TRANSLATION OF ROBOTICS TERMS FROM ENGLISH TO INDONESIAN

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Abstract

The objective of this research is to examine the use of translation strategies to translate robotics terms in Big Hero 6 – Hiro to the Rescue novel from English to Indonesian. The aim is to find out what strategies the translator mostly uses to translate robotics terms. This research uses qualitative method where the result of research with this method is strongly influenced by the views, thoughts, and knowledge possessed by the researcher. Through the research, from seventeen translation strategies, the translator uses seven translation strategies to translate robotics terms in the novel. Those translation strategies are: (1) transposition 15 times or (46%), (2) naturalization 5 times or (15%), (3) literal 4 times or (12%), (4) modulation 4 times (12%), (5) reduction 1 times (3%), (6) descriptive equivalent 2 times or (6%), and (7) transfer 2 time (6%). Therefore, more that 50% robotics terms are translated by using transposition strategy. It is inferred that there are some changing position of words and phrases from English to Indonesian so that the translator must find the most equivalent translation by finding the nearest style in TT.

Keywords: novel, robotics terms, translation strategy

1. INTRODUCTION

Since hundreds of years ago, books have been something that people need. They need books for various purposes. The purposes depend on what the people need the books for. Although, some people think that reading books is an academic activity only. According to Noor in (Akarsu & Dariyemez, 2014), it is true reading is valued as the most

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important academic skill especially for all second and foreign language learners in higher learning environment.

But aside from academic purpose, people read books for entertainment purpose as well. Reading books can be entertaining and enjoyable if people have an interest in reading. Furthermore, it can help them to gain new knowledge in the easiest way. Developing a reading interest is harder when people are older and busy with their lives. They would rather spend their free times doing something else than read books. That is why a person needs to inculcate a reading habit from early age, or at least in their teen ages, so their reading interest will grow alongside them.

For that reason, Disney publishes various books for young readers. They mostly publish books based on their movies. One of them is *Big Hero 6 – Hiro to the Rescue* written by Victoria Saxon. This is a novel adaptation of *Big Hero 6* movie that aired in 2014. Originally, this novel is written in English. English is probably the most widely translated language in the world. For people where English is not their main language, such as Indonesia, it will be hard for them to read the novel. The difference between two languages can easily drive away their interest to read. So, to overcome this problem, a translation is needed.

Translation is a product created by a translator. Since most translators want to be recognized as professional workers, they have to do their work in high professionalism as well. In addition, a translator needs to work harder to produce a good translation. So, while doing a translation, they need to follow certain translation strategies in order to create a translation that can be understood by the targeted readers. This also includes in translating the novel of *Big Hero 6 – Hiro to the Rescue* that has been translated into Indonesian language with the title of *Big Hero 6 – Hiro Datang Menolong* by an Indonesian translator named Debbie Daisy Natalia.

The novel is about a genius teen named Hiro who loves robotics and invents robots together with his brother since they were young. Hiro, who graduated high school when he was thirteen, chooses a career in robot fights. Unlike his older brother, Tadashi, who chooses to continue his study in a prestigious university. It all changes after he meets his idol, Professor Callaghan, that he decides to enroll to the university where he can study robotics with Tadashi through a Tech Showcase. Though unfortunately, Tadashi dies in a fire that happens at the said showcase.

Because the main character is a genius who is passionate in robotics, readers can find some robotics terms in the novel. For robotics experts, words related to robotics are easy to understand. But as for common people, especially children, they are more difficult to understand because robotics is a higher level of knowledge. Following the translation strategies, the translator of this novel need to make sure their translation is understandable for the targeted readers who are first to fourth graders. Therefore, in this paper, writer will analyze about what strategies the translator mostly used to translate robotics terms that can be found in the novel of *Big Hero 6 – Hiro to the Rescue* from English to Indonesian.

2. LITTERATURE REVIEW

Generally, people define translation as changing one language into another language. While it is not entirely false, the definition does not give a specific idea of what a translation is. According to Newmark (in Muam & Nugraha, 2020), *translation is the expression of meaning from one language to another as the meaning intended by the author.* Basil Hatim, (2019) states that translation is the process of transferring a written text from (source language) to (target language), conducted by a translator, or translators, in a specific socio-cultural context. Following to the definitions, Bushouse (2015) adds that translation specifically denotes the process part of the change in a linguistic text.

Based on those definitions, it can be inferred that translation is used to transfer written text from source language into target language. Although sometimes, people mistaken translation as the same thing with interpreting. Both translation and interpreting may have the source language transferred into target language, but they are in different terms. If translation involves written text, then interpreting involves oral language transfer. In short, the same in language transfer, but in different context.

A translator needs to do their job seriously. The translation they do must have the equivalence in term of meaning. It is so the people who do not understand the source language can understand and receive the messages in target language. If the translation does not have the equivalence in term of meaning, the targeted readers would not be able to receive the messages because they do not understand what the translator translated from the source language. That is why translation must be done carefully and thoroughly so there will be no mistake in translating the source language into target language.

Translation may seem easy to do, given the definition being transferring one language to another language. But actually, how translation works is not that easy. A translator needs to determine about what strategies they should use to translate. These strategies are used for sentences and smaller units of language such as words. Every translator will surely find many words that have a lot of meanings, and with different contexts as well. That is why a translator should know about translation strategies so they can translate the text with minimum mistake and make it understandable for the targeted readers.

For common people, translation strategies sound complicated and pleonastic when they think they can just transfer one language to another language with the help of a dictionary or online translator application. But as a matter of fact, translation strategies are more than

what common people think. Translation strategies are there to help translators do their job. Because of the existence of many languages in the world, there will be times where a translator finds words that are hard to translate due to the context of the texts. A certain context can affect the meaning of even just one word. So, these translation strategies can be a guide for translators to make the translation corresponds with the context.

According to Newmark (1988), there are 17 translation strategies that are used in translation (1) transference, (2) naturalization, (3) cultural equivalent, (4) functional equivalent, (5) descriptive equivalent, (6) componential analysis, (7) reduction and expansion, (8) synonymy, (9) through translation, (10) transposition, (11) translation label, (12) modulation, (13) recognize translation, (14) compensation, (15) paraphrase, (16) couplets, (17) notes, addition, glosses.

Over the years, there are many things that have changed around us. Be it the humans or the environment, they all change from time to time. We can even find big changes that do not exist in the past, including technology. The technology that we know helping us in various way, facilitating our activities in daily basis. From all the technologies that exist in the world, there is what people know as “robotics”. But what is robotics?

Robotics, as defined by (Matarić, 2008), is the study of a robot’s autonomous and purposeful sensing and acting in the physical world. In other words, robotics is related to robots that have been, are, and will be invented by the people in the related field. Robots are invented to facilitate humans in many ways. They can even do difficult things that are almost impossible to do by humans, such as life-threatening deep sea and outer space explorations. It gives us a huge impact in various aspects in our lives. Although sadly, not many people knows that we are slowly being replaced by those robots. That being said, the heavy pressure to invent something new received by robotics engineers around the world have increased in significance.

Dirican (2015) explains that the evolution of new technologies is supported by the people's changing needs and behaviors. Furthermore, not only people demand for something new that not only can help them in many ways, but also something that is mind-blowing. Something that never exists before. In other words, something that can make people think why they never think of inventing that.

Schaal (2007) says that researches in robotics field have moved away from their main focus on industrial ventures. They are now also focusing in other aspects such as children's education, elder care, search and rescue, physical therapy, and other general assistance in daily basis that will benefit us, humans, in the future. To illustrate this, we can take the use of prosthetic leg in the medical field. Prosthetic leg is invented to help people who have their legs amputated due to illness or accidents to be able to walk normally again. At first, it looks like metal bars that have been assembled into the shape of a leg. But since robotics is a growing field, there may be prosthetic legs that resemble with real human legs in the future.

Another example that many of us know is a drone. Drone is a technology of an unmanned aircraft that can be controlled with a remote control from a long distance. In Indonesia, drones are used by the search and rescue teams to located hikers who are lost in the mountains or the woods. They are also used to monitor the situation around dangerous areas such as areas near volcanoes that show eruption activities. It is more efficient because it can be remote-controlled from long distance, save more time, and prevent people from getting caught in a life-threatening situation.

After a brief insight of robotics, there is another thing called robotics term. Also in his book, Matarić (2008) states that robotics term was first used by an astonishing science fiction writer named Isaac Asimov based on Capek's term of robot. Robotics term is used to

describe or express anything that is related to robotics, such as the autonomy, sensing, action, and goals of a robot. Because robotics is a branch of technological study which the main focuses are about the design, construction, operation, and application of robots, there are many foreign terms that can be found in the study. So, robotics term exists to give an overview and better understanding to people about things that are related to robots in the study of robotics.

Some related research have been done by (Jayantini, Yadnya, Suparwa, & Puspani, 2017), (Khaerun., 2003). Some strategies of translating terminology are mostly borrowing and naturalization due to the research is focused on phonological viewpoint so the findings show most of the terminology are close to ST. However, reduction and transposition are used as well.

3. METHOD

Qualitative method is applied in this research by using content analysis and a kind of study case analysis which taking the data form a novel entitled *Big Hero 6: Hiro to the Rescue* written by Victoria Saxon and Indonesian version of *Big Hero 6: Hiro Datang Menolong* translated by Debbie Daisy Natalia. All the data is selected based on the characteristics of robotic terms, which related to robotic. The analysis is conducted by comparing both Source Text (ST) and Target Text (TT) to find strategies of translation used in translating robotic terms.

4. RESULT

The result shows there are 33 data found in this research. All those data is analyzed by using the theory of strategies of translation by Newmark. Detail data analysis will be show in table 1.

Table 1

Result of Strategies of Translation Analysis

No	Strategy	Amount	percentage
1	Transposition	15	46%
2	Naturalization	5	15%
3	Literal	4	12%

4	Modulation	4	12%
5	Reduction	1	3%
6	Descriptive equivalent	2	6%
7	Transference	2	6%
Total		**33**	**100%**

Table 1 shows that the most strategy used is transposition reach up to 46%. It implies that most of robotic terms in English have different form and pattern with Indonesian, so that the translator must find the equivalent translation form ST into TT. Detail discussion of table 1 will be elaborated in the next sub chapter.

5. DISCUSSION

In this part, the discussion will be started from the highest into the lowest strategy used in translating robotic terms from English to Indonesian.

5.1 Transposition

Transposition is the most strategy used in translating robotic terms form English to Indonesian in the novel *Big Hero 6 – Hiro to the Rescue.* Some of the case will be discussed as the following example.

Data (1)

ST: the mag-lev wheels

TT: *roda-roda magnet*

Data 1 shows the used of strategy to translate "the mag-lev wheels" is transposition. It can be seen by its position of the adjective and noun of ST into "*roda-roda magnet"* in TT.

the mag-lev wheels

roda-roda magnet

In ST noun is at the end of the phrase and adjective is in the beginning. While in TT, noun is in the beginning and adjective is at the end of the phrase. It occurs due to the different pattern of English and Indonesian.

5.2 Naturalization

Naturalization strategy used for five time or 15% from 33 data found. The discussion will be shown as the following data.

Data (13)

ST: Professor Robert Callaghan, who taught **robotics**, was standing behind them.

TT: *Profesor Robert Callaghan, yang mengajar* ***robotika****, berdiri di belakang mereka.*

In data 13 the bold part "**robotics**" in ST in translated into "***robotika***" in TT. It shows that strategy used by the translator is naturalization because the word "***robotika***" is naturalized from "**robotics**". Another example is in data 18.

Data (18)

ST: "The microbots are controlled by this **neural transmitter**".

TT: "*Mikrobot dikendalikan oleh* ***neurotransmiter*** *ini".*

In data 18, the bold part is a robotic term. It is translated by using naturalization strategy. It can be seen the word "***neurotransmiter"*** is naturalized from English robotic term **neural transmitter**.

5.3 Literal

Strategy of literal translation is used 4 times or 12%. Literal means the translation of ST is translated into the literal meaning in TT based on its real meaning on dictionary. Below is the detail discussion;

Data (8)

ST: "I **programmed** him with more than ten thousand medical procedures,"

TT: "*Aku* ***memprogramnya*** *dengan lebih dari sepuluh ribu prosedur medis,*"

In data 8, "**programmed**" is categorized as a robotic term because it is usually used in robotics. The word "**programmed**" is translated into "***memprogram***" it is a literal meaning.

Data (11)

ST: Baymax **scanned** Hiro's injury and sprayed it with medicine.

TT: *Baymax **memindai** luka Hiro dan menyemprotnya dengan obat.*

The word "**scanned**" in ST is translated into ***"memindai"***. The literal meaning is chosen by the translator to translate this word. "scanned" is categorized as a robotic term because this word commonly used in robotics.

5.4 Modulation

Modulation strategy is used for four times or 12% in translating robotic terms in this research. Modulation occurs when the translator has a different point of view with the author. Here is the detail example and discussion;

Data (5)

ST: **a white robot emerged and instantly filled with air**

TT: ***muncul robot putih yang langsung menggelembung terisi udara***

Data (5) is translated by using modulation strategy. It can be seen that the ST is translated into different point of view in TT. Where in the TT there is some different changing position of verb, noun and also some additional word "menggelembung" to express detail situation of ST in TT.

Data (10)

ST: **This chip is home to the caregiving matrix.**

TT: ***Dalam cip ini ada matriks perawat.***

Data (10) is a unity of the robotic terms because all the words are related to the robotics. In data 10 the translator has a different point of view with the author. It can be seen from the structure in ST are Subject+predicate+object while in TT adverb+subject+object. The translator also omitted a word "home" and replaces it with "*ada*". It can be concluded that data 10 is translated by using modulation strategy.

5.5 Reduction

Naturalization strategy is used for 1 time or 3% data was translated by using naturalization strategy. Below is the example data.

Data (1)

ST: **the mag-lev wheels**

TT: ***roda-roda magnet***

In data (1) "**mag-lev**" is an abbreviation for magnet-levitation but it is translated by reducing the word levitation in TT becomes "***roda-roda magnet***".

5.6 Descriptive Equivalent

Descriptive equivalent strategy is used for 2 time or 6% of robotic terms found in this research are translated by using descriptive equivalent strategy. Here are the example data.

Data (26)

ST: Baymax got new armor, powerful rocket fists, **wings, and thrusters** for his feet.

TT: Baymax mendapat baju pelindung baru, sepasang sarung tinju roket, dan ***sepasang sepatu roket.***

The bold part in data (26) is translated by using descriptive equivalent. It can be seen there is some additional description in translating "**thruster**" in ST becomes "***sepatu pelindung roket"*** in TT the description is given to describe that it is a kind of a rocket thruster.

Data (15)

ST: The professor stared at the **fighting bot** in Hiro's hands.

TT: *Sang profesor menatap* ***robot petarung*** *di tangan Hiro.*

The word "**fighting bot**" in ST is translated into "***robot petarung***" in TT. It shows the TT is given some description by the translator to give additional information in TT.

5.7 Transference

In this research transfer strategy is used for 2 times. Transference strategy is used when there is no an equivalent word in TT. So the

translator took the word directly without translate it. below are the example data.

Data (22)

ST: Hiro created a full set of armor for Baymax using his 3-D **printer.**

TT: *Hiro menciptakan satu set baju pelindung lengkap bagi Baymax dengan menggunakan* ***printer*** *3-D.*

The bold part in data 22 is translated by using transference strategy. It is because the word "printer" is a common word for Indonesian people. However, printer can be translated into "**pencetak**".

Data (33)

ST: He quickly fixed Baymax's super **sensor.**

TT: *Ia segera memperbaiki* ***sensor*** *super Baymax.*

The bold part ini data 33 is translated by using transference strategy. The word "**sensor**" in ST directly transferred into "***sensor***" in TT.

6. CONCLUSION

Based on the result of the analysis, the conclusion can be drawn that the most strategy used in translating robotics terms in the novel *Big Hero 6–Hiro to the Rescue* from English to Indonesian is transposition strategy. It is used for 15 times from 33 data or 46% data are translated by using this strategy. According to the finding, most of the data has a different arrangement of noun phrase between English and Indonesian. In Indonesian language, noun phrase is noun followed by adjective, while in English adjective followed by a noun.

Second most used strategy is strategy of naturalization used for 5 times or 15%. This happened due to some robotics terms in Indonesia are from English which naturalized to Indonesian. For instance optic-*optik,* neural, transmitter-*neurotransmiter*, teleportation-*teleportasi*, and mechanism-*mekanisme.* Next, the third most used strategy are literal

and modulation for 4 times or 12% for each, descriptive equivalent and transference for 2 times or 6% for each, and reduction for once.

What can be inferred from the research finding is, firstly, the data of this research is words and phrases, thus the strategy of translating robotics terms are mostly transposition. It implies the translation adjusts to TT in form and style. Secondly, naturalization takes the second strategy highest position in translating robotic terms. It implies some of robotics terms do not have equivalent meaning in TT. This research provide some information about strategy of translating robotics terms form English to Indonesian in the novel *Big Hero 6–Hiro to the Rescue.* This research is a study case analysis, so the result is very limited. It needs deeper analysis to find deeper finding.

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