THE TRANSLATION PROCESS: AN ANALYSIS OF OBSERVATIONAL METHODOLOGY

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1. Introduction

Over the past 15 years, the field of translation studies has seen considerable theoretical and experimental activity in the area of cognitive translation processes. Many observational studies have been conducted with the attempts of understanding what translators actually do compared to what they are assumed to be doing. Accessing the black box and gaining a better understanding of what goes on during translation will advance the field of study, open new areas of research, and improve the way translation is viewed and taught. Researchers have focused on various aspects of the process including revision (Mossop, 2001), creativity (Kussmaul, 1997), professional and student approaches (Séguinot, 1989; Tirkkonnen-Condit, 1989; Jääskeläinen and Tirkkonnen-Condit, 1991), time pressure (Jensen, 1999) and many more. While observing translators, researchers make use of data collecting tools such video cameras, think-aloud verbalizations, retrospective interviews and computer software programs. This article aims to critically evaluate the methods used to observe the translation process. Within the context of a study conducted at Toyota Canada, my objective is to test the methods and to make recommendations for more advanced practices of observation.

2. The Study

The data used to evaluate observational research methods for this paper was collected while observing a junior and a senior translator at Toyota Canada, and a third translator who has worked with the Ontario Government's Translation Service. I would like to thank all three translators as well as Toyota's linguistic services in Scarborough, Ontario for their enthusiasm and willingness to participate in the study. The background and experience of the three translators varied slightly. At first I thought this might be a problem because I had been trying to assemble a homogeneous group, but the differences brought forth the strengths and weaknesses of each observational approach in relation to experience, and how they can be used together to get a better understanding of the translation process.

The source text was chosen by the manager of Toyota linguistic services because it was an example of a typical translation that the department would complete. It was of average difficulty and did not contain any confidential information.

The translation was carried out in the natural work setting of all three translators. In the case of Toyota, I went to their Scarborough office and observed the translators in their work environment with the tools they were accustomed to using. They had their computers, databases, and electronic and traditional reference materials. It was an open concept office and the translators were free to consult with their colleagues. I observed the third translator in her natural work environment with a computer, dictionaries and the electronic resources she is used to consulting.

I prepared each computer in advance by installing two software programs, *Translog* and *Camtasia*. *Translog* is a translation recording program used to obtain quantitative results. *Camtasia* is a recording software that creates a video file of the computer screen and records all moves on the computer. The video camera was set up to capture facial expressions and work done away from the computer. It also recorded think-aloud verbalizations.

The data collection was a three step process: informing and preparing the subjects; the actual translation process combined with think-aloud, computer recordings, direct observation, and audio and video recording; and retrospective interviews with and without computer playback of the translation process. During the pre-translation discussion, the translators were introduced to the study and the methods of observation. They were encouraged to ask questions and use *Translog* in order to become familiar with the program and its features. All three translators were asked to verbalize whatever came to their mind and to speak freely during the translation process. I emphasized the need to feel comfortable and to work as if it were an average day on the job. Once the translators were ready to begin, I acted as a strict observer and had no contact with them. After the translation was complete, I conducted two retrospective interviews. The first included general questions on how the translator felt about the translation and the methods of observation. The second interview included a playback of the *Camtasia* recording allowing the translator to see the entire process and make further comments.

3. An Overview of Observational Methods

3.1 Think-aloud Protocols

A great number of studies on cognitive processes in translation have used think-aloud protocols (TAP) to extract information about the underlying mental processes required to complete a given task. TAPs originated in the field of psychology and have been used in many disciplines. Although each study may vary slightly, the expectation is that subjects faced with a specific task, such as translating, will verbalize whatever comes to mind while performing the assigned task.

The verbalizations are recorded, transcribed and analyzed. The anticipated outcome is that these verbalizations will give a better understanding of

> "the levels, steps, units of processing, the role of the interaction of the source and target language, the amount of proceduralization, the origin and course of search processes, and the times used for these processes." (Dechert and Sandrock, 1986:115)

Since thought processes are not directly observable, researchers use TAPs as indications of what might be going on in the black box. There has been much debate surrounding the use of think-aloud during information processing, and whether the subjects can even verbalize their thought processes while they are thinking. In their often-cited article "Verbal Reports as Data", Ericsson and Simon support the use of TAPs, but acknowledge that only information stored in short-term memory is accessible to verbalization. Therefore, as processes become more procedural, they may no longer be as available for description. There are also concerns about forced speaking during a normally unvoiced procedure altering results.

3.2 Direct Observation with a video camera

Direct observation is usually conducted in two ways. Firstly, the researcher is present to take notes and observe the overall process. Secondly, the event is recorded with a video camera so it can be analyzed in closer detail at a later time. In my study, I used the camera to record facial expressions and body language because they can be indicators of mental processes. It also recorded the think-aloud verbalizations and the non-computerized tasks such as consulting with colleagues and using paper reference materials. Before computer programs such as *Translog* existed, cameras were

also used to record computer, mouse and keyboard activity which were later transcribed into detailed logs.

3.3 Computer Observation – *Translog* and *Camtasia*

Translog is a relatively recent method of observation. It is a computer program developed in Denmark at the Copenhagen School of Business. Professor Arnt Jakobsen kindly allowed me to use this software for research purposes and I would like to thank him for the opportunity. *Translog* was developed to obtain quantitative reinforcement of assumptions about translation. It is ideal for gathering data such as the number of keystrokes, total number of characters, ratios, time delays, number of electronic dictionary look-ups, and more. Translators are required to translate directly into *Translog* on a split screen that displays the source text on the top and the active target text on the bottom. The program then records the translation process into a video format that can be played back at a later time. *Translog* also produces a detailed analysis so the researcher can examine what went on during the process with accurate time indications and statistics.

Camtasia is a software program that can be set to record the entire computer screen. I used it to document what the translators were doing on the computer outside of *Translog*, for example how they consulted electronic dictionaries, databases, websites and other tools.

3.3 Retrospective Interview

The retrospective interview was conducted in two parts. The first part consisted of prepared questions that examined how the translators felt about the translation and the observation process. During the second part of the interview, the translators were asked to comment on their translation process with the *Camtasia* playback. This was done to trigger information that was not verbalized during the think-aloud process.

Traditionally, reviewing a translation after the fact has not yielded much information because once the work is on paper, it is difficult to resurface the thought processes. However, when the process is played back in real time with actual mouse cursors and keyboard input, the translator is more likely to remember the thoughts and actions that surrounded the decisions that were made.

4. Findings

4.1 Observational Methods

Combining the results of observational methodologies yielded very interesting results about the translation process. They complimented each other and gave a detailed report that could then be evaluated.

I was quite surprised by the results of the think-aloud verbalizations. As part of the pre-translation preparation, the participants were asked to verbalize whatever came to mind. I told them that once they began translating I would no longer be there, and that they should behave as if it were a normal work day. Once the preparation was finished and I was confident that the translators had understood what was expected of them, I started the camera and stepped aside. The first translator started by reading the entire text very carefully. I assumed he would begin talking once he started translating. Several minutes later, he had still not said a word. Even though I knew not to interfere with the process, I quietly said to him "remember to think-aloud." He looked at me with great surprise and said "I am not thinking about anything" and went back to typing. Several minutes later, he was still not saying anything. Once again, I quietly asked him to think-aloud. He said he was just looking for a word in the dictionary, but did not give any details. Luckily, I had the camera to zoom in and could see that he was looking up the word *écarter*. He then continued to translate and did not say another word until he finished two hours later. In the retrospective interview,

I asked why he had not verbalized and he replied that he had found it very difficult and that having to think about talking while translating took him away from the actual work. Interestingly, the third translator who felt more comfortable thinking aloud once said "I'm not talking at all now. I could talk more but that would slow me down and it doesn't feel normal." These comments say a lot of about how the testing environment influences both motivation and the translation process no matter how comfortable the translators feel in their natural setting. Furthermore, it shows that the everyday emphasis on factors such as speed were extremely important for the translators even though the testing environment did not demand an accelerated pace. Within the context of another study, it would be very interesting to evaluate how culture relates to the success or failure of think-aloud protocols during translation. In the English Canadian context, it is not natural for translators who work alone to talk while translating and therefore the information may not be as easy to obtain as in another more oral culture. The two translators who felt comfortable thinking aloud usually spoke during hesitations that indicated moments of difficulty. They would repeat the words to themselves and demonstrate conscious reasoning. For example, while thinking about the translation of "*C'est ce qu'a declaré hier…qui a profité d'une visite éclair à Montreal pour proposer une entrevue…*", one of the translators spoke very slowing saying "while visiting Montreal… while he was in Montreal yesterday…" until she decided on a suitable equivalent. The data obtained from the think-aloud was very important, but as in the case of the first translator, it does not always work. Furthermore, it is quite intrusive and alters the normal work environment. On several occasions, the translators who vocalized would suddenly realize they were not talking and force themselves to say something. Although I have concerns about forcing people to talk when they usually do not, the translations do not seem to have been negatively affected by talking. Thinking aloud provides information about reflection, reasoning, self-revision, and other processes required for translation. The

circumstances surrounding hesitations or moments of difficulty resurfaced during the retrospective interview with playback, but the translators gave more general descriptions rather than detailed step-by-step accounts of how they had worked something through.

The video camera was useful for recording the verbalizations. On the other hand, it can definitely be a factor of intimidation that makes the set-up feel more like a laboratory than a natural translation setting. When asked about the study, all three translators replied that they had felt comfortable translating but had been aware of the camera recording them. Rather than using a large camera on a tripod, it is best to use a very small camera that creates a video file directly into the computer. The researcher would then not have to run the camera, and could observe from a less intrusive position. It is also important to note that combining the video recording with other methods of observation, especially *Translog*, minimizes the central role the camera once held in translation observation.

The *Translog* program was an extremely important tool. It recorded the entire process which could then be reviewed by the translator and the researcher. It also created a detailed analysis in text format that could be integrated with the data from other methods of observation. The analysis provided information about the mouse, keyboard and arrow use, which showed how the translators worked through the document. For example, whether they revised paragraph by paragraph, or sentence by sentence. Seeing a translator jump around in a document can also give indications on how the information is processed and worked through.

To better explain the *Translog* analysis, I have included an excerpt. The sans serif font in bold is the translator typing. The symbols indicate movement within the document, for example backspacing and mouse clicks. The stars indicate hesitation. If the pause was longer than a few seconds, the length of time is included in square brackets following the star. The sections in serif font in italics are comments that were taken from other methods of observation and manually inserted into *Translog*'s analysis document.

This•is•what•✱✱✱✱✱✱Yoshio•Nakatani_•✱Toyota's⌫⌫⌫✱✱a•Canada[✱:19.94]

*[*19:94] - She then says "président du conseil" and clicks over to Termium and looks up the term. She quickly goes back to Translog and types new president. She hesitates and looks over what she has so far before continuing.*

's•new•cha✱irman✱✱✱_•said•yester✱day[✱:38.86]

[:38:56] - She takes the papers and reads for a bit and then goes into Termium and types "visite éclair". She smiles at the results and then reads again. She then continues to type saying slowly "while visiting Montreal ... while he was in Montreal yesterday."*

•while•vit⌫siting•Montrea✱✱✱✱✱⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫

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One potential setback with *Translog* is that translators have to translate into a program they do not normally use. Certain features such as spelling and grammar checks, italics, underlining and highlighting are not available. Even though they had tested the software before using it, each translator ran into minor difficulties when attempting to use a feature that was not available. On the other hand, they all said they liked using *Translog*. The translator who did not verbalize said he forgot that he was being observed and really liked using the split screen. *Camtasia* proved to be very useful as it recorded the entire process both inside and outside *Translog*. This made the playback more realistic because the translators were able to see what they did when they left *Translog* to consult other electronic sources.

The retrospective interview with playback was designed to extract information that the participant was not able to vocalize during the actual translation process. Using the Montreal example from earlier, the simultaneous think-aloud verbalizations give indications about the thought patterns. When viewing the playback, the translator saw that she had hesitated and explained that she had been trying different combinations of the sentence to see which sounded more English. This is also clear from the think-aloud where the translator vocalized step-by-step reasoning as she worked

through possible combinations, each one sounding more and more idiomatic. The think-aloud verbalizations and the retrospective playback compliment each other and show the different levels of thought that can be vocalized.

4.2 Evaluation of the Translation Process

Based on the observations of the three translators in this study, the translation process can be broken down into three general strategies: understanding and reasoning; searching; and revising. These strategies are not clear cut or straightforward, and they overlap and reoccur throughout the translation process.The understanding and reasoning part of the process is the most obvious, especially to an external party. At this stage, the translators started by reading and becoming familiar with the text and eventually produced an equivalent target language text. To arrive at this end, they used a number of strategies such as reading, comparing the source and target texts, consulting with colleagues, reading out-loud, comparing language structures and working out acceptable equivalents. All three translators stayed very close to the structure of the source text, most commonly translating at the word or sentence level. As can be expected, experience played a significant role in how the translators worked through the text, especially regarding syntactic structure. For example, the two translators with more experience translated *mais le constructeur automobile du Japon* without any comments or pauses and came up with *but the Japanese car* manufacturer. The required word order was deeply embedded and they did not verbalize the change in position. The translator with less experience was able to verbalize the thought processes required to convert the structure because it had not yet been automated. He started by typing *but the automobile manufacturer*, then went back and changed *automobile* to *car manufacturer*. After slight hesitation, he used the arrow keys to go back and inserted Japanese to make it *but the Japanese car manufacturer*. This phenomena has been well documented in other observational studies

and can be attributed to the fact that as translators acquire more experience they are no longer able to verbalize processes that have become automatic (Séguinot, 1996; Ericsson and Simon, 1980). The understanding and reasoning stage of the translation process involved a lot of decision making. *Translog* and *Camtasia* were most useful in capturing this stage. They recorded the execution of the translation whether it was verbalized or not. The camera was also useful to capture verbalizations.

During the searching stage, the translators looked for words, expressions, terms, titles and collocations using a variety of resources including dictionaries, websites, databases and advice from colleagues. All three translators used paper and electronic dictionaries and glossaries as well as bilingual and monolingual websites to search for information. One translator used a parallel concordance website to see how expressions and strings of text had been translated in the past. The translator who had done the most translating, relied heavily on past experience when searching for equivalences. Body language and eye movements captured with the camera strongly indicated internal searching. He used very few external searching tools.

On the other hand, the translator with the least amount of experience did a lot of external searching, often looking in several places to confirm assumptions. The video camera captured the work done with paper resources. *Camtasia* was most useful in following the search paths and helping understand how and why the translators searched for information.

Like the other stages, revision reoccurred many times through out the translation process. Revision strategies included reading and rereading the text, comparing the source and target texts for accuracy and idiomatic language, verifying and changing lexical choices, adjusting grammatical structure, changing word order, revising syntax and improving the overall flow of the text. Revision was done both immediately as the translators typed, and later when reviewing the sentence, paragraph and then the complete text.

Returning to the Japanese car manufacturer example, the translator quickly typed his initial thoughts and then immediately revised them into better English. The *Translog* recording of the translator who did not vocalize shows several stops within a paragraph where he would jump to another paragraph all together and make revisions before going back where he had left off. This is perhaps an indication of effective time usage. Rather than dwelling on a difficult passage, the translator cleared his mind by rereading and correcting another part of the text before continuing. It could also be that he was looking for information from the parts he had already translated, and then saw an error that he corrected before continuing.

In "Some Thoughts about Think-Aloud Protocols", Candace Séguinot explains that translation can be non-linear and that though a translation has been found, the mind continues to look for alternatives and comes back to the same item or structure. She also says there is evidence of parallel processing where the translator works on more than one item, structure, etc. at a time. (Séguinot, 1996). All three translators did a final revision of their text once they had completed the translation. Two translators took the text and pasted it into word, where they did the majority of their revisions. When asked why, they said they were used to using that programs editing features.

5. Summary with Recommendations

To obtain the most accurate results, it is crucial that translators be observed in an everyday environment that is natural to them. This being said, it is important to use unobtrusive methods of observation that do not risk altering or interfering with the process. Translation has changed considerably over the past few years, especially with the wave of new technology. Therefore, the way we observe translation must also evolve. Computer programs such as *Translog* are an excellent start. With continued development, *Translog* could become embedded into a computer's operating

system and give statistics on all computer actions, not just those performed within the program. Furthermore, integrating audio and video into the program would ensure that facial expressions and vocalizations go with the computer actions. Think-aloud protocols, computer programs, audio and video recordings and retrospective interviews with playback should all be used together. They each yield information about different parts of the process and help us better understand the rapidly changing field. Continued work with improved methods will shape the way translation is viewed, taught and understood. Developing programs that keep statistics and monitor the translation process could also be useful in other areas of translation. Currently, many professional translation associations do not allow candidates to use computers during testing out of fear that they may cheat and consult with on-line translators outside the exam. Forcing translators to use paper methods when they are used to translating directly onto the computer is an unfair method of evaluation. If a monitoring program such as *Camtasia* or a system-wide *Translog* were to be implemented, the judges would be able to view the video file and base their decision on a more realistic translation process. There are many opportunities for translation observational methodologies and they need to be further explored.

References

Bernardini, S. Think-aloud protocols in translation research: achievements, limits, future Prospects. *Target* 13/2. 2002. p.241-263.

Danks, J. et al. (eds.). *Cognitive processes in translation and interpreting*. London: Sage Publications. 1997.

Dechert, H.W. & Sandrock, U. Thinking-aloud protocols: the decomposition of language processing. In V. Cook (ed.). *Experimental approaches to second language learning*. Oxford: Pergamon. 1986.

Ericsson, K.A. & Simon, H.A. Verbal Reports as Data. *Psychological Review* 87. 1980. p.215-251.

Hansen, G. Das kritische Bewußtsein beim Übersetzen: Eine Analyse des

Übersetzungsprozesses mit Hilfe von und Retrospektion. In G. Hansen (ed.). *Probing the process in translation:* methods and results, (Copenhagen Studies in Language 24). Copenhagen: Samfundslitteratur. 1999. p.43-61.

_____. (ed.). *Probing the process in translation:* methods and results, (Copenhagen Studies in Language 24). Copenhagen: Samfundslitteratur, 1999.

_____. Pausen im Übersetzungsprozess. June 2001, accessed August 2002 < http://www.cbs.dk/departments/english/EST/cf/Hansen.doc > .

_____. Selbstaufmerksamkeit im Übersetzungsprozess. accessed August 2002 < http://www.euroconferences.info/Selbstaufmerksamkeit.doc > .

Jääskeläinen, R. Translation assignment in professional vs. non-professional translation: a think-aloud protocol study. In C. Séguinot (ed.). *The Translation Process*. Toronto: H.G. Publications. 1989. p.87-98.

_____.Think-aloud protocols. In M. Baker (ed.). *Routledge Encyclopedia of Translation Studies*. New York: Routledge. 2001. p.265-269.

_____. Investigating translation strategies. In S. Tirkkonen-Condit & J. Laffling (eds.). *Recent trends in empirical translation research*, Joensuu: Savonlinna School of Translation Studies. 1993. p.99-120.

Jääskeläinen, R. & Tirkkonen-Condit, S. Automatised processes in professional vs. non-professional translation: a think-aloud protocol study. In S. Tirkkonen-Condit (ed.). *Empirical research in translation and intercultural studies*. Tübingen: Gunter Narr. 1991. p.89-109.

Jakobsen, A.L. Logging target text production with Translog. In G. Hansen (ed.). *Probing the process in translation:* methods and results (Copenhagen Studies in Language 24). Copenhagen: Samfundslitteratur. 1999. p.9-20.

Jensen, A. Time pressure in translation. In G. Hansen (ed.). *Probing the process in translation:* methods and results (Copenhagen Studies in Language 24).. Copenhagen: Samfundslitteratur. 1999. p.103-119.

Krings, H.P. *Was in den Köpfen von Übersetzern vorgeht*. Tübingen: Gunter Narr, 1986.

Kussmaul, P. Comprehension processes and translation. a think-aloud protocol (TAP) study." In M. Snell-Hornby et al. (eds.). *Translation as intercultural communication*. Philadelphia: John Benjamins. 1997. p.239-248.

Lörscher, W. *Translation performance, Translation Process, and Translation Strategies*. Tübingen: Gunter Narr, 1991.

_____. Thinking-aloud as a method for collecting data on translation process". In S. Tirkkonen-Condit (ed.). *Empirical research in translation and intercultural studies*. Tübingen: Gunter Narr, 1991. p.67-77.

Mason, I. Audience design in translating. *The Translator* 6/1. 2000. p.1-22.

Mossop, B. *Revising and editing for translators*. Manchester: St. Jerome Publishing, 2001.

Séguinot, C. *The Translation Process*. Toronto: H.G. Publications, 1989.

_____. A study of student translation stategies. In S. Tirkkonen-Condit (ed.). *Empirical research in translation and intercultural studies*. Tübingen: Gunter Narr, 1991. p.79-88.

_____. Some Thoughts about Think-aloud Protocols. *Target* 8:1. 1996. p.75-95.

Snell-Hornby, M. et al. (eds.). *Translation as intercultural communication*. Philadelphia: John Benjamins. 1997.

Tirkkonen-Condit, S. *Empirical studies in translation: textlinguistic and psycholinguistic perspectives*. Joensuu: University of Joensuu, 1986.

Toury, G. Experimentation in translation studies: achievements, prospects and some pitfalls. In S. Tirkkonen-Condit (ed.). *Empirical research in translation and intercultural studies*. Tübingen: Gunter Narr, 1991. p.45-66.