knowledge to get a good understanding of the source text and the translator can translate it to people who have beliefs, behaviors, values. different morals and rules.

System equipment and technology are the elements of culture that became the initial attention of anthropologists in understanding human culture. It seems clear the reason because the equipment and technology they use will provide a lot of information about the daily life of the community. Koentjaraningrat (2005) said that in traditional society there are several kinds of equipment systems and elements of physical culture used by the community in their culture. The findings above, show there are several types of physical culture. First, Productive tools. Productive tools are tools to carry out a job that produces something that has use-value for individuals or society and culture in general. It can be as simple as a stone for pounding rice, or a complex tool for weaving cloth. Second, container. It is a tool for storing, loading, and hoarding goods. At first, the container seemed

trivial to the community, but along with the increase in economic activity, the container became a primary need and continued to be developed. 3) Culinary (food, drinks, meal, herbs, etc.). This is related to the knowledge system how to cook for each community group is different. In anthropology, certain types and foodstuffs can provide special meanings and symbols for the community, or are associated with certain religions.

Examples of physical cultures are: 1) the word *gubug* is translated into "hut". The material of both *gubug* and hut is wood and bamboo and looks similar to each other. 2) The word *ta'pang* is translated into "bed". *Ta'pang* and beds are made of wood and their shape and size are more or less the same. Both *ta'pang* and bed share a similar function as a place to sleep. They were found in a house. 3) The word *kelapa gabug* is translated into "coconut fiber". *Kelapa gabug* or coconut fiber is a natural fiber extracted and used to fill something, like a pillow or cushion, or cloth doll in a tropical region. 4) The word *tempayan* is translated into "jar". The material of *tempayan* and jars could be clay and their shape and size are about parallel. People use it for storing something liquid such as water and sweets and put it in a kitchen. 5) The word *batok kelapa* is translated into "coconut shells". *Batok kelapa* or coconut shell is the outer hard part of the coconut fruit. 6) The word *periuk* is translated into "pot". Both *periuk* and pot are for cooking, so they have a similar function. 7) The word *kuali* is translated into "wok". *Kuali* or wok is made of clay or metal. Their functions are for cooking and can be used for frying. 8) The word *daun-daunan mentah* is translated into "raw leaves. They are usually healthy and most vegetarians like to consume these raw leaves. 9) The word *dongdang* is translated into "cage feeder". *Dongdang* or cage feeder is usually made of wood for a place of animal food, such as goats. 10) The word *empanan* is translated into "food". *Empanan* is a local language of

Betawi that refers to food, particularly for a domesticated animal. 11) The word *cangklekan* is translated into "hanger". *Cangklekan* is also a local language of Betawi and refers to a hanger to hang food for the animal, especially goats. 12) The word *sawah* is translated into "a rice field". *Sawah* or rice field is a flooded field of arable land used for growing rice. 13) The word *pantun* is translated into "poem". *Pantun* or poem is often recited by Betawi people to express their intention. Pantun looks like a poem that has a pattern and sometimes it contains wise words.

Besides that, there are socio-cultural elements found in this research. Socio-cultural is usually created by humans and is a system of values, ideas, and beliefs in behaving as social beings. This element plays a role in environmental changes to meet the needs of human life. The The example of social cultures are the words "beralaskan, menyantap, menampung mengumpulkan madu, dierami, menerawang, membajak". The word "beralaskan " is similar to "on". The word "menyantap" is similar to "eat" or "drink". The word "menampung" is similar to "collect". The word "mengumpulkan madu" is similar to "honey farmer" or "honey collector". The word "dierami" is similar to "incubated". The word "menerawang" is similar to "dreaming" And, the word "membajak" is similar to "plow" (activity of cultivating land by turning the soil so that the soil becomes smooth and easy to plan).

Words containing figurative language were also discussed, namely **berjalan and melayang.** They were taken from sentences "Angan-angannya **berjalan"** and "Pikirannya **melayang** terus". Such figurative language was translated inappropriately by the two machines since they were not equipped with the application of recognizing the words with connotative meaning. Therefore, they were badly in need of editing.

Equivalence is the key word in determining whether a text can be categorized

as a translation or not. In every translating and translating activity, the translator is faced with two texts that are linguistically and culturally different (Silalahi, 2017). cultural untranslated. However, translation is not impossible if we think that the same concept: meaning, or message can be expressed in different ways. Therefore, the translator needs the right approach and translation strategy so that he or she can overcome the problems that arise at the same time. transfer the text message of the source language into the target language. The translation approach and translation strategy as part of the translation process will affect the equivalence of the resulting translation.

Machines help translators work more efficiently, improve accuracy, and expedite return time (Fitria, 2021c). They can forecast outcomes based on recorded data and can significantly increase job productivity. Nevertheless, despite recent advances in artificial intelligence (AI), machine translations must still be reviewed by human translators to ensure key quality requirements are satisfied, including fidelity or correctness, intelligibility or clarity, and style. Automation may be the future, but we still have a long way to go before we can construct an unbreakable technology. For better machine translation results, we need post-editing of translations. We can choose a team that has training or experience with Post-Editing Machine Translation (PEMT). Post-editing is an activity distinct from translation and requires a specific set of skills According to Eneste (2013), the steps for editing the translated text also undergo a process, namely 1) reading the original text in the source language and trying to understand it, 2) making the translation in mind, then 3) editing the translation by comparing it with the text in the source language. These three steps are added to the last step, namely carefully reading the edited manuscript from beginning to end to ensure that there are no more mistakes and deficiencies in the accuracy of the translation, grammar, and spelling so that the translation does not feel like a translation.

Conclusion

The two machines have generated similar and dissimilar translations regarding CSI of concrete and socio-cultural terms. To generate an accurate final result of translation from the machine, Post-Editing Machine Translation (PEMT) was a must to conduct to find out the final translation by using a single consideration, namely semantic analysis of meaning. Besides, for figurative language translation, a full post-editing process should be employed so that the final translation is accepted by target readers at ease. Therefore, further research pertinent to PEMT could be implemented for particular academic fields or technical terms to investigate the process of editing, i.e 'light' and 'full' post-editing.

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