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## Controlling the process

### Theoretical and methodological reflections on research into translation processes

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One of the dilemmas in empirical translation studies, when investigating translation processes and products, is caused by the fact that we would like to divide them into many different phenomena and investigate these separately under controlled experimental conditions, avoiding disturbing variables. In reality, however, processes and products cannot be divided clearly into small, discrete parts. They comprise a complex network of factors, such as assumptions, decisions, feelings, thoughts, impressions and doubts. These in turn are influenced by several conditions, like the individual background of the translator, who is the subject of the experiment, the actual situation and conditions of the experiment, and the observer, who interprets the actions during the process and the results. In this article I argue that phenomenology, an approach derived from human experimental psychology, has dealt with this dilemma and provides useful methods and ideas for improving the field, such as the idea of aiming at increasing clarification via triangulation and the precise description of data from different sources.

#### Introduction: TRAP-project

My research project is a part of the TRAP-project (TRAP = "Translation process"), an empirical research programme that was started at the Faculty of Modern Languages at the Copenhagen Business School (CBS) in 1996. Researchers from three different departments – English, Spanish and German – worked together on a project in Translation Studies called "The translation process: from source text to target text". The project is described in Hansen et al. (1998a, 1999). The parts of the translation process which I have decided to focus on are the evaluation phases and, especially, the interaction between

the translators' skills, knowledge and competences and their ability to keep processes and products under control (Hansen 1997:207).

In his books and articles, the Hungarian-American psychologist Mihaly Csikszentmihalyi describes what he calls a "flow experience". It comprises all the enjoyable experiences a person can have during a successful activity: a feeling of great activity, total absorption, awareness and psychic energy. In this connection Csikszentmihalyi (1996:116) says that creative individuals and experts possess the ability to give feedback to themselves. They have a clear goal and are in control of their actions. They feel and know at once if they have done something really well, or not so well.

It is this feeling of satisfaction or displeasure that I have tried to capture in my research in translation processes. In addition, I have observed my subjects' individual behaviour, habits and strategies during the process (Hansen 1997, 1999a, 2002a).

#### A short definition of *translation* and *translation process*

*Translation* for the TRAP group means "real life translations" of complete authentic texts that have a social, communicative function in a defined communication situation. This involves a commissioner, user-oriented texts and a target text receiver (Hansen 1995:25). In short, our translations are pragmatic translations of what Weinrich (1976:16) has called "texts in a situation".

The *translation process* is defined as everything that happens from the moment the translator starts working on the source text until he finishes the target text. It is all encompassing, from every pencil movement and keystroke, to dictionary use, the use of the internet and the entire thought process that is involved in solving a problem or making a correction – in short everything a translator must do to transform the source text to the target text.

#### Controlling the process

The title of this article, "Controlling the process", can be understood in a variety of ways, for example:

1. Translators controlling their translation processes – "controlling" in the sense of translation monitoring and the control of translation quality.

2. Teachers/researchers controlling translators' translation processes – "controlling" in the sense of investigating translation processes for example by using different types of introspection.

3. Researchers controlling the research process when investigating translators' control of their translation processes. This kind of "meta-control" involves a great complex of epistemological and methodological reflections. Some of them will be described in this article.

As research in translation processes shows, all three kinds of "controlling the process" are difficult and sometimes problematic.

Process research started with Krings (1986), Gerloff (1987) and House (1988). Other scholars like Tirkkonen-Condit (1990), Jääskeläinen/Tirkkonen-Condit (1991), Lörscher (1991), Kiraly (1995), Kussmaul (1998) and Jääskeläinen (1999) produced important results. The dominant research method was the use of think-aloud-protocols (TAPs).

The possibility of combining introspective methods, TAPs and retrospection, with a computer program like *Translog* (developed by Jakobsen 1998, 1999a, 1999b and this volume), has changed and improved the study of translation processes. The computer software provides us with its "view function" to see all *objective data* about processes, allowing us with its "view function" to see all movements, corrections or changes as well as the position and length of all phases and pauses during the process on a log file. It is also a tool that enables us to design new experiments, involving for example various aspects of "time", such as different kinds of time pressure. With its "replay function", which shows the whole writing process dynamically on the screen, *Translog* makes it possible to use the method of "recognition", a frequently employed method in psychology.

#### Translators controlling their translation processes

Translators' ability to control their processes and their ability to change them depend not only on the translation task but, to a large extent, also on their skills, knowledge and translational competence. Experiments with *Translog* and retrospection gave indications, that translators sometimes translate "automatically"; they feel a kind of "flow" and become aware of a poor translation at once, enabling them to find better solutions without great effort. At other times they have to spend a lot of time thinking about a possible solution for a translation problem (reception or production problem). They consult refer-

ence books and other sources, and attempt to take into consideration all aspects of the commission, the communicative situation, the TT-receiver's presuppositions, coherence, grammar, style etc. before they decide whether their initial solution is adequate.

Sometimes translators just seem to feel or know when things are right or wrong and are able to control their processes nearly automatically. On other occasions they encounter a lot of problems, making control a conscious act during the translation process.

Translators do not normally think much about their translation processes and can therefore not tell us much about them. Kiraly (1995:41) states that "translation processing is probably a mix of conscious and subconscious processes – a mix that may change as translators proceed through their training and become more professional." Kiraly (1995:94) says that many processes are uncontrolled processes and that "only indicators of relatively controlled processes are likely to appear in TAP-data; relatively uncontrolled processes will continue to escape this kind of inspection." His main interest is the pedagogical application of his research to processes and his assumption is that in order to teach translation properly, it is necessary to understand both the uncontrolled and the controlled processes and the interaction between them.

#### Translators evaluating their translation product or parts of the product

Some translators read parts of the translated text during the process and most translators read and revise the whole target text after having finished writing (Hansen 2002b:48ff.). A condition for being able to evaluate translation elements or the whole translation product is that the translator has developed a sense of correctness. The translator must have some idea of the ideal product and be able to compare this idea with his or her actual product. Until recently, translation teachers hoped to promote this through discussions of translation products. Textual analysis of source texts and the study of parallel texts are used as means to internalise models. Extensive reading in both languages can have a similar effect.

Control implies some idea of a goal and how to achieve it. In connection with his flow chart depicting mental processes in translation (Hönig & Kussmaul 1998:175), Hönig mentions the importance of the translator having an idea of what the target text will look like (*Erwartungsstrukturen in bezug auf den prospektiven Zieltext*). Translation monitoring may take place automatically and this is fine until a disturbing element appears. Depending on their

skills and competence, translators realise that there is a problem and try to make changes, thereby adapting their product to their notion of the ideal product. Especially in LSP-translation, translators need a great deal of practice and knowledge in special fields to be able to imagine the "ideal" product and, thus, to be able to evaluate their own translation.

#### Controlling translators' translation processes

In my investigation of translators' control of their processes, I concentrated on an analysis of their monitoring skills i.e. their ability to spot and solve translation problems, and their ability to evaluate their tentative translation elements and their target texts. In addition, an attempt was made to analyse the degree of self-awareness with regard to their actions and habits during the process of translating.

*Short description of the project design:* the subjects were 47 postgraduate students from the CBS – in fact, all the students who took my translation courses in 1997/1998, and 6 postgraduate students from the Fachbereich Angewandte Sprach- und Kulturwissenschaft der Johannes-Gutenberg-Universität Mainz (FASK) in Germany (Hansen/Hönig 2000). The experiments proceeded as follows:

- They filled in questionnaires about their individual background, including educational background, development and use of their languages, reading habits, age, etc.
- After some tests of their writing speed, they were allowed to read the source text quickly. Then, in the first translation, the text was translated passage by passage under individual time pressure. For the individual time pressure, the first passage appeared immediately on the screen, and the next passages appeared after an individually predefined period of time and then disappeared again when the next passage popped up on the screen. "Individual time pressure" means that each of the subjects had a period of time at their disposal that was adapted to their individual writing and translating speed (for the texts and the time pressure see also Hansen/Hönig 2000 and Hansen 2002a). They had enough time to translate spontaneously but not enough time to change anything in this first version.
- I combined this first translation with a second translation of the same text, without time pressure (translating into the foreign language) or two parts

of a text with an overlapping passage (translating into the mother tongue). This followed immediately after the translation with time pressure. For the translation without time pressure, the subjects not only saw the source text on the screen, they were also given a paper version of the original text. For the second translation they had as much time at their disposal as they wished and had access to all the reference works they asked for.

- After translating, the subjects were given the chance to look at a hard copy of their translation without time pressure in order to correct their product. (This was only possible in the experiments at the CBS.)
- I mentioned earlier that *Translog* has a "replay function", where the whole writing process is shown dynamically on the screen. For my study, I combined this replay function with retrospection. For the retrospection with replay, the translation without time pressure was shown, and my subjects were asked to describe what went through their minds during the process and what kind of reference works they had used.
- During the experiment, when the subjects revised their hard copy, I recorded changes between the first and the second translation and marked both problematic and perfectly translated passages. In an interview after the retrospection with replay, I asked them for further clarification of their problems and gave them feedback.

*Short description of the analysis of the results:* The translation with time pressure gave indications about how the subjects translate automatically and spontaneously in a stressful situation, while the translation without time pressure gave indications about their competence under what they consider to be normal translation conditions. This showed how they proceeded from their first draft, the problems they encountered and the strategies, or lack thereof, that they used to solve these problems. It also demonstrated how they rejected many good solutions from their first translation in the second translation.

The target texts, log files and transcriptions of the recorded comments from the retrospection were analysed anonymously. In my analysis, I studied the subjects' ability to control their processes and products at several checkpoints, which had been established prior to the experiment:

- At first, I recorded all the changes between the two target texts. These changes were my first point of control or *checkpoint 1*.
- I mentioned that *Translog's* "view function" makes it possible to see all movements, corrections and changes as well as all phases and pauses during the process via a log file. My next point of control was the study of the writing phase of the process of the translation without time pressure.

On the log files, I registered all improvements and discounted all new errors that had an influence on the quality of the translation product. The study of movements, corrections and changes during the writing phase of the translation process constituted *checkpoint 2*.

- Many corrections and changes are undertaken in the revision phase. Therefore the study of the revision phase of the process via the log file was my *checkpoint 3*.
- A study of the corrections the subjects made on their hard copy constituted *checkpoint 4*.
- As mentioned earlier, retrospection with *Translog's* replay function gives the possibility of recognition. With the replay function the observer can direct the attention of the subjects to their experience. In my experiments, the replay on the screen kept the subjects concentrated on the task of recounting what had gone through their minds. Notably the pauses made them remember their problems (see Hansen 1999a:45). I registered these thought processes – which problems they mentioned and which ones they ignored, whether they had been able to solve them or not, and if they were aware of errors or overlooked them. This study of their ability to comment on the process and to improve weak passages was my *checkpoint 5*.

#### Researchers controlling the research process

One of the problems in experimental translation research is that it is difficult to isolate variables and to eliminate disturbing individual features. My assumption from translation teaching was that there must be great individual differences between translation processes and the ability to keep the process and product under control. I hoped to be able to establish individual and general competence patterns (Hansen 1997:209). For this reason, both in my experiments and when analysing the results, I tried *not* to eliminate individual features, but to take as much information as possible about the translators' individual conditions and backgrounds into account. The dominant impression from studying the log files and retrospection of more than two hundred translation processes confirmed my assumption. Although there are many similarities – the individual processes are quite different. These differences may be due to a plethora of factors, such as the translators' personal histories and individual backgrounds, their different temperaments, interests, their attention, knowledge, degree of self-confidence, competence in L 1 and L 2 and their strategies, or lack thereof. Sometimes physical conditions also play an impor-

tant part. Approximately one in three of my subjects displayed special habits which had an impact on their ability to control their processes and products.

### Investigating mental processes

The consequences of looking at individual translation processes together with the translation products, instead of looking at the products alone, are immense. This gave rise to many new problems – covering the huge complex of epistemological and methodological problems that psychology has battled with for centuries. It is impossible to avoid taking a stand on these problems which have an influence on every decision: the research design, the choice of subjects, the instructions, the analysis of data and the description of the results.

For this type of study, a useful theoretical and methodological framework turned out to be *phenomenology*, a method of experimental psychology. One of the concerns of phenomenological psychology is the analysis of all aspects of subjective experience. Phenomenological studies focus on qualitative data from the first-person perspective, i.e. what we know as introspection, the subjects' verbal accounts of their thoughts and experiences. This data is combined with data from the third-person perspective, which is the observer's perspective.

The phenomenological approach has some weaknesses, especially the fact, that the methods cannot live up to the requirements of natural sciences that demand accurate, objective, quantifiable, replicable and verifiable findings. As each of the observations with introspection is unique and totally dependent on the subject's/experiencer's individual private experience, replicability is virtually impossible. Different experiencers cannot have identical experiences. The same experiencers cannot have totally identical experiences at different times. So introspection and the first-person perspective were, and are, often considered to be unreliable, and qualitative methods are sometimes regarded as unscientific or as "pseudo science" (Morgan 1998). Phenomenological studies of consciousness in present-day research discuss these epistemological problems. Pickering, for example, states:

However, science strives to give us as complete an account of the world as possible, without mysterious gaps. Hence if consciousness is to be investigated scientifically, it needs to be considered in *all* its aspects. The first person perspective needs to be included in psychology despite the misgivings of those for whom empiricism and objectivity are the essence of scientific practice... First-person methods enrich research because they provide data that cannot be got in any other way.  
Pickering (2000: 279f.)

Phenomenology demands pluralism, including for example a combination of qualitative and quantitative data, subjective and objective aspects, and in addition also individual, social and cultural conditions (Pickering 2000: 280). The different approaches using phenomenology deal with the same problems and ask the same questions: how can the findings from first-person methods be translated into a systematic intersubjective science? There are problems with the effects of the observer on the experiment and on the experimenter. There is the great problem of creating some kind of general understanding that goes beyond private experience. The crucial question is as Velmans (2000: 337) expresses it: "how can one obtain public, objective knowledge about private, subjective experiences?"

### Intersubjectivity

It is an advantage to be able to *triangulate* qualitative first person and third person investigation with methods and technical devices that give quantitative results (Pickering 2000: 290). But there will always remain "observer effects" – especially where we deal with an observer of a human experimenter expressing his or her experiences and thoughts. In this situation both are observers and their experiences are seen from their individual or private perspective, which is subjective. In early phenomenology, a solution or compromise was found in the notion that shared similar experiences can lead to *intersubjective identification*, i.e. observers can aim at *more and more precise description* and through negotiation reach an agreement about privately observed phenomena (Tranekjær Rasmussen 1967: 23). The observer effects can be isolated in the "no", i.e. in those cases where observers or the observer and the observed do not agree with each other. In such instances they have to negotiate and clarify what the other party or the subject/experiencer really meant. The shared perspective that can be reached by negotiation is sometimes called "the second-person perspective". It presupposes not merely shared experiences but as Velmans (2000: 343) describes it "one also needs a shared language, shared cognitive structures, a shared world-view or scientific paradigm, shared training and expertise and so on."

### Communication

Communication has always been an important aspect of the phenomenological approach. Communication between researchers and experiencers depends on

encoding and decoding, i.e. it depends on the experiencers' ability to express themselves and the researchers' ability to interpret what they have heard. A methodological problem is how first-person experiences can or should be described by the experimenter and whether an experimenter can identify a problem if he or she does not know the concepts and words to identify or describe it. This is the classic philosophical and psychological problem of "the power of language over thought" that concerned people like Luther, Goethe, Sapir/Whorf, Vygotsky and many others. Wundt (1874/1888), the founder of experimental phenomenology, was already aware of this problem. He trained his subjects to report their own sensory experience as consistently and precisely as possible. Lewin (1922:195) says that it is the task of the experimenter to teach the subjects to give reliable reports of their experiences (*Erziehung der Vp. zur richtigen Selbstbeobachtung*). This is one of the reasons why "classical introspection", as it is called (Jääskeläinen 1999:64), is sometimes rejected by scholars of today. Their argument is that teaching the subjects "how to report" destroys the data because this implies that the subjects have already been told "what to experience and what to say". Nevertheless, Wundt's idea of giving subjects a language with which to express their thoughts seems quite progressive. Well-known examples from the world of individual perception of how important it is to teach specialists to express their experiences can be found in the fields of wine or coffee tasting, as described by Broadbent (1975), or in the field of perfume testing. The tasters and testers are taught the vocabulary of tastes or smells before they are able to describe their experiences.

In all kinds of research with introspection or retrospection, we have to ask ourselves: What kind of information do we get from our subjects/experiencers? Most likely, we only hear about phenomena that they at some point in their lives have learnt to talk about. But what about other phenomena? Are they not aware of those? Perhaps they are simply unable to express their thoughts explicitly. During the retrospection with replay in my experiments, I observed that some of my subjects had held long pauses and made many movements that obviously showed that they had tried to solve a problem. In retrospection, however, they only produced vague comments like "I feel ..." or "this sounds ..." or they just remained quiet. Like most other researchers in this field, I had followed Krings (1986) and Ericsson and Simon (1993) and asked my subjects to describe "what was going through their minds". I could see that there was a lot "going through their minds", but they were not able to find the words to express it.

Perhaps a person does not need terms like "metaphor", "prolepsis" or "nominalization" to be able to translate but the translator must be aware of

the existence of such phenomena – otherwise he or she cannot detect them and talk about them. Moreover, one normally learns the terminology at the same time as learning about the phenomenon.

The fact that experiencers have learnt terms with which to express their thoughts does not automatically imply that they also have been told *what to say* during the experiments. Over many years, I have observed that it is much easier for our students to comment on and revise translations into a foreign language than translations into their mother tongue, and they prefer doing so. The reason might be that they have learnt the foreign language consciously, and have acquired the terminology to describe potential problems. I assume that the same observations, namely that we obtain more information about translation processes into a foreign language than into the mother tongue, can be made in our research with TAPs or retrospection with replay.

### Sources of information about processes and products

In my research, I combined relevant quantitative and qualitative data in different ways and tried to analyse them in relation to each other. "Relevant" means that they provide the possibility of creating new knowledge. In the following section, I will try to characterize the data I could obtain from my experiments in relation to the phenomenological approach.

### Evaluation of the translation product

An important, if not the most important, source of data in this kind of research is the evaluation of the target texts. Processes are not very interesting if they cannot be seen in connection with any kind of result, the translation product (Hansen 1999a:51ff.). Evaluation data are qualitative third-person data, which are elicited through the evaluation of the final translation product. But also corrections, changes and new errors during the process, for example after pauses, have to be evaluated. Though it would appear that quality assessment is very subjective, evaluators can use a procedure of describing their evaluation criteria precisely and of negotiating and compromise when a dispute arises. However, as Gile (1999:56) points out, it is important to be aware of the extent of intra-group variability. It may not be substantial. There may be observer effects, but as before, it is possible to reach a kind of intersubjectivity. As to the evaluation of errors, the phenomenological method of accurate description and clarification becomes important, because then every reader of the results of

a study can make a decision as to whether he would agree with the evaluation criteria or not.

#### Log files

As mentioned above, with *Translog* the researcher has the possibility to observe the writing process on a log file, which provides quantitative data about all movements and which shows all phases and pauses. Logfile data are objective third-person observations, but the evaluation of the results of the movements after the pauses are not. For this reason, it is necessary to interpret and discuss them. Although the software gives an exact and objective account of phases (preparation phase, writing phase and revision phase) and pauses (position, number and length of pauses) during the process, the researcher and the subject do not really know what happened during these phases and pauses. In some of my experiments, the subjects' annotations on the paper version of the source text showed a part of their actions during the preparation phase, and their comments during the replay showed what they believed to have thought and done during the phases and pauses (Hansen 1999a, 2002a: 18). Often the movements directly following the pauses, which can be seen on the log file, gave an indication as to what had happened during the pauses. However, it is always necessary for the observer to evaluate and interpret the movement after the pauses, a process where interpretation is subjective. If it is discussed with other evaluators, the process can become intersubjective. Seen together, the two kinds of third-person observations – the evaluation data and the data from the movements on the log file – can be considered to be very reliable, because data from the product have to match data from the process. Many of the movements made during the processes and at least the last movements are reflected in the final product.

To get more precise results, i.e. to get closer to the causal relationship between what happened during the translation process in relation to the final translation product and the quality of it, I used the combination of observations from the log files and observations from the retrospection with replay (Hansen 2002a, 2002b).

#### Third-person observation of the first-person intro/retrospection

During the replay, the subject recognises the thoughts and problems he or she experienced during the process and the researcher is provided with this information, especially during the pauses. Sometimes the subjects try to explain

their solutions and sometimes they explain what they "normally" do (see also Hansen 1999a: 45ff.). Information from retrospection is private and subjective – but to some degree it can be controlled. The researcher does not only see all the movements in the process together with the experimenter, but also has access to a great deal of data from the process (log file) and from the product. These all have to fit in with the comments during the retrospection with replay. Thus the phases and pauses, the replay and the comments, as well as the movements directly after the pauses, all supplement each other. Seen as a whole, they give a very clear picture of what happened during the process.

#### Further explanation for clarification

All this information and data may not be sufficient. There are situations where it is necessary for the observer to ask for further explanation. In such cases, the combination of all the methods, is a great advantage. During retrospection, where the first-person observer (experimenter) and the third-person observer (researcher) look at the replay of the same process on the screen and see the same pauses, movements and decisions, it is easy to identify a problem and to go back to it and work on further clarification during the following interview.

#### Questions after the experiment/questionnaires

Sometimes all the data from the log files of the process, combined with the results of the product evaluation, the comments from the retrospection and further explanations are still not enough to interpret and clarify all observations during individual processes. It may even be necessary to ask the subject for further clarification *after* the experiment. The questionnaires about the individual background of the subjects can also provide a source of useful information.

#### Some examples

At every of my checkpoints (p. 30/31), data from different sources were combined – sometimes only data from two sources and sometimes data from them all. The following three examples from my experiments show how they can complement each other. Sometimes quantitative data are explained by qualitative data and sometimes data obtained from different sources mutually support each other. However, in this context, I cannot give a description of the

relation between all the relevant data or the whole investigation of the ability to control processes and products of the subjects mentioned.

The examples show combinations of qualitative and quantitative data in relation to one aspect of my experiments – the use of reference works. During the stage that I describe as checkpoint 2, I can register the translators' search for information during the translation process and their decision of what can be used. On the log files, one of the indices of search for information, for example the use of reference works, is the presence of longer internal pauses of 30 seconds and more, and the movements in the process immediately after these pauses.

#### Log files from the experiments

I looked at three *log files* from three different translations without time pressure, i.e. where the translators had had as much time at their disposal as they wished. They show that all three translators exhibit many long *internal pauses*. One of the log files (A) has been taken from the experiments at the FASK in Germersheim – a translation from English into the mother tongue German. The other two, B and C, are from the experiments at the CBS: B is from a translation from German into Danish, and C is from a translation from Danish into German.

The long pauses in the log file are quantitative data, and need not be discussed. What should be discussed is what the translators did during these long pauses. As stated earlier, this cannot be seen from the log files.

Their products from both translations, with and without time pressure, received the following assessments from two evaluators (Hansen 2002b:35):

<i>With time pressure</i>	<i>Without time pressure</i>
A not acceptable	not acceptable
B good	good
C not acceptable	good

What is the connection between the long internal pauses (log file) and this result (evaluation)? Without further data from third-person observations of the process (log file and/or replay) and/or first-person data from the retrospection with replay or from further explanations, *it is impossible to answer this question*.

Regarding subject A: When Dr. Hönig and I conducted the experiments at the FASK, we observed that the German subjects hardly ever used dictionaries (Hansen/Hönig 2000: 336). A used the dictionary only three times. During the long retrospection with replay, she didn't say much. The movements on the log

file after the pauses did not explain what happened. At last we had to ask her for an explanation of what went on during all those pauses. She said:

*Ich habe ziemlich lange überlegt. Das Problem ist (beim Wörterbuchgebrauch), man haftet zu sehr an den Wörtern und es bringt nichts. Es bringt wirklich nichts. Es wird nicht besser dadurch.*

[I thought about things for quite a long time. The problem is that (when you use a dictionary) you stick too much to the words and it doesn't help. It really doesn't help. It doesn't make it better.]

This explanation shows that A used nearly all her long pauses to think.

Translator B explained during the retrospection, that she had consulted a dictionary 19 times (the average for all 47 subjects was 8). From the log file, I could see that she had found 13 successful solutions after the pauses in which she had looked up words. She said that she consulted the dictionary mostly to get ideas, but 5 times she stated that she looked something up just to be sure. In the translation with time pressure she had shown that she was a good translator under all conditions, with or without dictionaries.

Translator C was highly unusual. She said in the retrospection that she looked up everything: "If you haven't any idea of what things are called, you only have the Danish-German dictionary." She did not use remarkably more time than the other subjects, although she says that she consulted one or more dictionaries on 37 occasions (the average was 11 times). Her product and the words and idioms she used immediately after the internal pauses (seen in the log file) showed that 29 of these 37 consultations were successful, on 5 occasions she made an incorrect choice and 3 times she could not find anything of use.

In the case of C, the data from the log file, the product evaluation, and her comments and explanations during the retrospection and interview were insufficient. They could not explain the reasons for her exaggerated use of dictionaries. Consequently it was necessary to ask further questions after the experiment. It turned out that she had had an English teacher who had systematically trained his pupils to use dictionaries. He had given them texts as cloze tests, where there were gaps, which had to be filled in. She told me that since that time she had looked everything up and double-checked, both in bilingual and monolingual dictionaries. She had done this for about 15 years, and throughout her studies at the CBS, without anyone ever noticing it.

The quantitative data from the log files showed that translators A, B and C all used many long internal pauses. During the retrospection, A appeared to be helpless. She could not identify her problems, could not talk about them



and/or did not have any method or strategy to solve them. She was unable to find any help in dictionaries. B had only one problem. She didn't take risks. She was quite aware of her own process, and the experiment convinced her that she was able to translate well without so many dictionary consultations. My conclusion about C was that her translation competence depended almost entirely on a very special kind of competence, i.e. an extremely well developed competence in dictionary use. She had not been aware of this. It would appear that she needs translation training without dictionaries. Otherwise her life as a professional translator will not be easy because it will cost her too much effort to solve translation tasks.

In all three cases, the combination of quantitative and qualitative data from different sources (pauses (log files), product (evaluation), retrospection, interview and questions afterwards) allowed both the subject and me to move from subjective to intersubjective identification and, thus, closer to a clarification of what happened during the processes and the relation between the processes and the products.

### Conclusion

My area of interest was "Controlling the Process" and especially the research process. I found that phenomenological methods of observation with their holistic and pluralistic approach, together with triangulation of qualitative and quantitative results are very useful. Through increasingly accurate description and negotiation of observations from different sources of data, we can get closer, perhaps not to an "objective" result, but to shared replicable experiences and results.

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## Building a translation competence model

### PACTE group

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This chapter presents the translation competence model that is being worked on by the PACTE group and that is the basis for designing the hypotheses of an empirical-experimental study of translation competence. This research is the first stage in a larger project to investigate the process of translation competence acquisition. The first part of the chapter describes our theoretical framework and the first models that we designed in 1998. This is followed by a brief presentation of the design of the research project. The last part of the chapter deals with the modification we have introduced in our 1998 translation competence model as a result of the first exploratory studies.

### Introduction

The PACTE research group (Process in the Acquisition of Translation Competence and Evaluation) was formed in October 1997 to investigate the Acquisition of Translation Competence in written translation into and out of the foreign language (inverse and direct translation). All the founding members of the group are translators and translation teachers who train professional translators in the Facultat de Traducció i d'Interpretació of the Universitat Autònoma de Barcelona. Our language combinations include English, French and German ↔ Spanish and Catalan. We cover both direct and inverse translation directions. This means that we all have different theoretical and methodological backgrounds, but for a long time we had all felt the need for more information about how trainee translators learn to translate in order to create better teaching programmes, improve evaluation methods and unify pedagogical criteria. Therefore, in 1997, we decided to form a research group. Our first objective was to unify criteria; so our first task was to build a model of the characteristics