

# **REVISION AND TIME CONSTRAINTS IN TRANSLATION**

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## **Abstract**

This small-scale pilot study of the translation process was conducted in order to work out the methodology for the future large-scale research and describe the effect of time pressure on the translation process as a whole and revision in particular. Two translators translated two texts with and without time pressure; all their activities were documented and analyzed. Our hypothesis, stating that the distribution of time and translation tasks over the phases will change under time constraints, has been confirmed. At the same time, interesting and surprising findings were made concerning the quality of the final product: translating under time pressure seems to yield a higher quality output. This still has to be confirmed by a study with a larger number of informants and triangulation, which is what we hope to do in the nearest future.

**Keywords:** empirical studies, translation process, revision, time constraints, translating styles

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## **Introduction**

There has been growing interest in the translation process over the last 20 years. Translation Studies has adopted empirical techniques from cognitive psychology, psycholinguistics and related disciplines and has developed its own methods of data collection like Translog. All this has brought about a quiet revolution in the way translation is regarded. Nowadays Translation Studies scholars, far from the earlier prescriptivism, are looking for better practices, not by trying to set up a number of rules that should regulate translation, but rather by looking at what makes real translations successful.

This is the point of view that we have adopted for the present study: we are interested in the processes that take place during translation, in the factors that can influence it and in translators' reactions to those factors. In doing so we are concerned not only with getting new insights into the process, but also in improving existing practice. Perhaps this is too ambitious an aim, but if in the end we come a little closer to understanding the complicated mechanisms that are at work when a translator starts translating, we will feel satisfied.

Empirical research on the translation process has yielded interesting and sometimes contradictory results. First of all, we are going to examine the existing findings to outline the path we are going to follow. We are primarily interested in revision and time constraints, so research on both revision and time in translation are analysed in detail.

Our study is based on the translations of two texts from Spanish into English done by English-speaking translation students. For the translation of the first text no time constraints were imposed (both finished translating in about 24 minutes). For the second text the subjects were given under 10 minutes. The first student coped well with time constraints, but the second did not have enough time to finish the last sentence.

We admit that using think-aloud protocols, questionnaires and eye-tracking would offer us a number of new possibilities and broaden our understanding of translation processes, which is what we intend to do in the future. In this case we just tried to elicit all information we could from the data.

This led us to consider the distribution of time spent on each of the three translation phases: pre-drafting, drafting and post-drafting. Then the translation tasks

performed during the translation were classified. They were divided into: production, visually represented as typing new text; documentation, consisting of looking up words in multimedia dictionaries and searching for information on the Internet (the only source of information the subjects had during the experiment); revision, consisting in deletion of previously written words and phrases or insertion of new text in the body of the translation; technical revision, consisting in correcting spelling mistakes; technical adjustments, which consist in various manipulations with the windows and the text, such as scrolling up and down, minimizing windows, opening new documents, etc.; and processing, the most problematic part of the process, as it is not represented visually apart from, for example, movements of cursor while reading.

Apart from analyzing the distribution of time and tasks over the phases, the detailed analysis of the reformulations was carried out. This allowed us to assess the necessity (and in many cases no necessity) of these changes, which also sheds light on both general aspects of the process and individual differences between the subjects.

Finally, an evaluation of the translation was made by an expert in revision. The results of the evaluation were surprising: the best results were yielded by the translations made under time constraints.

Chapter 1 discusses theoretical approaches to the translation process, especially the ones that developed in order to explain the empirical findings of the last twenty years or so. Special sections are devoted to the phases of the translation process, processing, and, of, course, revision and time constraints.

Chapter 2 gives an overview of the empirical research conducted within the framework of process-oriented DTS. It is subdivided into empirical research on the translation process in general, on revision and on time constraints.

Chapter 3 presents the most important methodological issues, some of which are directly related to the present study, and others help us understand the problems and perspectives of empirical research in Translation Studies.

Chapter 4 reports on the pilot study.

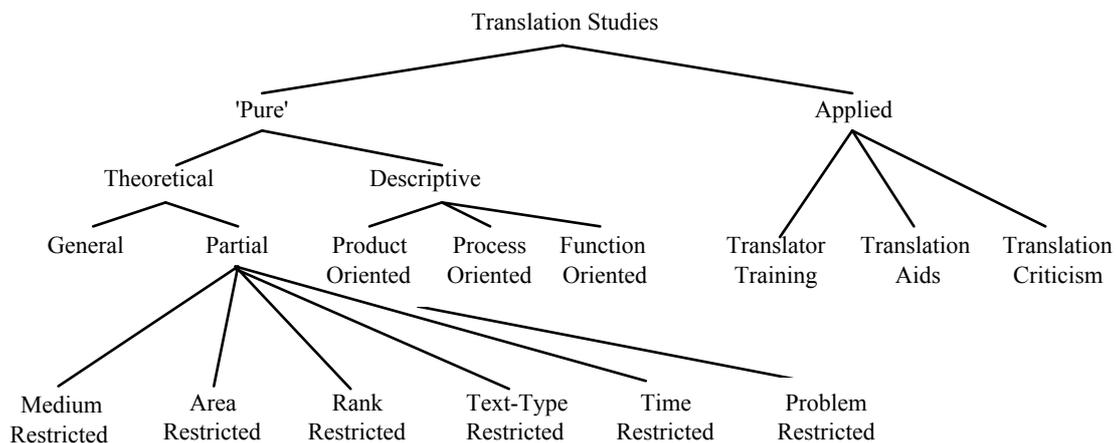
And, finally, Chapter 5 contains some reflections on the limitations of the present study and proposals for the future research.

## Chapter 1

### Literature review

#### *Empirical research in Translation Studies*

Embarking on a study aiming at creating new knowledge, however modest our contribution may turn out to be, we believe it necessary to situate ourselves within the vast and ever-growing field of Translation Studies. And what could serve better for this purpose than the work that “laid the foundation stone of the discipline with what now seems visionary powers” (Snell-Hornby 2006: 3), James Holmes’ “map” of Translation Studies.



**Figure 1. Holmes’ conception of translation studies (from Toury 1995: 10)**

We find ourselves in the descriptive area, which Toury (1995) focused on in his seminal book. That was due to the fact that until recently Descriptive Translation Studies (DTS) was uncharted territory for translation scholars.

The area is further divided into product-oriented, process-oriented and function-oriented DTS. Product-oriented DTS involves corpus analyses and comparative surveys: “one of the eventual goals of product-oriented DTS might possibly be a general theory of translations – however ambitious such a goal may sound at this time” (Holmes 1987: 14, as cited in Snell-Hornby 2006: 43). Since then quite a lot has changed, owing to the great amount of work carried out by Vermeer (1992), Delisle and Woodsworth

(1995), Baker 1998, and many others. Many large-scale corpora projects were created in Great Britain, Germany, and Ireland, among others.

Function-oriented DTS flourished in Germany, represented by Hönig and Kussmaul (1982), Nord (1991) and Hönig (1995). It was based on Hans Vermeer's skopos theory (see Reiss and Vermeer 1984), which occupies a prominent place under the General Theory branch of Pure Translation Studies.

Finally, Process-oriented DTS, which interests us most and which are normally most empirically- and experimentally-oriented, gained particular popularity in Germany and Finland: the translator's 'black box' has been studied by Krings (1986a and 1986b), Jääskeläinen (1989), Tirkkonen-Condit (1989), Lørscher (1991) and many others (see Chapter 2) with the help of think-aloud protocols (TAPs). A new stage was entered with the development of Translog software in 1998. Copenhagen Business School became a new centre of process-oriented translation studies, giving impetus for extensive research: Jakobsen (1999, 2002, 2003), Hansen (1999, 2002, 2005), Jensen (1999, 2000, 2001), Alves (2001, 2003, 2006), and others. Eye-tracking gives a deeper insight into what goes on in the translator's brain, but it has not been used extensively because of its high price. Methods borrowed from neurophysiology were used for research on simultaneous interpreting (see Kurz 1994), but at the moment they seem to be inapplicable for research on translation.

### *Translation process*

Even defining translation process is not an easy task. Malmkjær (2000: 163) states that

'translation process' may be used to designate a variety of phenomena, from the cognitive processes activated during translating, both conscious and unconscious, to the more 'physical' process which begins when a client contacts a translation bureau and ends when that person declares satisfaction with the product produced as the final result of the initial inquiry.

Both aspects are of equal importance for Translation Studies, but the methodology and difficulties they present differ fundamentally. For example, this is Sager's (1993) process model, which can be related to the "physical" sense of the translation process:

Specification → Preparation → Translation → Evaluation

In the psycholinguistic sense, the translation process can be described as follows:

Input → Black box → Output

What is most important in these models of translation process and what makes them different from comparative and causal models of translation (Williams & Chesterman 2002: 48-57) is the notion of time that makes them dynamic. And it is precisely this notion we are interested in: the tasks performed during translation and their relation with time.

House (2000: 150) emphasizes that “we are dealing here not with an isolable process but rather with a set of processes, a complex series of problem-solving and decision-making processes”. These processes have been described and classified in various ways. An example of a simple enumeration of translation tasks is Breedvald’s (2002a and 2002b) list of the activities that translators perform during the translation process, such as reading ST; commenting ST; evaluating ST; process planning; realizing translation problem; producing / formulating TT ; writing TT; reading TT; evaluating TT.

#### *Phases of the translation process*

A more structured view of the process was suggested by those researchers who divide production of translation into various phases (Krings 1986a; Mossop 2000; Jensen 2001; Jakobsen 2002; Asadi and Séguinot 2005; Gouadec 2007).

Krings (1986a: 186-187) divides the translation process into three phases. The first phase, *Vorlauf*, is preparatory and comes before the beginning of translating. During this phase translators read the text and make note of possible problems. During the second phase, *Hauptlauf*, translators produce the translation performing various actions: they produce the text of the translation, consult dictionaries and correct their translations (on-line correction in modern terms). Finally, the last phase, *Nachlauf*, is dedicated to reading through the target text and trying to improve it (off-line revision).

This division seems very logical, and perhaps this is the reason why various researchers have used it, either through the influence of earlier work or independently. For example, Jensen (2001: 98-99) uses the same division but gives different names to the phases. This is motivated first by the fact that her work is written in English and the use of German names could pose some problems to those readers who do not speak this language. Secondly, she wants the terminology to coincide to some extent with Bereiter and Scardamalia's (1987) notion of start-up time (Bereiter and Scardamalia, on whose models of Knowledge Telling and Knowledge Transforming Jensen bases the theoretical framework for her research, try to account for the characteristics of the

writing process in general). So she distinguishes (2001: 99) the following three phases (to be able to delimit the phases she uses Translog and TAPs):

1. Start-up time, “during which the translator sets up goals for the task and plans ahead. During this phase, the translator may form a mental representation of the text to be translated by reading the source text and analysing it for problems”.
2. The writing phase, “during which the first version of the translation is actually written”.
3. The revision phase, “during which the target text may be compared to the source text and further modified or improved”.

According to Mossop (2000: 40), the three phases of translation production are:

- (1) pre-drafting (before sentence-by-sentence drafting begins)
- (2) drafting
- (3) post-drafting (after sentence-by-sentence drafting is complete)

And within these phases there are five tasks to be performed:

- (1) Interpret the source text.
- (2) Compose the translation.
- (3) Conduct the research needed for tasks 1 and 2.
- (4) Check the draft translation for errors and correct if necessary.
- (5) Decide the implications of the commission: how do the intended users and uses of the finished product affect tasks 1 to 4?

The distinction that he makes between phases and tasks is what makes his model different from the rest, because the latter imply that the tasks are somehow inherent to the nature of the phases, while for Mossop the important factor is the distribution of the tasks over the phases, as “[e]ach task can be performed during any phase (with the exception of task 4, which cannot occur during phase 1)” (2000: 40).

Mossop himself makes this point comparing his model with Sager’s, where preparation is pre-drafting, translation is drafting and evaluation is post-drafting. Specification or commission would precede the pre-drafting stage. However, Mossop (2000: 47) criticizes Sager for not distinguishing between a temporal phase and a task.

The main problem for Mossop is that “we do not know, and need to know, [...] *how translators distribute the tasks over the phases*” (2000: 40; emphasis in the original). However, the tasks cannot be demarcated as clearly as the phases. For example, the borderline between processing required for interpreting the source text and

composing the translation is often very difficult to establish. Analyzing his protocol studies, Kussmaul (1997: 243) concludes that “the traditional notion that in the translation process we can distinguish two separate phases should [...] be replaced by a model that leaves room for overlapping of the phases.”

This overview of models of the translation process would not be complete without mentioning Gouadec’s description of the translator’s job (2007: 12-26). First, he divides the activities involved in providing a translation service into three phases:

1. Pre-translation
2. Translation
3. Post-translation

Pre-translation includes anything that takes place up to the moment the translator actually receives the material for translation, representing thus the second definition of the translation process by Malmkjær (2000: 163). Post-translation, accordingly, covers all activities that follow delivery of the translated material.

Translation is divided into three stages we are already familiar with:

1. Pre-transfer
2. Transfer
3. Post-transfer

The use of ‘transfer’ instead of ‘drafting’ does not really make any difference, as the activities that take place within each of these phases basically coincide with those proposed earlier. However, we are not entirely satisfied with his model, as it is not as flexible as Mossop’s: once again the translator’s activities are bound to concrete phases, which can be seen from the chart Gouadec uses to illustrate his model. This can be due to the fact that Gouadec’s book was intended primarily for describing professional practices and group work, so quite often it is prescriptive rather than descriptive. This is why Gouadec’s ideal professional translator will not waste time on unnecessary actions; his or her work is perfectly structured and ruled by pragmatic (in non-linguistic sense of the word) norms, not bound to psychological realities. But since we are going to deal with real-world translators, and sometimes not even professionals, Gouadec’s rigid lists become difficult to apply. This is why at the end we are going to stick to Mossop’s view of the translation process.

Before proceeding further, we would like to clarify some doubts that can arise from the different use of these terms by other scholars. For example, in his sequential model of translation process devised for translator training, Gile (1995: 101) views

translating as a two-stage process operating on consecutive text segments. The first phase is source text comprehension (consisting in formulating mentally a “Meaning Hypothesis”), and the second phase is reformulation in the target language. Even though Gile admits that in actual practice the two stages overlap, he argues that beginning students should not do that. When they reach a higher stage, they are taught the action/test/action loop, that is revision.

This model is criticized by Jensen (2001: 51), who finds the term *phase* inappropriate in the context of the translation process, as its recursive nature “makes it difficult to identify distinct cognitive phases”. Therefore, she prefers the term *processes* instead of *phases*. We think this is an important point, as the term *phases* in our study will refer to pre-drafting, drafting and post-drafting, which can be easily delimited.

The concept of “looping” also has some disadvantages, as it emphasizes once again the division into separate phases. Jensen (ibid) finds that this description “fails to take account of the interaction that takes place between comprehension and production”. She cites Wilss (1996: 136), who refers to the continuous forward and backward movements between source-text reading and target-text formulation as *multiple stage* translation, which rests on the assumption that as a rule translators do not attain an acceptable result in one fell swoop, but rather in a series of moves, enabling the translator to practise cumulative, self-corrective feedback. So the question arises how these two overlapping processes can be distinguished and analyzed in a study of the translation process. This issue is discussed in the next section.

### *Processing*

Generally processing has been associated with pauses in production, provided the pauses are not due to activities not related directly with the translation process. At the same time, the cognitive filling of these pauses can be a subject to debate, as in most cases it is not clear to an outside observer whether the pauses are connected with analyzing a segment of the source text and choosing the best translation or with monitoring the previous production segment (Jakobsen et al. 2007). We would like to proceed to analyze this issue starting from the data that we have at our disposal, namely pauses.

As for pauses in the domain of language production, it is generally agreed by researchers that they are indicators of cognitive processes (see Foulin 1995; Schilperoord 1996; Cenoz 2000). Translation Studies has adopted this claim for the

purpose of research into the translation process (Séguinot 1989a, 1989b; Jakobsen 1998, 2002; Krings 2001; Hansen 2002; Alves 2006; O'Brien 2006b). O'Brien gives a comprehensive overview of the actual situation in the field of pauses research (2006b).

According to Krings (2001: 304), language production research shows that pauses are of great value in the identification of processes, and especially process boundaries. Pauses can be identified and measured with the help of Translog or eye-tracking, and they are highly operational, which proves a great advantage for empirical research.

According to Séguinot (1989b), pauses typically occur

- at the end of the sentence/paragraph
- between independent clauses
- before/after subordinate clauses
- before phrases
- before subject and predicate
- at the end of line/word level
- before/in words.

She defines pauses as “interruptions in the typing of translation” and hesitations as “unusually slow typing” (1989b: 31). However, she does not explain of what duration pauses and hesitations are in her study. Jakobsen (1998: 3) claims that a pause length of 1 second is appropriate for observing delays in text production:

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.

He argues (1998: 100) 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”.

Hansen's research (2002) is of particular interest to us, as she wants to find out, first, whether some translators demonstrate specific pause behaviour in translation which is independent of direction; and, secondly, whether there is any correlation between the position, duration and number of pauses and the quality of the translation product.

With the help of Translog, Hansen confirms both hypotheses. Her first hypothesis directly relates to what we call “translating styles” (see below), as the study confirms that translators do demonstrate specific pause behaviour. This finding chimes in with Cenoz’s claim (2000) that pause and hesitation phenomena are subject to individual variation. As for the second hypothesis, she finds no correlation between the position, duration and number of pauses and the quality of the translation product.

Alves (2006) observes that the cognitive rhythm of novice translators is “erratic”, and also confirms Hansen's findings that pausing is not reflected directly in the quality of the final output.

In general, there is broad agreement on the fact that pauses are influenced by a number of factors, among them knowledge of the domain, knowledge of the text recipient, text type and the emotional state of the author (Bonin and Fayol 1996). All this makes research on pauses more challenging and at the same time lets us hope that the results of this research can provide us with revealing insights into the psycholinguistic nature of the translation process.

But the basic issue remains unresolved: how do we distinguish between forward planning and back revision? This was pointed out by Foulon (1995: 494):

En somme, des variations de la durée des pauses, principalement celles localisées en fin d’unités structurales, pourraient également survenir en fonction de ce qui précède. Dès lors, il conviendrait, d’une part de décrire et expliquer le fonctionnement de ces pauses rétrospectives et, d’autre part, de déterminer dans quelle mesure l’activité de pause en un site donné dépend de décisions relevant de la planification du texte subséquent ou du contrôle du texte antécédent.

O’Brien (2006b: 7) states that “current methodologies do not allow us to specify exactly what motivates a particular pause”, but we believe that eye-tracking could be a possible solution to this problem. In their study of different renderings of idioms from English to Dutch, Jakobsen et al. regret they do not have eye-tracking data to reinforce their findings on pauses: “In particular, [...] we cannot know for certain how much time was spent on planning the production of the idiom segment and how much was spent on monitoring the previous production segment” (2007: 237).

It is for this reason that in the pilot project we do not make a distinction between forward planning and back revision. We hope to be able to differentiate these two processes in the future with the help of eye-tracking equipment allowing tracking the

direction of gaze and pupil dilation, which would provide us with direct evidence regarding the object of the cognitive effort.

### *Revision*

Revision came into focus in Translation Studies not long ago. For instance, there is no entry “Revision” in *The Routledge Encyclopedia of Translation Studies* published in 1998; only ‘Revising and criticism’ of literary translations are defined. But being a very important part of translation process and closely connected with translation quality, revision could not but be studied in some detail.

As normally happens in most language-related areas, prescriptive guidelines came first: Horguelin and Brunette with their *Pratique de la révision* (1998) and Brian Mossop with his *Revising and Editing for Translators* (2001) were some of the pioneers addressing this area from a pedagogical and practical perspective. The fact that all of them come from Canada is indicative of the specific linguistic situation in this country, which leads to heightened awareness of the dangers of interferences, etc.

Since then a few empirical studies on revision have appeared that pose new questions and try to answer them. They differ in scope, subjects of study and methods used but can be roughly divided into two groups: self-revision and other-revision, which can both be unilingual or comparative (cf. Brunette et al. 2005). Research on self-revision seems less concerned with practical dimensions like translation quality than research on other-revision, as what interests the researchers most in the former are the underlying psychological factors.

To assess corrections, the system suggested by Peter Arthern (1983; 1987) can be applied. His system is set “in a practical rather than scientific context” (Mossop 2007) due to the fact that it was worked out as assessment of twelve revisers in the into-English translation service of the former Council of the European Communities, now the European Commission, which the author headed. Arthern proposed a formula:  $S = X + F/2 + U/3$ , where S is a reviser’s score, X - the number of substantive errors left unchanged or introduced by reviser, F - the number of formal errors (a formal error “does not distort the overall meaning of the text”) left unchanged, and U the number of unnecessary change made. The number of necessary corrections or improvements in readability is not taken into account in this formula. Unfortunately, he does not provide concrete examples of such an assessment.

In a later study Arthern (1991) eliminates unnecessary changes from the formula and makes no distinction between substantial and formal errors (S= X+F). However, we prefer the first variant as we are concerned with time, and introducing unnecessary changes is quite common and slows down production.

Revision also can serve as the basis for singling out so-called translation styles. Translators, like writers, have different styles and use different strategies in their work. Going back to the classification of phases and tasks during translation process devised by Mossop (2000: 40), we find a very illustrative and useful description by Chandler (1993) adopted by Mossop for translating (2000 and 2001):

<b>Task/phase: writing strategy</b>	<b>Planning / pre-drafting</b>	<b>Revising / drafting or post-drafting</b>
Architect	Major	Minimal, after drafting
Bricklayer	Major	Major, during drafting
Watercolourist	Minimal	Minimal, during drafting
Oil Painter	Minimal	Major, during & after drafting

Table 1. Mossop's classification of translating styles (2000, 2001)

Even though Chandler's is a study of writing strategies in general, it can be perfectly applied to translating, which is indeed what Mossop does (confessing by the way that his own book was 'oil-painted'):

Translators too use different strategies. Some do considerable preparation before beginning sentence-by-sentence drafting of the translation. For instance, they may read the text through entirely or at any rate in some detail, and they may do a considerable amount of conceptual or terminological research. Others just take a quick glance and then start drafting the translation. During sentence-by-sentence drafting, some people try to solve almost all problems as they go, while others 'steamroll' through the text: if a passage is difficult, they leave a blank, or make a guess preceded by a question mark, or write down alternative translations separated by a slash. Finally, as regards self-revision, some people do much of this during sentence-by-sentence drafting: they select one wording, then change it, then change it again; or they may stop to revisit an earlier passage and correct it. But once the draft is down, few further changes are made. Other people work quite differently: they leave almost all self-revision work until after the draft is complete. (2001: 3)

These analogies are not just a result of casual observation or an attempt at a nice metaphor: some research on revision provides evidence of this. Research carried out by

Englund Dimitrova (2005), Jakobsen (2002), and Asadi and Séguinot (2005) demonstrates that there are significant differences in translating styles.

Although Breedweld (2002: 99) points out that “not only will the individuals differ in the way they proceed in order to produce a translation, but they may also proceed differently according to the translation task they are confronted with”, there is some evidence demonstrating that there is no correlation between the subjects’ cognitive rhythms and the type of target text rendered by them (Alves 2006: 6).

In a study dedicated to the comparison of professional vs. non-professional translators’ translation drafting, Jakobsen (2002) reports that, on average, professional translators dedicated more time to pre-drafting and less to drafting than non-professionals did. Jensen’s study (2001) has confirmed these findings.

### *Time constraints*

Traditionally time in translation has not been regarded as one of the defining factors, a supposition based on the idea that while oral interpreters normally work at speech-delivery speed, “translators generally have hours, days, or even weeks to complete the operations” (Gile 1995: 111). This means that they have time to consult with experts, colleagues and search databases and dictionaries to solve individual problems.

However, the actual situation professional translators often find themselves in is quite different from this idealized description, which is perhaps best suited to the learning environment. Many of them, even those not working with news and other particularly perishable texts, have to work to very tight deadlines, a fact recognized by many scholars. Most freelancers agree that if you cannot work fast, you cannot earn enough money to pay the bills, as in many countries of the world translators’ work is not extremely well paid. This is the situation described by Gouadec in his book with the telling title *Translation as a Profession*, where he describes the standard practices of translators:

For the translator, this can mean having to be prepared to work fifteen or sixteen hours a day for days on end to meet the deadline on a major contract, and then facing several nail-biting days, or even weeks, with little or no work. (2007: 215)

This situation puts to the test “the translator’s ability to combine topical knowledge with linguistic knowledge” (Jensen 2001: 5), changing their *modus operandi*, and thus deserves closer observation and investigation.

At the same time, self-revision has often been seen as a consequence of looser time constraints, as translators can afford to go back to a problematic segment as many times as they wish until they are satisfied with the solution: “Translators can read the source-language text several times at leisure [...] Similarly, they can write their target-language text at leisure and improve it iteratively [...]” (Gile 1995: 186).

According to Gouadec (*ibid*), this is not always so: “deadlines are usually far too short [...] or the contract price is too low (which means that the translator cannot afford to ‘waste’ time on the job and certainly not on fine-tuned quality control)”. This is a real-world situation that translators have to face quite often.

Another important question arises as we think about the implications of Gile’s statement: does this mean that the more time the translator has, the more improvements they will make resulting in a better quality target-text? According to Gile (1995: 113), the answer would be positive: “In translation, a target-text is not final until it is handed over to the client. This means that until that moment, the translator has the opportunity, which some conscientious practitioners regard as a duty, of improving it as much as possible.” However, various studies have demonstrated that it is not necessarily so, as we shall now see.

## Chapter 2

### Previous research

In the previous chapter we mentioned that process-oriented DTS was developed not so long ago. The first studies appeared in the mid-1980s and they were directly connected with the introduction of new methods of data collection, sometimes borrowed from other sciences (like TAPs) and sometimes developed specifically for the study of the translation process. The application of eye-tracking equipment for studying translation, which started not long ago, can also become a significant breakthrough in process-oriented translation studies.

In this chapter we would like to give a brief overview of a few seminal studies that have determined the direction of the whole empirical approach in Translation Studies. Also some studies on the revision process and on time in translation are analyzed, as this is the area that is of particular interest to us.

It should be pointed out that we do not include research on interpreting into this overview due the complexity of the former, almost impossible to assess to the full extent within a short chapter. However, we do not discard the possibility to apply the methodology and results of this research to our investigation in the future.

#### *Empirical research on the translation process*

According to Kiraly (1995: 42), empirical research into translation processes dates from the 1984 study by Dechert and Sandrock. Nowadays it looks like the testing of a new methodology rather than a real piece of research: only one subject was involved, an advanced university student of English, who had to translate a text from English in 15 minutes using dictionaries. In addition to taping the subject's verbalizations, Dechert and Sandrock recorded the time the student used to process each translation unit. The conclusions they came to can be summarized as follows: the translation was done mostly on word level, and there was a tendency to keep to the syntactic structure of the source text, even if the norms of usage of the target text were violated. Even though the value of the findings is of little consequence nowadays, it was an important step forward in terms of methodology.

### *Gerloff*

The first empirical studies on the translation process were primarily concerned with identifying various translation strategies. An example of this is Gerloff's pilot study (1986): five American intermediate university students of French were asked to produce TAPs while they were translating a text from French into English. The students could not use dictionaries - a fact that nowadays would raise doubts about the general applicability of her findings, as documentation is regarded as an important and sometimes most difficult part of the translation process, but back to the 1980's this approach was not questioned. We also should not forget that the study was aimed not at discovering new facts about translation, but rather at "develop[ing] a methodology for researching learner processes of second language translation" (Gerloff 1986: 244).

Gerloff developed a two-part system for the analysis of the data: text-processing strategies, divided into 8 groups, and linguistic levels at which individual translation strategies operated, from morpheme or phoneme level up to sentence level.

As for text-processing strategies, she identifies the following ones: problem identification, linguistic analysis, storage and retrieval, general search and selection, text inferencing and reasoning, text contextualisation, eliciting and, finally, extratextual or language use and task monitoring.

The fact that in Gerloff's classification of translation units the highest level is that of a sentence may be due to two factors: first, she worked with students of French, not even translation students, and even beginning translation students tend to see the sentence as the largest translation unit; another reason behind that is that at the time the pilot study was written, the linguistic approach to translation still enjoyed great popularity at most universities.

However, Gerloff's approach proved very effective, as it allowed comparison of the choice of translation units and strategies employed "within and across various categories of language users" (Gerloff 1986: 258), for example, by professionals and novices, a type of study that became popular at the end of the 1980s.

### *Lörscher*

Lörscher (1986) claimed that using TAPs would be more natural if the translation was done orally from a written source. This is the experiment that he carried out with fifteen German subjects with "little experience and training in translation and only partial

competence in the target language” (Lörscher 1986: 277), seeking to find evidence for the hypothesis that “an innate basic ability to translate” (ibid.) exists.

The use of dictionaries was prohibited in order to ensure a greater number of problem-solving processes. All this could not but affect the normal translation process, as was pointed out by Krings (1986a) right after the publication of the study. Also, the use of sight translation was criticised by Kiraly (1995: 44) for the reason that it “changes the parameters of a translation task considerably because the translator cannot backtrack and review interim translation products”.

Notwithstanding the criticisms, Lörscher used the same mode of translating in his later studies (1991 and 1996). In 1991 he studied 52 translations (half of them into L1, and the other half into L2) carried out by 48 subjects. The study has a very broad basis, and Lörscher evaluates the protocols completely, identifying numerous “elements of translation strategies” and “translation strategies”.

Later Lörscher (1996) carried out the same study, but this time working with professionals. He found out that foreign-language students normally focused on the linguistic level, taking a form-oriented approach, whereas professionals were more concerned with stylistic and text-type adequacy. The strategies used by the two groups were the same, but their distribution and frequency differed.

Although Lörscher's findings are of interest for Translation Studies, as the basic difference between professionals and non-professionals was confirmed, we should mention that his research design flatly contradicts the principle that “simultaneous introspection [...] in terms of concurrent talking or thinking aloud or verbalization of specific cognitions, presupposes that the modality of language use is not itself oral-productive” (Faerch and Kasper 1987: 15). To put it simply, the mode of sight translation did necessarily interfere with the cognitive processes reflected in the concurrent TAPs.

### *Krings*

One of the most often cited early studies on the translation process is, without doubt, Krings' *Was ist den Köpfen von Übersetzern vorgeht* (1986a). The reason for this is that it is “one of two major empirical studies published to date on the psycholinguistics of translation” (Kiraly 1995: 44). Its advantage over the previous research lies in the fact that Krings had analyzed all the drawbacks of the previous research and tried to improve the research design as much as possible.

First, Krings criticized Dechert and Sandrock for the simplicity of their study based on the ratio of the time spent translating a segment of the source text to the time spent reading it. In Dechert and Sandrock's study the ratio was three to one, which indicates that the text was very simple and did not present any difficulty for the student who had to translate it. In Krings' experiment the ratio went up to about twenty-five to one, as he chose a text with many translation problems in the belief that non-problematic texts are usually translated automatically. But in the end, Krings was also criticized for his choice of text: he chose a newspaper article laden with metaphors, puns, etc. that were very difficult to translate (which is what he initially wanted) and also rather atypical in terms of everyday translation work.

Krings also criticized Lörcher's study for the prohibition of dictionaries, because, as we have already mentioned, documentation is an important part of translation strategies. Another point of disagreement is Lörcher's use of the written-to-oral combination, which Krings finds rare. Krings was especially interested in the strategies applied in response to translation problems, so he pointed out that different strategies would be used when translating orally: only short segments of text can be kept in short-time memory and the possibilities of revision are very limited.

Gerloff's study did not avoid his criticisms either: she failed to make the distinction, very important for Krings, between controlled and automatic behaviour. This is caused by the fact that her area of interest lies primarily in studying the process from the point of view of second-language use and not translation, so she does not give a precise definition of the term *translation strategy*. Actually, she does not distinguish between processes and strategies at all, classifying all the verbalizations as belonging to one of the 45 strategies she had established. For Krings, taking very seriously the principles of empirical research and interested in problem-solving, this is unacceptable. He bases his definition of translation strategies on Faerch and Kasper's definition of the communication strategies (1983), regarding them first of all as "potentially conscious plans for solving a translation problem" (Krings 1986b: 268).

Krings also introduced a new variable – directionality. Four of the eight subjects (university students in Romance languages) did a translation from French into German, and the rest from German into French. In total, 454 translation problems were encountered, divided into comprehension problems and retrieval problems. Depending on the kind of the problem, a total of 115 translation strategies were identified. They were used as a basis for a model of the translation process presented in the form of a

flow chart (Kring 1986b: 269), according to which the process can run in two directions: if no problem is identified, the translator proceeds to the target text without any additional mental activities, that is automatically; if a problem is encountered, depending on its type either comprehension or retrieval strategies are activated. When it comes to monitoring strategies, there are also different possibilities: if there is only one equivalent, the translator proceeds directly to the translation; if there are two or more equivalents, decision-making strategies come into play; and finally, if the translation found is not adequate, the translator either goes back and uses another retrieval strategy or uses reduction strategies.

Once again, non-professionals were involved: Krings analyzed the performance of eight native speakers of German, all studying to become secondary school teachers of French and completing their master's level degrees. Krings was aware of the fact that "the structure of the translation process of experienced professional translators might differ substantially" from that of the students (Krings 1986b). That is why in a later study (1988) he repeated the experiment, but with professional translators. The strategies differed significantly: the professionals used holistic strategies, whereas the non-professionals' strategies were mostly linear.

### *Königs*

Unfortunately, the author has not had an opportunity to read *Was beim Übersetzen passiert* [What happens during translation] published 1987, so we will have to rely on the accounts of it given by Kiraly (1995: 46-48) and Krings (2001: 84-87).

The study once again involved subjects whose mother tongue was German. They were: two second-semester university students of Spanish, two students nearing the completion of their Master's level program in Spanish and one professional German translator. The five had to translate two texts, originally written in German and then translated into Spanish (which was later criticised by Krings, who warned that there might be some errors introduced by the first translator from German into Spanish, and recommended using authentic texts for the experiments). Video recording was used along with TAPs.

Königs identifies two types of translation units: (a) those translated spontaneously (i.e., for which the translator had found a one-to-one equivalent) and (b) those posing translation problems. He also gives the reasons why certain translation units may be

found problematic, like gaps in the translator's competence, specific linguistic or context difficulties or performance difficulties.

#### *Jääskeläinen and Tirkkonen-Condit*

The two researchers have made a great contribution to the study of the translation process. Both have published various studies separately, and in 1991 they joined their efforts to study automatized processes in translation. In 2000 they edited a collection of articles called *Tapping and mapping the process of translation and interpreting: outlooks on empirical research*.

Jääskeläinen and Tirkkonen-Condit were mostly interested in the differences between professional and non-professional translators and dedicated a number of studies to comparing various aspects of the translation process for these two groups. The problem is that at the beginning they regarded as professionals fifth-year students of translation (Tirkkonen-Condit 1989; Jääskeläinen 1989; Jääskeläinen and Tirkkonen-Condit 1991), but this in no way invalidates their findings, which served as a real breakthrough in empirically-oriented Translation Studies.

In her first study, Jääskeläinen (1989) identifies some differences between two non-professionals (first-year students of translation) and one professional (fifth-year students). Even though the findings cannot be regarded as definitive as a description of real professionals and also because of the small sample size, it still demonstrates the gradual acquiring of translation competence. For example, the professionals' use of reference materials was better structured and more effective.

In 1991 Jääskeläinen studied the differences in the focus of attention during task performance, using for the experiment four non-professionals and four professionals, this time with more than 10 years of experience. Her findings agreed with Krings (1988) and Lörcher (1996) in that non-professionals normally did not go beyond formal linguistic correspondence, whereas professionals used all their textual and world knowledge when translating.

In their joint study, Jääskeläinen and Tirkkonen-Condit, while using the same criteria of professionalism as in Jääskeläinen's first study, worked with a larger number of informants – seven in total. In this study they were interested in the automation of translation processes, and the results proved to be quite interesting with respect to the long-lasting discussion of automation between the proponents and opponents of the use of TAPs in Translation Studies. Some scholars argued that TAPs would be ineffective

when used on professionals, as their translation processes would be automated to a high degree, and thus would not produce many verbalizations (cf. Chapter 3).

Jääskeläinen and Tirkkonen-Condit's study demonstrated that even though the professionals did verbalize less than the novices when it came to routine tasks, they became sensitive to more complex translation tasks, which required a lot of decision-making. Their conclusion is that "while some processes become automated, other processes are evoked into consciousness, i.e. the translator becomes sensitised to new kinds of problems" (1991: 105).

This conclusion was supported by the findings of Jääskeläinen's 1999 study, which showed that semi-professionals (translator trainees) spent more time on processing than both professionals and non-professionals. This may be the result of becoming sensitised to new problems without automatizing the problem-solving strategies.

### *Kiraly*

Up to this point we can see that in general the findings agree, and more or less the same conclusions are arrived at by various scholars. Kiraly's study of the translation process (1995) is an exception in this aspect, as it demonstrates no significant differences between professional (nine graduates from a university translator training program having had at least some experience as professional translators) and translation students (nine second-semester students). Once again, a question can be raised whether these graduates could be regarded as professionals.

The study forms part of his book on pedagogy in translator training, so Kiraly's main aim was to develop a model for teaching translation. His findings are quite surprising – he did not find any major differences in the process or in the quality of the product for professionals and non-professionals. This may be a result of the fact that the subjects were asked to translate from German into English, their L2, in which, according to Kiraly, the informants did not feel comfortable (Kiraly also used questionnaires after the completion of the task). Also, we are not told anything about the kind of experience the graduates had, which makes it hard to make any definitive conclusions.

Kiraly makes interesting conclusions from the experiment, some of which chime in with Shreve (1997), who believed that automatic processing is as important in professional translation as other scholars thought it was: Kiraly believes that the

difference between professionals and non-professionals lies not in the degree of automatic processing, but in differences in conscious processing when a problem occurs. Professionals are more aware of the existence of certain problems, can find a better tentative solution to it and evaluate it (Király 1995: 110). This finding agrees with the conclusion made by Jääskeläinen and Tirkkonen-Condit (see above).

#### *Empirical research on revision*

In books on translation the view is shared that revisers are normally senior translators that after many years of work have acquired a lot of experience their junior colleagues do not possess, which allows them to identify more problems in a translation and find better solutions to them. Generally, ten or more years of experience are seen as a requisite to become a reviser (see Gouadec 2007). This implies that revision skills are not that different from translation skills, and also that revision competence develops in response to experience, and not only to training. At the same time, almost any translator has to do some self-revision, which seems to be not an easy task.

Empirical research is needed to provide us with deeper insight into this activity, regarded by many as essential in any translation. Even though in the present study we are focusing on self-revision as part of the translation process, other-revision is also used to evaluate the output. This is why we are going to give a general overview of research on both self-revision and other-revision.

Research on revision evolved not long ago, so new methods of data collection were used, including Translog, which makes the data more quantitative and easier to process.

#### *Research on other-revision*

*Brunette, Gagnon and Hine.* The first question that comes to mind when one thinks about other-revision is whether it should be unilingual or comparative. This is what Brunette, Gagnon and Hine studied in “The GREVIS project: revise or court calamity” (2005). The project started out with a question which kind of revision, unilingual or bilingual, is better. The results of the comparison of unilingual and comparative revision of 13 English-French and French-English translations demonstrated that comparative revision proved more accurate and, what is quite surprising if we consider research on interferences, more readable. The evaluation of the revisions was made by university

teachers and professional translators and revisers, who worked separately and consulted each other in order to get to the final evaluation.

Both revisions were made by the same subjects, and the results seem even more convincing if we take into account that comparative revision was carried out first, and unilingual a few days after. This was done in order to make comparative revision independent of the unilingual: the time span between the two revisions was meant to erase memories connected with comparative revision so that it would not influence the second revision. Also, the fact that comparative revision was carried out first demonstrates that its better quality was achieved not because it was done after unilingual revision just introducing some new corrections based on the comparison with the ST.

Four analytical criteria were applied to the revisions: accuracy, readability, appropriateness to the audience and linguistic coding. Both corrected and uncorrected errors were classified according to these criteria. We would like to quote the numerical results for the English-to-French subjects: when revising unilingually, they failed to make necessary corrections more often than when revising comparatively (890 errors that they failed to correct in the unilingual version versus 727 in the comparative one). The number of errors they introduced, however, is fewer in the unilingual revision (89) than in the comparative (113). At the same time, they only managed to correct 81 errors, which is less than the number of errors they introduced.

These findings not only demonstrate that higher quality, i.e., fewer errors made during this type of revision, can be achieved with the help of more expensive and time-consuming comparative revision, but also makes us question the very need to revise, as the final output might be even worse than the original translation: “monolingual revision proved to be an irrational practice, even less helpful than no revision” (Brunette et al. 2005: 43). This is especially relevant in the light of the publication in 2006 of the EN-15038, the European quality standard for translation services. This standard requires that the translation be revised by a person other than the translator, but, as can be seen from this study, this does not always yield better quality.

It should be noted that here we are only discussing one aspect of revision: “This study only tested the criterion of quality [...] Another study could measure the times required to perform the two types and document whether one in fact proceeds faster than the other” (Brunette et al. 2005: 44). Also, Mossop (2007: 7) warns that “no

practical conclusions can be drawn from a single study. More studies are needed to confirm (or, we may hope, disconfirm!) the findings of Brunette and her co-workers.”

*Krings.* Krings (2001) conducted a study of the post-editing of English-German, French-German and German-English machine translation output by 52 German-speaking students in a technical translation program. The experimental exercises included translation, post-editing the machine translation of the English source texts with source text, post-editing the machine translation of the English source texts without source text, and on-screen post-editing.

He comes to the conclusion that post-editing on paper saves about 7% of time, while on-screen editing increases the speed by 20% higher than the same value for human translation of the same texts. But most relevant for us aspect of this study is described in sections 7.3, 7.6 and 11.6 of his book, where Krings considers the unilingual revision of the English-German translation made by the students. The output of each student along with the MT output is evaluated from 1 to 5 on the basis of the correctness and completeness of the rendering of the source text. The evaluation was made by translation teachers and professional translators.

Interestingly, while MT output scores on average 2.39, the students’ revisions were given only 3.38. The reason was that although the students eliminated almost 80% of the errors (most of which are easier to detect in MT output than in human translation), they did not manage to see some of the most wide-spread and trickiest ones, like when the MT system failed to recognize the part of speech – “only half of such errors could be corrected, but it is precisely these errors that seriously impair text comprehension” (2001: 555), which is further evidence that unilingual revision is not always effective.

*Künzli.* Künzli investigated specialized translation, one of the most difficult areas, on the basis of translations of legal and technical texts. His aim was, in the first case, to see whether the reviser’s specialization in a particular field is crucial for producing a high-quality revision.

In his study “Translation revision - A study of the performance of ten professional translators revising a technical text” (2006), ten professional translators with previous experience in revision but not specialized in technical translation had to revise a French-German translation of a technical text with a difficult terminological

problem (the draft translation contained four possible alternatives). The translators' comments were recorded to find out which strategies they applied to solve the problem. After the translators revised the text, the final versions were checked by a freelance technical translator with a degree in engineering, who paid special attention to the rendering of the above-mentioned term.

Only one of ten professionals chose the right rendering, and he was the one who considered the relation of the term to the context and found its synonym in the same sentence. The others just searched databases and Google. This is a highly revealing finding, as from the previous research on the translation process we learned that the basic difference between professionals and novices was the ability of the former to work on the level of the text, and not separate words. In this case even experienced translators could not distance themselves from the word-level.

On the one hand, Künzli's findings confirm the necessity of a reviser with a specialization in a particular field to translate technical texts, and on the other hand, they support the idea that revision, just like translation in general, requires specific skills and the use of certain strategies apart from good knowledge of the two languages. Are revisers made or taught?

This study once again raises serious doubts about the quality of translation revision. Who can guarantee that the same translator that did not manage to find the right rendering is not working right now on a technical text? To yield a high-quality product, the translations in all the three studies described here had to be revised twice, and this implies serious extra costs.

The second part of Künzli's study on translation revision of specialized texts, "Translation Revision: a study of the performance of ten professional translators revising a legal text", is treated below under the heading *Empirical research on time constraints*.

To sum up, we would like to emphasize the importance of a panel of scorers to evaluate revisions, as in Krings' and Brunette's experiments, as we still do not have universally adopted standards for quality and subjective opinions might interfere with the final evaluations.

#### *Research on self-revision*

Self-revision is what we are dealing with mostly in the present study, so relevant research is of particular interest for us. However, the majority of empirical studies like

the ones we have discussed above are on the translation process in general, where revision is tangential. Still, some interesting conclusions have been arrived at which we would like to mention.

According to Mossop (2007: 12), self-revision differs from other-revision in the following ways:

self-revision is intermixed with the drafting process; the self-reviser is familiar with the source text when the task begins; since the operation is on one's own work, the relationship to the translator is not a factor, and the temptation to substitute one's own translations or one's own approach to translation is not an issue.

We have already analyzed the drafting and post-drafting phases and their relation to revision. The familiarity with the source text is an important factor if we compare self-revision with unilingual other-revision.

As could be seen from the section on empirical research in general, many studies involved students. Here, however, we would like to focus our attention on the studies of professional behaviour, which, we hope, will provide us with some kind of a standard procedure to refer to when studying self-revision.

*Englund Dimitrova*. In her 2005 book *Expertise and Explicitation in the Translation Process*, Englund Dimitrova uses Translog and TAPs to study the translation of a two-page text from Russian (L2) to Swedish (L1) by 9 subjects, 2 of which are senior professional translators, another 2 are junior professionals, 2 are translation students and 3 language students.

In many aspects the work of the senior translators differed from that of the rest of the subjects: they made fewer revisions (66 out of the 1002 changes made by all nine translators), and almost none of their revisions were made during the post-drafting phase (9 out of the 627 changes made in the post-drafting phase by all nine translators). This finding is particularly interesting for our study, as we are dealing with non-professional subjects, who, according to Englund Dimitrova, normally wait until the post-drafting phase to start revision.

TAPs provide us with very interesting information: only about 10% of the verbalizations during revision concerned correspondence with the source text, and the rest concerned some aspects of the target language. And again, out of the comments about the ST, none was made by the professionals. Perhaps this indicates the absence of

comprehension problems after so many years of professional experience. As for the retrieval strategies, in many cases *Minimax* was used by the professionals: they just translated literally short chunks of the source text (sometimes only mentally, which can be seen from the TAPs) before searching more adequate renditions. Englund Dimitrova suggests that this is done in order to free up short-term memory for the processing of larger units, which brings their working style closer to that of interpreters.

*Asadi and Séguinot.* Asadi and Séguinot's 2005 study "Shortcuts, strategies and general patterns in a process study of nine professionals" seems to be the embodiment of the research on the translation process Mossop (2000) longed for. It analyses the translation into L1 (two from French to English and seven from English to French) of pharmaceutical texts by nine translators working in this field. Screen recording and TAPs are used as the methods of data collection.

Special attention is given to the distribution of time across the three translation phases: pre-drafting, drafting and post-drafting. Two different approaches are identified that correspond to Mossop's (2000 and 2001) 'architect' and 'watercolourist': some translators planned their translation before entering it on the screen, and made little on-line revision; others translated and revised almost simultaneously.

The distribution of translation tasks such as production, documentation and revision over the phases also differed significantly. Some left most documentation and revision work until the post-drafting phase, while others just monitored the translation during the last phase, but did not introduce any major changes. Mossop (2007: 15) emphasizes that "this difference is regularly reported by professionals attending self-revision workshops". So these findings can be used as evidence of the existence of various translating styles, which we mentioned in Chapter 1.

*Jakobsen.* Finally, we would like to report on one of the numerous studies by Arnt Jakobsen, dedicated to translation drafting by professional translators and by translation students (2002). Jakobsen was interested in detecting differences in the distribution of time over the phases of translation in the groups of four non-professionals (students of translation) and four professionals. All were native-speakers of Danish, but Jakobsen introduced a new variable making them translate two texts into L1 and two into L2. The difference between the texts translated into L1 and L2 was a greater amount of revision during the drafting phase when working into L2.

It took the professionals less time than the students to complete the drafting phase, but surprisingly, they spent more time on the post-drafting phase, while introducing fewer changes. This might serve as evidence that successful translators tend to use the same translation style (e.g. ‘architect’).

A similar experiment was carried out by Alves in 2006. The translations were made from English into Portuguese (L1) and from Portuguese into English (L2) by two groups of subjects: translators with some professional experience who majored in language and enrolled in a graduate program in Translation Studies and students enrolled in a graduate diploma course not all of which had professional experience. Almost all participants took longer to make a translation into L2 and it showed greater segmentation; at the same time, it only required more revision for the more experienced group. However, we cannot be sure that the differences between the two groups are clear enough to take it into account (see Chapter 3 on level of expertise).

#### *Empirical research on time*

Not so much research has been done on time constraints in translation. This has been much better studied in interpreting, but we are not going to describe the latter here for the reasons explained at the beginning of the chapter.

*Künzli.* First, we would like to discuss Künzli’s 2007 study on the revision of a legal text that we mentioned above to get a general idea of the significance of time in the translation process. The same ten translators that revised a technical text in “Translation revision: A study of the performance of ten professional translators revising a technical text” worked on the legal text. This time the evaluation was made by a teacher of legal translation with degrees in both translation and law.

In the final evaluation of the revisions Künzli uses the same system Arthern (1983, 1987) applied for the assessment of the translators that worked under him in the former Council of the European Communities: all changes are classified into justified, unnecessary, changes that introduced errors, and necessary changes that were not made. Unlike Arthern, who only sums up the reviser’s flaws, Künzli subtracts them from the total number of justified changes. With this formula only three of the ten subjects had more good changes than bad changes or failures to change. Four of the ten only worsened the draft translation, an alarming finding confirmed by other studies.

As for the time, the two translators who spent the most time made the two best revisions. This seems logical, but then a surprising fact is discovered: the next two translators who spent the most time turned out to make the worst revised versions. This demonstrates that spending a lot of time on revision does not necessarily produce a high quality text. However, Künzli (2007: 121) suggests that “[t]he revisers’ performance also seem to be related to their degree of motivation”, because those who revised the legal text first did better than those who did it last.

Related to this is María Pilar Lorenzo’s 2002 empirical study that demonstrated that the more time the students spent on revision, the worse was the final output.

*Jensen.* Astrid Jensen’s doctoral thesis *The effects of time on cognitive processes and strategies in translation* is one of the most comprehensive studies on time in translation. She is interested in the application of Bereiter and Scardamalia’s (1987) models of Knowledge Telling and Knowledge Transforming to translation, predicting that Knowledge Telling model will be used almost exclusively for translation under time pressure. Knowledge Transforming model deals with writing as a complex, problem-solving task, while Knowledge Telling model is concerned with writing as a natural, unproblematic task which makes use of existing cognitive structures. She finds evidence for this hypothesis on the basis of the analysis of the TAPs and Translog protocols.

Jensen analyses the translation process in terms of the distribution of time and tasks over the phases on the basis of the 24 translations made by three groups of translators (non-professionals, young translators and expert translators). Each subject had to translate 4 texts with time constraints of 10, 15, 20, and 30 minutes, the latter regarded as virtual lack of time pressure.

Jensen finds that “both the writing phase and the revision phase are significantly affected by time, whereas start-up time is affected only marginally by time pressure” (2001: 125). We believe that this distribution of time was affected by the fact that the experiment started with the 10-minute translation with almost no start-up time, which could mean that the stress level would be higher after the completion of the first task and could influence the following tasks.

As for the time spent on revision, it tended to increase as more time became available. Professionals spent more time revising than non-professionals, which agrees with the findings reported by other researchers (e.g., Jakobsen 2002, Englund Dimitrova

2005). Combined measurement of on-line and of-line corrections showed a tendency for young professionals to make twice as many changes as non-professionals and experts (2001: 143). In general, it was found that “expert translators were able to apply Knowledge Telling strategies in a more consistent way than the two other groups” (2001: 180) and that “when problems occur, non-professionals apply Knowledge Telling strategies to solve them, whereas professional translators (experts and young professionals alike) apply knowledge Transforming strategies in response to problems” (2001: 181).

*De Rooze*. In his doctoral thesis “La traducción, contra reloj: Consecuencias de la presión por falta de tiempo en el proceso de traducción”, de Rooze “pretende profundizar en el estudio de los cambios en los procesos cognitivos producidos al traducir bajo el estrés por falta de tiempo” (2003: VI). To do so, he first looks at the previous research on time constraints in psychology, interpreting studies and, finally, translation. De Rooze makes a special emphasis on stress connected with time constraints.

De Rooze carries out a pilot experiment with students (large groups of 30 students every academic year from 1999 to 2002) and two definitive experiments with students and professionals using Translog and retrospective questionnaires. The general structure of the experiment reminds that of Jensen: first, the informants are given a ten-minute heating task, after which two groups of 15 students translate two different texts in 15 minutes; then the text are exchanged, and the second translation is carried out in 10 minutes. In the second definitive experiment a group of 6 professionals translate the same texts at home or at their usual workplace.

Unlike Jensen, De Rooze starts with the “slow” translation, and then proceeds with the “fast” one. From our point of view, this is a more viable approach, as otherwise the levels of stress during the second translation would be higher after the “fast” translation, which might influence the length of the pre-drafting stage, among other things.

The findings are the following (2003: 100):

- “Si hay que traducir más de 200 palabras por 10 minutos, la calidad desciende en más de un 15%”.

- “Hay una clara tendencia a cometer errores en el texto justo después (100%) de otro error, coincidiendo, además las pausas con el error (77,2%)”.
- “Algunos estudiantes trabajan mejor bajo presión de tiempo y parece haber una correlación con las calificaciones”.

The first one is of special interest to us in view of the future research. The third finding might be indicative of the existence of different translating styles, some of which are more robust, which is one of the new hypotheses we formulate (see Chapter 5).

The attention De Rooze pays to the methodology is exemplary, and his recommendations for the access to professionals (2003: 97) are especially valuable for us.

*Guerberof.* A very interesting study has been conducted by Ana Guerberof within the framework of the PhD in Translation and Intercultural Studies (Universitat Rovira i Virgili, Tarragona). In her unpublished minor dissertation “Productivity and quality in the post-editing of outputs from translation memories and machine translation” (2007), Guerberof investigates the correlation of speed and quality in the performance of 8 professional translators with various levels of expertise.

The main aim of the experiment was to establish a correlation between productivity gain, quality and translators’ experience in New, Machine Translated (MT) and Translation Memory (TM) segments to define if faster productivity affects the final quality, and to explore if translators’ experience determines their processing speed and number of errors. The participants were given separate sentences with either no translation or pre-translated with the help of either MT or TM (80-90 percent fuzzy matches) with no indications of the origin of the translations. Guerberof observes that translators with less experience and lowest processing speeds are likely to have similar processing speeds when using both aids, MT and TM. On the other hand, translators with more experience have higher processing speeds when using MT.

Very relevant for us is the finding suggesting that the “slowest post-editors took more time than faster post-editors [...] not due to the fact that they produce better quality, but to other factors” (2007: 44). Guerberof comes to the conclusion that “experience has a clear incidence on the processing speed. The experienced group is faster than the group with less experience” (2007: 57).

Unfortunately, it is virtually impossible to give an outline of all process-oriented empirical research, and the description of the above-mentioned books and articles is necessarily concise. But we hope that even from this brief overview it becomes clear that revision and time constraints have been one of the important research subjects for some time. The results are still not definitive due to the lack of scientific rigor in setting up the experiments and apparent discrepancies in definitions and classifications. However, there are general tendencies that cannot be ignored: professionals seem to work more efficiently with or without time pressure; in many cases time pressure leads to better final output in terms of errors; there seem to be some limit values after reaching which the quality decreases. All these have contributed to the formulation of new hypotheses we are going to test out in the future (see Chapter 5).

## Chapter 3

### **Methodological issues**

#### *Methods of data collection*

Interest in studying translation as a process emerged in the mid-1980s, requiring new instruments of research. The first to be applied in Translation Studies were think-aloud protocols (or TAPs). In the late 1990s researchers started to use the keyboard logging program Translog, devised by Arnt Lykke Jakobsen and Lasse Schou. And finally, researchers working on the cutting edge of new technologies made use of eye-tracking.

The advantages and drawbacks of these methods should be studied thoroughly in order to provide us with a wider perspective on their limitations. As Riitta Jääskeläinen (2000: 8) puts it:

On the whole, it seems that a systematic methodological investigation, which would be designed specifically to determine the validity and reliability of different data elicitation methods in process-oriented studies, is long overdue.

Even though this claim was made eight years ago, the basic problem remains the lack of scientific rigour in setting up the experiments and manipulating the data.

Not pretending to give a comprehensive guide to methodological issues in research into translation processes, we would like to offer a brief overview of the most relevant ones, which often express moot points.

#### *TAPs*

In their seminal book, Ericsson and Simon (1993/1984) provided the theoretical framework for the use of think-aloud protocols in research on cognitive processes. Their model of human information processing as consisting of short-term memory and long-term memory allowed them to propose an assumption that under certain conditions verbally encoded information contained in short-term memory could be transmitted in the same form without losses or interferences. This assumption served as a basis for extensive use of TAPs in cognitive psychology, psycholinguistics and related disciplines and its posterior adoption for empirical research in Translation Studies.

TAPs have been used in Translation Studies for studying different groups of subjects, language pairs and aspects of the translation process. These studies have

yielded many interesting insights into the mental translation process, but doubts persist regarding their experimental validity.

In general, there are some serious doubts as to its correlation with real mental processes going on in a translator's mind. Some researchers believe that the only thing we can get access to with the help of TAPs are intermediate products of these processes or "mental content", comprising among other things prior experience, focus of attention at any given moment, attitudes, emotions, and plans (Nisbett and Wilson 1977). White points out that in this connection "the problem is that no satisfactory definitions of product and process in terms of mental events exist" (1980: 105). However, most scholars do not see this as a problem using the conventional meaning of the two. Toury (1995: 235) also cautions that "it would be wrong to maintain that thinking aloud provides any direct access to the mental process". But "even though think-aloud protocols should not be taken as direct reflections of thought process they can be regarded as data which are correlated with underlying thought process".

Also, Ericsson and Simon (1993/1984: 15) admit that unconscious automated mental processes cannot be verbalized. This was thought to have important implications for research on professionals vs. novices (Börsch 1986; Krings 1986a; Séguinot 1989b). However, research has demonstrated that professionals, while automatizing routine tasks, are more aware of higher-level problems (Krings 1988).

Ericsson and Simon's assumption that the concurrent verbalization does not interfere with the cognitive process (1993/1984: 78-107) is quite disputable. Jakobsen (2003) demonstrated that use of concurrent TAPs results in a slow-down (by about 25%) and break-down of the cognitive processes:

Think aloud clearly affected segmentation. It forced translators, whether fast or slow, whether expert or not, to chop up target text production into smaller segments. Contrary to what had been predicted on the basis of Ericsson & Simon's theory, there was a clear effect of the TA condition on segmentation. (Jakobsen 2003)

One solution to this problem would be the use of retrospective TAPs, which was also suggested in Ericsson and Simon's survey. Proponents of this method (Hansen 1999; Alves 2001 and 2003; Jakobsen 2003; Buchweitz and Alves 2006) argue that it "present[s] an alternative for the studies of cognitive processes in translation" (Buchweitz and Alves 2006: 243). Of course, the dilemma remains: on the one hand, retrospective TAPs afford reports that are better structured, and that allow the

participant to better report inferential thinking (Alves 2003: 76); on the other hand, there is certain risk of embellishment and elaboration (Ericsson & Simon 1984/1993). But the latter can be minimized with the use of Translog or screen recording, which permit to re-play the whole translation process.

Another solution are so-called dialogue TAPs or “joint translation protocols” (see Séguinot 1996; Kussmaul 1991). The proponents of this method point out that “this is a more natural situation since there is a real partner to work with and one does not talk only to oneself” (Kussmaul 1991: 91-92). According to Séguinot (1996: 88), “in a standard protocol analysis subjects are constrained to think, but not justify their thinking. In the natural discourse situation where both subjects were responsible for the task, the translation was negotiated, sometimes with overt reasoning.”

However, we would rather agree with Bernardini (1999) that such a kind of interaction “is likely to interfere with the task being carried out in unpredictable and uncontrollable ways” and contradicts what Ericsson and Simon say in their book. According to their theoretical framework, social interaction during the verbalization should be avoided at all costs.

Apart from the above-mentioned difficulties, there exist reservations among most empirically-minded scholars, who can even dismiss attempts to single out certain translation strategies on the basis of TAPs (Bernardini 1999):

The most obvious limitation of this body of research is the fact that researchers tended to proceed in a rather anecdotal and unsystematic way in their studies and reports, generally not providing a theoretical justification for the classification schemes they construct and very little information about their methods and findings.

Defeng Li (2004: 302), discussing some previous research with the use of TAPs, rather harshly criticizes it stating that “the trustworthiness of the findings is open to debate, to say the least”. At the same time, he provides a series of safeguards to be introduced in TAPs research, which can be classified as naturalistic qualitative research. They include such general procedures as prolonged engagement, (near-)natural situation, peer debriefing, member checks, etc. One of the most important safeguards is triangulation:

More rigorous methodology has been developed by, for example, supplementing TAPs with other methods of data collection (e.g. retrospective interviews or research software, such as the Translog program for logging keyboard activity). (Jääskeläinen 2002: 109)

From the researcher's point of view, one of the main disadvantages of TAPs is that it is very time-consuming. The verbal reports have to be transcribed before they can be submitted to a qualitative analysis. This explains why the experiments are usually carried out on rather short texts, which are seldom representative of the professional translator's work.

Having taken into account the recommendations concerning the validity of empirical research and assuming that there are certain limitations of TAP methodology, we still find it a valuable instrument in the study of the contents of the 'black box'. Retrospective TAPs combined with replaying the recording of the translation process is one of the methods of data collection that we are planning to use in further research on translation processes.

### *Translog*

Translog was created after some years of exclusive use of TAPs in translation process research to respond to "the need felt for quantitative reinforcement of assumptions about translating based on qualitative data only" (Jakobsen 1999: 11). The underlying idea was to "create a kind of dialogue between qualitative and quantitative approaches that would result in synergetic refinement of both methods" (ibid). Finally, triangulation was seen as an important advantage of the parallel use of the two methods.

Translog2006 is a Windows-oriented program that allows a researcher to record and study all kinds of writing done on a computer keyboard. It was originally developed to study writing processes in translation by Arnt Jakobsen and Lasse Schou in 1998.

Without in any way interfering with the writing process, the program records all the keystrokes, including all changes, deletions, additions, cut-an'-paste operations and cursor movements made by a writer in the process of creating a text.

The program also logs information about the exact time at which each keystroke operation is made, so that a typing process can be replayed any number of times using media-player buttons. It also can create a linear representation of an entire typing event (including changes) with a graphic and/or numerical representation of the duration of any pauses occurring during the process of typing. Translog 2006 also incorporates features unavailable in the earlier versions, like audio recording and playback.

Due to the fact that nowadays with the advent of personal computers translators' typing skills have developed to a very high level (for those who have mastered touch-

typing writing becomes almost as immediate as speech), Translog can be compared with TAPs to some degree:

[...] when logged, a translator's keystrokes constitute what might be called a 'type-along protocol' or even a 'type-along think-aloud protocol', with information about first impulses, false starts, revisions, etc., much like which is elicited in think-aloud protocols. (Jakobsen 2003)

Translog is a valuable instrument for eliciting all kinds of textual information, and it has been successfully used in translation research for about a decade. It is especially useful for the analysis of pauses, as the program allows the researcher to set any time segmentation from milliseconds to minutes.

However, as good as it is at detecting and measuring pauses, Translog has little to say about the processes taking place during the pause: "As text production is ongoing, the statistics of Translog can be very informative, but as it halts, the silence in text production elicits further investigation" (Buchweitz and Alves 2006: 268) This is when other methods of data collection like TAPs and especially eye-tracking come into play.

#### *Screen-recording software*

Screen-recording is can be used as a possible alternative to Translog, and to some extent to eye-tracking. It has not been used very extensively in Translation studies, and perhaps the main reason is the difficulty it presents when it comes to coding the data, which is extremely time-consuming (the author knows that from personal experience) if the method is not combined with keyboard-logging records.

However, it is an invaluable instrument when combined with Translog as it affords an excellent opportunity to see what happens on the screen in each moment. Extra-textual activities like looking up words in electronic dictionaries or Internet searches can be followed.

Compared to screen recording, eye-tracking provides us with extra information, enriching the research and helping formulate new hypotheses, but if it is not available, screen recording is a viable alternative.

#### *Eye-tracking*

Starting from the 19<sup>th</sup> century there have been attempts to measure eye movements in order to gain insight into the nature of some cognitive processes. It is believed that

Eye movements reflect the human thought process; so the observer's thought may be followed to some extent from records of eye movements (the thought accompanying the examination of the

particular object). It is easy to determine from these records which elements attract the observer's eye (and, consequently, thought), in what order, and how often. (Yarbus 1967: 190)

This makes experimenting with an eye-tracker a valuable source of information for the kind of research we are going to carry out. We can get insight into the translation process as there is a firm link between cognitive effort and eye movement, and in particular, between cognitive effort and pupil dilation (O'Brien 2006a: 186). O'Brien (ibid) also lists the studies like those conducted by Hess and Polt (1964), Nakayama et al. (2002), Iqbal et al. (2005) that have demonstrated that there are correlations between pupil dilation, blink rate and mental workload. This means that often an observer will focus his or her attention on elements that are unusual in the particular circumstances, unfamiliar, incomprehensible, and so on, i.e. the elements of a text presenting some difficulties, either for comprehension or reformulation. Gaze direction gives valuable information regarding the processes taking place and serves as a support for the claim that the translation process is not linear (see above).

However, we should be aware of some drawbacks of this method. First and foremost, eye-tracking equipment is very expensive and in many cases not available for researches in many institutions. Another problem is the fact that we still cannot infer specific cognitive processes directly from a fixation on a particular object with absolute certainty, which is caused by the fact that so-called 'ecological' eye-trackers, i.e. those which do not require direct contact with the equipment and head fixation, are not always 100% accurate and the data is lost when subject looks away. Also, excessive amounts of data can be generated, which is difficult to process.

Nevertheless, eye-tracking is the method which gives us the most exact information about the translator's actions we can get. Coupled with other methods like Translog, TAPs and questionnaires and interviews, it allows us to reconstruct the translation process with minimal inaccuracies. Of course, it still cannot show what exactly is happening during the pauses, but the traces obtained using this method are the nearest approximation to an insight into cognitive activities we can get today.

Just like the Replay function in Translog, there is a possibility to replay gaze. The Gaze Replay facility in ClearView allows us to monitor the gaze paths of translators as they work on each segment, and can be used in combination with retrospective verbal protocols, as suggested by O'Brien (2006a: 197).

Taking into account the great advantages of eye-tracking for studying translation process, the scarcity of research in the domain of Translation Studies might seem quite surprising. However, it can be explained by the fact that there are some serious disadvantages, such as the excess of data, the need to learn how to use the data, and the continued need to interpret it.

Hyönä et al. (1995) use data on pupil dilation to investigate processing load in simultaneous interpreting; O'Brien (2006a) applies it to study translation memory matches; interesting research is conducted in Copenhagen Business School, but these are definitely not enough to provide us with a comprehensive analysis of the translation process.

In the view of the above, we find it extremely interesting and useful to carry out a series of experiments using eye-tracking equipment, triangulated by Translog, retrospective TAPs based on retro eye cue method and interviews. All this will form part of the future research project outlined in Chapter 5.

In conclusion we would like to cite Jakobsen et al. (2007: 229) saying that “[w]e are still searching for a good point of balance between experimental control and ecological validity” (“ecological validity” here means making the experimental situation as natural as possible, e.g., keeping the investigator’s presence to a minimum). To reach this point, a researcher should thoroughly think through research design, applying the most rigorous standards from other areas of knowledge that have been using empirical research for many decades, use triangulation to the maximal extent and limit the number of variables - a challenging but rewarding task to carry out we are going to embark on in the future research.

### *Informants*

When it comes to the search for informants for an experiment, two important issues should be taken into account: the representativeness of the sample and the size of it. These two factors can either contribute to getting a fairly correct generalisable estimates or converting the experiment into a case study. In our case, representativeness of the sample can to a great degree be related to the much-debated professional vs. non-professional division.

### *Sample size*

As Gile (2001: 9) puts it,

In an empirical study, the number of subjects that can be observed *and/or* submitted to experimental procedures is an essential parameter. In a hypothesis-testing endeavor, random variation makes it difficult to contemplate any generalization from very small samples, unless intra-sample variability is small.

This has been one of the serious problems for process-analytical translation research, and not only because of the difficulty of looking for numerous informants, but rather because of the huge amount of data that needs to be processed in order to obtain any results.

Most empirical studies on translation have been based on rather small samples. Astrid Jensen (2001: 88) offers an overview of the empirical translation studies with a few informants ranging from 2 (Séguinot 1996), 3 (Tirkkonen-Condit 1989), 12 (Gerloff 1986) to 18 (Király 1986). An exception was Lörscher's 1991 analysis of 52 orally produced translations. Krings studied translations of two texts by eight foreign-language students, that is 16 protocols. Király based his 1995 study on 18 protocols (eighteen subjects performing one translation task). Jääskeläinen did the same, but with eight subjects. Jensen herself compares four translations made by six subjects divided into two homogeneous groups, which provided her with record 48 protocols.

It is evident that the size of samples in the majority of these studies cannot allow any generalisations, but at the same time they can give us interesting insights into the translation process. While planning to involve a larger number of participants in the future study, for the pilot project we have had to limit ourselves to just two subjects making two translations, giving a total of 4 protocols.

We would like to emphasize that the aim of this pilot project was first and foremost to test the methodology, and the results of the experiment can in no way be regarded as definitive because no valid conclusions can be drawn from such a small sample.

#### *Level of expertise*

Let us start with another quote from the same article by Gile (2001: 8):

In any research endeavor which scrutinizes a selected part of the entity to be explored, that is a *sample* of the *population* (the name traditionally given to the target entity), it is essential to know whether there is good reason to believe it is representative of the whole population, in which case

it said to be a "representative sample", or whether it represents a sub-population that may differ in some relevant characteristic from the overall population.

The main problem that has always existed in research on the translation process is not the sample size, which is undoubtedly very important, but rather the representativeness of the sample. The reason for this is the fact that many researchers have conducted experiments not with professional translators, but with translation and sometimes even foreign-language students.

The distinction between professional, semi-professional and non-professional is defined in a different way by researchers. That is why we would like to close this chapter with an overview of this division, first of all because we need to give reasons for defining our informants either as non-professionals or as semi-professionals.

The dispute was first provoked by the title of Krings' seminal work *Was ist den Köpfen von Übersetzern vorgeht. Eine empirische Untersuchung zur Struktur des Übersetzungsprozess an fortgeschritten Französischlernern* (1986), as he used *Übersetzer* (translator) to designate *fortgeschritten Französischlerner* (advanced students of French). Apart from that, the students had to translate into their foreign language, which was justifiably criticized. According to Hönig, second-language learners are not able to see the text the way a professional does:

Das Übersetzen ist wesentlich komplexer als es – auch gebildete – Laien vermuten. Sie sehen nur die horizontale Verbindung von der A- zur Z-Sprache, aber sie haben wenig Ahnung davon, welche komplizierte Brückenstruktur notwendig ist, damit diese Verbindung tragfähig wird. (1995: 32)

Krings was also aware of this problem, so a couple of years later he conducted the same kind of study with professional translators (Krings 1988). The difference was indeed the way the two groups processed the texts: the professionals used holistic strategies, whereas the non-professionals followed linear strategies. So, this early study already demonstrated the existence of a certain difference between students and practising translators.

Lörscher (1986, 1991) also used students for his early experiments, and later repeated them with professional translators, trying to examine the development of translation competence. He also found significant differences between the students and professionals: the former checked their translations mainly for stylistic and text-type

adequacy, while the students only looked for solutions to the problems of lexical equivalence.

But the first systematic comparison between professionals and non-professionals was carried out by Tirkkonen-Condit (1989, 1991) and Jääskeläinen (1989, 1991, 1999). Without repeating the details of the experiments (see Chapter 2), we would like to focus on the results obtained. In their first studies, Tirkkonen-Condit and Jääskeläinen compared professional and non-professional translators with respect to various variables. They found that the professionals did more conscious decision-making. The results of the study are consistent with the above; the only problem is that in their early experiments both researchers used first-year translation students as non-professionals and fifth-year students as professionals. While it is indisputable that translation competence gradually develops during the course of study, there are still many objections to regarding students who do not have any serious work experience as professionals.

In later research Jääskeläinen (1999) analysed the performance of four professional translators with more than 10 years experience, and her findings confirmed Lörcher's (1991): the professionals did not keep as close to the linguistic surface of the texts as the non-professionals did. Most other researchers also agree that the development of translation competence is accompanied by the growing awareness of more complex problems and a shift away from the word level (cf. Kiraly 1995; Shreve 1997).

So some important questions arise – how do we define professionals and non-professionals? When does a graduate become a professional and a professional an expert? These questions are not easy to answer, and most researchers base their choice on personal vision (although nobody would doubt that a translator with 10 years experience is a professional).

An interesting solution was found by Jensen, who divides the informants in her study into three groups: non-professionals, who had a degree in engineering, used English as their working language, have worked for over 30 years and had a broad educational background in general; young professionals with approximately 2 years of experience; and, finally, professionals with 10 years of experience. Both young professionals and professionals held a university degree in translation. We find her criteria for the selection valid and objective.

According to Gouadec (2007: 153), “[e]xperience is generally considered an asset and many jobs with responsibilities make three to five years’ experience a pre-requisite”.

## **Chapter 4**

### **Pilot study**

#### *Hypotheses*

On the basis of the previous research on the translation process, we believe that time constraints will affect the translation process in two ways:

1. Time pressure will affect the distribution of time over the three translation phases.
2. Time pressure will affect the distribution of translation tasks over the translation phases.
3. Time pressure will affect different subjects in different ways, thus indicating their translating styles.

We also hope to reach some more specific and innovative hypotheses with the help of this pilot study.

#### *Research design of the pilot study*

##### *Informants*

The two subjects were second-year Master's students doing Spanish Translation, having English as a mother tongue and the level of Spanish defined by them as 'near-native', which was confirmed by their translation teacher. One had a BA in Germanic Languages & Literatures and the other in Linguistics/Spanish from two American universities. Both had some experience of pro-bono translation. Both had done short summer language courses in Spain. Actually, their CVs looked rather similar, which made us think that they could be treated as belonging to the same group of novices. We do not regard them as professionals or even young professionals on the basis of the pro-bono translation they did, because this would be unrealistic with respect to the situation of the translation market (cf. Chapter 3).

One important point we should mention is that one informant was male and the other female, which might also have influenced the way they worked, but as far as we know, gender-based approach has not been widely applied in the study of the translation process. Gile (2001: 8) stresses that "women interpreters probably make up well over

50% of the population of interpreters, but may differ from the rest of the population (male interpreters) as regards social behavior, self-image, personal ambitions, etc.”

Nevertheless, in many studies on the translation process no mention is made of the gender of the informants at all, and in the rest of the cases it is made explicit by the names of the participants, but no claims are made regarding the introduction of gender as a variable. Whereas we think that this should be taken into account in the future, we do not base any conclusions on this factor in the present study.

### *Screen recording*

The program used for the recording was BB FlashBack by Blueberry Software Ltd. Before the beginning of the experiment the subjects were asked to download the program on their personal laptops and practice using it.

The program was not supposed to interfere with the translation process. However, when calculating the time spent on different tasks, we had to take into account technical problems caused by the program. For instance, one of the subjects had problems trying to type diacritics and switch languages on the toolbar. Also, some time was spent on retyping double quotation marks and apostrophes, another problem caused by the screen-recording program. This resulted in discrepancies between the whole time spent on translation and the sum of the times of translation tasks, as technical problems were not added for obvious reasons.

### *Source texts*

The subjects were given two texts to translate taken from *El País* editorials available online 27/11/2007 that presented few difficulties in terms of lexis or extratextual knowledge. The texts were cut to make them convenient for the experiment, but preserving coherence and cohesion. Both text concerned foreign affairs, the first one relating the growing tension between Colombia and Venezuela, and the second one giving an overview of the peace process in the Middle East. The length of the texts was 233 and 196 words respectively.

### *Setting*

Initially the experiment was a two-hour class with a pedagogical aim to demonstrate to the informants that they could translate at a higher speed without significant losses in quality. In two hours the participants downloaded the software, did the translations and had verbal protocols on both as they watched the recordings (unfortunately, the verbal

protocols were not available for our study). Afterwards the informants were asked if the recordings could be used for our research, and both subjects granted their permission. They were promised absolute anonymity.

The experiment took place in the teacher's office. Nevertheless, the overall setting might be called rather naturalistic: the subjects used their own laptops with free access to any online materials and electronic dictionaries they could find useful. The researcher was separated from the subjects by a glass wall while they did the translating, which did not make the subjects feel like a subject of observation and at the same time allowed the researcher to observe their behavior. So we can be sure that the time the subjects did not perform any actions reflected in the recording was not spent on looking out the window or chatting with each other.

For the translation of the first text no time limits were set. However, both subjects stopped recording at more or less the same time - about 24 minutes: the first subject finished translation after 23 minutes 52 seconds, and the second a few seconds earlier (23 minutes 43 seconds). This actually happened when having observed a prolonged break in typing activity, the teacher entered the room, asked if the students had finished, and asked them to stop recording. We are conscious of the fact that during a rigorously controlled experiment either the time limits would be set more precisely, or the participants would not be pressed to finish. However, in this case we believe that this flaw in the experimental design does not invalidate the results of the experiment.

For the second text they were given 9 minutes 30 seconds (both actually stopped recording after 9 minutes 27 seconds). The first student coped well with time constraints, but the second did not have enough time to finish the last sentence.

The subjects were asked to translate texts for publication, a frequently given instruction, found nevertheless too vague by many practitioners. But we are not going to tackle this topic, as it would lead us to entering a heated debate on evaluation and quality, which does not form part of this piece of research and, indeed, did not form part of the pedagogical situation in which the experiment took place.

### *Data analysis*

#### *Protocols*

First of all, we had to convert qualitative information obtained from the videos into operational quantitative data. The initial step was to subdivide the translation process into sets of tasks for the convenience of processing the protocols. In doing so we based

on the classification of translation tasks suggested by Brian Mossop (2000: 40). These are:

1. Interpret the source text (Processing in our study).
2. Compose the translation (Production).
3. Conduct the research needed for tasks 1 and 2 (Documentation).
4. Check the draft translation for errors and correct if necessary (Revision).

The fifth task, which is “decide the implications of the commission: how do intended users and uses of the finished product affect tasks 1 to 4”, was not treated as a separate task in our classification since it was not the focus of the pedagogical activity, but rather as the whole strategy adopted for the distribution of time under time constraints and the choice of wording on the basis of the translation brief (see above).

**Production** is visually represented as typing new text. The part of processing dedicated to forward planning, which logically also forms part of production, could not be included for the reasons explained in Chapter 1. The same happens with the processing dedicated to revision. So in the absence of more advanced methods like eye-tracking we were forced to unite them all these manifestations of mental processes under the heading of **processing**, which basically represents all the pauses made during translation. It is not represented visually apart from, for example, movements of cursor while reading.

**Documentation** consisted of looking up words in multimedia dictionaries and searching for information on the Internet (the sources of information the subjects had unlimited access to during the experiment).

Revision was divided into two types: **revision** and **technical revision**, the former standing for deletion of previously written words and phrases or insertion of new text in the body of the translation; the latter consisted in correcting typos and spelling mistakes. Such a distinction was made due to the fact that these corrections are not equal. The same division was used by Jakobsen (2003) in the study with the help of Translog.

An important part of the time was dedicated to various manipulations with the windows and the text, such as scrolling up and down, minimizing windows, opening new documents, etc. We designated such activities as **technical adjustments**.

Some time had to be spent on solving technical problems resulting from the use of the screen-recording program, as we mentioned in Research design. We called the activities connected with solving these problems **technical problems**, and no account of them was taken in the final analysis.

In some cases it was impossible to separate production from revision or technical revision, as the two appeared to take place almost simultaneously. The time unit chosen for the study was 1 second, following the recommendations by Jakobsen (1998:3).

This is an example from the protocols:

06'00" - 06'07"	<i>president of Colombia Alvaro Uribe</i>	7	Production
06'07" - 06'11"		4	Processing
06'11" - 06'13"	<i>decided to</i>	2	Production
06'13" - 06'34"		21	Processing
06'34" - 06'45"	<i>suspend talks with his ve, del ve, Venex, del x, zuelan counterpart, del , Hugo Cha, del a</i>	11	Production, technical revision
06'45" - 06'50"		5	Processing

Table 2. An example of the protocols

Of course, we do not pretend to give as detailed and precise a description as, for example, Translog. But thanks to screen recording we can see what was going on at each moment on the screen, so that actions like consulting electronic dictionaries and the Internet do not escape our analysis.

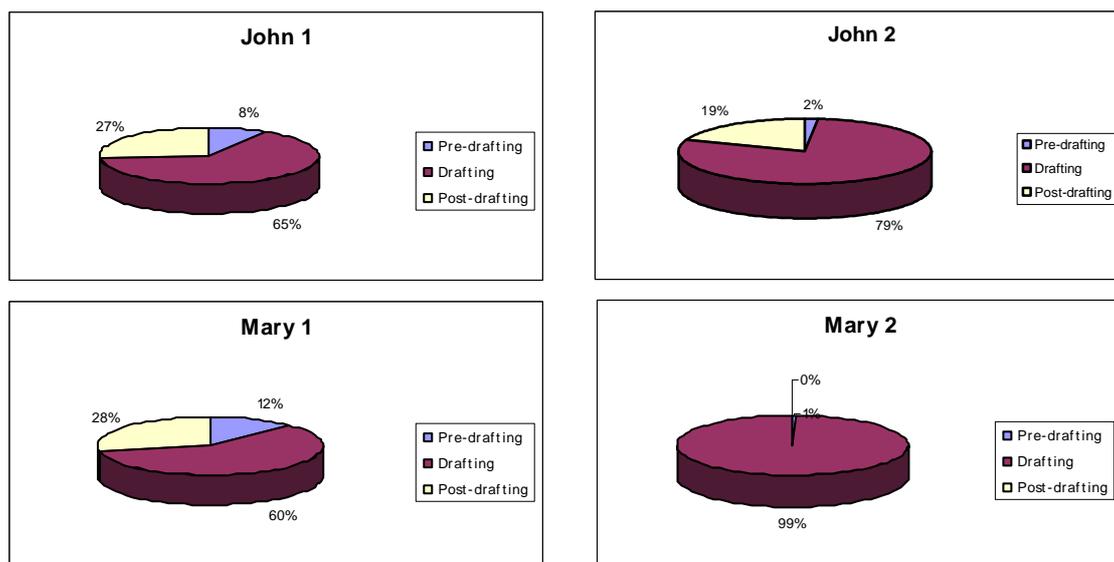
#### *Phases of translation production*

It was predicted that time constraints would influence the time spent on different phases of the translation process, affecting some of them more than the others. On the basis of the protocols, we can calculate the time spent on each phase, represented in Table 3.

Available time	Subject	Pre-drafting (sec)	Drafting (sec)	Post-drafting (sec)	Total time (sec)
No time constraints	John	119	933	380	23 minutes 52 seconds
	Mary	175	845	403	23 minutes 43 seconds
9.5 mins	John	9	448	110	9 minutes 27 seconds
	Mary	3	561	0	9 minutes 27 seconds

**Table 3. Distribution of time over the phases of the translation process**

Below are the pie charts, representing the percentage of time spent on the different phases:



**Figure 2. Distribution of time over the phases of the translation process**

As we can see, in the first task the percentage of time spent on different phases is almost identical for the two informants. However, everything changes in the second task: both John and Mary have cut down significantly on the time spent on the pre-drafting phase. John had more or less the same percentage of time for the post-drafting phase, while Mary could not manage with the time pressure, and did not have time for the post-drafting phase at all.

In a pedagogical situation the translator is advised to read the source text before starting to translate it. From the table we can see that actually in the first case both John and Mary did so. Screen recording also demonstrates that they took their time to prepare the new document and choose the layout they preferred. In the second task, they just opened a new window and started translating straightaway.

The time spent on the drafting phase was reduced by about 62% by John and 43.6% by Mary under time constraints. In the first task it took John and Mary 65% and 60% of time respectively, and in the second task 79% and 99%. Comparing our data, we come to the conclusion that there were important individual differences in the perception of time constraints between John and Mary. In the first task, where no time constraints are present, both finish their translations at practically the same time and with the same distribution of time over the different phases. However, in the second task we get the impression that John is still quite relaxed compared with Mary. He does not seem to perceive the time that was given for the task as too short. On the contrary,

Mary seems very affected by the presence of time pressure. However, these are mere suppositions, which could only be proved true with the help of TAPs or questionnaires.

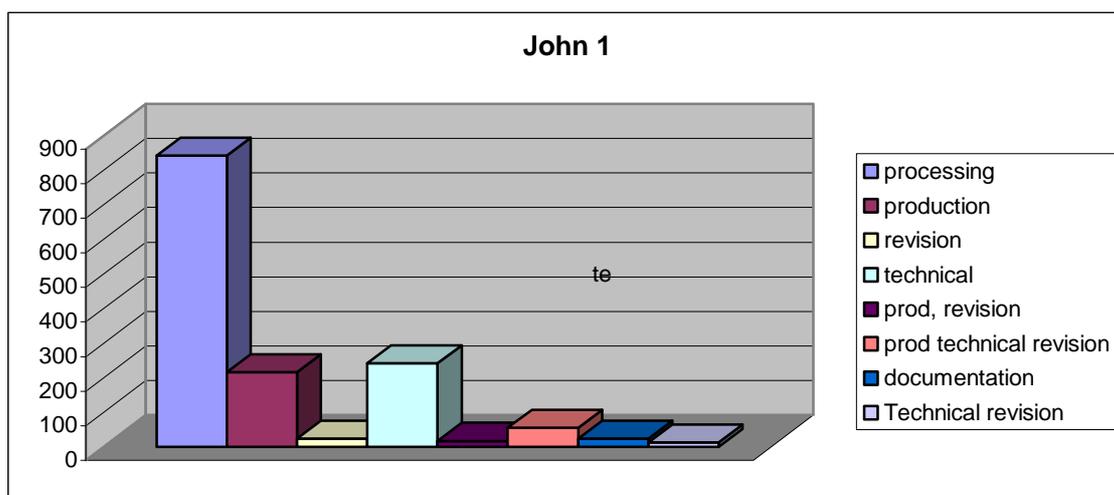
The post-drafting phase in the first task included thorough monitoring the target text and comparing it with the source text, which can be seen in the video. In the second task Mary did not have time for revision at all, and John used it to make sure he translated some names in the right way. So this phase was largely used for documentation he had no time for during the drafting.

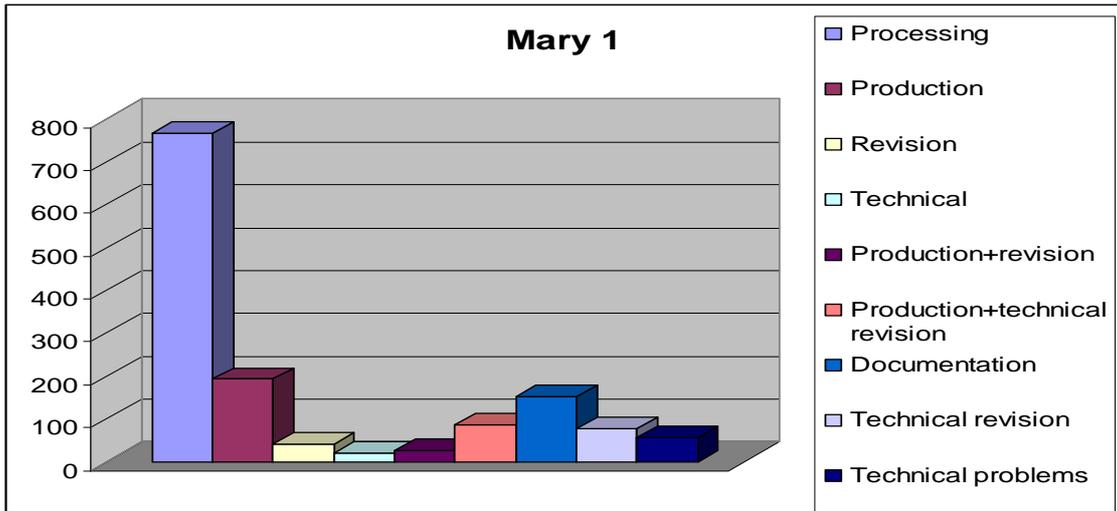
On the basis of these data we can make the conclusion that the pre-drafting phase was the most affected by the time pressure. Effective distribution of time during the drafting phase allowed John more time for the post-drafting, which he used for research.

This conclusion contradicts Jensen’s findings that “both the writing phase and the revision phase are significantly affected by time, whereas start-up time is affected only marginally by time pressure”. This may be explained by the fact that in Jensen’s study the informants, who had to produce four translations (in 30, 20, 15 and 10 minutes), started with the 10-minute task, which Jensen regarded as a warm-up task, and proceed in increasing temporal order. This might have influenced their rhythms, making them speed up during the rest of the tasks.

*Distribution of time on tasks*

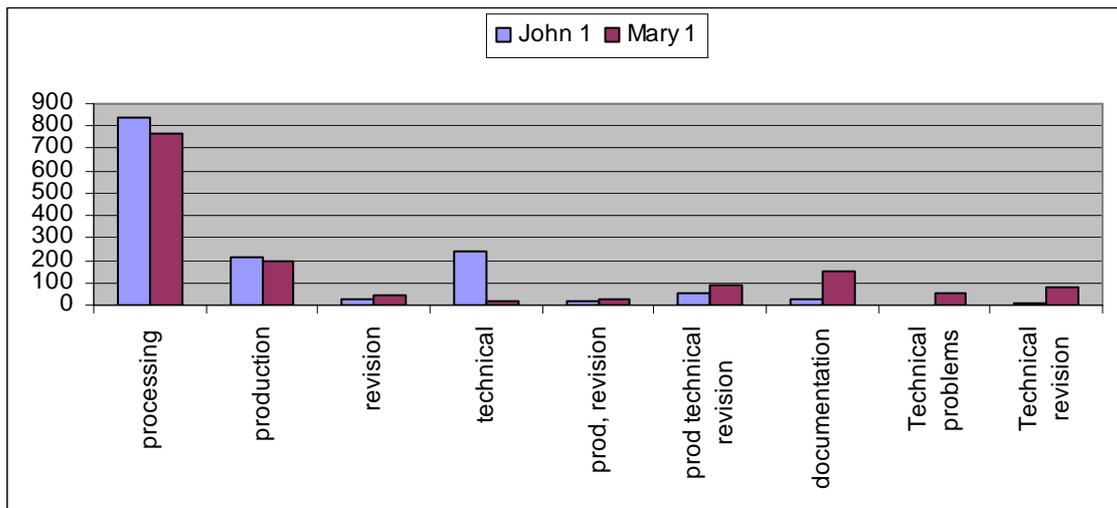
The data allows us to plot the following diagrams for the translations of the first text by each subject, with time in seconds along the vertical axis:





**Figure 3. Distribution of time on tasks for subject 1 and subject 2 (text 1)**

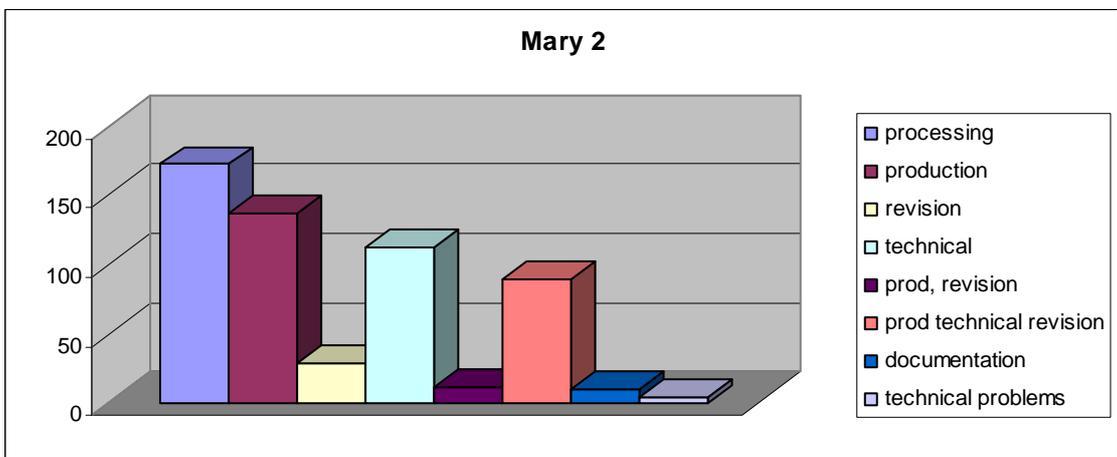
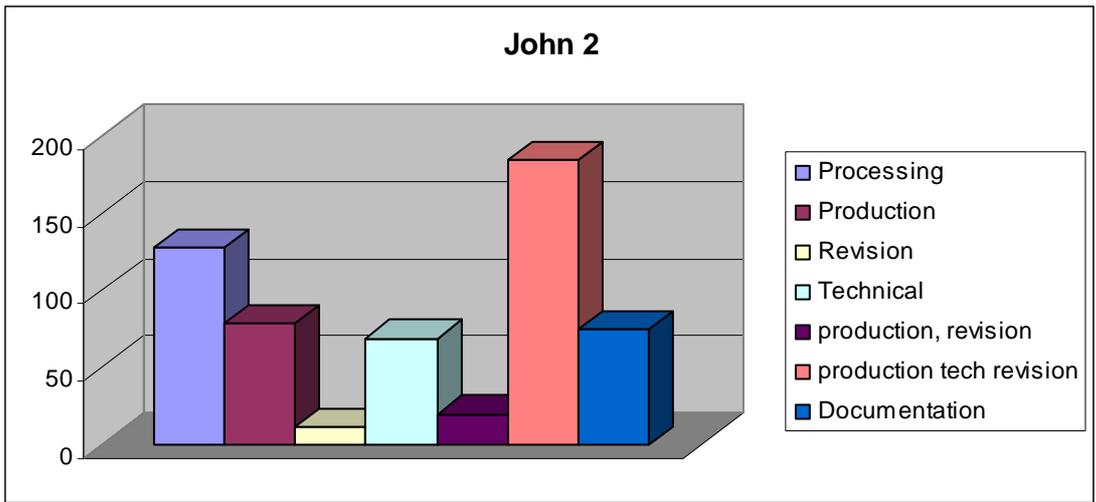
If we combine the two graphs, we get the comparative time distribution for the translations of the first text:



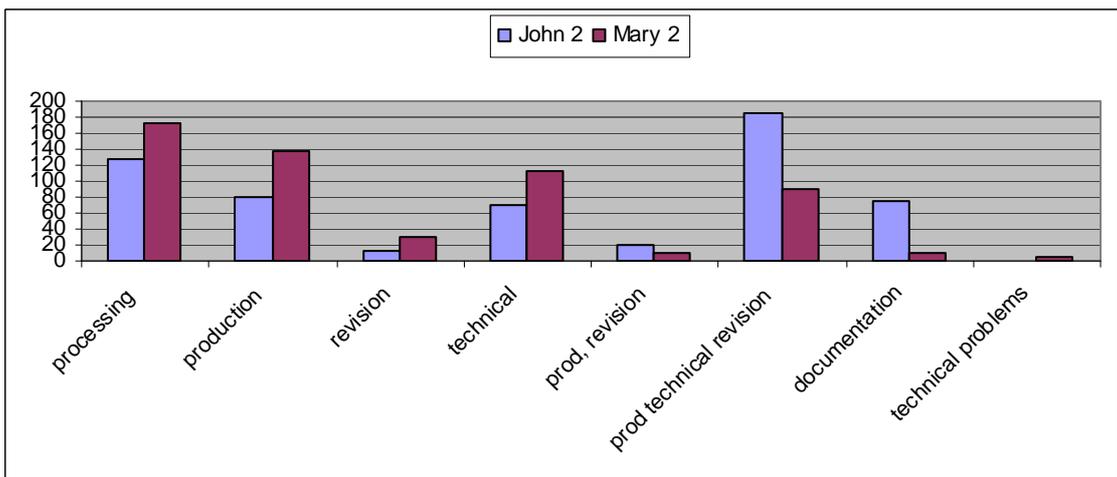
**Figure 4. Comparative distribution of time on tasks (text 1)**

We can see that while the first subject spent more time on processing, production and technical adjustments, the second subject did more documentation research, spent more time on technical revision, both combined with production and not, and had technical problems caused by the screen-recording program.

If we do the same operations with the translations of the second text, we get practically the opposite results:

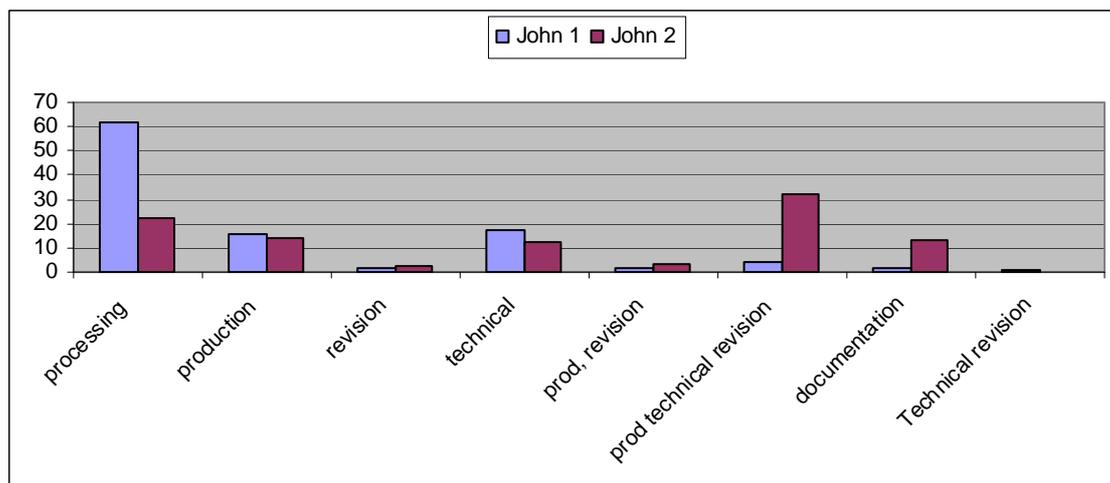


**Figure 5. Distribution of time on tasks for subject 1 and subject 2 (text 2)**



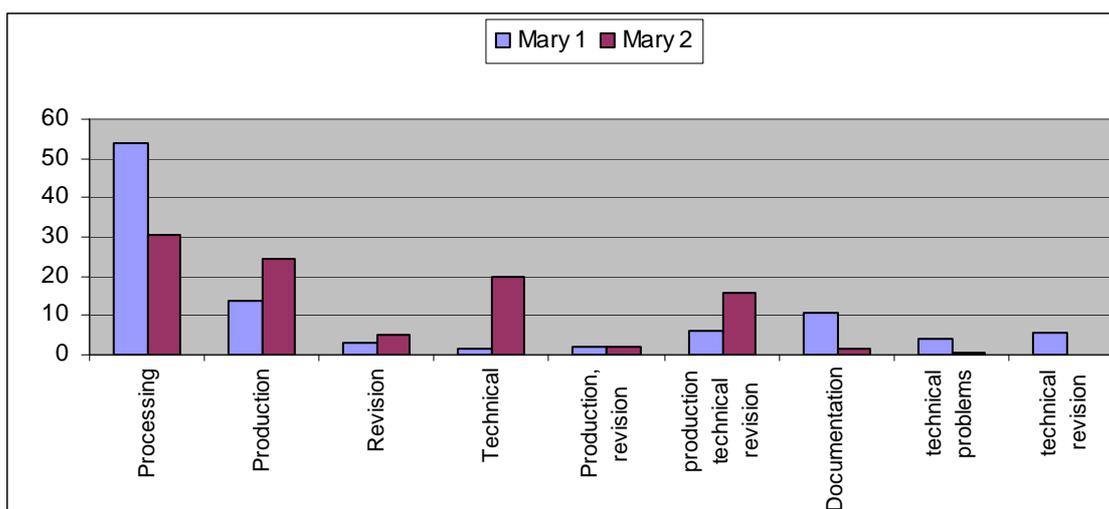
**Figure 6. Comparative distribution of time on tasks (text 2)**

To understand why such dramatic changes are produced, we should compare time distribution for both subjects. Now the time is presented not in seconds, but as a percentage:



**Figure 7. Distribution of time on tasks for subject 1 (texts 1 and 2)**

In the case of John, time spent on processing decreases drastically, compensated by the increase of time spent on production combined with technical revision and documentation. We can make the conclusion that John’s coping tactics (cf. Gile 1995: 193-207) consist in cutting down on processing, which perhaps leads to higher stress levels, causing more typos and spelling mistakes, which are corrected on the spot, which can be seen from the table (the combination of production and technical revision). Documentation is another way of economizing on time: perhaps it is viewed less time-consuming than thinking over various renderings.



**Figure 8. Distribution of time on tasks for subject 2 (texts 1 and 2)**

Mary also cuts down on processing time. Surprisingly, the percentage of time spent on technical adjustments increases, perhaps as a result of the stress. Production combined with technical revision also increases, but not as considerably as John's. Together these factors contributed to the fact that Mary did not manage to finish the translation of the second text, which means that her coping tactics are not as effective as John's.

*Distribution of the tasks over the phases*

The knowledge of how the tasks were distributed over the phases might help us understand the reasons for Mary's failure to finish the translation on time. This distribution is represented in Table 4.

<b>John 1</b>	Pre-drafting	Drafting	Post-drafting
Processing	8 (7%)	498 (55%)	254 (71%)
Production	0	213 (24%)	0
Revision	0	18 (2%)	6 (2%)
Technical adjustments	102 (93%)	67 (7%)	46 (13%)
Production + revision	0	17 (2%)	0
Production + technical revision	0	55 (6%)	0
Documentation	0	23 (3%)	0
Technical revision	0	13 (1%)	0

Processing + technical adjustments	0	0	50 (14%)
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<b>Mary 1</b>	Pre-drafting	Drafting	Post-drafting
Processing	139 (75%)	368 (44%)	256 (70%)
Production	0	190 (22%)	0
Revision	0	13 (2%)	30 (8%)
Technical adjustments	6 (3%)	45 (5%)	28 (8%)
Production + revision	0	26 (3%)	0
Production + technical revision	0	82 (10%)	0
Documentation	39 (22%)	80 (9%)	21 (6%)
Technical revision	0	20 (2%)	0
Technical problems	0	23 (3%)	31 (8%)

<b>John 2</b>	Pre-drafting	Drafting	Post-drafting
Processing	1 (11%)	121 (27%)	0
Production	0	80 (18%)	0
Revision	0	7 (2%)	0
Technical adjustments	8 (89%)	32 (7%)	21 (30%)
Production + revision	0	20 (4%)	0
Production + technical revision	0	185 (42%)	0
Documentation	0	0	49 (70%)

<b>Mary 2</b>	Pre-drafting	Drafting	Post-drafting
Processing	0	171 (31%)	0
Production	0	137 (25%)	0
Revision	0	29 (5%)	0
Technical adjustments	3 (100%)	108 (20%)	0

Production + revision	0	11 (2%)	0
Production + technical revision	0	88 (16%)	0
Documentation	0	0	0
Technical revision	0	2 (0.5%)	0
Technical problems	0	4 (1%)	0

**Table 4. Distribution of tasks over the phases of the translation process**

As we can see from Table 4, John was much more consistent: the distribution of time during the pre-drafting phase stays practically the same under time pressure. If we sum up the time spent on all the tasks related to text production (production, production and revision, production and technical revision, technical revision, revision) for the first and in the second text, we also get almost the same percentage: 53% vs. 68%. The significant increase in production and technical revision in the second task can be accounted for by the stress, which led the subject to make more typos. Technical adjustments were 75 for both texts. Documentation, as we have emphasized earlier, was shifted from the drafting to the post-drafting phase. This surprising consistency perhaps makes for the successful completion of the second task.

As for Mary, the situation is quite different. Unlike John, she does a lot of processing (reading the source text) and some documentation during the pre-drafting phase in the first task. In the second task, no processing is made. We suppose that this was quite stressful for Mary and influenced her normal working rhythm. It seems that she cannot set priorities like John did (leaving the documentation till the post-drafting phase). She spends a lot of time on technical adjustments (100% during the pre-drafting and 20% during the drafting phases) and in the end has to stop the recording before she finishes the last sentence.

These data confirm Jensen's finding that problem-solving activities (e.g. pauses longer than 4 sec, delaying decision, revisions and dictionary looks-up) are reduced under time pressure.

#### *Other-revision*

A professional translator and editor with over 17 years of professional experience was asked to evaluate the final translations from 1 to 10 with respect to the brief (translation

for publishing). She graded the translations in the following way: John 1 – 5; Mary 1 – 7; John 2 – 8; Mary 2 – 7.

It should be noted that the revision was unilingual because of the evaluator limited knowledge of Spanish. The source texts were different, which could have influenced the grades. But even taking into account these reservations, we believe that this evaluation is deeply revealing, as according to this reviser, the best translations were those made with time pressure. Even Mary’s unfinished translation did better in terms of quality than the first translation she spent about twice as long on. This evaluation agrees with Lorenzo’s (2002) findings and poses many challenging questions. What is it that makes translations done in a short time better than those a translator can spend “hours, days, or even weeks” on? We hope to answer these questions in the future project.

### *Self-revision*

Here we would like to compare the number of on-line corrections (made during the drafting phase) and off-line corrections (made during the post-drafting phase). This would help us define the translating style of the subjects, as revision is its principal component according to Mossop (2000, 2001). We are not going to take into account technical revision, as it has less importance for identifying the translating style and serves to indicate stress levels and a subject's typing skills more than anything else.

From Table 4 we can see that Mary spends much more time than John on off-line revision of the first text (8% versus 2%). The percentage of time spent on on-line revision of the first text is the same for both subjects. For the drafting phase of second text the distribution is about the same. However, there are profound qualitative differences that can be seen in Table 5. Here we calculated all on-line and off-line corrections and the number of typos and “useless” changes. Even though the term “useless” sounds purely evaluative, we tried to be as objective as possible: we only classify as “useless” the changes the first variant of which in the end appear in the final draft (“after” → “following” → “after”).

<b>Text 1</b>	On-line corrections / typos / useless changes	Off-line corrections / typos / useless changes
John	41 / 27 / 3	2 / 0 / 0
Mary	38 / 23 / 8	9 / 0 / 5

<b>Text 2</b>	On-line corrections / typos / useless changes	Off-line corrections / typos / useless changes
John	37 / 28 / 1	3 / 2 / 0
Mary	27 / 13 / 3	0 / 0 / 0

**Table 5. On-line and off-line corrections**

Mary makes many unnecessary corrections: she changes words or phrases and then goes back to the previous variant (“infuriate” → “inflammate” → “infuriate”). Also she makes some corrections that the external reviser did not approve of: she changes “didn’t *trust* in anyone in Colombia’s government” to “didn’t *believe* in anyone in Colombia’s government”, and the reviser prefers “trust” (this correction has not been classified as “useless” in Table 5). This means a lot of time is spent on doing things that in the end do not improve the draft or even worsen it. This may be the reason why her translation of the second text received a better grade from the expert: she did not have time to worsen the translation with her own corrections. This further confirms Lorenzo’s (2002) findings about the quality of students’ work under time pressure. The same happened to John: first he translates *tildando* as ‘calling’, and then almost immediately changes it to ‘labeling’. The reviser prefers ‘calling’.

John makes more typos than Mary, but these are easy to spot and correct, which he normally does straightaway. Of course, this slows down the translation, but these corrections do not require much time to think them over, unlike Mary’s reformulations.

Notwithstanding the large number of corrections and reformulations, the informants do not manage to correct some basic errors: Mary did not change the format of the data so that it corresponded to the American standard; neither puts the definite article before the abbreviation ‘FARC’, even though they do put it before ‘Revolutionary Armed Forces of Colombia’. All this makes us believe that sometimes they could not set priorities when revising, which might be a serious drawback of the translation course, as rarely do we get explicit information about the way revision should be done.

### *Conclusions*

The first hypothesis, stating that time constraints affect the distribution of time over the three translation phases, has been confirmed for both subjects. Pre-drafting and post-drafting phases were the most affected by time pressure.

The second hypothesis has been confirmed for Mary, and only partially for John, which leads us to the third hypothesis on the differences in the translating styles. Significant differences have been identified between John's and Mary's approach to translating.

However, to be able to confirm or reject this hypothesis we need to conduct a large-scale study with a greater number of informants, which would allow us to make some generalizations.

Another result of the experiment is relatively higher quality of the product made under time pressure. That was an unexpected turn of this study, which focused primarily on the process and not the product. Nevertheless, it makes us believe that there is more to learn about time constraints, so the notion of quality will be introduced in the future research.

## Chapter 5

### Limitations and recommendations for future research

#### *Limitations of data collection methods*

The drawbacks of this kind of research are connected, first of all, with the limitations of the data-collection methods, which have been discussed in Chapter 3. Imperfect research design can also debilitate the validity of the findings (cf. Jääskeläinen 1996, 2000, 2002; Bernardini 1999; Li 2004). We are going to discuss all these limitations in more detail.

In our study, screen recording was used as the only method of data collection, which is undesirable from the point of view of empirical research methodology, where triangulation is one of the basic principles. Not only did it debilitate the trustworthiness of the findings, but also made the data harder to process: hours and hours were dedicated to transcribing the screen-recording data, which could be at our disposal instantaneously had Translog been used.

Other data-collection methods would also allow us to gain deeper insight into the process. Eye-tracking would provide us with data on the gaze direction, helping us to analyze, for example, whether the processing was done on revision or thinking over a new segment of the text. Retrospective TAPs and questionnaires would serve to trace the translators' strategies and demonstrate the degree of stress and other affective factors.

Another limitation was the small number of the informants, which is a general problem for empirical research in Translation Studies (see Chapter 3) but not only for Translation Studies. As Jääskeläinen points out (1996: 72), “the problem is not unique to translation studies where, one might add, experimentation is still a novelty. In psychology, with its vastly long history in experimentation, the same problem still exists, which might help to alleviate the guilt of translation experimenters”. Large-scale studies like Krings' (1986a, 2001) can be carried out only involving students, as it is much harder to find professionals willing to participate in experiments which could make them lose face. Of course, another reason is that professional translators might just not have much time to do such things.

We will try to overcome this problem in the future study, but there is no guarantee that we find a considerably large homogeneous group of professionals disposed to participate in the experiments.

Still another problem is the lack of agreement among the researchers as to how the terms ‘professional’, ‘semi-professional’ and ‘novice’ should be used. As Bernardini (1999: 186) points out, “[t]his is a very controversial design [between-subject design, used to compare professionals with non-professionals], which is nonetheless normally posited without further discussion”. One testimony demonstrating that what Bernardini says is actually true is Jääskeläinen's 1990 study reported in the article in *Meta* in 1996. For her experiment, Jääskeläinen had to divide the subjects into three quality groups (good, mediocre, weak), which did not coincide with the initial division based on experience (translation students, professional translators and educated laymen) because the quality assessment of the translation showed that professional status did not guarantee high quality - one of the professional translators ended up in the ‘weak’ group.

Acknowledging the relevance of Bernardini’s claim, we still find the division into professionals and non-professionals very important for empirical studies, as it allows us to observe the development of translation competence. Of course, it is very important to check whether the professional status correlates with the level of expertise, but unfortunately the only source of information we have at our disposal (unless the subjects are the researchers’ students or colleagues) is the informants’ CVs.

We believe that the categories of professionals vs. non-professionals should be treated very carefully. From our point of view, it is better to be overcritical than to categorize a fifth-year student of a translation training program as a professional. This is why in our study the two subjects were regarded as non-professionals, notwithstanding their pro-bono translating experience and many years of study. This was made with the reference to other studies, where translators with two-year experience were regarded only as young professionals. In any case, the term “professional” should not be used in an essentialist way. We believe that it would be more correct to speak about a continuum corresponding to more or less experience.

One of Li’s (2004: 304) recommendations for empirical research on translation consisted in applying so-called stepwise replication that consists in dividing the investigators into two groups “which will deal separately with data sources, which should also be divided, so that their interpretations and results can be compared”.

In the present study the processing of the data was carried out by the author, which might result in subjective interpretations. The evaluation of the translations was made by one reviser, but in this case we believe that the experience and renowned expertise can serve as a guarantee of rather repeatable results.

### *Recommendations for future research*

We have carried out the pilot study aiming at the examination of the effect of time pressure on the translation process as a whole and on revision in particular. The project was small-scaled and was conducted with the view to working out the methodology for the thesis. However, we made some surprising findings concerning the quality of the final product: translating under time pressure seems to yield a higher-quality output.

This has made us change the initial idea for the research project. Now we want to investigate the correlation between time constraints and the final output. Of course, this does not mean that we are no longer interested in the translation process as such. Discovering the underlying mechanisms of this process is crucial for explaining why this happens. So here are the hypotheses for the future research.

The first three hypotheses are the ones we worked on in the pilot project but we want to support them with more data and triangulation. We believe that time constraints will affect the translation process in two ways:

1. Time pressure will affect the distribution of time over the three translation phases, especially the pre-drafting and post-drafting phases.
2. Time pressure will affect the distribution of translation tasks over the translation phases, especially revision and documentation.
3. Time pressure will affect different subjects in different ways, indicating thus their translating styles.

The others have been formulated on the basis of the new findings:

4. Translations done under time pressure tend to be of better quality than those done without any time constraints.
5. There are limit values of time after reaching which the quality of the final output would go down. In other words, there is a point of diminishing returns.
6. Some translation styles are more robust in the sense that they handle time pressure significantly better than others.

In order to define the limit values, we would need to carry out a different kind of experiment with a series of exercise as Jensen (2001) did. We should also note that our

findings were made on the basis of translations made by students, which were categorized as non-professionals. Perhaps the situation would be different had the experiment involved professional translators. So our final hypothesis concerns this issue:

7. Professionals deploy more robust strategies (as defined in terms of a point of diminishing returns), comprising differences in time distribution, translation tactics employed and the reaction to time constraints between professionals and non-professionals.

## **Conclusion**

In the present study we have tried to test the methodology that could be used in future for the thesis. The findings made have affected the research project for the thesis giving us new ideas and hypotheses.

We have discussed the literature on this subject and analyzed the existing empirical research. A considerable part of the work has been dedicated to the examination of various data collection methods, as they are crucial for an empirical study of the translation process. We came to the conclusion that even though there has been active research work on the translation process in the last 20 years, still much is left to be explored. This is especially true of time constraints, which have not been studied systematically.

The study we have conducted is based on the translations of two texts from Spanish into English done by English-speaking translation students. The first text was translated without time constraints; for the second text the subjects were given 9 minutes 27 seconds. On the basis of screen recording data we have drafted protocols, reflection all the activities that took place during the translation. This data have been analyzed with respect to the following hypotheses:

1. Time pressure will affect the distribution of time over the three translation phases will change.
2. Time pressure will affect the distribution of translation tasks over the translation phases will change.
3. Time pressure will affect different subjects in different ways, indicating thus their translating styles.

All the hypotheses have been confirmed. However, no definitive conclusions can be made as the sample size is very small and does not allow for generalizations. The findings should be confirmed by a large-scale study we are planning to conduct within the thesis.

A surprising discovery we made concerns the quality of the final product: translating under time pressure seems to yield a higher-quality output. This has made us change the initial idea of the research project, and we hope to elicit more information about this interesting aspect in the future research.

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## Appendix 1

Text 1

# Venezuela llama a consultas a su embajador en Colombia

**La medida se produce tras la decisión del presidente colombiano, Álvaro Uribe, de suspender la mediación de Hugo Chávez en la liberación de 45 de los rehenes en poder de las FARC**

ELPAIS.com / AGENCIAS - Venezuela - 27/11/2007

Venezuela ha llamado a consultas a su embajador en Colombia "con el fin de proceder a una evaluación exhaustiva de las relaciones bilaterales" entre ambos países, según anuncia un comunicado del ministerio de Asuntos Exteriores de Venezuela. La medida se produce tras la decisión del presidente colombiano, Álvaro Uribe, de suspender la mediación de su homólogo venezolano, Hugo Chávez, en la liberación de 45 de los rehenes en poder de las Fuerzas Armadas Revolucionarias de Colombia (FARC).

El presidente de Venezuela ya había anunciado el pasado 25 de noviembre que metía las relaciones con Colombia "en el congelador" porque no creía "en nadie en el Gobierno de Colombia", tildando de "escupitajo brutal" la medida de Álvaro Uribe. Chávez señaló que el gobierno de Uribe había mentido reiteradamente para justificar el fin de la mediación de un canje humanitario en el país vecino.

A las palabras de Chávez, Uribe respondió ayer: "No se puede incendiar el continente como usted lo hace, hablando un día contra España, al otro día contra Estados Unidos, maltratando un día México, al siguiente al Perú, en la mañana, después, a Bolivia".

## **Mary's translation**

# Venezuela calls for consultations with its ambassador in Colombia

This measure is taken after Colombian President Alvaro Uribe's decision to halt Hugo Chavez' mediation in the liberation of 45 hostages being held by FARC.

**ELPAIS.com / AGENCIAS - Venezuela - 27/11/2007**

Venezuela has called for consultations with the ambassador in Colombia "in order to work toward a conclusive evaluation of bilateral relations" between the two countries, according to information released by the Venezuelan Secretary of Foreign Affairs. The measure was taken following Colombian President Alvaro Uribe's decision to halt Venezuelan President Hugo Chavez' mediation in the liberation of 45 hostages being held by the Revolutionary Armed Forces of Colombia (FARC).

On November 25, the Venezuelan president had already announced that he was putting relations with Colombia "on hold" because he "didn't believe in anyone in Colombia's government," and he called the measure taken by Alvaro Uribe "absolute rubbish." Chavez reported that Uribe's government had repeatedly lied in order to justify its goals in the mediation of a humanitarian exchange in the neighboring country.

Uribe reponded to Chavez' words yesterday by saying "You can't infuriate the entire continent the way you are , one day speaking against Spain, the next against the United States, cursing Mexico one day, Peru the next, and Bolivia the next."

## Expert's revision

# Venezuela Calls for Consultations with its Ambassador in Colombia

The measure was taken after Colombian President Alvaro Uribe decided to halt Hugo Chavez's mediation aimed at the liberation of 45 hostages held by the FARC.

ELPAIS.com / AGENCIAS - Venezuela - 11/27/2007

Venezuela has called for consultations with its ambassador in Colombia "in order to work toward an exhaustive evaluation of bilateral relations," according to information released by the Venezuelan Ministry of Foreign Affairs. The measure was taken following Colombian President Alvaro Uribe's decision to halt mediation by Venezuelan President Hugo Chavez aimed at the liberation of 45 hostages being held by the Revolutionary Armed Forces of Colombia (FARC).

Earlier, on November 25, the Venezuelan president announced that he was putting relations with Colombia "on hold" because he "didn't trust anyone in Colombia's government" and called the measure taken by Uribe "absolute rubbish." Chavez reported that Uribe's government had repeatedly lied in order to justify its [Editor's note: perhaps its *own* goals]goals in the mediation of a humanitarian exchange in the neighboring country.

Uribe reponded to Chavez yesterday by saying "You can't infuriate the entire continent the way you are, one day speaking against Spain, the next against the United States, cursing Mexico one day, Peru the next, and Bolivia the next." [Editor's note: Please confirm subject in quotation.]

10:03-10:10

10:36-10:46

14:15-14:16

### **John's translation**

## **Venezuela Calls on Ambassador to Colombia**

This action comes after president of Colombia Alvaro Uribe's decision to suspend talks with Hugo Chavez regarding the liberation of 45 hostages held by FARC.

ELPAIS.com / AGENCIAS – Venezuela- 11/27/2007

According to a report by the minister of Foreign Affairs of Venezuela, the country has called on its ambassador to Colombia "to draw up an extensive evaluation of the bilateral relations" between both countries. This was announced after president of Colombia Alvaro Uribe decided to suspend talks with his Venezuelan counterpart Hugo Chavez regarding the liberation of 45 hostages held by the Revolutionary Armed Forces of Colombia (FARC).

On November 25, Chavez had already announced that he was putting relations with Colombia on hold because he did not have faith "in anyone in Colombia's government," labeling Uribe's actions as "a serious insult." Chavez pointed out that Uribe's government had repeatedly lied in order to justify talks regarding humanitarian exchange in the neighboring country.

In response to Chavez, Uribe commented yesterday: "We can't set fire to the continent like you do, speaking out one day against Spain, another against the USA, kicking Mexico to the curb one day, the next Peru, the morning after Bolivia."

### **Expert's revision**

# Venezuela Calls for Consultations with Its Ambassador to Colombia

The action comes after the decision by Colombia's President Alvaro Uribe to suspend Hugo Chavez's mediation aimed at the liberation of 45 hostages held by the FARC.

ELPAIS.com / AGENCIAS – Venezuela- 11/27/2007

According to an announcement by Venezuela's minister of foreign affairs, the country has called on its ambassador to Colombia "to prepare an extensive evaluation of bilateral relations" between the two countries. The announcement came after Colombia's President Alvaro Uribe suspended mediation efforts by his Venezuelan counterpart Hugo Chavez directed at the liberation of 45 hostages held by the Revolutionary Armed Forces of Colombia (FARC).

Earlier, on November 25, Chavez announced that he was putting relations with Colombia on hold because he did not have confidence "in anyone in Colombia's government," calling Uribe's action "a serious insult." Chavez pointed out that Uribe's government had repeatedly lied in order to justify talks regarding humanitarian exchange in the neighboring country. [Editor's note: Something is wrong here. Consider rephrasing as, "Chavez noted that Uribe's government had lied repeatedly to justify involvement in humanitarian affairs in the neighbouring country.]

In response to Chavez, Uribe commented yesterday: "We can't set fire to the continent like you do, speaking out one day against Spain, another against the USA, kicking Mexico one day, the next Peru, the morning after Bolivia." [Editor's note: Please confirm subject in quotation.]

10:10-10:35

14:17-14:19

5

## **Appendix 2**

Text 2

# **Los principales obstáculos para la paz entre israelíes y palestinos**

## **Los puntos de conflicto siguen sin resolverse tras décadas de litigio**

ELPAIS.com - Madrid - 27/11/2007

La reunión internacional de Annapolis puede marcar el primer paso de un proceso de paz en Oriente Medio, aunque el escepticismo rodea la cumbre. Algunos de los puntos que serán tratados están sin resolver desde hace décadas.

### **Jerusalén**

La ciudad está siempre sobre las mesas de negociación y es uno de los temas más conflictivos para israelíes y palestinos. Jerusalén es considerada una ciudad sagrada para el judaísmo, el cristianismo y el Islam. Para los palestinos, es una ciudad santa, corazón de Palestina y el mundo árabe. Para los israelíes, Jerusalén tiene lazos históricos y religiosos con el pueblo judío y es parte integral de su identidad. En ella, están los restos del gran Templo Sagrado de Jerusalén. Después de la Guerra de los Seis Días en 1967, Israel conquistó Jerusalén Oriental, lo que supuso una “ocupación” para los palestinos y una “liberación” para los israelíes. El gran símbolo de la disputa es el sitio llamado por los judíos Har Haram, Monte del Templo, y por los musulmanes Haram al-Sharif.

### **Mary's translation**

## The main obstacles to peace between Israelis and Palestinians

Conflict continues without resolution after decades of litigation

**ELPAIS.com** - Madrid - 27/11/2007

The international meeting in Annapolis could mark the first step in a peace process for the Middle East, although the summit is shrouded by skepticism. Some of the points that will be addressed have been unresolved for decades.

### Jerusalem

The city is constantly being negotiated and is one of the topics that causes the most conflict between Israelis and Palestinians. Jerusalem is considered a sacred city within Judaism, Christianity and Islam. For Palestinians, it is a holy city and the heart of Palestine and the Arab world. For Israelis, Jerusalem has historical and religious roots for the Jewish people and is an essential part of its identity. The ruins of the great Holy Temple of Jerusalem are found. After the Six-day War in 1967, Israel conquered East Jerusalem, which to the Palestinians meant "occupation" and to the Israelis "freedom." Something of great symbolic value in the dispute is the site called

### **Expert's revision**

## The Main Obstacles To Peace Between Israelis and Palestinians

Conflict continues without resolution after decades of litigation [Editor's note: Does the term mean "negotiations"?]

The international conference in Annapolis could mark the first step in a peace process for the Middle East, although the summit is shrouded in scepticism. Some of the points to be addressed have been unresolved for decades.

## Jerusalem

The city is constantly the subject of negotiations and is one of the topics that causes the most conflict between Israelis and Palestinians. Jerusalem is considered a sacred city by Judaism, Christianity and Islam. For Palestinians, it is a holy city and the heart of Palestine and the Arab world. For Israelis, Jerusalem has historical and religious roots for the Jewish people and is an essential part of Israel's identity. The ruins of the first and second temples are found in Jerusalem. During the Six-Day War in 1967, Israel conquered [Editor: Consider changing to "captured" or "annexed."] East Jerusalem, which meant "occupation" to the Palestinians and "liberation" to the Israelis. Something of great symbolic value in the dispute is the site called Temple Mount—*Har Haram*—to the Jews and *Haram al-Sharif* to the Muslims.

14:23-14:41

7

### **John's translation**

The main obstacles to peace between Israelis and Palestinians

The conflict is without a resolution after years of fighting

ELPAIS.com -Madrid- 11/27/2007

The international meeting held in Annapolis could mark the first step towards a peace process in the Middle East, although there is much skepticism. Some of the key issues that will be talked about have not been solved after decades.

Jerusalem

The city is always involved in negotiations and is one of the issues that represents the most conflict between Israelis and Palestinians. Jerusalem is considered a holy city Judaism, Christianity and Islam. For Palestinians, it is a holy city, the heart of the Palestine and the Arab world. For Israelis, Jerusalem has historical and religious ties with the Jewish people and is an integral part of their identity. Within the city are the remains of the Holy Temple of Jerusalem. After the 6 Days war in 1967, Israel conquered Eastern Jerusalem, which meant a state of occupation for Palestinians and one of liberation for Israelis. The big issue that is disputed is the site which Jews refer to as Har Haram, Temple Mount, and which Muslims refer to as Haram al-Sharif.

### **Expert's revision**

The Main Obstacles to Peace Between Israelis and Palestinians

The conflict is without a resolution after years of fighting [Editor's note: Please check translation.]

ELPAIS.com -Madrid- 11/27/2007

The international conference held in Annapolis could mark the first step towards a peace process in the Middle East, although there is much scepticism. Some of the key issues to be discussed have been unresolved for decades.

## Jerusalem

The city is always involved in negotiations and is one of the main points of contention between Israelis and Palestinians. Jerusalem is considered a holy city by Judaism, Christianity and Islam. For Palestinians, it is a sacred site, the heart of the Palestine and the Arab world. For Israelis, Jerusalem has historical and religious ties to the Jewish people and is an integral part of their identity. Within the city are the remains of the Holy Temple of Jerusalem. After the Six- -Day War in 1967, Israel conquered [Editor's note: Consider "captured" or "annexed" instead.] Eastern Jerusalem, resulting in state of occupation for the Palestinians and of liberation for the Israelis. The main issue being disputed is the site which Jews refer to as *Har Haram*, Temple Mount, and which Muslims refer to as *Haram al-Sharif*.

14:42-14:49

8

## **Appendix 3**

### **Self-revision**

Below are the drafts of the four translations with all the corrections made during the drafting and post-drafting stages. The corrections introduced during the drafting phase are highlighted in red, and those made during the post-drafting phase in turquoise. Unfortunately, the author had to reconstruct the drafts manually, so there are no indications of the exact time when each reformulation was made. It should be pointed out that not all corrections are linear, but here we are primarily interested in the nature of the reformulations, so we find the distinction between the drafting and post-drafting phases sufficient for the purposes of the present study.

## Mary Text 1

Venezuela calls for consultations with its ambassador in Colombia

The measure is taken after following after Colombian president Alvaro Uribe's decision to halt Hugo Chavez mediation in the liberation of 45 hostages being held by FARC

ELPAIS.com / AGENCIAS - Venezuela - 27/11/2007

Venezuela has called for consultations with the ambassador in Colombia in order to work toward a conclusive evaluation of the bilateral relations" between between the two countries, according to a press release information released by the Venezuelan Secretary of Foreign Affairs of Ve. This measure was taken following Colombian President Alvaro Uribe's decision to halt the mediation of Venezuelan President Hugo Chavez' mediation "in the liberation of 45 hostages being held by the the Revolutionary Armed Forces of Colombia (FARC) in Colombia.

On November 25, the Venezuelan president had already announced that he was putting relations with Colombia "on hold" because he "didn't believe in anyone in Colombia's government and he called the measure taken by Alvaro Uribe complete absolute rubbish." Chavez pointed out reported that Uribe's government had repeatedly lied in order to justify its goals in the mediation of an humanitarian exchange in the neighboring country.

According to Chavez, Uribe responded to Chavez' words yesterday by saying "You can't infuriate all the entire continent the way you are doing so, one day speaking against Spain, the next against the United States, cursing Mexico one day, Peru the next, and then the next, and then Bolivia the next."

## John Text 1

Venezuela **call** Calls on Ambassador **r** to Colombia

This **ac**tion comes after the president of Colombia Alvaro Uribe **?'**s decision to suspend talks with Hugo Chavez regarding the **l** liberation of 45 hostages held by FARC.

**<e<lLPAIS.com%<aAGENCIAS -<Venezuela- 11/27/2007**

According to a report by the minister of Foreign Affairs of Venezuela, **Venezuela** the country has **e** called **upon** their **a**its ambassador **in** to Colombia “to **draw up a** draw up an extensive evaluation of **t**the bilateral relations” between both countries. This was announced after president of Colombia Alvaro Uribe decided to suspend talks with his **ve**Venezuelan counterpart, Hugo Chavez regarding the liberation of 45 hostages held by the Revolutionary Armed **F**Forces of Columbia (FARC **=**).

**The president Chavez had already** On November **3**25, Chavez had already announced that he was putting relations with Colombia on hold because he did not **believe** have faith “in anyone **i** in Colombia’s **g**government,” **callin** g labeling **ur**Uribe’s action as **<**“a serious insult.” Chavez pointed out that Uribe **?'**s government has **d** repeatedly lied in order to justify talks regarding **a** humanitarian exchange in the **neighb**horing country.

In response to Chavez, Uribe commented yesterday: “We can’t set fire to the continent like you do, speaking out one day against Spain, another against the US, kicking Mexico to the curb one day, the next Peru, the morning after Bolivia.”

## Mary Text 2

The main obstacles to peace between Israelis and Palestinians

Conflict continues without resolution after decades of litigation

ELPAIS.com - Madrid - 27/11/2007

The international meeting in Annapolis could mark the first step in a peace process for the Middle East, although the summit is shrouded by skepticism. Some of the points that will be addressed have yet to be resolved and have been unresolved for decades.

Jerusalem

The city is constantly being negotiated and is one of the most conflict-ridden areas of the topics that causes the most conflict between Israelis and Palestinians. Jerusalem is considered a holy sacred city within Judaism, Christianity and Islam. For Palestinians, it is a holy city and the heart of Palestine and the Arab world. For Israelis, Jerusalem has historical and religious roots for the Jewish people and is an essential part of its identity. The ruins of the ancient great Holy Temple of Jerusalem are found. After the Six-day War in 1967, Israel conquered East Jerusalem which to the Palestinians meant to an "occupation" and to the Israelis "freedom." Something of great symbolic value in the dispute is the site called

## John Text 2

The main obstacles to peace between Israelis and Palestinians

The conflict is without a resolution after years of fighting

ELPAIS.com -Madrid- 11/27/2007

The international meeting held in Annapolis could mark the first step towards a peace process in the Middle East, although there is much skepticism. Some of the key issues that will be talked about have not been solved after decades.

Jerusalem

This city is always involved in negotiations and is one of the main issues that represents the most conflict between Israelis and Palestinians. Jerusalem is considered a holy city for Judaism, Christianity and Islam. For Palestinians, it is a holy city, the heart of Palestine and the Arab world. For the Israelis, Jerusalem has historical and religious ties with the Jewish people and is an integral part of their identity. Within the city are the remains of the Holy Temple of Jerusalem. After the 6 Days war in 1967, Israel conquered Eastern Jerusalem, which meant a state of occupation for the Palestinians and a zone of liberation for Israelis. The great issue of big issue that is disputed is the site which Jews refer to as Har Haram, Mountain of the Temple Temple Mount, and what which Muslims refer to as Haram al-Sharif.