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Pauses by Student and Professional Translators in Translation Process

Rusdi Noor Rosa[1]*, T. Silvana Sinar[2], Zubaidah Ibrahim-Bell[2], Eddy Setia[2]

[1]*Linguistics Department, University of Sumatera Utara, Medan, Indonesia, English Department, Faculty of Languages and Arts, Universitas Negeri Padang, Indonesia*
[2]*Linguistics Department, University of Sumatera Utara, Medan, Indonesia*

Corresponding Author: Rusdi Noor Rosa, E-mail: rusdinoorrosa@yahoo.com

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ABSTRACT

Translation as a process of meaning making activity requires a cognitive process one of which is realized in a pause, a temporary stop or a break indicating doing other than typing activities in a certain period of translation process. Scholars agree that pauses are an indicator of cognitive process without which there will never be any translation practices. Despite such agreement, pauses are debatable as well, either in terms of their length or in terms of the activities managed by a translator while taking pauses. This study, in particular, aims at finding out how student translators and professional translators managed the pauses in a translation process. This was a descriptive research taking two student translators and two professional translators as the participants who were asked to translate a text from English into bahasa Indonesia. The source text (ST) was a historical recount text entitled 'Early History of Yellowstone National Park' downloaded from *http://www.nezperce.com/yelpark9.html* composed of 230-word long from English into bahasa Indonesia. The data were collected using Translog protocols, think aloud protocols (TAPs) and screen recording. Based on the data analysis, it was found that student translators took the longest pauses in the drafting phase spent to solve the problems related to finding out the right equivalent for the ST words or terms and to solve the difficulties encountered in encoding their ST understanding in the TL; meanwhile, professional translators took the longest pauses in the pos-drafting phase spent to ensure whether their TT had been natural and whether their TT had corresponded to the prevailing grammatical rules of the TL.

INTRODUCTION

Pauses are generally understood as a temporary stop or a break indicating doing nothing in a certain period of time. However, such understanding does not apply in translation process because every translator took pauses while doing their translation tasks. Pauses are central in process-oriented descriptive translation studies (DTS) as researches on translation process often try to find out the duration of pauses (e.g. Alves and Vale 2009; Angelone 2010; Dragsted and Hansen 2008; Jakobsen 2011), the reasons motivating to take pauses (e.g. Dimitrova 2005; Kumpulainen 2015), and the activities during pauses (e.g. Dragsted 2012; Jaaskelainen 1999, 2000; O'Brien 2006, 2009; Seguinot 1989).

In an effort of exclusively revealing the nature of pauses – which should be different from other related 'break' activities in translation process –, Seguinot (1989, p. 31) distinguishes pauses from hesitations by defining pauses as "interruptions in the typing of translation" and hesitations as "unusually slow typing". Nevertheless, the word "interruptions", despite being followed by many scholars in defining pauses, should be revisited for containing negative sense. In doing so, Carl, Lacruz, Yamada and Aizawa (2016) use the term "gaps" to replace the word "interruptions". They further say that pause analysis could be used as a method to detect the amount of 'cognitive effort' in translation (Carl et al., 2016, p. 4). However, the question arises in terms of the exact cognitive processes taking place during the pauses. In addition, different translators took pauses for different activities and purposes because professional translators, for example, might take pauses differently compared to non-professional ones. Therefore, it is worth comparing the behaviour of student and professional translators in taking pauses while translating a text. This research is aimed at finding out how the student translators and professional translators manage the pauses in the translation process. Theoretically, this research contributes to reveal the essence and the role of pauses in translation to develop the terminology in process-oriented descriptive translation studies. Practically, the findings of this research contribute to characterize student translators and professional translators in terms of their activities while taking pauses.

LITERATURE REVIEW

Pauses in translation process are seen as indicators of cognitive processing, the centre discussion of translation process

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research (Alves 2006; Jakobsen 1998, 2002; Screen 2016). As Kumpulainen (2015, p. 48) says that translation can be regarded as a complex cognitive task that involves planning and problem solving linked with interlingual and intercultural processing, and cognitive task is manifested in pauses. In line with Kumpulainen, Krings (2001, p. 304) states that language production research shows that pauses are of great value in the identification of processes, and especially process boundaries. In addition, the high operationality of pauses is an advantage for data analysis. He uses pauses as markers for identifying "writing acts" in post-editing activity.

Pauses as indicators of cognitive processing have been frequently mentioned in the literature; however, differences arise as to the duration of what is regarded as a significant pause. For Krings, the duration of a pause is one second for being an arbitrary unit, but he justifies this by saying that it made sense for his data analysis: one second was long enough to identify a distinguishable gap in verbalization flow and pauses of that length were easy to identify acoustically and to record with relatively reliable inter subjectivity (Krings 2001, p. 210). Angelone (2010) and Gopferich (2010) adopt the same length of pause duration. Dragsted et al. (2009) consider the significant pause length to be 2.5 seconds; however, a year later he did another study reporting that the pause length is more than 1 second (Dragsted 2010).

In addition, Jakobsen (1998) investigates pauses in the context of translation process analysis using the Translog tool. He states that "the assumption that time delay during text production and translation correlates with cognitive processing is strongly supported by the systematic syntagmatic distribution of delays" (Jakobsen 1998, p. 100). In his article describing how the keyboard monitoring software Translog records pauses, he claims that a pause unit of 0.20 seconds brings us close to many subjects' typing speed. He also suggests that a pause length of 1 (one) second is appropriate for observing delays in a text production event. He says that for the purpose of observing the distribution of longer delays in a text production event, a representation with a 1 second time unit will often turn out to be very appropriate because it represents all the delays we want to identify and suppresses most of the delays we are not interested in.

On the other end of the scale, Jakobsen argues that a time delay greater than 10 seconds will identify text initial and text final delays, delays between paragraphs, and delays appearing less systematically in front of particularly difficult text segments (Jakobsen 1999, p. 84). In addition, Jakobsen (2002, p. 191) investigates how time is divided between translation phases across semi-professional (senior cycle students) and professional translators. The phases he identifies are the initial orientation phase, the middle drafting phase and the final revision phase. Jakobsen observes a difference between the professional and semi-professional translators in the allocation of time between the three phases. He reports that, on average, professional translators dedicated more time to the initial phase and less time to the drafting phase than semi-professional translators.

Hansen (2002) investigates two hypotheses regarding the occurrence of pauses in the translation process. Her firsthypothesis is that some translators demonstrate specific pause behaviour in translation which is independent of language direction. Her second hypothesis is that there is no correlation between the position, duration and number of pauses and the quality of the translation product. She classifies pauses into *Orientierungspausen* (orientation pauses), *Kontrollpausen* (control pauses), *Binnenpausen* (internal pauses) and *Monitoringpausen* (monitoring pauses) (Hansen 2002, p. 33). Using Translog and an empirical approach, Hansen confirms her two hypotheses: translators do demonstrate specific pause behaviour and there is no correlation between the occurrence of pauses and the quality of the product. Hansen's finding regarding individual translator behaviour is interesting because it confirms claims regarding pauses in language production research and is consistent with findings from the current study.

In this research, through the help of a keylogging program, Translog, the length of pauses is determined as short as 0.01 seconds. Such length of pause duration has once been mentioned by Immonen (2006, 2011) arguing that "even the miniature pauses of 0.01 seconds are of interest".

METHOD

Research Design

This was a qualitative research aiming at exploring problems and deeply understanding the pauses in the translation process from English into Bahasa Indonesia.

Data and Source of Data

The data of this research were the translation process from English into bahasa Indonesia, and the source of data was the English text entitled 'Early History of Yellowstone National Park' downloaded from *http://www.nezperce.com/yelpark9.html*. In order to confirm its readability, the ST was measured using three different readability indices: Flesch Reading Ease Score (FRES), Flesch-Kincaid Grade Level (FKGL) and Coleman-Liau Index. FRES was used to measure the difficulty level of the text, and the score (49.4) indicated that the text was hard to read. The FKGL was used to grade the level of the readers, and the score (10.9) indicated that the text was suitable to be given to eleventh grade readers, equal to a college level at the non-English speaking country confirmed by the score (13) based on the the Coleman-Liau Index. The importance of measuring readability of the text in translation has been suggested by Acar and Işisağ (2017).

Participant Characteristics

The participants of this research were student translators (hereinafter called Student) and professional translators (hereinafter called Professional). The student translators were the students of Master Degree Program of Linguistics Department majoring translation studies at the University of Sumatera Utara. The participant selection criteria for the Students followed Kourouni's (2012) suggestions emphasizing on the participants' homogeneous profile.

1) They are familiar with major web search techniques for translation purposes.
2) They are expected to be familiar with the type and style of texts to be used, as a result of attending the "Translation Workshop";
3) Their mother tongue is bahasa Indonesia;
4) They have never worked as professional translators in the past, i.e. they have not translated outside the educational setting nor have they received money for any translation-related work;
5) They belong to the same age group.

Meanwhile, the professionals were selected based on the following criteria:

1) They have completed an MA in Translation and Interpreting studies
2) They have more than five year's professional experience on translation
3) They are members of HPI (Association of Indonesian Translators).

Data Collection Method

In collecting the data, two data collection methods were applied in this research, they were translog protocols, think-aloud protocols (TAPs) and screen recording.

RESULTS AND DISCUSSION

Data Analysis

In terms of time consumption, there was no difference between the Students and Professionals, even one of the Professionals spent longer time in translating the text. The data obtained from the Translog protocols concerning the total amount of time spent by the Students and Professionals in translating the text are shown in Table 1.

Based on the data displayed in Table 1, in translating the text, Student A spent 1 hour and 26 minutes (86 minutes), Student B spent 53 minutes, Professional A spent 36 minutes, and Professional B spent 1 hour and 8 minutes (68 minutes). That Professional B spent longer time than Student B in translating the text means the time spent in translating the text was not able to distinguish professional translators from student translators.

When the time they spent was compared to the number of words they translated, Student A, who spent 86 minutes in translating the text, translated an average of 3 words per minute (wpm). This translation speed did not only include the time spent in the pre-drafting and drafting but it also included the time spent in post-drafting. Student B who spent less time in translating the text had, on average, a translation speed of 5 wpm. Meanwhile, Professional A had, on average, a translation speed of 7.5 wpm, and the average translation speed of Professional B was 4.5 wpm. The result of this average translation speed was obtained by dividing the total number of the ST words with the total amount of time spent by the Students and Professionals in translating the ST.

The translation activities within such total amount of time are divided into two: typing and pauses (gaps in typing activities during translation process). The result of the analysis concerning the amount of time spent by the Students and the Professionals for pauses is presented in Table 2.

Table 1. The total time spent by the participants in translating the text

Participants	Time spent in the translation process
Student A	86 minutes
Student B	53 minutes
Professional A	36 minutes
Professional B	68 minutes

Student A

Based on the data displayed in Table 2, 63 minutes out of the total of 86 minutes spent by Student A in the whole translation process was spent for pauses. The findings were derived from the data from the Translog protocols and screen recording (Camtasia). The log recorded that, of the total pauses, 1 minute and 19 seconds was spent in the pre-drafting phase. At this small amount of time, he scanned and skimmed the source text (ST) only to get the key word(s) representing the main idea of the text. He found 'Native Americans' as the keyword and used Google translate (GT) to help him find its equivalent in the target language (TL). Figure 1 shows the screen recording of how the GT provided the target text (TT) term '*Asli Amerika*' as the equivalent of 'Native Americans'. The TT term was copied and pasted to the space provided in the Translog. Once he pasted the first word or group/phrase of the TT, this indicated the beginning of the drafting phase, and any pauses taken hereafter were classified into pauses in the drafting phase.

Drafting was the phase in which the longest pause duration was taken by Student A. As provided in Table 1, in the drafting phase, he took pauses as long as 47 minutes and 15 seconds, more than a half of the total pause duration in the translation process. The long time duration in the drafting phase was related to the difficulties he found in drafting the TT and the relatively larger cognitive effort caused by such difficulties. Based on the data from the TAPs, the difficulty mainly lied on his ability in rewriting the ST words in the TT. Based on the data obtained from the screen recording, he frequently used GT to draft the TT showing his problems in finding the equivalent of the SL groups in the TL. In addition to GT, Student A also used some other websites helpful in drafting the TT. Again, he took pauses in drafting phases while searching for various relevant online resources. The websites include wikipedia *(www.wikipedia.org*), the free dictionary (*www.thefreedictionary.com*), Kamus Besar Bahasa Indonesia (*kbbi.web.id*), and United States Senate (*www.senate.gov*).

The longest pause duration taken by Student A was when he translated the ST clause as in (1a).

(1) a. The Yellowstone River Valley offered little protection, for several hundred miles, for travelers traveling down the Yellowstone Valley including Indians. (ST)
b. *Lembah Sungai Yellowstone memberikan sedikit perlindungan untuk beberapa ratus mil bagi para*

Table 2. The time spent for pauses by the Students and Professionals

Participants	The time length spent for pauses				Total time of translation process
	Pre-drafting	Drafting	Post-drafting	Total Duration	
Student A	01:19	47:15	14:26	63 minutes	86 minutes
Student B	00:13	30:33	00:14	31 minutes	53 minutes
Professional A	00:36	07:21	11:03	19 minutes	36 minutes
Professional B	01:19	00:13	48:28	50 minutes	68 minutes

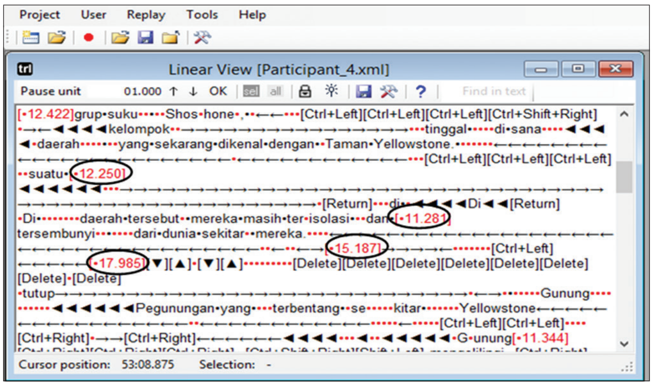

Figure 1. The Translog protocols of pauses taken by Student B in restructuring the TT clause

penjelajah menelusuri Lembah Yellowstone termasuk suku Indian. (TT)

In the process of drafting the ST clause in (1a), he took a number of pauses within a total of 8 minutes and 17 seconds. Based on the Translog protocols and screen recording, the first pause (lasting in 2 minutes and 46 seconds) was spent to find the equivalent of the ST term 'Yellowstone River Valley' by doing online activities. He wrote the term on the space of Google Search which then provided him with a number of pictures and articles about it. After looking at the pictures and reading a short description of the articles about 'Yellowstone River Valley', he decided to write '*Lembah Sungai Yellowstone*' as its equivalent. This means that he kept the ST word 'Yellowstone' in his TT, but provided the Indonesian equivalent for the ST words 'River' and 'Valley'.

Then, he took another pause as long as 45 seconds before drafting the translation of the ST phrase 'offered little protection'. During this pause duration, he used GT which translated the ST phrase as '*sedikit perlindungan ditawarkan*'. As the TT provided by GT sounded unnatural, he then improved it by writing '*memberikan sedikit perlindungan*' on the Translog space. He also took another pause within 13 seconds before he wrote '*untuk beberapa ratus mil*' as the equivalent of the ST group 'for several hundred miles'. During this short pause duration, he only used GT to confirm the equivalent of 'miles' in bahasa Indonesia.

Another pause in drafting the TT in (1b) was taken to write the equivalent of the ST word 'travellers'. Actually, it was not an unfamiliar word because it was usually heard on casual conversations. However, to confirm the best equivalent for the word by paying attention to its context, he decided to do online searches. He spent 62 seconds surveying its meaning in the Internet. Again, he relied on GT to solve this problem. The GT provided some possible equivalents for the ST word 'travellers' such as '*wisatawan*', '*pelancong*', '*musafir*', '*orang bepergian*' and '*penjelajah*'. He finally decided to choose '*penjelajah*' as the best equivalent for the ST word 'travellers'.

Furthermore, he also had difficulties in finding the equivalent of the ST group 'traveling down' for which he spent 2 minutes and 8 seconds of a pause. As he did before, he looked up the meaning of the group in GT which provided '*bepergian ke*' as its equivalent. Dissatisfied with the equivalent provided by GT, he looked up the meaning of the group via Google Search which provided the list of some related articles. He read the list and concluded that the ST group 'traveling down' might be equivalent with the ST word '*menelusuri*'. However, he did not immediately write it on his draft. He was not sure whether it was the standard form of Indonesian word because, in addition to '*menelusuri*', there was also a word '*menyusuri*' in bahasa Indonesia which was formed from the same base '*telusur*'. For this reason, he visited online *Kamus Besar Bahasa Indonesia* (Monolingual Indonesian Dictionary) on http://kbbi.web.id/page to check the exact meaning of the two words. Based on his understanding, he finally decided to choose the word '*menelusuri*' as the best equivalent of the ST group 'traveling down'.

The last pause (lasting in 1 minute and 23 seconds) taken in drafting the ST clause in (1a) was spent for reading the TT draft he had already written. Based on the data from Translog and TAPs, there was no keyboard activity, meaning that during this pause duration, he only spent it by reading. This pause was spent to confirm whether the TT draft had accommodated the original meaning contained in the ST.

Furthermore, the other 14 minutes and 26 seconds of pauses duration taken by Student A was spent in the post-drafting phase. The main activity done by Student A in this phase was reading the TT draft. The Translog protocols and TAPs showed that he spent around 6 minutes to read the TT draft as he was recorded to have not done any keyboard activities in that duration. Like what happened in the drafting phase, the pauses were also related to the complexity found in finding the best equivalent to revise his translation draft. The TAPs also revealed that he read aloud the ST and the TT indicating that a cognitive process was taking place to examine the accuracy of the TT.

Student B

Like Student A who spent longer pauses duration in the drafting phase, Student B who spent 31 minutes out of 53 minutes of the total time spent in translation process for pauses

also took the longest pauses duration in the drafting phase in which he spent 30 minutes and 33 seconds (See Table 2). The pauses taken were mostly to solve the translation problems related to finding the right equivalents for the ST words or groups and restructuring the ST clauses in the TT. One of the difficulties was when he tried to find the equivalent of the ST words 'shelter' and 'protection' as both of the words had almost similar meanings. He took a pause for about 51 seconds before he finally decided the TT equivalents for the two words as '*tempat berteduh*' and '*tempat berlindung*' respectively. During the 51 second pause, he visited GT to help him find such equivalents.

In addition, the pauses taken by Student B were related to his lack of fluency in restructuring the clause in the TT. For example, he took a number of pauses before he succeeded to construct the TT clause in (2b) which was the equivalent of the TT clause in (2a).

(2) a. There they remained isolated and sheltered from the world around them. (ST)

b. *Di daerah tersebut mereka masih terisolasi dan tertutup dari dunia sekitar mereka*. (TT)

He did understand the ST in (2a), but he found difficulty on how to transfer his understanding into the TT clause as in (2b). His understanding was visible when he was able to construct the TT despite a long pause. The pauses he took are presented in Figure 1.

The Translog protocols (showing all of the keyboard activities undergone by Student B in the translation process, including the length of each of the pauses taken) in Figure 1 show that in restructuring the TT clause, Student B took a 12 second pause before deleting the draft he had made, an 11 second pause to substitute some of the words in his first draft, a 15 second pause to arrange some of the words, and a 17 second pause to read the clause he had constructed. Therefore, he took pauses as long as 55 seconds before he succeeded to construct the TT clause.

Furthermore, in this 55 second pause, he did not use any online resources to construct the TT. Based on the data from the screen recording, there was no online activity done by Student B in constructing the TT. This was an evidence that he did understand the text but found a difficulty in drafting his understanding. This also means that he relied only on his cognition to construct the TT clause.

Meanwhile, in the post-drafting phase, he took a pause for about 14 seconds that obviously did not allow him to do various activities in the pause. The only activity done by him in this very short pause duration as recorded by the Translog was reading the TT at a glance to make sure that he had included all of the ST information in the TT. This was confirmed by cursor movements in the linear view of his translation process. Therefore, it can be concluded that he did not do any corrections during this pause.

Professional A

Unlike the Students, Professional A took pauses mostly in the post-drafting phase (11 minutes 3 seconds). In the pre-drafting phase, he took pauses for the duration of 36 seconds during which he read the ST at a glance and searched the keywords of the ST to find other related articles using Internet searches. In the drafting phase, all the pauses taken were used for online activities. He used a variety of online resources to help him draft the TT. One of the difficulties driving him to take a pause was related to finding out the equivalent of several local terms. For example, he took a pause as long as 1 minute and 8 seconds (68 seconds) before he decided to keep the ST group 'Yellowstone Plateau' in his TT as shown in Figure 2.

Based on the data from Camtasia, Professional A solved the problem of finding the equivalent of the ST group 'Yellowstone Plateau' by employing online resources. This means that a 68 second pause was spent for online activities. He opened a Google browser and wrote the ST term on the search space as shown in Figure 3. Then the Google page provided various articles containing the keywords 'Yellowstone Plateau'. He read every title and short description of the related articles, but did not open any of them. Once he finished reading, he returned to the Translog TT space to draft the TT by keeping the ST term 'Yellowstone Plateau'.

In addition to the ST group 'Yellowstone Plateau', Professional A also kept some other ST words or groups in his TT such as Sheepeater Indian, Snake Indians, Buffalo Country, Yellowstone National Park, Yellowstone River, and Bannock Trail. All of these words are local related terms. Based on the data from the TAPs, he kept these terms for several reasons: (i) they were the name of Indian tribes, (ii) they were the name of places; and (iii) their equivalents were not found in any online articles (e.g. Bannock Trail). Almost

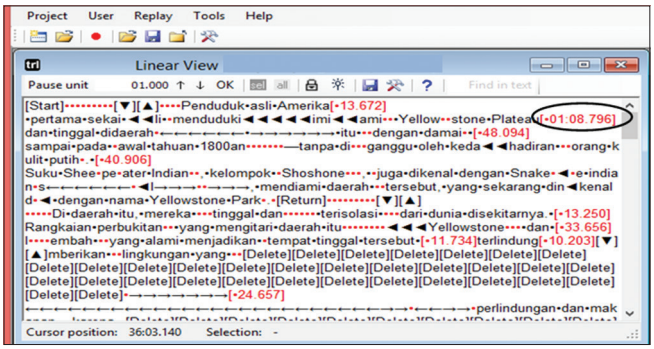

Figure 2. The pause taken by Professional A in the drafting phase

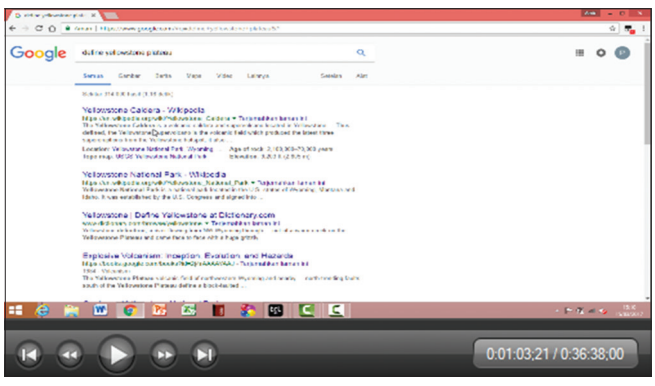

Figure 3. The Google search result on 'Yellowstone Plateau'

every time before he decided to keep the ST words, he took pauses to consider whether his decision was already right. He took pauses as long as 41 seconds before deciding to keep the ST words 'Sheepeater Indian', 47 seconds for the ST words 'Buffalo Country', 24 seconds for the ST words 'Yellowstone River', and 45 seconds for the ST words 'Bannock Trail'.

Finally, in the post-drafting phase, the 11 minutes and 3 seconds of pauses duration was used for revision to ensure whether the TT had been natural and had corresponded to the grammar rules of the TT. Another activity he did in this phase was revising the dictions that had been drafted before. For example, in his draft, he wrote '*perbukitan*' as the equivalent of the ST word 'The mountain'. Then, he took pauses for about 21 seconds to perform Internet searches before he substituted the word '*perbukitan*' with the word '*pegunungan*' which he considered more representative as the equivalent of the ST 'The mountain'.

The frequent pauses taken by Professional A were when he did self-correction on the phrase structure of his first TT draft as in (3b) for the ST phrase in (3a).

(3) a. upon a roll call vote with 115 ayes, 65 nays and 60 abstaining (ST)

b. *dengan pemungutan dengan opsi "ya" dan "tidak" atas dengan hasil 115 mengatakan "ya", 65 "tidak" suara suara, dan 60 suara abstain* (TT)

To self-correct this phrase structure, he took pauses three times for the duration of 45 seconds, 34 seconds, and 19 seconds respectively. In these pauses, he surveyed the use of the ST phrase in online articles. Through reading the online articles, he could understand the main idea of the ST phrase in (3a). Then he restructured his TT draft as in (4).

(4) *dengan pemungutan suara beropsi "ya" dan "tidak" dengan hasil 115 suara mengatakan "ya", 65 suara "tidak", dan 60 suara abstain'*

This final draft of his TT looked more natural than the first draft in (3b) that was written under the influence of the ST structure. This is another evidence of the importance of using online resources in solving the problems encountered during translation process, especially in terms of the naturalness of the TT.

Professional B

As displayed in Table 2, Professional B spent 1 minute and 19 seconds (79 seconds) for pauses, the exactly similar duration he spent in the pre-drafting phase. This means that he spent the whole duration of pre-drafting phase for pauses. During this 79 second pause, the only activity he did was online activity during which he copied the ST to be pasted into the GT space. He did not read the ST, the common activity done by translators while taking pauses in a pre-drafting phase. Based on the data from the Translog protocols and screen recording, during the 79 second pause, he copied the ST and activated the Internet to search for GT website. Once he opened the GT, he pasted the ST into the ST space of the GT, and that was the end period of pause he took in the pre-drafting phase. Similarly, the very short duration of pause taken in the drafting phase (13 seconds) was spent only for copying the TT provided by the GT to be pasted into the Translog TT space. Once the TT draft was completed on the Translog TT space, the post-drafting phase began.

The frequent pauses were taken by Professional B for self-revisions or self-corrections in the post-drafting phase. The longest pause duration was spent when he revised the TT draft as in (5b) which was the equivalent of the ST clause in (5a)

(5) a. The Sheepeater Indians, a band of Shoshone, also known as Snake Indians, lived in the area of what is now Yellowstone Park. (ST)

b. *Sheepeater India, sebuah band dari Shoshone, juga dikenal sebagai Ular India, tinggal di daerah yang sekarang Yellowstone Park*. (TT)

In revising the TT draft in (5b), he took pauses four times with the duration of 11 minutes and 8 seconds, 39 seconds, 19 seconds, and 12 seconds respectively, so the total pause duration needed to revise the TT draft in (5) was 12 minutes and 18 seconds as can be seen in Figure 4.

Based on the data from Translog protocols and TAPs, in the first pause (11 minutes and 8 seconds), he read the ST clause to get its main idea. Once he got the main idea, he then read the TT draft whether its main idea had corresponded to meaning of the ST main idea. Besides, he also paid attention to several local terms used in the ST clause because local terms usually provided difficulties for translators to find their equivalents. The two local terms requiring longer pause duration to be revised were 'Sheepeater Indians' and 'a band of Shoshone'. In the first draft, the ST term 'Sheepeater Indians' was translated 'Sheepeater India' and 'a band of Shoshone' was translated '*sebuah band dari Shoshone*', meaning that he kept the ST term in his TT. In order to help him find the right equivalent for those ST terms, he surveyed the terms in the Internet as shown in Figure 5.

The first picture in Figure 5 shows the Wikipedia page (*https://en.wikipedia.org/wiki/Sheepeater_Indian_War*) providing the information of Sheepeater Indian War in which he was looking for the information about what Sheepeater Indian was. The second picture and the third picture show the FamilySearch page (*https://familysearch.org/wiki/en/Sheepeater_Indians*) in which he looked for the information about the meaning of Sheepeater Indian and band of Shoshone. Based on the two online articles mentioned above,

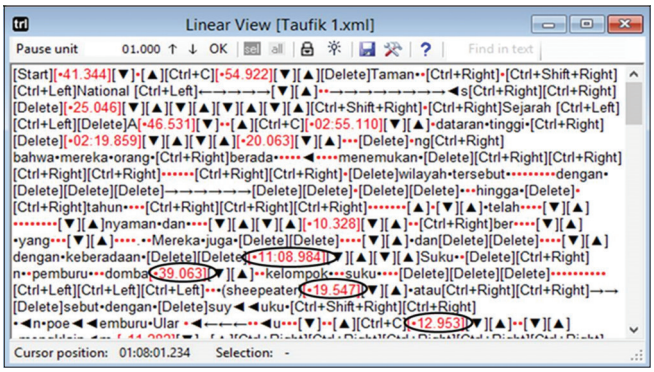

Figure 4. The longest pause duration taken by Professional A in revising the TT clause

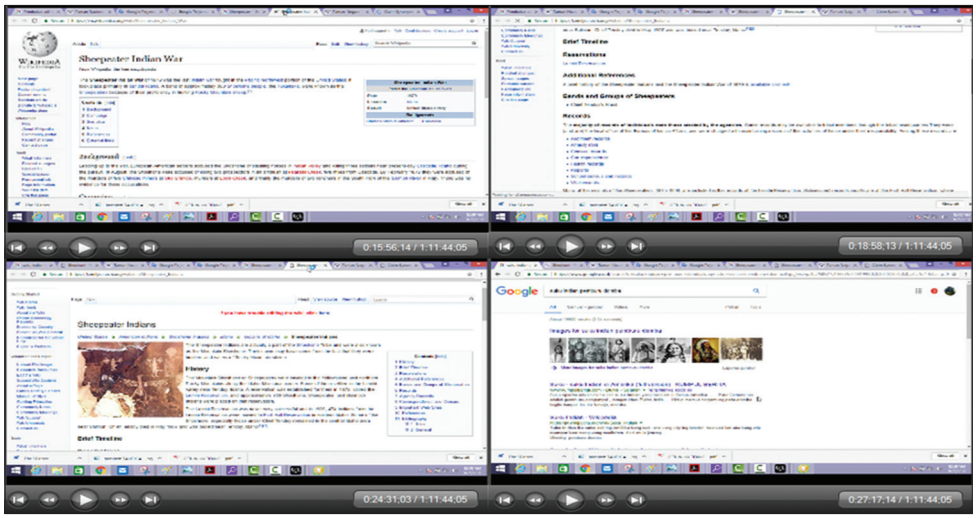

Figure 5. Online activities of finding the equivalent of the ST local terms

he revised his first draft by substituting the term 'Sheepeater India' with '*suku Indian pemburu domba*'.

Feeling uncertain whether the new draft he made was the right equivalent for the ST term 'Sheepeater Indians', he took another pause within 39 seconds. During this pause duration, he confirmed the latest draft he made '*suku Indian pemburu domba*' by writing it on the space of Google Search as shown in the fourth picture of Figure 5. The Google Search page provided some Indonesian articles related to '*suku Indian pemburu domba*', but none of them exactly talked about it. Finally, in his final draft, he kept using the term '*suku Indian pemburu domba*'; however, he also added the ST term 'sheepeater' in parentheses to give clue to the TT readers about what the term referred to.

Furthermore, based on the article he read on the FamilySearch page, he substituted his first draft '*sebuah band dari Shoshone*' with the new draft '*kelompok suku Shoshoni*'. However, this was not the final draft. He then took another pause within 19 seconds activating his cognitive process to confirm whether this new draft would become the final draft. He finally decided to substitute the new draft with the final draft '*turunan suku Shoshoni*'.

The other 12 second pause in the process of translating the ST clause in (5a) was used to confirm the equivalent of the ST term 'Snake Indians'. Following the way he did for the previous almost similar term, he decided to use the ST term '*suku Indian pemburu ular*' as its equivalent. Therefore, the TT final draft of the equivalent for the ST clause in (5a) was written as in (6).

(6) *Suku Indian pemburu domba (sheepeater), turunan suku Shoshoni, atau juga disebut dengan suku Indian pemburu ular, dulunya tinggal di daerah yang sekarang dikenal dengan Taman Yellowstone tersebut'.*

Based on the data analysis it was found that the Students and Professionals spent longer time duration in taking pauses than typing the text indicating the important role of pauses in translation process. This finding indicates that pauses are compulsory activities in translation process. Nevertheless, there is no difference in the total time spent by the Students and Professionals in taking pauses as shown in Table 1.

Findings and Discussions

Based on the data analysis it was found that the Students and Professionals spent longer time duration in taking pauses than typing the text indicating the important role of pauses in translation process. This finding indicates that pauses are compulsory activities in translation process. Nevertheless, there is no difference in the total time spent by the Students and Professionals in taking pauses as shown in Figure 6.

The finding presented in Figure 6 shows that Student A took longer pauses (73%) than Student B (59%) and Professional A (51%), but shorter than Professional B (74%). This finding indicates that a pause length would not be used as the measure to qualify a translator as a professional translator; in other words, it cannot be used as a means to distinguish professional translators from student translators because professional translators even took longer pauses.

In addition, in contrast to Kapranov's (2013) finding of pauses indicating lack of fluency, this research found that pauses should not be considered as the translator's lack of fluency because professional translators, who should have been more fluent than student translators, took longer pauses. The finding of this research supports Hansen's (2002) research finding stating that there is no correlation between the occurrence of pauses and the quality of the product. Therefore, studying pauses should not be seen as the time length spent, instead, it should find out the activities taking place during pauses.

Responding to what the participants were doing while taking pauses, this research found that the Students and the Professionals did different activities during pauses. It was found that the Students spent the pauses in the pre-drafting phase by reading the ST, or at least scanning and skimming the ST in order to decode it. Meanwhile, the Professionals, in addition to the ST scanning and skimming activities, they also did online activities. This was done to find other material resources related to the ST topic which would help them later in the whole translation process. The importance of reading other related materials before drafting the translation has been emphasized by Maley (2010) who says that reading

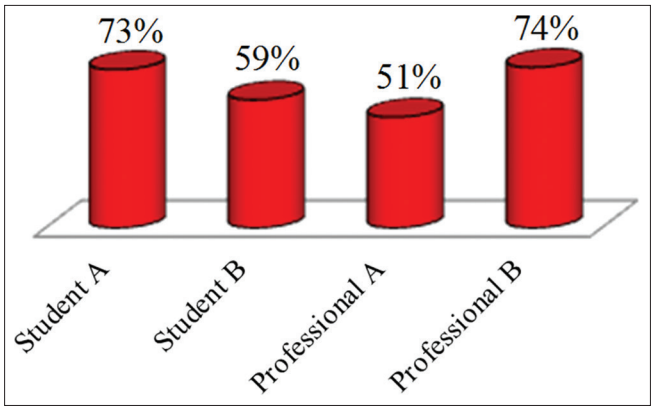

Figure 6. The duration of pauses taken by the Students and Professionals

is the most readily available form of comprehensible input, especially in places where there is hardly any contact with the target language.

In addition, it was found that the Students took pauses mostly in the drafting phase, meaning that they took pauses for composing their translation draft. The activities they did mostly during pauses can be classified into two: (i) they did pauses to solve the problems related to finding out the right equivalent for the ST words or terms, and (ii) they did pauses to solve the difficulties encountered in encoding their understanding in the TL. This finding in line with what O'Brien (2006) found in her research that student translators dedicated more time to the drafting phase. Therefore, student translators tended to do revisions simultaneously with drafting process. In addition, spending more time for pauses in the drafting phase also indicates low performance level in translation process (Qian 2017, p. iii). This finding confirms that student translator can be defined as a translator with low performance level in translation practices.

The encoding problem faced by the Students was caused by their lack of competence of the TL. Even though the TL was their mother tongue (bahasa Indonesia), it was hard for them to transfer their understanding of the ST to the TL readers. Therefore, they took pauses thinking of the right clause arrangement to be drafted. This finding indicated that a good translator should be competent in both the SL and TL, and having good language performance did not mean having good language competence.

In order to solve the problems they encountered, they relied on both their cognition and Internet searches, meaning that both cognitive and social affective processes were applied. In doing Internet searches, it was found that Google Translate (GT) was the website they most frequently visited because the main problem they encountered was related to drafting the TT. The frequent visit of GT indicated their lack of vocabulary and their low ability of online resources management because GT was just like a dictionary providing word by word translation. Even though, nowadays, GT has been able to give better translation, there are a number of weaknesses that GT should improve one of which was about collocation. Kamalie (2011, p. 71) noted that the incapability of GT in providing good collocation/idiom and language style in the TL leads to the conclusion that, until today, GT has not been successful to translate a number of words and phrases perfectly. This idea implies that GT is helpful in drafting the TT, but the translator has to do revisions on the draft particularly in terms of collocation or idiom and language style.

Meanwhile, the Professionals took pauses mostly to revise the draft they had written; in other words, they took pauses mostly in the post-drafting phase. They took pauses for two purposes: (i) to ensure whether their TT had been natural, and (ii) to ensure whether their TT had corresponded to the grammar rules of the TL. To achieve these purposes, they relied on online resources by visiting various related websites to the difficulties encountered. Unlike the Students, the Professionals never used GT in revising their translation draft. This finding is in contrast with Jakobsen (2002) who argued that professional translators dedicated more time of pause duration to the pre-drafting phase. In this research, it was found that the Professionals tended to skip the pre-drafting phase because they let the machine do it. In addition, understanding the ST, which was the purpose of spending time in the pre-drafting phase, could be obtained while doing revisions because, during revisions, they had an opportunity to read the ST and the TT to get an understanding of both texts. Therefore, the longer time taken by the Professionals did not necessarily mean that they used the time to think more deeply on the subject matter and the language involved and so might be able to arrive at a better form of expression. Instead, they used the time to find out superficial level meaning like corresponding lexical and structures, instead of a creative, alternative way of expressing similar meaning.

Furthermore, during the pauses in the post-drafting phase, it was found that Professionals applied non-linear method of self-correction, the term was adopted from Kourouni (2012). They self-corrected their translation draft by leaving some parts of clauses in the earlier paragraph(s), moving to the next paragraph(s). Then, they returned to the earlier paragraph(s) to complete their revisions. However, the translators have to be more careful while choosing non-linear method in self-corrections because it may cause translators to miss self-correcting some of their first draft. Meanwhile, the Students were found to have applied inline method of self-corrections. They self-corrected their drafts line by line. As a result, their self-corrections were clause-by-clause revisions, resulting in lack of cohesion of the TT.

In addition, this research also found the common positions where pauses usually took place. It was found that in the translation process, the Students and Professionals did pauses: (i) before/after an embedded clause, (ii) before/after a clause complex (iii) within a word, (iv) before/after a phrase or a group, (v) between a participant and a process, (vi) between two or more than two circumstances in one clause, (vii) at the end of a paragraph, and (viii) at the end of the text. This finding completes the earlier research finding done by Seguinot (1989) who concludes that pauses typically occur: (1) at the end of the sentence/paragraph, (2) between independent clauses, (3) before/after subordinate

clauses, (4) before phrases, (5) before subject and predicate, (6) at end of line/word level, and (7) before/in words.

Moreover, this research found that pauses are closely related to the cognitive process that took place in the translators' mind, or the translators' black box (the term adopted from Toury, 1995). The heavier the cognitive load was, the more pauses would be taken. This finding supports the results of the research done by Kumpulainen (2015) who found that "differences in pause duration seem to be related to differences in processing time, to the extent that longer pauses can be taken to indicate a relatively larger cognitive effort due to some kind of complexity". Therefore, this finding was in line with other previous research findings (Foulin 1995; Schilperoord 1996; Cenoz 2000; O'Brien 2006) regarding pauses as the indicators of cognitive processing.

In addition to cognitive process, this research also found the application of social affective process during pauses. The use of social affective method could be seen from the interaction of the participants with other people through their articles published in the Internet. The interaction done by the participants was not a face to face interaction or interaction via emails or other chatting media, but it was the interaction through reading. Nevertheless, as technology develops, it would be possible to do an online interaction with other people during translation process, i.e. the interaction through online social media such facebook, messenger, whatsapp, etc. Therefore, pauses in translation process should not only be regarded as cognitive processing, but also as social affective processing. By applying social affective process, a cognitive load would be reduced.

In relation to the online activities while taking pauses, this research found that the Students and Professionals had low skill in online resource management. This low skill was caused by two factors: (i) the dependency on GT, and (ii) the limited variety of online resources they visited. The online resources they used during translation process would fall into four broad categories: (i) online dictionaries and thesaurus; (ii) machine translation; (iii) wikipedia; and (iv) free online articles. Ideally, a good translator should have good ability in online resources management as Sofyan (2016) found that the translators with a good online resources management produced a better translation quality.

Based on the findings of this research, pauses can be defined as the activities in translation process in which typing activities are excluded; in other words, while a translator was not typing, he was taking a pause. This finding was obtained from the use of Translog as the keylogging tool and Camtasia as the screen recording tool. This is in line with Kumpulainen's (2015, p. 47) idea arguing that pauses in screen recording data refer to breaks in the writing process, but the determination of a pause is based on moments during which nothing takes place on the screen. However, this is in contrast to the definition of pauses generated from the use of think-aloud protocol (TAP) method defining pauses as breaks in subjects' verbalization which is recorded and transcribed in protocols (Jaaskelainen, 1999, p. 57-58).

Studying pauses also reveals the characteristics of the student and professional translators in doing revisions while translating the text. Based on the research finding, it is concluded that the student translators preferred to do revisions simultaneously with drafting, while the professional translators allocated a special time duration for revisions. Therefore, the revisions done by the student translators tended to be at a clause level (clause-by-clause revisions) applying inline method of self-revisions or self-corrections. The professional translators, on the other hand, focused their corrections at the text level applying non-linear method of self-revisions.

CONCLUSION

Based on the research findings discussed in the previous section, it is concluded that a pause in translation process is the indicator of cognitive processing, and the heavier the cognitive load was, the more pauses would be taken. However, such heavy cognitive process is reduced by applying a social affective method in which the student and professional translators are allowed to find online materials through Internet connection. The online resources they visited can be categorized as: (i) online dictionaries and thesaurus; (2) machine translation; (iii) wikipedia; and (iv) free online articles.

Moreover, it is concluded that pauses can be defined as the activities in translation process in which typing activities are excluded; in other words, while a translator was not typing, he was taking a pause. This also means that any break in the writing process during the translation process is categorized as pauses.

In addition, studying pauses also reveals the characteristics of the student and professional translators in doing revisions while translating the text. Based on the research finding, it is concluded that the student translators preferred to do revisions simultaneously with drafting, while the professional translators allocated a special time duration for revisions. Therefore, the revisions done by the student translators tended to be at a clause level (clause-by-clause revisions) applying inline method of self-revisions or self-corrections. The professional translators, on the other hand, focused their corrections at the text level applying non-linear method of self-revisions.

This study only used three methods in collecting the data – Translog protocols, TAPs, and screen recording –, so the other studies are expected to use other methods (e.g. retrospective questionnaire) to gain deeper data in revealing the translation process done by translators.

Besides, as the process of data collection was conducted in the classroom setting that might affect the psychological states of the participants for being unrelaxed, it is suggested for other studies to create more relaxing setting for the participants to get more representative data.

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