Indonesian Journal of EFL and Linguistics
Vol. 6 No. 1, 2021
eISSN: 2503-4197, pISSN: 2527-5070
www. indonesian-efl-journal.org
doi: http://dx.doi.org/10.21462/ijefl.v6i1.362

Translation Shifts on Reference by Machine Translation in Descriptive Text

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Abstract:
Translation shifts are one of strategy to get a high-quality translation. It's also used to solve the absent meaning on the target text. The objectives of this research are to describe the translation shifts (based on the theory of Blum-Kulka about kinds of shift and Halliday and Matthiesen on cohesion theory), which are done by machine translation in descriptive texts. The researcher used a descriptive qualitative research design to achieve the aims of this research. The source of data in this research is descriptive text. The data of this research are pair of words in source and target text. The form of words (pair of words in source and target) are in reference form based on the theory of Halliday about lexical devices. The researcher used interactive data analysis (data condensation, data display, and verifying/conclusion) to get the research findings. This research shows that Yandex translation made translation shifts more (35 times) often than the others. From the whole types of translation shifts (cohesion shifts: implicitation, explicitation, and meaning change), implicitation shift placed a high frequency among machines translation, however explicitation shift placed in the low frequency, and the medium frequency is placed by meaning change. It is to indicate that machine translation still lacks to produce a high level in the target than a source.

Keywords: *descriptive text, machine translation, reference, shifts, translation*

1. INTRODUCTION

Language is a tool for a human to deliver her/his idea. However, as estimated, there are six to eight thousand languages in the world. It's to indicate that difficult to understand every language. The main goal of language as an instrument is to express an idea. However, to re-express or to re-construct the idea from one language to another language is challenging and complex work. It is challenging because someone needs to transfer the meaning from one language to another.

Translation studies are one solution to re-express or re-construct meaning/idea from one language to another language. In addition to that, translation is an easy and cheap way to re-express ideas from one language to another language. Even though the translation is a solution and the easiest way to deliver meaning, a great problem on translation is on equivalence in pairs of language. In addition to that, the equivalence on cultural words is something that translators need to analyze in source language before transferring the meaning.

Some people use translator's service in translating. There are many kinds of translator's service, like a sworn translator. In addition to that, there are three groups of translators: professional translator, part-time translator, and free translator (Machali, 2000). It can be concluded those groups will have different abilities in analyzing the source text. Professional translators will be paid professionally. However, part-timer and free translator will be paid differently.

Some people do not use translator service in translating. They use web service and translation applications in translating. There are many web services in translating, like google translation, Yandex, Microsoft bing, etc. However, most Google users use google to translate one language to another language. It is to indicate that, google translate is a favorite instrument for the translation aim.

It will be the next problem if the translation which is produced by machine translation originally to use. The problems that can be appeared in the translation without human touch are lack of accuracy, lack of acceptability, and lack of readability in the target text. These problems can appear since the machine translation concept is a word-for-word translation.

Translation tools can help people from different countries of different languages. It's as a bridge for them to get the meaning. Most people used various applications and web services to translate one language to another language. These tools can help other people to conducts their jobs through translation. The translation is categorized as a translation draft. It means that human touch is needed for better translation.

The researcher believes that the advances of the tool in translation technologies will pressure translators in time and quality. The improvement of internet users, web accessibility, and contribution of digital information have a great contribution to professional translators. The advances of translation technologies create the loss

project on three groups of translators like professional translators, part-time translators, and free translators.

Based on the researcher's observation (as a gap of this research) on certain machine translation, in translating descriptive text, especially on personal reference, it can be seen as follow.

ST : but overall, **he** has a bad attitude
TT : *tapi secara keseluruhan, sikap**nya** buruk*

The researcher paid attention to the personal reference. The word of "*he*" in the source text was not translated by the machine translation. It is very important to describe that reference in the target. In this case, the machine translation makes a shift through translation.

Based on the observation above, machine translation makes a shift from the existential to the possessive in the level of semantic category. In addition to that, on the grammar function, there is a shift from head (he) to modifier (nya). At the level of class, the changes are occurred from pronoun (he) to determiner (nya). Theoretically, translation shift can be used or applied since the absence of meaning in the target. In this case, the source text of *"he"* has an equivalence in target, but the machine translation tends to make a shift through translation. Based on the researcher, the target text shoul be *"tapi secara keseluruhan, dia memiliki sikap yang buruk"*. There is no shift. It occurs since the presence of meaning or the presence equivalence on the target text. In this translation, the researcher tries to describe the meaning from the source to the target text.

The social function of description is to describe a particular person, place, or thing. In addition to that, the generic structure of description is identification and description (Gerot & Wignel, 1994). It is to indicate that in describing something, the translator tends to add some information to the target text. If the machine translation omits some information, impossible to describe something to the reader/listener. In other points of view, the concept of machine translation is word-to-word (Harper, 2018). It is difficult to apply in translating descriptive text by machine translation. Machines translation needs to add some information in target in translating descriptive text.

Based on the phenomena above, the researcher assumes that machine translation lack in adding information in the target text. In other words, Machine translation tends to apply omission or substitution way in translating descriptive text. In this chance, the researcher would like to investigate the cohesion shift, which is done by machine translation.

The researcher assumes that the orientation of machine translation is on source text than target text. It is to indicate the weakness of MT in translating. Human touch is needed in this case. Based on the researcher's insight on the case above, the

researcher would like to describe the translation shifts in descriptive text done by machine translation (google translate, Yandex translation, bing Microsoft translate, pons translate, Ttalk).

Catford in Sipayung (2018) states that there are two major translation level shifts and category shifts. In addition, he defines category shift as structure shift, class shift, unit shift, and intra- system shift. Noor, Sinar, Ibrahim-bell, & Setia (2017) said that translation shifts in translation were influenced by the level of understanding of the source text (ST). It is to indicate that shifts in the translation are categorized as a procedure since the changing in the level of grammar or class. The change occurs in the absence of equivalence meaning on TT. It's to indicate that humans and machines have a different level to analyze the meaning of ST. Based on the statement above, the researcher has a great desire to describe translation shifts which is done by MT. This research will explore the frequent of machine translation on cohesion shifts in descriptive text. Widarwati (2015) states that shift deals with some changes occurring in a translation process. The changes from source to target occur since the absent meaning or no formal meaning in the target text. So, the purpose of translation shifts to get the accurate meaning from the source to the target text. Blum-Kulka in Lawrence Venuti (2012) states that shift can be divided into two, namely shifts in cohesion and shifts in coherence. In addition, he divides shifts in cohesion become shifts in the level of explicitness (with the target text higher or lower than that of the ST) and shifts in the text meaning (s), explicit and implicit meaning change through translation. meanwhile, the coherence shifts divided into two kinds, namely reader-focused and text-focused. In this research, the researcher focused on cohesion shifts in both types.

Widarwati (2015) states that translation shifts occur both at the lower level of language, i.e. the lexicogrammar, and at the higher thematic level of text. In this research, the researcher investigates the shifts in the level of lexicogrammar or the lower level. The lexicogrammar is realized in the class of semantic category, grammar function, and class. The scope of this research is the reference. Halliday (2014) classifies the class of personal reference into noun and determiner, class of demonstrative reference into determiner, adverb (proximity) and neutral determiner, class of comparative reference into an adjective (general comparison, identity, general similarity, and particular comparison) and adverb (general comparison, identity, general similarity and particular comparison). The whole classification in rerefence become the scope of this research. Bahaziq (2016) states that reference can be identified as the situation in which one element cannot be semantically interpreted unless it is referred to another element in the text.

Similar research (case study on the medical text between human and google translate) was conducted by Ahangar & Rahnemoon (2019), who investigate reference ties from English to Persian. It reveals out that shifts of implicitness and explicitness occur in the process of translation. In line with that Károly, (2014) and

Karoly et al., (2013) also made similar research (case study on Hungarian-English on news text) on the shift of referential cohesion he/she used the theory of Halliday and Matthiessen (cohesion theory) and Bell (structure model). The analysis shows that shifts of reference are not statistically significant and quantitative shifts. Parazaran & Motahari (2015) also conducted a study on cohesion shift on grammatical cohesive in translating narrative text. This study is done with a comparative and descriptive model, this study figures out the motivations undertaken by translators influenced by stylistic preference, systemic language difference, and the translation process itself.

Based on some previous study above, it can be concluded that most of them did not investigate the reference shift which translated by machine translation. Ahangar & Rahnemoon (2019) investigate the reference ties shift, which is translated both human and machine. However, this study investigates reference shift which is translated by some machine translation with cohesion theory based on Halliday and Matthiessen and shift theory based on Blum-Kulka. The researcher would like to describe the machine translation on translating lexical cohesive devices, especially on the reference. How the machine translating reference and relate it to the situation is a great desire to know. How the machine makes shifts through translating ST to TT is an interesting behavior from machine to know. The researcher believes that MT has a weakness in transferring ST to the TT, especially on translation shift on the reference. Noviarini (2021) states that MT, like google translate, cannot replace translators, and google translate has its limitations, including understanding the context and cultural situation of a nation. Their findings are an embrio for this research. In addition to that, the researcher will investigate five machines in this research.

Practically the result of this research will help the scholar in translating. Indirectly, It also contributes to the machine translation for evaluating to improve the process of analysis and transfer from ST to TT in terms of reference. Theoretically, the result of this research is useful for other researchers whose interest in this topic is a reference. The researcher expects the expert of computation linguist to make a balance among cohesion shifts in terms of reference—the purpose of balancing to have high accuracy, acceptability, and readability on translation. As a novelty of this research, it helps the students as a beginner of translator even professional translator in drafting translation. The drafting is based on the translation cohesion shift point of view.

2. LITERATURE REVIEW

2.1 Translation Shift

Catford in Fitri, Lia, Indrayani, & Citraresmana (2014) state that shifts is departures from formal correspondence in the process of going from the SL to the TL. Catford divides shifts into two major types: level shifts and category shifts. In addition to

that, Halliday in Julita (2013) stated that the concept of cohesion refers to relations of meaning that exists within the text and that define it as text. The focus of this research is cohesion shift based on the theory of Blum Kulka in Julita (2013) stated types of cohesion shifts as follow: 1) Shifts in Levels of Explicitness which can be devided in two types like (a) The general level of the target text's textual explicitness is higher than that of the source text (b) The general level of the target text's textual explicitness is lower than that of the source text. 2) Shifts in text meaning(s). It can be devided into two like (a) The explicit meaning potential of the SL changes to implicit through translation (b) The implicit meaning potential of the SL changes to explicit through translation

2.2 Grammatical Cohesion

Haliday and Hasan in Bahaziq (2016) classified that there are four types of grammatical cohesion: reference, substitution, ellipsis, and conjunction. Reference will help the reader or listener to know something in the text. It can be categorized that reference is the situation. It can not be interpreted semantically without another element in the text. Halliday (2014) and Bloor (2017) classify reference into two types: exophoric and anaphoric. The concept of exophoric and anaphoric can be seen in the following figure.

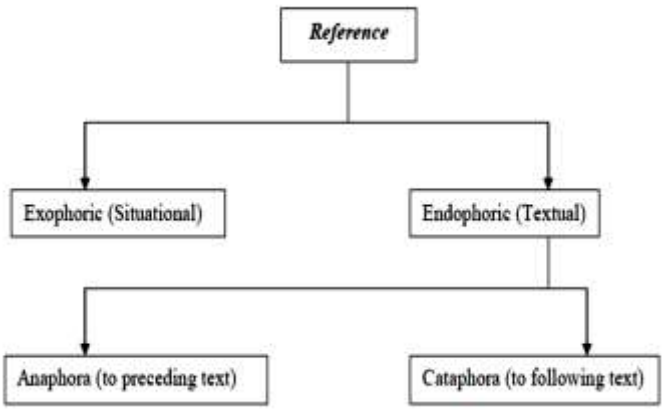

Figure 1. Types of reference

Exophoric reference means to recoverable from the environment of the text. It requires the reader or the listener to interpret by looking beyond the text or environment share. For example, in the sentence: These are a wonderful idea!. To get the meaning of *these* the reader or listener must look at the environment/situation. However, endophoric reference is recoverable from within the text itself. The example of endophoric reference is personal demonstrative and comparative.

2.3. Machines Translation

According to Stevanović & Radičević (2012), there are four main approaches to machine translation: direct translation, rule-based, corpus-based, and knowledge-based. These approaches indicate a certain method or procedure in translating. A direct translation is conducted with a poor code language. The analysis of morphology, syntax, semantic and lexical is a feature of rule-based translation. However, corpus-based is aligned off the large and parallel corpus on pairs of the sentence. Knowledge-based translation approach requires ontological and lexical data. It shows the development of machine translation in translating ST to TT from time to time.

Costa-jussa (2015) states that evaluation in machine translation (MT) is a challenging task. Based on the statement above, the researcher would like to investigate translation shifts (implicitation, explicitation, and meaning change) on language devices in terms of reference made by some translation machines. The researcher believes that machine translation has a weakness in translating. Harper(2018) states that the concept of machine translation was base on word-to-word translation.

3. RESEARCH METHODOLOGY

This research is a qualitative research design. Bogdan & Bilken (2007) states that qualitative research is descriptive. In addition, they state that the data include interview transcripts, field notes, photographs, videotapes, personal documents, memos, and other official records. Based on the statement above, the data of this research is transcription on pairs of translation produced by google translate, Yandex translation, bing Microsoft translate, pons translate, Ttalk.

This research is qualitative descriptive research because it concerns the process rather than results or products. The process of machine translation in translating reference into the variance of cohesion shifts is the researcher's focus. The data of this research are words in the form of reference. The reference refers to personal reference, demonstrative reference, and comparative reference. In collecting data, the researcher copy-pastes the source text (descriptive text) into each machine translation. Then, the machine translation transfers it to the target text (Indonesia). After that, the result (translation) was taken (copy-paste) by the researcher. Finally, the researcher noted and tabulated pairs of translation which are produced by each machines translation.

After collecting the data, the researcher analyzed it by applying three steps to analyze the data. They are data condensation, data display, and conclusion: drawing/verification (Miles, et al., 2014). In data condensation, the researcher reduced the reference which experience shift or not. In data display, the researcher classified each type of reference that experience shift based on the theory of Blum-

Kulka. Finally, the researcher verified or described the cohesion shifts on reference found in descriptive text.

4. FINDINGS

Related to the results of this research, the researcher finds which MT often made cohesion shifts. The researcher also finds the dominant types of cohesion shift from English to Indonesian in descriptive text. The examples can be seen as follow:

Explicitation shifts

Explicitation is a technique of translation in order to add extra information to the target text. In this case, the researcher investigated the explicitation shift, which is made by some machine translation. The example of data analysis can be seen as follow:

Yandex Translation

ST : but overall, he has a bad **ø** attitude
TT : *tapi secara keseluruhan, sikap**nya**buruk*

The example above shown us that Yandex translation made an addition in TT. The addition is "*nya*" in TT. This addition leads to the explicitation shift. The word "*sikapnya*" in TT must become from "his attitude"; however it is from "ø attitude". It indicates that the general level of the TT's textual explicitation is lower than that ST.

Ttalk and Pons Translate

ST : ...typical British behavior about **her**
TT :....*perilaku khas inggris tentang **dirinya***

Based on the data above, the literal meaning of "her" is *"nya (perempuan)"* but in this case, Ttalk and Pons Translate made it become *"dirinya"*. It is to indicate that the general level of the TT's textual explicitation is lower than that ST.

Implicitation shifts

Implicitation also a translation technique. It is the opposite of explicitation. Implicitation tends to reduce some information from the source text to the target text. Vinay and Darbelnet in Sipayung, Lubis, Setia, & Silalahi (2017) state that implicitation is a stylistic translation technique that consists of making what is explicit in the source language implicit in the target language, relying on the context or the situation for conveying the meaning. The example of data analysis on implicitation shift which is made by machine translation, can be seen in the following example.

Google Translate

ST : .....that most people hate **him**
TT : .....*dibenci* **ø** *kebanyakan orang*

The example of data analysis above shown us that google translate make an implicitation shift. literally in ST, the meaning of "him" (personal reference) becomes *"nya"* in TT, but google translate made it become "ø"(zero). The implicitation shift occurred since the ommition in the target text. It shows that the general level of the TT's textual explicitation is higher than that ST.

Yandex Translation

ST : but overall, **he** has a bad attitude
TT : *tapi secara keseluruhan,* **ø** *sikapnya buruk*

Obviously seen that yandex translation made an implicitation shift on personal reference "he" to the TT. literally, the personal refference "he" become "dia" in TT but Yandex translation ommit it becomes ø (zero). It's to indicate that the general level of the TT's textual explicitation is higher than that ST.

Bing Microsoft Translate

ST : .. I had **the** oppurtunity to ...
TT : ... *saya memiliki* **ø** *kesempatan untuk*

The article "the" in the source is translated become ø (zero). It happens because of commission. It indicates that Bing Microsoft translate makes implicitation shift through translation.

Pons Translate

ST : He is **the** son of **the** headmaster
TT : *dia adalah* **ø** *putra* **ø** *kepala*

A similar thing also happens to Pons translate. Both references "the" in the source are translated become ø (zero). Omission has occurred through translation. The omission leads to the implicitation shifts. It means that the general level of the TT's textual explicitation is higher than that ST.

Ttalk

ST :...**that** Jane Goodall came to...
TT :... **ø** *Jane Goodall datang ke....*

The demonstrative reference in the source text "that" is translated becomes ø (zero). It is to indicate that there is an ommition of information from source to the target which is made by Ttalk. Based on the data above, most demonstrative references are translated to become ø or zero. It means that those machines made the implicitation shifts.

Meaning change

The meaning change is also categorized as a translation technique. The source meaning potential is changed through translation. The changes of meaning potential will lead to the explicitaton or implicitation. The example of data analysis on meaning change which is produced by some machines translation on reference can be seen as follow.

Google Translate

ST : We did know each **other**
TT : *Kami tidak **saling** kenal*

Literally, the word "other" is translated become "*yang lain/lain*" however, google translate made a meaning change become "*saling*". It is to indicate that explicit meaning potential of the source text changes through translation. A similar thing occurred in Yandex translation, Pons translate, Bing Microsoft Translate, and Ttalk.

Ttalk

ST : ... as fit as **that** of a young woman....
TT :...*sama bugarnya **dengan** seorang wanita...*

Obviously seen that the word "that" is translated into *"dengan"*. However, the literal meaning of that is *"itu"*. In this case, Ttalk makes a meaning change in the process of translation. It is to indicate that explicit meaning potential of the source text changes through translation.

The detail of the research result can be described in the following table.

Table 1. Percentage of Translation shifts on reference made by Machine Translation

Machine Translation	Explicitation	Implicitation	Meaning Change	Total shifts
Google Translate	3,2%	80,6%	19,3%	31
Yandex Translation	0%	60,6%	18,1%	33
Bing Microsoft Translate	0%	70,3%	29,6%	27
Pons Translate	3,3%	66,6%	30%	30
Ttalk	3,2%	77,4%	19,3%	31

The table above shows us that Yandex translation place a high frequency (33 shifts) on translating shifts, especially in translating language devices like reference. However, Bing Microsoft place a low (27 shifts) frequency in translation shifts in term of reference. It is to indicate that machines have a different strategy and way, especially on translation shifts.

Explicitation shifts are weak shifts than the others. It can be seen that Yandex translation and bing Microsoft translate produce 0% in shift translation, especially on the reference. However, the dominant one is Pons translate (3,3%). It's to state

that these MT are weak in producing target text at a higher level than the source, like From zero to words, words to phrases, phrases to clauses, clauses to sentences. Machines translation tends to omit and eliminate some information from source to target in the process of translation.

Implicitation is a dominant shift among the other shifts. In addition, Google translate is placed a high frequent (80,6%) among the other machines. However, the low frequency is made by Yandex translation (60,6%). Machines translation are often to do this shifts than the others shifts. It can be seen from the table above. It's to indicate that those machines tend to omit some information from the source in the process of translation. The implicitation shifts accrued since the omission, elimination, and substitution of information like from words to zero (ø), phrases to words, clauses to phrases.

The medium shifts are meaning change/shifts. It's to indicate that there is a change in the same level, like words to words, phrases to phrases, and clauses to clauses—the changes which are made by MT lead to the changing of meaning. Pons translate is a machine that often (30%) made a meaning change through translation. However, Yandex translation is seldom (18,1%) to make meaning shifts.

5. DISCUSSION

The significant result of this research state that Yandex made more translation shift than other machines. Noor et al (2017) state that professional translators did more shifts than a beginner. It is to indicate that neuro linguistics of Yandex better than other MT. However, Dhakar, Sinha, & Pandey(2013) examine translation quality between google and bing translation describe that bing translator is better than google translate. It is not supported by these findings (see table 1) based on translation reference shift point of view (Noor et al., 2017). The deepest research is needed to prove this gap. In addition to that implicitation shift is a dominant shift than the other. Based on the result above to indicate the advantages and disadvantages of using a machine in translating.

Tohmetov, Ushakov, & Vanushin (2014) examine the problems on machine translation (Yandex) figure out the weakness of MT in translating lexical, conjunction, polysemy, syntactic, production, and transmission. However, the translation accuracy works better from time to time. It supports the result of this research on meaning changes that occurred in the translation process. A machine can translate the source to the target in a short time. Besides, Meyer & Webber (2013) examine the connectives MT in implicitation discourse with semi-automatic method state that human reference translation from English to French or German is not translated in comparable forms up to 18%.However, the production-like implicitation shift to indicate that machine tends to reduce or omit source information, it supports the finding of Ahangar & Rahnemoon (2019). Harper (2018) states that Every natural language is having different sentence structures, grammar,

and lexicons. Besides, he states that that the concept of translation was base on word-to-word translation. It is the reason why implicitation and meaning shifts are dominantly done by MT. This study proves that Yandex made a translation shift more often than other machines. It is also beneficial for the translator to use this machine. A translator will not spend time too long. A translator can make machine translation as a first draft before re-expressing meaning to the target language.

The current research of Ahangar & Rahnemoon (2019) examines the changes in reference ties in the level of explicitness between human translation and google translate on medical texts. This research figure out that explicitness and meaning shift can be experienced as the optional shift in translating demonstratives plus referents. In addition, this research also states that the omission of *it* and *they* categorized as not a shift. Károly (2014) examines shifts of referential (personal, demonstrative, and comparative) cohesion from Hungarian to English. In his/her research state that the shift of references (corpus) is not significant statistically/quantitative shifts in translation and fails to provide evidence; however, it contributes more explicitly to news content. In addition, Wu (2014) investigated shifts of (references, substitution, ellipsis, conjunction, and lexical cohesion) English-Chinese translation with the same theory. This study declares that topic prominence and subject prominence are explored from both language perspectives. Based on Parazaran & Motahari (2015), who investigates the shift of grammatical cohesive devices on narrative text with comparative and descriptive model, showed that target text adopts all types of grammatical cohesive devices except verbal and causal substitution in Persian. This research emphasizes that three types of shifts were applied in translation.

Based on the previous findings above, the novelty of this research indicates that Yandex produces more reference shifts. It means that the neuro linguistic as MT brain of Yandex more sophisticated than others. However, better neuro linguistics will be born. That is why we need to analyze it based on the functional linguistic theory or other linguistics theory. Human touch is really needed for MT production.

6. CONCLUSION

The implicitation is dominant occurred since the ommition and elimination. In addition to that, explicitation shift occurred since the addition of information in the target. However, these shifts placed the lowest frequency. Yandex and bing microsoft translation did not apply these shifts in translating reference. MT also able to make meaning change in the same level like the word for word, phrase to phrase, and clause to clause. But in this case, the level is still on words. It was a benefit for the students to adopt meaning change as a step before re-structuring the meaning. MT is lack to produce a higher level or to explore more information in the target. This weakness will lead to the usage of (reader and listener) lost information. MT can create meaning change at the same level through translation. It's to indicate that

meaning potential is changed to the target through translation. It's recommended to the next researcher for investigating the translation quality since the meaning change on reference or other language devices.

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